THE PLAYFIT PERFORMANCE ENHANCEMENT SYSTEM

THE PLAYFIT PROJECT FOR GOLFERS

Bringing Golf Specific Health & Fitness into the 21st Century

The Golf Specific Health & Fitness Bible *by John Knight*

THE PLAYFIT

PERFORMANCE ENHANCEMENT SYSTEM

The Golf Specific Health & Fitness Bible

by John S. Knight

Playfit Enterprises Inc.

Jacksonville, Florida

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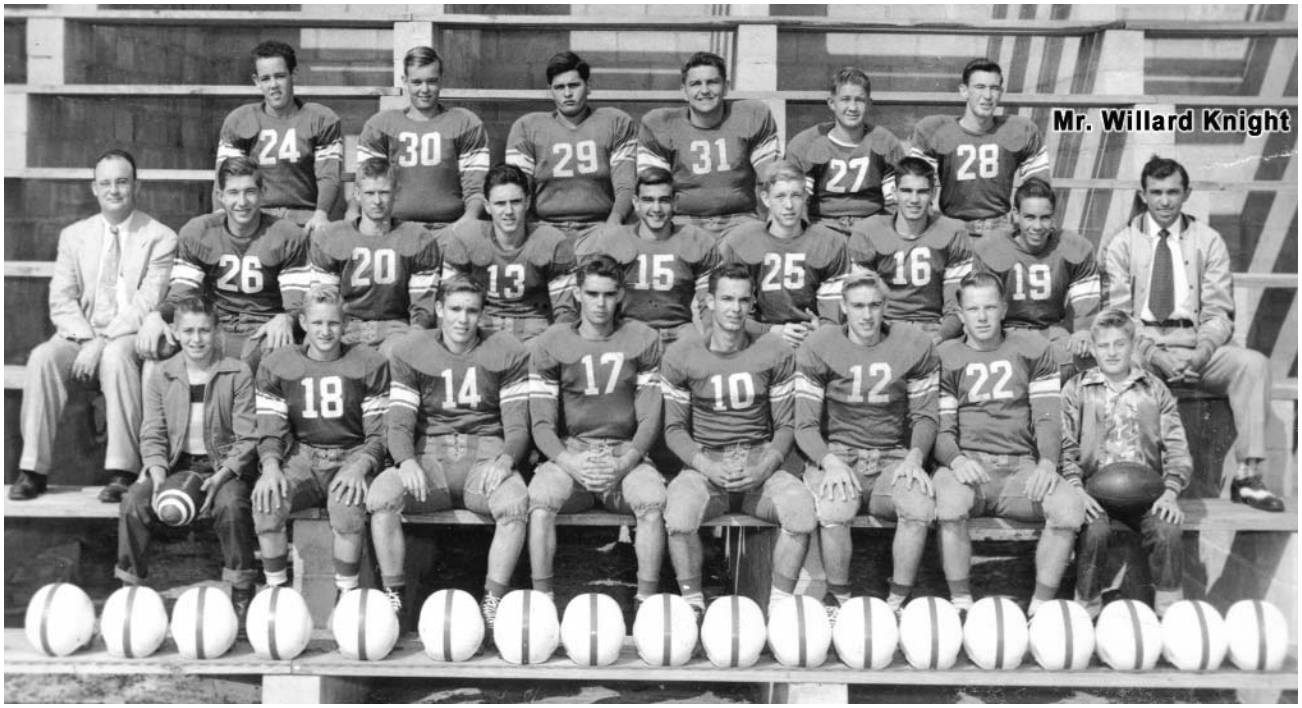
And most of all, my Lord and Savior Jesus Christ.

DEDICATION



The Playfit Performance Enhancement System (PPES©) is dedicated to my incredible father Willard T. Knight for his love, patience, integrity and resilience, throughout two decades of nearly impossible circumstances.

As many pictures as we have of dad in a golf setting, we found none to be more appropriate for the book than the one of him (right side of picture), sitting with his High School Football Team. Why? CHECK OUT THE SHOES! There's little doubt about where the Football Coach, turned Golf Professional is going after sitting for this picture.

Back in the mid fifties when this picture was taken, Willard Knight was also a High School Teacher, the Dean of Men and the Assistant Golf Professional at the local golf course. This picture accurately portrays him as an educator and mentor with confidence and athletic versatility *and perhaps gives you a glimpse into the origin of this powerful educational/athletic performance enhancement concept.*

Willard Knight died in 1981 of Malignant Melanoma after spending two decades as a Club Professional in Florida.

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FITNESS DISCLAIMER

The Health/Fitness Information presented in this book is not intended to be used as a replacement for medical advice and/or instruction from a health/fitness professional. It is intended to be used only as a template for golf specific health & fitness education. We recommend that you consult your physician and/or a health/fitness professional prior to implementing any of the golf specific fitness principles or concepts presented in this book.

FROM THE AUTHOR—*WHY I WROTE THE PPES©*

I remember exactly what I was feeling when I made the decision to put my professional life on hold, so I could begin pressing out this vision. And to be perfectly honest, the Playfit Performance Enhancement System (PPES©) was written as much out of frustration as it was ambition.

As the son of a PGA Golf Professional, a golfer for almost 40 years and a Sport Specific Fitness Instructor now for nearly 30 years, I've seen first hand how many so-called golf specific exercise programs affect the golfer. And while most of them improve the golfer's physical condition, few actually improve their golf performance.

Attempting to establish the credibility of a golf specific fitness program by touting the improvements it brings about in a golfer's physical condition is the norm. However, the standards used to measure a golfer's physical condition and those which measure their golf performance are completely different. What's really unfortunate is neither golfers, nor their (golf and fitness) instructors seem to realize this and those who do aren't acknowledging it.

Since there are presently no legitimate standards in place for measuring the results of fitness programs in terms of actual golf performance, there is no accountability for golf specific fitness instruction. As a result, politics, popularity and power have become the means by which individuals and organizations attain their authority status in golf specific fitness. This basically equates to the “good old boy” system.

In 1998 I began contemplating a software program that would disable the “good old boy” system, level the instructional playing field and make all Health & Fitness Organizations and Professional Fitness Instructors (including myself) accountable for their “golf specific” exercise prescriptions. So, my motivation for writing the PPES© Book, designing the PPES© Software Program (Evaluation System) and creating the PlayfitGolf.com Website (PPES© Support System) was much deeper than just a desire to help golfers improve their golf performance through fitness. I wanted to bring some

accountability to this new and rapidly growing area of golf instruction and provide equal opportunities for all fitness instructors to participate in the golf specific health & fitness movement. So rather than excluding people and creating separation, the PPES© *and the Playfit Project as a whole* is designed to include everyone and unite them, for the purpose of taking golf specific health & fitness education to a whole new level.

The Playfit Performance Enhancement System (PPES©) is not something you'll learn to use overnight—but then again you didn't learn to play golf overnight either. There's a lot more to golf specific fitness than you may realize. Regardless of how it's been portrayed in previous books, golf specific fitness as a whole is arguably the most complex form of sports specific fitness that exists in athletic performance enhancement training. So to bring you up to speed, the PPES© forces you into a vigorous self-education process that requires your diligent and continuing effort.

Since the nature of the subject matter (golf specific fitness) is considered expansive, meaning that your understanding of the subject matter will continue to broaden over time, it's important that you do not draw any conclusions but consider yourself to be in a continuous learning phase. Realistically, you should give yourself a full year to become familiar with the PPES© and to develop some proficiency with the diagnostic process. Designating a round or two each month to record the required Golf Performance Data is suggested. Doing so will help familiarize you with the PPES© and what it's capable of revealing about you physically and athletically, in terms of golf performance.

While the golf specific fitness principles presented in the PPES© Book are fully supported by sports specific fitness principles, their application is to a degree subjective. In order to broaden your understanding of these principles and learn the best application of each for your body, you should visit the PlayfitGolf.com Discussion Forums frequently to see them debated between PPES© Certified Instructors, PGA Golf Professionals and other golfers. And by all means, participate in these discussions yourself.

Under absolutely no circumstances should you skip over any part of the PPES© Book. Rather you should read it from cover to cover at least once before attempting to implement any part of it, or attempting to use the PPES© Software. Regardless of your level of expertise in golf and/or fitness, skipping forward in the book will only result in confusion, an incomplete understanding of the system and an inevitable return to the beginning of the book. So you should read the Preface, all three Forewords and the Introduction closely, as these preparatory sections of the book are designed to plow up your mental soil so to speak, so the golf specific fitness principles in the subsequent chapters can

be more easily planted.

As you proceed through the PPES© Book make it a point to remember this: having a thousand different golf specific fitness strategies in your arsenal is obviously valuable, but having the ability to discern how any fitness strategy will affect your golf related areas of physical conditioning and athletic ability, prior to implementing it, is of the highest value. Helping you achieve this level of understanding in golf specific fitness is the ultimate mission of the PPES©.

Now there will be people and organizations in both the golf industry and the health/fitness industry who condemn the PPES© and those who praise it. But the reality is that condemnation can't reduce its value any more than praise can increase its value. The PPES© is only a tool, and tools are subject to the knowledge and expertise of the user—*a scalpel may be valuable in the hand of a skilled surgeon, yet it's useless in the hand of a diesel mechanic*. So to become proficient using the PPES©, it's up to you to bring your knowledge and understanding of golf specific fitness principles up to par. In short, you only get out of it what you put into it, so neither condemnation of the PPES©, nor praise can influence its value—only you can. Assisting you in the educational process is the purpose of the PlayfitGolf.com Website.

Whether you're a golfer, a Health/Fitness Professional, or a PGA Golf Professional, my recommendation is that you take your time absorbing the information in the PPES© Book; make use of the support system on PlayfitGolf.com; and by all means, help us bring golf specific health & fitness into the 21st century by participating in the Playfit Golf Performance Championship Series each year. These tournaments could potentially have the most positive influence on the sport, in the history of the game, educationally, recreationally and philanthropically.

And finally, be patient and really try to enjoy the process of learning the proposed golf specific fitness principles, implementing the new training concepts and monitoring your progress with the PPES© Software Program. If you'll use this approach, you'll learn to structure your fitness program so it not only improves your physical condition, but every area of your golf game as well.

Enjoy the book and may God Bless.

John Knight
President Playfit Enterprises Inc., Author PPES©, Developer Playfit Project

The Playfit

Performance Enhancement System

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PREFACE

Since Tiger Woods burst onto the golf scene displaying the sport as one requiring the ultimate combination of power and finesse, golf is no longer viewed as a sport for the weaker athlete. Golfers are finally seeing themselves as athletes first and golfers second. And as a result, the number and variety of Golf Specific Fitness Programs being offered has increased substantially. While this is obviously having a positive influence on the sport of golf as a whole, it could potentially have negative consequences for the golfer.

Golfers all over the world have begun fitness programs and they're getting in great physical condition with respect to muscle tone, body fat percentage, flexibility and cardiovascular health. However, only a small percentage of these golfers are actually improving their golf games. In fact, David Duval's golf performance since developing his new, muscular physique (over the 2000, 2001, 2002, 2003, and 2004 golf seasons) proves that the type of physical condition that pleases the eye doesn't always support a high level of golf performance.

While his efforts in the gym clearly produced an impressive physique, they seem to have produced negative results in several key areas of golf performance for several consecutive years *and a few injuries as well*. Phil Mickelson on the other hand, whose physical appearance is considerably less athletic than that of David's, has steadily improved in nearly every area of golf performance over the same five year period.

The bottom line is, achieving a higher level of physical conditioning, with respect to muscle tone and body fat percentage does not guarantee a higher level of golf performance will follow. Unfortunately, bodybuilding is the only sport where the winner is determined by those standards of measurement.

Now, the intention here is in no way to portray David or his approach to fitness in a negative light and it certainly isn't to promote Phil Mickelson. Besides, David probably knows more about fitness than any golfer on tour. The dramatic transformation of David's physique is the result of tremendous physical and intellectual effort and the *physical* results were apparent. But when you compare David's physical development to his golf performance over the past five years (in Chapter Four), it's clear they've gone in two different directions. While his physique was steadily improving, key areas of his golf game were slowly falling apart. So David's experience in this regard simply provides us with an opportunity to help golfers understand why pursuing good physical condition with respect to muscle

tone and body fat percentage, i.e., *an awesome physique*, can very easily have a negative effect on their golf performance.

First of all, golfers (and their fitness trainers) must realize their Overall Fitness Level and their Golf Specific Fitness Level are two entirely different types of fitness, measured by completely different standards. Golfers have unique physical and athletic design specifications, as do football players, bodybuilders and sprinters. If a golfer's fitness program doesn't prioritize their critically interdependent *golf related* areas of physical conditioning and athletic ability, it can actually hinder their golf performance, regardless of the physical condition it helps them achieve. For this reason, measurements in muscle tone, body fat percentage, flexibility and cardiovascular health cannot be depended on to evaluate golfers physically and athletically, nor can they be used to determine the value of their fitness programs.

Secondly, just about any fitness program that includes aerobic exercise, flexibility and resistance training can potentially improve your golf game, especially if you're in poor physical condition when you begin. But most fitness programs affect far more than just strength, flexibility and endurance. In fact, every effort you make to improve your fitness level affects your golf game, *either for better or for worse*, by altering your *golf related* areas of physical conditioning and athletic ability.

Unfortunately, most of the fitness strategies associated with general fitness programs (and many of today's so-called golf specific fitness programs) typically enhance one *golf related* area of physical conditioning and/or athletic ability, while hindering (and often destroying) several of the others. I refer to this as the "chemo effect" and it's extremely common among health conscious golfers.

REMEMBER, CHEMOTHERAPY IS DESIGNED TO KILL CANCER CELLS, BUT WHEN ADMINISTERED IT ALSO KILLS HEALTHY CELLS AND CAUSES A NUMBER OF NEGATIVE PHYSIOLOGICAL CHANGES AS WELL.

In order to avoid the "chemo effect," fitness strategies that target one golf related area of physical conditioning or athletic ability must be carefully modified so they do not hinder the others. The only way to accomplish this is by measuring the influence your fitness program has *on actual golf performance*, as opposed to its influence on your physical condition.

The standards of measurement used to evaluate a golfer's fitness level as it relates to golf performance are called Golf Performance Indexes. By monitoring fluctuations in the Golf Performance Indexes, you can (more accurately) evaluate your golf related areas of physical conditioning and athletic abil-

ity and thereby determine the value of your golf specific fitness strategies. This is the process by which you develop an effective golf specific fitness program—one that actually improves your golf game, not by measuring strength, muscle tone, body fat percentage, range of motion (ROM) or cardiovascular health.

Golf Specific Fitness Professional Endorsement—*Randy Myers*

M. LS., Penn State University 1992, Golf Digest Professional Advisor, Titleist Performance Institute Board Member

The science of physical conditioning for golfers is fast becoming one of the most important subjects discussed in clubhouses and locker rooms around the world. So today, it is widely accepted that golfers need to work out specifically for their sport. But while physical conditioning and weight training techniques for golfers have improved significantly over the past twenty years, the standards used to measure their value to the golfer have not. Balance, flexibility, strength and stamina are not the only areas that need to be evaluated and addressed in a golf specific fitness program.

When I researched golf exercise conditioning in 1990, there was very little detailed information available. But in the years since I researched my Masters Thesis, many new theories have been introduced. The Playfit Performance Enhancement System (PPES©) represents the most advanced research available to both golfers and fitness professionals to date. It provides a detailed analysis of just how good a golf fitness program is for your game, or how bad one can be if it’s designed incorrectly. With the PPES©, proper golf conditioning can now be evaluated and proven based upon actual golf performance.

Over the years, I have been fortunate enough to work with some of the world's greatest golfers; Gary Player, Lee Trevino, Hale Irwin and many others who exercise their golf muscles with weight training and stretching. I believe that customizing a fitness program based upon strengths and weakness in the athlete is necessary for each individual golfer. Yet until the PPES© was developed, we relied upon outdated techniques to measure our golf clients' progress. With John's extensive research of nearly seven years, we can now proceed to the next level and properly measure the great benefits of exercise for golfers of every ability level, i.e., *ensure your golf clientele are getting better at the game they love to play, while they're getting into better physical condition.*

On a separate note, continuing to learn and achieve is one of the greatest attributes a fitness professional can have; the PPES© facilitates this process rather well.

Randy Myers

FOREWORD ONE *BY TRACEY NELSON*
MS, HEALTH EDUCATION & EXERCISE PHYSIOLOGY

As complex and advanced as sport specific training methods have become, the transfer of improved physical conditioning to improved performance in a sport is often minimal and sometimes even non-existent. In fact, sport specific training that does not respect the unique genetic characteristics of individual athletes can potentially impede their performance in the respective sport.

The fact of the matter is, all golf specific fitness programs are productive for one golfer or another, but no single golf specific fitness program can be productive for all golfers—regardless of its popularity. Because of genetic differences, common fitness strategies have varying results from golfer to golfer. A fitness program that is highly productive for Hal Sutton may not be as productive for Davis Love, because they are practically genetic opposites.

The Playfit Performance Enhancement System (PPES©) allows you to evaluate any golf specific fitness program by the degree to which it improves the areas of your golf game that are influenced by your physical condition and athletic ability. If the PPES© is proving your current golf specific fitness program to be counterproductive, it doesn't mean the program will have that effect on all golfers. It simply means that it is currently proving to be counterproductive for you and that a few modifications may be necessary.

The beauty of the PPES© from a fitness perspective is that it neither competes with nor discourages the use of any fitness program designed for improving golf performance. Rather, it encourages you to try a variety of golf specific fitness programs and to use the PPES© Software Program to determine which is the most productive based on your specific needs. *It helps you customize a generic fitness program to assure the improvements in your physical condition will in fact improve your golf performance.*

The PPES© Book provides an educational foundation comprised of sports specific fitness principles that will assist you in mapping out a path for your ongoing golf specific health and fitness education, while its companion, the PPES© Software, indicates the results of the fitness program you design *in terms of actual golf performance.* So the PPES© ultimately serves as a template for conducting your own personal research on how the fitness strategies you employ influence various areas of your golf game.

Keep in mind that the power of a teaching tool is measured by the volume of knowledge it helps you acquire. So in the realm of golf specific fitness, the PPES© could in time prove to be one of the most powerful teaching tools the sport of golf has seen. As long as you continue to use it, it will continue to reveal the golf specific health & fitness information you need for improvement.

Tracey Nelson
Exercise Physiologist

FOREWORD TWO *BY JIM HARRISON,*
MA, PHYSICAL EDUCATION, BA, PHYSICAL THERAPIST

Physical Therapists have always played a vital role in the post injury/surgical rehabilitation phase of recovery for laypersons and athletic participants. As a natural progression, Physical Therapists have become increasingly more involved with preventive care for individuals or "wellness" populations. One population, in particular, is the golfing population. This is a population that constantly seeks to improve their golf playing abilities—*most of the time it is by the purchase of new and expensive golf equipment or "training aids."* An increasing number have discovered that there are other means of realizing improvement. They have found that by enhancing their physical attributes they can improve their golf game without the purchase of equipment. As a result, Physical Therapists have found an important niche and golfers are able to avail themselves of the skills of a Physical Therapist outside the typical medical patient-therapist model.

Physical Therapy skills are particularly well suited to helping the "well" golfer. During the course of a "typical" orthopedic Physical Therapy evaluation various physical attributes are measured quantitatively. These include: joint range of motion, strength, joint integrity, posture, endurance, function, and pain patterns. Upon completion of the Physical Therapy assessment the Physical Therapist is able to make a "Physical Therapy Diagnosis" and determine the appropriate exercise and physical modality prescription to address any specific physical deficits. These deficits most often affect functional capabilities.

The conventional thinking is that by eliminating deficiencies, function will improve. Physical Therapists working with the "well golfer" usually have attended continuing education courses designed to instruct the Physical Therapist on how to work with the golfing population. These courses have taught Physical Therapists how to tailor their evaluation skills to the golfing model, correlate their findings and prescribe the course of "therapy" to correct any deficiencies. Applying conventional thinking, it would follow that once the deficiencies are eliminated, function, *i.e. golf playing ability,* will improve.

However, this brings us to a couple of questions:

1) *What exactly is improved golf playing ability?*
2) *How and what is measured to show if function/golf playing ability is actually improved?*

Until recently, those were questions largely left up to the individual fitness practitioner to answer for his/her specific population and program. The answers varied from fitness practitioner to fitness practitioner, program to program, and were not always easily measured.

With the introduction of the Playfit Performance Enhancement System (PPES©) the fitness practitioner now has excellent diagnostic tools as well as measurable functional goals. It does not matter the type of program or the types of exercise/modality prescription used. The fitness practitioner can use the PPES© in both the gym and the clinic setting to diagnose deficiencies within the golfer. The fitness practitioner can then use the PPES© to help them design a personalized program for the golfer that specifically addresses those deficiencies. And finally, the PPES© can continue to be used by the fitness practitioner to measure the golfer's progress and to diagnose the strengths and weaknesses of the prescribed program as well.

The ultimate goal is for the golfer to be independent of direct intervention by a practitioner. The golfer now directs the program. The golfer can continue to monitor the progress of any maintenance or formalized program performed either at home or in a gym. Further, the golfer is empowered to determine if staying on a maintenance program is needed or whether they should return to a formal supervised program. This is the ultimate in flexibility for both the fitness practitioner and the golfer.

Jim Harrison
Physical Therapist

FOREWORD THREE *BY*
PGA GOLF PROFESSIONAL

Golf and fitness have not always been discussed in the same conversation... *oh how times have changed!!* Over the past few years, it has become quite evident how important physical fitness is to golf performance. So now we have the Golf Specific Fitness Programs *and to say there are many is an understatement.* Now more than ever, it is time for a system that will evaluate each fitness program for the individual golfer, as it relates to their golf performance.

PGA Golf Professional
Pending New Submission

The proper application of this extraordinarily detailed system is much more valuable to your golf game than I'd originally thought. At first, I was simply trying to learn how the system worked and how the various standards measurements were capable of revealing my level of physical conditioning and athletic ability *as they related to my golf performance.* But I soon began to see that the scoring system was prompting me to prioritize the things that are the most important to shooting low scores. To say the least, I've become reacquainted with the importance of a well placed tee shot and hitting as many greens in regulation as possible. Prioritizing these two areas *as opposed to a 300 yard drive* has really sharpened up my game. So in addition to indirectly improving my golf game by directly improving my golf related areas of physical conditioning and athletic ability, the PPES© has also improved my game through better scoring strategies.

Here's the irony in this: the PPES© is a golf specific fitness system. As such, you would think that using it would first help you hit the ball farther, and second, improve your endurance or something along those lines; for me it has certainly done both. But it has had an even greater effect on my driving accuracy and greens in regulation percentage—two areas I originally suspected would suffer as my physical strength increased. So in my opinion, the PPES© not only helps you improve your golf specific fitness level, *it makes you a more strategically minded golfer as well.*

The PPES© can be extremely helpful in exposing problems in your golf game caused by poor or improper physical conditioning, but it can also be very confusing unless you use some common sense. So when beginning to monitor your golf performance with the PPES© Software, be sure you consider *all* of the factors that could be affecting your golf game, such as recent changes in your golf swing and changes in golf equipment (new driver, new irons, etc.).

And don't forget to consider the mental aspects of your game, which can have an extremely powerful influence on your performance. Considering the influence these and other non-fitness related issues could be having on your game will prevent you from mistakenly attributing an increase or decrease in your golf performance to your fitness program. Conveniently, the PPES© Software Program provides you with an area to make note of these potential influencing factors. With some effort, you'll eventually be able to discern between bad shots and rounds resulting from physical conditioning and those caused by problems with your swing.

The beauty of the PPES© from a golf perspective is that it has absolutely no respect for any golf specific fitness program. It will not respect the popular names in any type of golf or fitness instruction, nor can it be influenced by politics or marketing hype. It is the ultimate "bottom line" monitoring system and by design can only indicate the results of your fitness program *in terms of golf performance*.

The PPES© will help make all Golf Specific Health and Fitness Organizations, Physical Therapists, Athletic Trainers, Golf Specific Fitness Instructors and PGA Golf (and teaching) Professionals accountable for their exercise prescriptions and/or their golf instruction, thus influencing more responsible self-education. Not only will this be good for golfers, but for the sport of golf as well.

PGA Golf Professional

INTRODUCTION—*HOW TO USE THE PPES© BOOK*

Contrary to popular belief, golf specific fitness is incredibly intricate and has tremendous depth. A pure Golf Specific Fitness Program consists of far more than just some light weight training, low impact aerobic exercise and complicated-looking stretches. *Before* a fitness program can be considered "Golf Specific," it must first prove to exert a positive effect on every aspect of a golfer's athleticism. In other words, you can design your fitness program specifically to improve your golf performance, but the fitness program cannot be considered "Golf Specific" until after it's improving your golf performance. *This is precisely what makes golf specific fitness so complicated.*

Depending on your current physical condition, your natural athletic ability and your genetics, constructing your fitness program to meet this standard can be extremely challenging. It involves a process that not only takes time, but one that requires an understanding of the most intricate biomechanical, kinesiological and physiological principles that exist in athletic performance enhancement training, in addition to a sports nutritional strategy specific to your unique physiological needs. So while "Golf Specific" sounds like a term that narrows the subject of fitness, the reality is that it significantly broadens it.

To assist you with the broadness and the complexity of golf specific fitness, the PPES© uses a unique organizational approach that categorizes the golfer's fitness strategies into Six Golf Specific Fitness Components, their golf related areas of physical conditioning and athletic ability into Seven Aspects of a Golfer's Athleticism, and the standards for measuring the condition of the Seven Aspects of a Golfer's Athleticism into Five Golf Performance Indexes. The main benefit of this approach is that it makes it easier for you to connect the increases and decreases in the relevant areas of golf performance to the fitness strategies that caused them. In all, this approach helps you become increasingly more in tune with your golf related areas of physical conditioning and athletic ability, assists you in more accurately evaluating your golf specific fitness strategies and enables you to continually refine your golf specific fitness program for peak golf performance, regardless of the physical condition it helps you achieve.

As you proceed through the PPES© Book, it is recommended that you *temporarily* set aside everything you've learned about health and fitness—*especially your preconceived ideas about how exercise affects golf performance.* Once you've read through the entire PPES© Book, you'll find that your previous health and fitness knowledge has been appropriately categorized for more accurate application *with regard to improving golf performance.*

The following pages provide a brief description of the content in each chapter and help explain the rationale behind the PPES©'s unique organizational approach.

CHAPTER ONE defines the Seven Aspects of a Golfer's Athleticism and explains their interdependent relationship in great detail. The Seven Aspects of a Golfer's Athleticism are your "golf related" areas of physical conditioning and athletic ability. Collectively, they represent the soil out of which your golf performance grows. *Since they are the targets of all golf specific fitness strategies, it's essential that you learn about them first.*

In this chapter, each aspect is explained in a manner that helps you to understand its (interdependent) relationship with the others, how it will be affected by your golf specific fitness strategies (the Six Golf Specific Fitness Components) and how *its condition* both directly and indirectly influences specific areas of golf performance. The Seven Aspects of a Golfer's Athleticism are quite literally *the control rods of all golf performance*. You will soon learn that the level of golf performance you're able to achieve is ultimately determined by their *cooperative* condition.

CHAPTER TWO defines the Six Components of a Golf Specific Fitness Program in great detail. Each component is explained in a manner that helps you to understand how it should be implemented and how variations of that component affects the condition of one or more of the Seven Aspects of a Golfer's Athleticism. Also explained in this chapter is how certain Golf Specific Fitness Components work in tandem with one another to produce synergistic effects on certain Aspects of a Golfer's Athleticism. Together, Chapters One and Two help you achieve a level of understanding necessary to (more readily) determine the *nature* and *origin* of golf performance problems once they've manifested themselves in one or more of the Five Golf Performance Indexes.

CHAPTER THREE defines the Five Golf Performance Indexes and explains the rationale behind their calculation formulas. The Golf Performance Indexes are directly influenced by your golf related areas of physical conditioning and athletic ability (Seven Aspects of a Golfer's Athleticism) and are therefore the standards of measurement that enable you to evaluate them. In this chapter the Golf Performance Indexes are explained in a manner that helps you understand how *the condition* of each Aspect of a Golfer's Athleticism influences them, which Aspects of a Golfer's Athleticism influences each Golf Performance Index, and how problems manifested in one Golf Performance Index can actually be the result of problems in one or more of the others. Monitoring fluctuations in your Golf Performance Indexes not only allows you to measure your golf specific fitness level, but it's critical to exposing counterproductive golf specific fitness strategies.

CHAPTER FOUR explains how the Four Main Golf Stats are influenced by both the Golf Performance Indexes and the Seven Aspects of a Golfer's Athleticism. Also explained in this chapter is the *Playfit Golf Rating*—a numerical value obtained with a formula comprised of the Four Main Golf Stats. An increase in Driving Distance that's accompanied by a loss of Accuracy, or a decline in Putting Performance is *harshly judged* by the Playfit Golf Rating.

To help you better understand its application, the Playfit Golf Rating is used in this chapter to show the progress of several PGA Tour Professionals over five consecutive seasons, *who are known to follow regular exercise programs*. Reviewing their Playfit Golf Ratings will give you an idea of how productive (or unproductive) their fitness programs may have been during the five year period and help you begin distinguishing between the type of physical conditioning that improves your physique and that which improves your golf performance.

CHAPTER FIVE is Cause and Effect—*a short chapter that pulls together the first four chapters*. The purpose of this chapter is to help you understand the *Cause/Effect Relationship* between The Six Golf Specific Fitness Components, The Seven Aspects of a Golfer's Athleticism, The Five Golf Performance Indexes and The Four Main Golf Stats. The Cause/Effect Chart at the end of this section is particularly helpful because it allows you to see the relationship between these four areas all on one page. This chart also serves as a template for diagnosing golf performance problems and exposing the golf specific fitness strategies that may be responsible for those problems.

CHAPTER SIX explains the PPES© Software Features and its Functionality. In this chapter, you'll learn how to record your golf performance data, how to use the PPES© Software to measure your golf specific fitness level and how to monitor trends developing in various areas of golf performance, in order to expose ineffective and counterproductive fitness strategies.

So with respect to cause and effect, the PPES© Book & Software combine to assist you and your PPES© Certified Golf Specific Fitness Instructors in adjusting the cause—*golf specific fitness strategies*, to produce the desired effect—*peak golf performance*.

CHAPTER SEVEN explains The Playfit Golf Performance Tournament Format, the Tournament Rules and Regulations and helps you understand the scoring strategies necessary for qualifying.

Since the PPES© Book is almost entirely about the *cause and effect* relationship of golf specific health and fitness strategies, it's laid out in a manner that requires you to understand the information

in one chapter in order to fully comprehend the information in the subsequent chapters. So be certain you fully understand the golf specific fitness principles presented in each chapter before moving to the next. If you feel the need to re-read a chapter, then by all means do so.

THE PERSONAL INDEX at the end of the book is designed specifically to help you learn the PPES© principles, as they relate to you. Since not everything is relevant to all golfers, the personal index gives you an opportunity to slowly build your own *personal index* for more efficient referencing of the information that is relevant to you. So by all means, make use of this area of the PPES© Book and build the best personal index you are capable of building; doing so can make you a better, more knowledgeable golfer and/or instructor.

The explanations of the Seven Aspects of a Golfer's Athleticism in Chapter One, the Six Components of a Golf Specific Fitness Program in Chapter Two, and the Five Golf Performance Indexes in Chapter Three are by design limited. The purpose of this is to influence further explanation of each topic by PPES© Certified Golf Specific Fitness Trainers and PGA Golf Professionals, on the PlayfitGolf.com Publication and Discussion Forums, in order to provide you with an active web-based support system. Whether you're a golfer or an instructor, participating in this process will help you continually broaden your understanding of golf specific health & fitness.

Another way to look at it is, the brief explanations of the Seven Aspects, the Six Components and the Five Golf Performance Indexes represent a total of 18 golf specific health & fitness seeds. The first seven seeds are planted by reading Chapter One, the next six seeds by reading Chapter Two and the five remaining seeds by reading Chapter Three. As you continue to fertilize them and water them by staying active on the PlayfitGolf.com Website and by participating in the Playfit Project, you'll cultivate a golf Specific Health & Fitness garden that yields a wide variety of golf specific health & fitness fruit, capable of supplying all of your golf specific health & fitness needs.

Remember, improving your golf game with a fitness program requires you to first define the (your) areas of physical conditioning and athletic ability that influence your golf performance, and to then formulate your fitness strategies to target and enhance each individual area *without negatively affecting the other areas*. And to avoid unintentionally developing counterproductive golf specific fitness strategies, you must continually monitor your progress *with the PPES© Software* and then eliminate or modify your strategies when necessary. This is precisely what the PPES© teaches you to do. *If used consistently, it will enable you to personalize and continually refine your golf specific fitness program for peak golf performance, regardless of the physical condition it helps you achieve.*

As you proceed through the PPES© Book, your objective should be to learn the following:

- What the Seven Aspects of a Golfer's Athleticism are
- How the Six Components of a Golf Specific Fitness Program affect the condition of each Aspect
- How the condition of each Aspect affects the condition of the others
- How the condition of each Aspect influences the Five Golf Performance Indexes
- What the Golf Performance Indexes reveal about your Seven Aspects
- Which Aspects influence each Golf Performance Index
- How to measure your Golf Specific Fitness Level

While a few of the learning objectives above can be accomplished rather quickly—perhaps in a matter of weeks, others will require a continuous effort—*one that will last a lifetime*. As stated in the first Foreword, the PPES© Book provides an educational foundation comprised of sports specific fitness principles that assist you in mapping out a path for your ongoing golf specific health and fitness education. So the PPES© Book is really just the Genesis of your personal Golf Specific Health and Fitness Bible—*the future books must be written by you*!

IN ORDER TO GET THE FULL BENEFIT FROM THE PLAYFIT PERFORMANCE ENHANCEMENT SYSTEM (PPES©) AND TO ENSURE MAXIMUM COMPREHENSION, WE RECOMMEND READING THE ENTIRE PPES© BOOK BEFORE ATTEMPTING TO IMPLEMENT ANY PART OF IT, OR ATTEMPTING TO USE THE PPES© SOFTWARE.

Chapter One

The Seven Aspects of a Golfer's Athleticism

Chapter One Learning Objectives:

- What the Seven Aspects of a Golfer's Athleticism are
- How the *condition* of each Aspect affects/influences the condition of the others

Introduction to The Seven Aspects of a Golfer's Athleticism

Before we get into the actual meat of golf specific fitness, you need to have a clear understanding of the word "Specific," as it relates to fitness programs. It is the root word for "Specification," which is a term used to "Specify" the physical characteristics of something.

In order to construct a building you must have the blueprints for the building and more importantly its design specifications. While the building will be constructed *from* the blueprints, it will be constructed *to* precise specifications outlined in a book called a Spec Book. Generally written by engineers, Spec Books contain the physical and mathematical specifications to which a building must be constructed, to ensure it will handle all of the different types of stresses it will endure throughout its life. As long as the building is constructed according to the design specifications listed in its spec book, it will be structurally sound and serve the purpose for which it was designed with maximum efficiency.

It works exactly the same way with golfers. To perform with maximum efficiency, the golfer's body must be developed to the exact *physical* and *athletic* design specifications of the golfer. These *physical* and *athletic* design specifications are called *Aspects of Athleticism* and they're the distinguishable areas of a golfer's *physical condition* and *athletic ability* that influence (and support) golf performance. To better understand the "aspects of athleticism" approach, as it relates to golf performance, let's take a look at how it works with football players.

Football players have five *main* aspects of athleticism i.e., strength, size, speed, agility and endurance. Nearly all five of these aspects support each other. *This means that football players can train at full intensity to achieve the desired effect in one aspect and usually experience a positive effect on nearly all of the others.*

For example, strength training directly increases both size and speed, improves agility and *indirectly* improves endurance. Similarly, speed training directly increases strength and improves *agility potential*. Also, while endurance training improves endurance, it indirectly improves both speed and agility. So for the most part, the football player's five aspects of athleticism have a *self-supporting* relationship, in that the effort to improve one aspect usually has a positive effect on the others. Since training one aspect of a football player's athleticism rarely has a negative effect on the others, *improvements in each can be made within a relatively narrow scope of athletic performance enhancement strategies.* In short, the football player's fitness program is fairly straightforward.

Golfers on the other hand are not as fortunate. Their physical and athletic design specifications are outlined in Seven Aspects of Athleticism, as opposed to five and they have a far more intricate working relationship with each other compared to those of the football player. As stated in the Preface, fitness strategies intended to enhance one Aspect of a Golfer's Athleticism can very easily have a negative effect on one or more of the others. What's more, the *condition* of each Aspect of a Golfer's Athleticism has a more powerful influence on the *condition* of the others, than those of the football player. So while the football player's Aspects of Athleticism *strongly support* one another, it's more accurate to say the Golfer's Aspects of Athleticism are *heavily dependent* on one another. *This is precisely what makes golf specific fitness so complicated.*

The Seven Aspects of a Golfer's Athleticism listed below are the areas in which the overall physical and athletic design of the golfer is specified.

- Aspect #1 - Lower Back Strength & Integrity (All Torso Muscles)
- Aspect #2 - Joint Integrity (Connective Tissue)
- Aspect #3 - Strength/Flexibility Axis
- Aspect #4 - Kinesthetic Awareness (Muscular Awareness & Sense of Feel)
- Aspect #5 - Coordination
- Aspect #6 - Tempo/Timing Axis
- Aspect #7 - Endurance/Recoverability Axis

ASPECTS #1, #2, #3, & #7 ARE GOLF RELATED AREAS OF PHYSICAL CONDITIONING.
ASPECTS #4, #5 & #6 ARE GOLF RELATED AREAS OF ATHLETIC ABILITY.

The *condition* of each Aspect:

- *is directly affected either for better or for worse by all fitness strategies;*
- *directly influences the condition of the other Aspects and;*
- *directly and indirectly influences all areas of golf performance.*

A direct influence on golf performance, for example, would be when improving Aspect #3 (Strength/Flexibility Axis) directly increases Clubhead Speed. An indirect influence would be when improving Aspect #3 (Strength/Flexibility Axis) directly enhances Aspect #4 (Kinesthetic Awareness), resulting in improved putting.

But as previously mentioned, training to produce the desired effect in one Aspect of a Golfer's Athleticism can very easily have a negative effect on one or more of the others. For example:

- Weight training increases muscular strength by increasing muscle size and muscle density, which typically decreases muscular flexibility, creating potential problems with Aspects #4, #5 & #6.
- "Overemphasizing" flexibility decreases muscle strength and muscle density, creating potential problems with Aspects #1 & #2.
- Explosive weight training movements build strength and power, yet they smother your Kinesthetic Awareness (Aspect #4), obliterate your Coordination (Aspect #5) and alter your sense of Tempo (Aspect #6).
- Attempting to maximize Endurance helps you play the final holes as strong as you play the initial ones, but if pursued to excess, it can imbalance the Endurance/Recoverability Axis (Aspect #7), an Aspect of a Golfer's Athleticism that is critical to having maximum strength and Endurance during the second, third and fourth days of a golf tournament.

So again, obtaining a positive effect in one Aspect of a Golfer's Athleticism, without negatively affecting one or more of the others, requires a far more delicate approach than the one football players use, especially with the strength training portion of your fitness program. If any one of the Seven Aspects is even slightly under or overdeveloped, several, or all of the others are immediately thrown out of balance and the golf swing's efficiency is compromised. So it's essential that you and your instructors familiarize yourselves with the *nature* and *characteristics* of each Aspect of a Golfer's Athleticism and begin developing a feel for their interdependent relationship. This is the first step in learning how your fitness strategies and your fitness instructor's exercise prescriptions influence your golf performance.

As you proceed through the book, remember this: having a thousand different golf specific fitness strategies in your arsenal is obviously valuable, but having the ability to discern how any fitness strategy will affect your golf related areas of physical conditioning and athletic ability, *prior to implementing it,* is of the highest value. Achieving this level of understanding begins in this chapter.

NOTE: The explanations of the Seven Aspects of a Golfer's Athleticism in this chapter are by no means the only angle from which they can be explained, nor should these explanations be considered complete. Their purpose is only to give you a *foundational understanding* of each Aspect so you can begin learning about them more thoroughly, *as they relate to you and your golf performance.* Also,

remember that we're all genetically unique, with a wide range of physiological and anatomical differences. *This means the effect (common) exercise strategies have on the Seven Aspects can vary greatly from golfer to golfer.* So as you proceed through the PPES© Book, remember that you must *continually* learn about the Seven Aspects *as they relate to your body*, because their collective and cooperative condition governs all areas of golf performance.

Aspect Assessment/Influence Charts

Following the explanation of each Aspect of a Golfer's Athleticism, there are two charts *like the one below* that provide examples of how the *condition* of that particular Aspect *may affect* the *condition* of the others. These charts are designed to give you more insight into the Seven Aspects' interdependent relationship and help you visualize potential positive and negative influences each Aspect's condition can have on that of the others.

Example Aspect Assessment/Influence Chart

Aspect 1	Aspect 2	Aspect 3		Aspect 4	Aspect 5	Aspect 6		Aspect 7	
Lower Back Strength	Joint Integrity	Strength	Flexibility	Kinesthetic Awareness	Coordination	Tempo	Timing	Endurance	Recoverability
◯ + 3	◯ + 3	◯ + 3	◯ + 3	◯ + 3	◯ + 3	◯ + 3	◯ + 3	◯ + 3	◯ + 3
◯ + 2	◯ + 2	◯ + 2	◯ + 2	◯ + 2	◯ + 2	◯ + 2	◯ + 2	◯ + 2	◯ + 2
◯ + 1	◯ + 1	◯ + 1	◯ + 1	◯ + 1	◯ + 1	◯ + 1	◯ + 1	◯ + 1	◯ + 1
◯ Balance	◯ Balance	◯ Balance	◯ Balance	◯ Balance	◯ Balance	◯ Balance	◯ Balance	◯ Balance	◯ Balance
◯ - 1	◯ - 1	◯ - 1	◯ - 1	◯ - 1	◯ - 1	◯ - 1	◯ - 1	◯ - 1	◯ - 1
◯ - 2	◯ - 2	◯ - 2	◯ - 2	◯ - 2	◯ - 2	◯ - 2	◯ - 2	◯ - 2	◯ - 2
◯ - 3	◯ - 3	◯ - 3	◯ - 3	◯ - 3	◯ - 3	◯ - 3	◯ - 3	◯ - 3	◯ - 3

The word *"Bal."* on the left side of each chart is the abbreviation for the word *Balance*. If a dot representing a certain Aspect's condition is in this position *(Bal.)* of the chart, it simply indicates the Aspect is in the preferred condition for golf and/or is in balance with the others. On the other hand, *Negative* and *Positive* readings indicate an Aspect is in less than top condition for golf and/or out of balance with the other Aspects. These charts are also provided on the PPES© Software Program so you can evaluate the condition of the (your) Seven Aspects on a regular basis. *Studying them closely is recommended*.

Aspect #1—Lower Back Strength & Integrity

Aspect #1 (Lower Back Strength and Integrity) is without question the most important Aspect of a Golfer's Athleticism, because out of all seven, it's the only one you can't play golf without.

In this segment, the term "hip and torso muscles" refers to any and all muscles originating from, or attaching to the pelvis, sacrum or lumbar spine. And unless otherwise specified, the term "strength" deals predominately with the muscles, while the term "integrity" deals predominately with the connective tissues.

Foundation of the Golf Swing—*Structural and Muscular*

When we think of a foundation, what generally comes to mind is the bottom part of a structure, or the area of a structure that supports its weight. When speaking in terms of movement however, we must consider the origin of the movement to be a type of foundation as well. Like the foundation of a structure, it is also an area on which a significant amount of force is exerted.

The lower back *as a whole* serves as both types of foundations for the golf swing. As the hip and torso muscles act on the pelvis and the spine respectively to produce rotation, the lumbar spine serves as the axis of this rotation. Therefore, the lumbar spine is considered the structural foundation of the golf swing, while the hip and torso muscles are considered the muscular foundation of the golf swing. One area deals almost *exclusively* with support and the other deals *predominately* with movement.

Connective Tissue

The skeletal system in the lower back (lumbar spine) and pelvic (hip) area has an extremely intricate joint structure, comprised of multiple joints (vertebras) that are held together by a complex configuration of ligaments. Similarly, the muscles that act on the lower back (lumbar spine) and pelvis (hips) are attached to them with tendons. Both the ligaments and tendons (connective tissues) throughout the entire lower back and pelvic area play a vital role in maintaining Lower Back Strength and Integrity.

So in terms of both *movement* and *support*, the overall anatomical foundation of the golf swing (the lower back) consists of:

- The hip and torso muscles that produce the movement;
- The tendons that attach those muscles to the skeletal structures;
- The skeletal structures to which those muscles attach—*and most critically;*
- The ligaments that tie the skeletal structures together.

If any of these four anatomical areas falls below a certain level of strength and/or integrity, the spine, the discs and the Sacroiliac Joint become vulnerable to the destructive forces exerted on them by the *rotation* of the golf swing.

Tensile Force

Both the backswing and the downswing are produced by the muscles that act on the spine and pelvis to produce torso (spinal) and hip (pelvic) rotation. These are primarily the gluteus, hamstring, abdominal, internal and external oblique, the spinal erector and deep spinal (multifidus) muscles.

During the golf swing, these muscles actually exert force from the waist down and from the waist up simultaneously in order to produce rotation. At the beginning of and during the downswing phase, a tremendous amount of tensile force produced by the *rotation* of the golf swing, pulls against the connective tissues (ligaments & tendons) throughout the lumbar, pelvic and sacral areas. This tensile force literally tries to pull the lumbo-pelvic skeletal structures apart. If the *rotation* of the golfer's swing produces an amount of tensile force that exceeds the *integrity* of the connective tissues, they can lengthen, causing a significant reduction in lower back *integrity*. Therefore, lower back *integrity* is primarily determined by the integrity of the connective tissues.

The strength of these connective tissues is determined largely by the *condition* of the muscles that produce the golf swing and the *condition* of the muscles that produce the golf swing *is directly proportionate to the type and amount of work they perform.* What this means is if your hip and torso muscles never experience any resistance training, other than that which they experience during the golf swing, they will gradually weaken. This causes the destructive forces produced by the *rotation* of the golf swing to be diverted onto the ligaments and the discs. Why? Because weak muscles simply cannot help hold the skeletal structures together as well as strong muscles. As a result, the lumbar spine,

the lumbar discs and all of the spinal and sacroiliac ligaments become increasingly vulnerable to the destructive forces produced by the *rotation* of the golf swing.

On the other hand, if you have sufficient strength and density in your torso muscles, they will handle the majority of the tensile force and prevent your connective tissues from having to hold the skeletal structures together by themselves.

Strength Training

Since most golfers do not routinely employ strength training exercises for their lower back muscles, but typically focus almost exclusively on their flexibility, it's no surprise that lower back problems are so common in the sport of golf.

But consider this: lower back problems among football players are virtually non-existent, yet many health professionals discourage golfers from doing exercises that require them to bend forward, which when done correctly, strengthens the lower back muscles and *lengthens the hamstrings* as well. Football players are constantly in this position and they have among the healthiest lower backs of all athletes. The increased strength and density (thickness) developed in the spinal erector and deep back muscles as a result of regularly performing exercises from a "bent forward" position improves the overall strength and integrity of the lower back and helps keep the spine (vertebras) decompressed as well.

Unfortunately, the spinal decompression produced by stretching the lower back only lasts until you stand up, at which time the weight of the upper body, under the influence of gravity promptly recompresses it. If nothing more, this suggests that where lower back health and spinal decompression is concerned, golfers may need to focus a little more on strength training and a little less on flexibility. Remember, stretching lengthens all tissues and strength training increases the density and integrity of all tissues. A balance between the two (Aspect #3) is the key to having a strong, healthy lower back and a powerful golf swing. Nevertheless, the term *integrity* refers to the amount of force the lower back as a whole can withstand, while the term *strength* refers to the amount of force the lower back muscles can produce.

THE SACROILIAC JOINT

Depending on your swing biomechanics and hamstring flexibility, you can experience an even greater destructive force just below the lumbar area, in the *sacroiliac joint*. The sacroiliac joint (SI Joint) is the area where the sacrum is attached to the ilium. It is held together by a complex mass of ligaments and supports approximately 60% of your body weight. Unlike an elbow or shoulder joint, the SI Joint is not built to allow movement, but to form a solid immovable joint that binds the upper skeletal structure to the lower skeletal structure, like two separate pieces of steel that have been welded together. Overstretching this area by carelessly performing questionable stretching exercises such as toe touches, *while fully relaxing the lower back*, literally demolishes SI Joint Integrity.

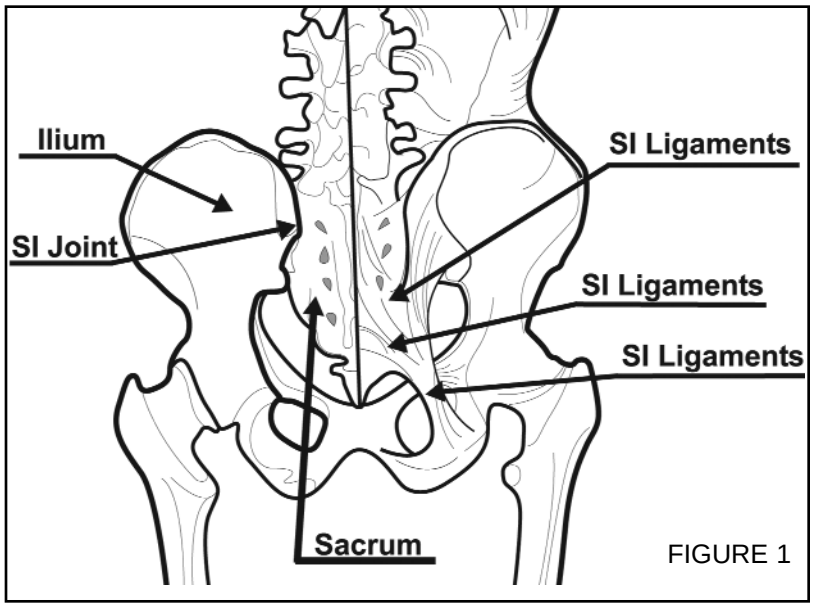

FIGURE 1

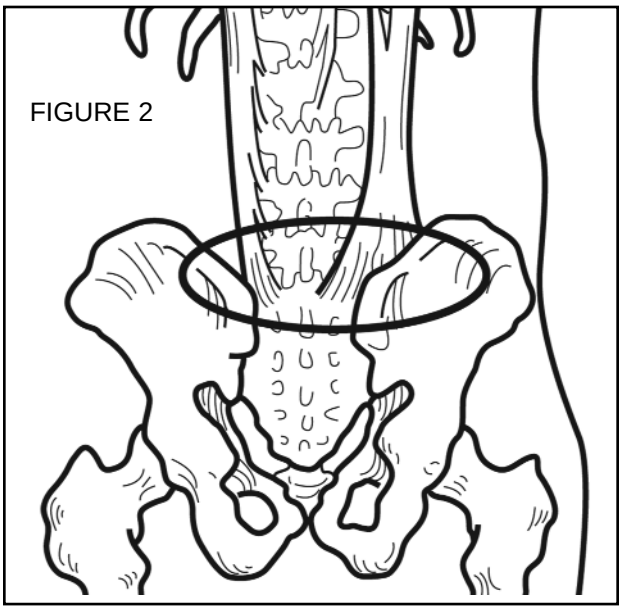
FIGURE 2

First of all, the lower back muscles are fully stretched when the abdominal muscles are fully contracted, as they are when you perform a full standing, or lying abdominal crunch. Attempting to stretch the lower back muscles beyond that which they experience during a full abdominal crunch strains (lengthens) the ligaments (sacroiliac ligaments) that hold the SI Joint together. This allows movement between the sacrum and ilium to occur, *something for which it was not designed*.

In addition to damaging ligaments, overstretching any part of the lower back, in any direction can strain and even tear the muscles where they connect (originate) to the sacrum and ilium (Figure 2).

This also destroys lower back integrity and can create a chronic *and extremely painful* lower back condition as well.

HAMSTRING FLEXIBILITY—*IMPORTANCE OF*

Hamstring flexibility also affects Lower Back Strength & Integrity. Notice that the hamstrings are attached to the bottom of the pelvis (Figure 3). When the hamstrings are tight (shortened), they actually pull the bottom of the pelvis downward into a posterior tilt—*the opposite of an arched lumbar spine*. This increases tension on the lower back muscles where they attach to the sacrum and the ilium, which further increases tension on the sacroiliac ligaments.

Swinging a golf club under these conditions strains the ligaments even more, which not only produces pain, but further weakens the entire lower back structure, *because weak ligaments are lengthened under an excessive load*. To make matters worse, if the lower back structure is weak because of strained (lengthened) ligaments, you're less capable of doing the exercises that strengthen the lower back muscles, because under those conditions, just about any movement produces pain. This scenario is extremely common among golfers and ultimately predisposes them to more serious lower back injuries.

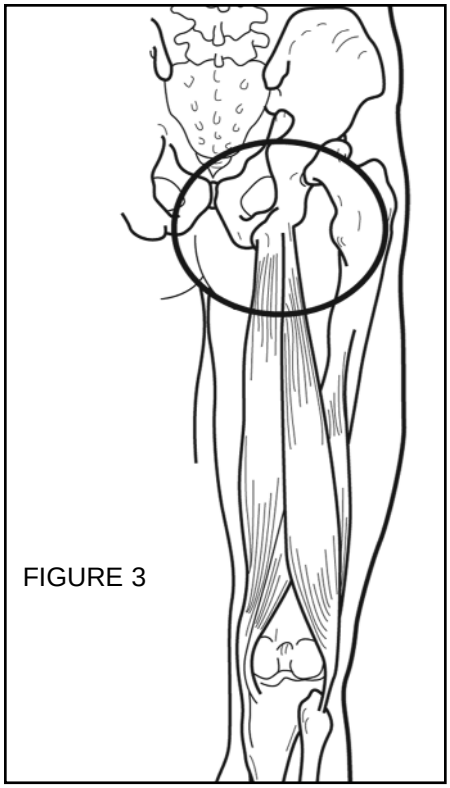

FIGURE 3

One thing that golfers need to understand is that stretching, like the golf swing, pulls the body's anatomical structures apart. Both activities influence the tissues in basically the same way, which is to lengthen them.

Strength training, on the other hand, not only increases the strength and density of the muscles, but that of the connective tissues as well. This gives them the integrity to better withstand the destructive forces produced by the rotation of the golf swing, without lengthening. And as previously stated, stronger, thicker spinal erector and deep back muscles help to keep the spine decompressed, *which eliminates the physical sensations that produce a desire to over-stretch the lower back*. All things considered, Lower Back Strength and Integrity is significantly more important to golfers than lower back flexibility and should be prioritized accordingly.

The bottom line is, when you lack sufficient strength and/or integrity in your lower back, one wrong move can result in injury and/or produce intense pain, causing your golf game to suffer significantly more than if another area of your body were injured. Therefore, Lower Back Strength and Integrity (Aspect #1) is the principle Aspect of a Golfer's Athleticism, because without it, golf is a sport you'll enjoy only from your television.

In the following chapter you'll learn to employ the Golf Specific Fitness Components in a manner that will produce maximum Lower Back Strength and Integrity.

IMPORTANT POINTS:

- Lower back *integrity* refers to the amount of force the lower back as a whole can *withstand.*
- Lower back *strength* refers to the amount of force the lower back muscles can *produce*
- Lower back *strength* reinforces lower back *integrity—this suggests that developing strong lower back muscles is the key to maintaining lower back integrity.*

LOWER BACK STRENGTH & INTEGRITY IS A BY-PRODUCT OF:

- Dense Lower Back Muscles
- Strong Abdominal Muscles
- Strong Spinal and Sacroiliac Ligaments
- Powerful Gluteus Muscles
- Flexible Hamstring Muscles
- Proper Balance of Strength and Flexibility in all Muscles

LOWER BACK STRENGTH & INTEGRITY (ASPECT #1) IS *DIRECTLY* AFFECTED BY THE FOLLOWING GOLF SPECIFIC FITNESS COMPONENTS:

1. Component #1 - Anatomy, Biomechanics & Kinesiology
2. Component #2 - Weight/Repetition Range
3. Component #3 - Point of Focus
4. Component #5 - Anaerobic/Aerobic Axis
5. Component #6 - Sports Nutrition

LOWER BACK STRENGTH & INTEGRITY (ASPECT #1) IS *INDIRECTLY* AFFECTED BY THE FOLLOWING GOLF SPECIFIC FITNESS COMPONENTS:

1. Component #4 - Mode of Execution

LOWER BACK STRENGTH & INTEGRITY (ASPECT #1) IS CONSIDERED AN AREA OF A GOLFER'S PHYSICAL CONDITION.

The charts on the following page are referred to as Aspect Assessment Charts. Their purpose is to assist you in developing greater insight into the interdependent relationship of the Seven Aspects of a Golfer's (your) Athleticism and help you visualize the potential positive and negative influences the condition of each Aspect can have on that of the others.

ASPECT ASSESSMENT—EXAMPLE #1

Aspect 1	Aspect 2	Aspect 3		Aspect 4	Aspect 5	Aspect 6		Aspect 7	
Lower Back Strength	Joint Integrity	Strength	Flexibility	Kinesthetic Awareness	Coordination	Tempo	Timing	Endurance	Recoverability
○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3
○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2
○ + 1	○ + 1	○ + 1	◉ + 1	○ + 1	○ + 1	○ + 1	○ + 1	○ + 1	○ + 1
○ Balance	○ Balance	○ Balance	○ Balance	◉ Balance	◉ Balance	◉ Balance	◉ Balance	◉ Balance	◉ Balance
◉ - 1	◉ - 1	◉ - 1	○ - 1	○ - 1	○ - 1	○ - 1	○ - 1	○ - 1	○ - 1
○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2
○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3

Example #1 indicates that when Lower Back Strength & Integrity is compromised, it could be a result of the Strength/Flexibility Axis (Aspect #3) being out of balance in favor of flexibility.

ASPECT ASSESSMENT—EXAMPLE #2

Aspect 1	Aspect 2	Aspect 3		Aspect 4	Aspect 5	Aspect 6		Aspect 7	
Lower Back Strength	Joint Integrity	Strength	Flexibility	Kinesthetic Awareness	Coordination	Tempo	Timing	Endurance	Recoverability
○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3
○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2
◉ + 1	◉ + 1	◉ + 1	○ + 1	○ + 1	○ + 1	○ + 1	○ + 1	○ + 1	○ + 1
○ Balance	○ Balance	○ Balance	○ Balance	○ Balance	○ Balance	○ Balance	○ Balance	◉ Balance	◉ Balance
○ - 1	○ - 1	○ - 1	◉ - 1	◉ - 1	◉ - 1	◉ - 1	◉ - 1	○ - 1	○ - 1
○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2
○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3

Example #2 indicates that when Lower Back Strength & Integrity is higher than normal, it's likely the result of the Strength/Flexibility Axis (Aspect #3) being out of balance in favor of strength, which usually causes a decrease in Aspects #4, #5 and #6.

ASSESSING THE CONDITION OF EACH ASPECT IS BASED ON YOUR PERCEPTION OF ITS CONDITION MORE SO THAN ITS ACTUAL CONDITION. ACCURACY IN YOUR ASSESSMENTS AND PROFICIENCY IN THE DIAGNOSTIC PROCESS TAKES TIME. THE DEVELOPMENT OF BOTH CAN BE EXPEDITED WITH MORE FREQUENT ASSESSMENTS.

Aspect #2—Joint Integrity

We've already established the lower back to be the anatomical area on which the golf swing exerts the greatest amount of destructive force. However, the wrist, elbow, shoulder, knee and hip joints experience their share of destructive forces during the golf swing as well. While Aspect #1 (Lower Back Strength & Integrity) is considered the core foundation of the golf swing, Aspects #1 and #2 combined form the overall structural foundation of the golf swing—*the foundation that must be in good health for the finer Aspects (Aspects #4, #5, & #6) of a golfer's athleticism to reach their peak condition.*

Ligaments and Tendons

Joint Integrity is primarily a by-product of strong, healthy ligaments and tendons (connective tissues), which connect bones to bones and muscles to bones, respectively. Since muscle and tendon strength is increased with physical exertion (particularly resistance training), golfers who are chronically inactive have considerably less Joint Integrity than those who exercise frequently.

As previously stated, the downswing exerts a tremendous amount of tensile (lengthening) force against the connective tissues that hold your joints together. If you allow your connective tissues to become weak to the point your golf swing is exerting an amount of destructive force on them that's greater than their integrity, *they will lengthen* and allow your joints to become loose like the worn out stick shift in an old automobile.

Visualize the feel of shifting the gears of a brand new expensive sportscar and identify with its smooth, clean operation. Now, visualize shifting the gears of a worn out 1976 Datsun B-210, or something comparable. Your joints can end up in this very condition without a physical activity that prepares your connective tissues and joints to withstand the destructive forces exerted on them by the golf swing.

Pain

Poor Joint Integrity can cause a subtle, annoying type of pain that hinders your ability to swing naturally, forcing you to improvise. When poor Joint Integrity results in pain and/or discomfort, either the

pain, *or protecting yourself from experiencing the pain*, becomes the predominant focal point during your golf swing. This redirection of your mental focus basically imprisons your Kinesthetic Awareness (Aspect #4), resulting in less Coordination (Aspect #5) and an altered Tempo/Timing Axis (Aspect #6).

Strength Training and Joint Integrity

For every action, there is an equal and opposite reaction. Since the golf swing exerts a tensile (lengthening) force against the connective tissues that hold your joints together, you must apply the opposite stimulus to the muscles, connective tissues and the joints, in a controlled environment to counteract it. Otherwise your connective tissues will continue to weaken and lengthen over time, allowing your Joint Integrity to slowly deteriorate. Strong, healthy connective tissues are the result of carefully performed resistance exercises that require your joints to operate through their *entire range of motion*. So the key to maintaining your Joint Integrity is proper strength training. In the following chapter you'll learn to employ Golf Specific Fitness Components that promote maximum Joint Integrity.

Important Points:

- Aspect #2 is exactly like Aspect #1, in that it is heavily dependent on Aspect #3.
- The desired effect in Aspects #4, #5 and #6 cannot be achieved while Aspect #2 is in poor condition.

Joint Integrity is a by-product of:

- Strong and healthy ligaments
- Strong and healthy tendons
- The proper balance of muscular strength and flexibility (Aspect #3)

JOINT INTEGRITY (ASPECT #2) IS DIRECTLY AFFECTED BY THE FOLLOWING GOLF SPECIFIC FITNESS COMPONENTS:

1. Component #1 - Anatomy, Biomechanics & Kinesiology
2. Component #2 - Weight/Repetition Range
3. Component #3 - Point of Focus
4. Component #5 - Anaerobic/Aerobic Axis
5. Component #6 - Sports Nutrition

JOINT INTEGRITY (ASPECT #2) IS INDIRECTLY AFFECTED BY THE FOLLOWING GOLF SPECIFIC FITNESS COMPONENTS:

1. Component #4 - Mode of Execution

JOINT INTEGRITY (ASPECT #2) IS CONSIDERED AN AREA OF A GOLFER'S PHYSICAL CONDITION.

The charts on the following page are referred to as Aspect Assessment Charts. Their purpose is to assist you in developing greater insight into the interdependent relationship of the Seven Aspects of a Golfer's (your) Athleticism and help you visualize the potential positive and negative influences the condition of each Aspect can have on that of the others.

ASPECT ASSESSMENT—EXAMPLE #1

Aspect 1	Aspect 2	Aspect 3		Aspect 4	Aspect 5	Aspect 6		Aspect 7	
Lower Back Strength	Joint Integrity	Strength	Flexibility	Kinesthetic Awareness	Coordination	Tempo	Timing	Endurance	Recoverability
○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3
○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2
○ + 1	○ + 1	○ + 1	○ + 1	○ + 1	○ + 1	○ + 1	○ + 1	○ + 1	○ + 1
○ Balance	○ Balance	○ Balance	○ Balance	○ Balance	○ Balance	○ Balance	○ Balance	○ Balance	○ Balance
◉ - 1	◉ - 1	◉ - 1	◉ - 1	◉ - 1	◉ - 1	◉ - 1	◉ - 1	◉ - 1	◉ - 1
○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2
○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3

Example #1 indicates that when Joint Integrity is compromised, all Aspects are compromised.

ASPECT ASSESSMENT—EXAMPLE #2

Aspect 1	Aspect 2	Aspect 3		Aspect 4	Aspect 5	Aspect 6		Aspect 7	
Lower Back Strength	Joint Integrity	Strength	Flexibility	Kinesthetic Awareness	Coordination	Tempo	Timing	Endurance	Recoverability
○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3
○ + 2	○ + 2	○ + 2	◉ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2
○ + 1	○ + 1	○ + 1	○ + 1	○ + 1	○ + 1	○ + 1	○ + 1	○ + 1	○ + 1
○ Balance	○ Balance	○ Balance	○ Balance	○ Balance	○ Balance	○ Balance	○ Balance	○ Balance	○ Balance
◉ - 1	◉ - 1	○ - 1	○ - 1	◉ - 1	◉ - 1	◉ - 1	◉ - 1	◉ - 1	◉ - 1
○ - 2	○ - 2	◉ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2
○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3

Example #2 indicates that when the Strength/Flexibility Axis is out of balance in favor of flexibility, Joint Integrity (and Lower Back Integrity) usually decreases, which suppresses the other Aspects to suffer.

ASSESSING THE CONDITION OF EACH ASPECT IS BASED ON YOUR PERCEPTION OF ITS CONDITION MORE SO THAN ITS ACTUAL CONDITION. ACCURACY IN YOUR ASSESSMENTS AND PROFICIENCY IN THE DIAGNOSTIC PROCESS TAKES TIME. THE DEVELOPMENT OF BOTH CAN BE EXPEDITED WITH MORE FREQUENT ASSESSMENTS.

Aspect #3—Strength/Flexibility Axis

Flexibility is without a doubt the most misunderstood topic in golf specific fitness and as a result, golfers everywhere are falling apart. We've known from the beginning that strong muscles with poor flexibility decrease range of motion (ROM) shorten the golf swing and predispose golfers to injuries such as muscle strains and muscle tears. In an attempt to avoid this problem, flexibility has been pursued in a most reckless manner, producing an army of injury prone golfers. Muscular Flexibility is, and has always been a prerequisite for top golf performance. But unless it's accompanied by a *proportional* amount of Muscular Strength, it can actually promote inconsistency in the golf swing and predispose golfers to more serious injuries than stronger, less flexible muscles.

Balancing Theory—*Something to Consider*

Unlike football players who perform their sport with a tremendous amount of muscular force, golfers are encouraged to perform their sport (the golf swing) with their muscles in a more *semi-relaxed state*. This actually prevents the golfer's muscles from protecting their joints like the football player's muscles protect his. Since the prototypical golf swing doesn't necessarily allow the muscles to help hold the skeletal structure together, the tensile force generated by the rotation of the golf swing has an even greater lengthening effect on the ligaments. So theoretically, strength training may be more essential for golfers to maintain their ideal balance of strength & flexibility, while stretching may be more essential for football players to maintain theirs.

Range of Motion (ROM)

One of the more inconspicuous problems associated with flexibility is the practice of using a predetermined ROM in a joint as the standard *for all golfers* to determine if their flexibility is sufficient. Depending on a golfer's genetics, this can either prevent them from achieving the degree of flexibility they're capable of, or it can cause them to destroy their Lower Back Integrity and their Joint Integrity pursuing it.

For example, if Arnold Palmer, *whose musculature is naturally dense*, had aggressively pursued the ROM in his torso displayed by Ben Hogan, *whose musculature was naturally less dense and more flexible*, he may have developed serious lower back problems and shortened his career considerably.

On the other hand, if Ben Hogan had allowed himself to accept a degree of flexibility less than what he was actually capable of, simply because the "standard" ROM (which would probably have come very easy to him) indicated his flexibility to be sufficient, he may have never developed his mesmerizing golf swing. In short, using a standard ROM *for all golfers* to determine whether or not their muscular flexibility is sufficient can prevent them from acquiring the measure of flexibility that best supports their ideal golf swing.

I remember using the predetermined ROM approach at a more destructive level in the late 1960s when I was in elementary school. The physical education teacher would have the entire class perform toe touches as one of our routine stretching exercises. The kids who were able to touch their toes were considered to have flexible muscles, while those of us who couldn't were considered to be less flexible and instructed to keep trying. Never was there an attempt to explain the anatomical reasons why some could touch their toes and why others couldn't. The physical education teacher simply told us if we worked hard and kept stretching, we could eventually acquire the degree of flexibility that would enable us to touch our toes. Not only was this incorrect, but it was careless fitness instruction with potentially serious health consequences.

CONSIDER THE FOLLOWING QUESTIONS:

- Since (theoretically) there are basically two major muscle groups (hamstring & spinal erector muscles), being stretched *simultaneously* during toe touches, is each muscle group being stretched equally, or is one being stretched more than the other?
- If it's one more than the other, which is it—the lower back muscles, or the hamstring muscles?
- And is the muscle group being stretched to a lesser degree still considered flexible, simply because the toes are being touched?
- And depending on the manner in which they're performed, could toe touches actually miss stretching the lower back and hamstring muscles altogether?
- And as a result of anatomical differences, could some people actually be straining their ligaments during toe touches more than stretching the lower back and hamstring muscles—*particularly those in the SI Joint*?
- Could the answer to all of these questions vary considerably from individual to individual?

ABSOLUTELY!

First of all, an individual's ability to touch their toes is by no means a question of muscular flexibility alone, but depends on a variety of genetically predetermined anatomical factors. Depending on certain anatomical differences, someone could have a considerable degree of muscular flexibility in both their hamstring muscles and their lower back muscles, yet still have a difficult time touching their toes. While you would think people with long legs and short torsos would have the most difficult time with toe touches, people with short legs and long torsos have problems with them as well.

Regardless of which anatomical category you're in, being able to touch your toes does not necessarily reflect flexibility in the lower back and/or hamstring muscles. *In fact, performing toe touches with a relaxed lumbar spine, with the primary focus on touching the toes, directs the majority of the lengthening force directly to the point where the lower back muscles attach to the pelvis and to the sacroiliac area, immediately below the lumbar spine, actually missing the lower back and hamstring muscles altogether.* As stated in the segment describing Aspect #1, the Sacroiliac Ligaments support approximately 60% of your body weight and are exceptionally prone to injury. Therefore, toe touches are one of the more destructive of the "Predetermined ROM" stretching exercises.

For optimum performance, golfers should pursue a balance of muscular strength and muscular flexibility and allow their ROM to adjust accordingly. While this method produces varying (yet adequate) ranges of motion from golfer to golfer, it produces maximum Lower Back and Joint Integrity in all golfers.

ELASTICITY

Excessive and improper stretching without resistance training can also cause the muscles to lose their elasticity. Elasticity is a characteristic of healthy muscles that enables them to pull back (recoil) powerfully, much like the action of a rubberband when stretched and then released.

Golfers who lose the elasticity in their muscles (from excessive stretching) can have a ROM and a full golf swing, yet they're unable to generate much Clubhead Speed, because loose muscles simply don't allow much torque to be built up between the upper and lower body. Furthermore, muscles that have lost their elasticity divert stress on to the ligaments and tendons, just as weak muscles, which again, promotes further lengthening of the connective tissues (ligaments). As stated in the previous segment (Aspect #2), this compromises Joint Integrity and causes them to become overly sensitive and injury prone.

False Flexibility

Poor Joint Integrity can allow a golfer's stretching exercises to increase a joint's ROM by further stretching out the ligaments and tendons (connective tissues) that hold it together, while their actual muscular flexibility remains poor. This is referred to as *false flexibility* and it can result from mechanically performing stretching exercises without focusing on the muscle that needs to be stretched. Golfers should always focus on feeling each stretch *in the belly of their muscles,* not close to the joint.

Excessive Flexibility

Golfers who display a high level of muscular flexibility with a low level of muscular strength *in their torso muscles* typically have full, clean golf swings and they're powerful ball strikers, yet they usually have trouble with their lower backs. *Excessive stretching* has a particularly destructive effect on the ligaments in the lower back area, which as previously mentioned, causes them to become strained and permanently lengthened. Over a period of time, this creates what I call a precarious lower back condition, where your back always feels as if it could give out during your golf swing.

While Davis Love and Fred Couples are two of my favorite Tour Professionals, they're also golfers with precarious lower back conditions who *appear* to fit this profile. Both have maximum flexibility and beautiful, full golf swings, yet neither displays much muscle density and both have had ongoing lower back health issues.

A high degree of muscular flexibility without a healthy balance of muscular strength, allows structural weaknesses to develop. Why? Because weak, overly flexible muscles always divert the excessive force produced by the rotation of the golf swing to the ligaments.

To get a better picture of how that works, visualize yourself hanging from a pull-up bar preparing to attempt a pull-up. Now visualize yourself slowly relaxing the muscles around your shoulder joints until you're fully relaxed and in a dead hang. What you have left is the ligaments that hold the shoulder joints together carrying the entire load. If you were to hang there for any length of time, your ligaments would lengthen and your arms would be pulled right out of your shoulder joints.

So while golfers should definitely perform stretching exercises routinely, stretching alone simply cannot produce the degree of integrity in the musculature and the connective tissues necessary to protect their lower backs and their joints from golf related injuries.

Excessive Strength

If golfers who use resistance training allow their muscular strength to exceed what *for them* is considered a healthy balance with muscular flexibility, their Lower Back Integrity and their Joint Integrity will actually increase, which makes them less injury prone. But unfortunately it can suppress their Kinesthetic Awareness (Aspect #4), lower their level of Coordination (Aspect #5) and alter their Tempo/Timing Axis (Aspect #6).

A good example of this can be seen during celebrity golf tournaments involving NFL players. Their swings are not only considerably shorter than what's considered a full golf swing, but they usually have a very fast (snappy) Swing Tempo and their Timing is downright pathetic. This is the smoking gun—the evidence of a Strength/Flexibility Axis that is out of balance in favor of strength, *which is appropriate for football, but inappropriate for golf.*

The Master Controller

When muscular flexibility exceeds a healthy balance of muscular strength, Aspects #1 and #2 will usually decrease, while Aspects #4, #5, and #6 can become restricted from further development. Conversely, when muscular strength exceeds a healthy balance of muscular flexibility, Aspects #1 and #2 actually improve, while Aspects #4, #5, and #6 decrease. So the Strength/Flexibility Axis (Aspect #3) is also the axis on which all other Six Aspects are balanced, making it the Master Controller of the other Aspects (excluding Aspect #7).

As previously stated, Aspects #1 & #2 are the most important Aspects of a Golfer's Athleticism, because together, they form the foundation on which the other Aspects are constructed. However, the Strength/Flexibility Axis (Aspect #3) literally determines the condition of Aspects #1 and #2 and it *governs the development* of Aspects #4, #5 & #6. As long as muscular strength and muscular flexibility are balanced with one another, Aspects #1 and #2 will likely be in good condition (with the excep-

tion of injury) and Aspects #4, #5 & #6 will have the atmosphere they require for maximum development. Therefore, Aspect #3 is the *Core Aspect* of a Golfer's Athleticism.

Keep in mind that *muscular flexibility allows* you to perform the golf swing, but *muscular strength enables* you to perform the golf swing. In other words, flexibility allows you to do what strength first enables you to do. Since the golf swing actually begins with muscular strength, muscular flexibility should be pursued *in addition to and in proportion to muscular strength, not prior to it, or as an alternative to it.* In short, *strength should be your first concern.* Besides, when the muscles, ligaments, tendons and bones are strengthened *first* by resistance training, you can apply more force to each stretch, without risking injury (lengthening effect) to the connective tissue around the joints. The muscular flexibility you acquire then will not be detrimental to your Lower Back Integrity or your Joint Integrity, nor will it be out of balance with your overall muscular strength. Only then can your stretching exercises be considered a positive addition to your golf specific exercise program.

Again, Lower Back Strength & Integrity (Aspect #1) and Joint Integrity (Aspect #2) are in one sense the most important Aspects to the golfer, since without them you obviously can't play golf. But again, since the Strength/Flexibility Axis (Aspect #3) largely determines their condition, it is arguably the most important Aspect of a Golfer's Athleticism and therefore should be prioritized.

Remember, if you directly pursue a balance of Muscular Strength & Flexibility (Aspect #3), you'll indirectly acquire Joint Integrity (Aspect #2), Lower Back Strength & Integrity (Aspect #1) and a ROM (unique to you) that supports your most productive golf swing. In the following chapter you'll learn to employ the Golf Specific Fitness Components that promote the balance of Strength and Flexibility necessary for you to achieve peak golf performance.

IMPORTANT POINTS:

THE STRENGTH/FLEXIBILITY AXIS IS BALANCED AS A RESULT OF:

- Muscles that have undergone resistance training exercise (anaerobic exercise) that requires them to perform through their entire functional range of motion (ROM)
- Muscles that have undergone regular appropriate stretching exercises
- Muscles that experience regular aerobic exercise

THE STRENGTH/FLEXIBILITY AXIS (ASPECT #3) IS DIRECTLY AFFECTED BY THE FOLLOWING GOLF SPECIFIC FITNESS COMPONENTS:

1. Component #1 - Anatomy, Biomechanics & Kinesiology
2. Component #2 - Weight/Repetition Range
3. Component #3 - Point of Focus
4. Component #5 - Anaerobic/Aerobic Axis

THE STRENGTH/FLEXIBILITY AXIS (ASPECT #3) IS INDIRECTLY AFFECTED BY THE FOLLOWING GOLF SPECIFIC FITNESS COMPONENTS:

1. Component #4 - Mode of Execution

THE STRENGTH/FLEXIBILITY AXIS (ASPECT #3) IS CONSIDERED AN AREA OF A GOLFER'S PHYSICAL CONDITION.

The charts on the following page are referred to as Aspect Assessment Charts. Their purpose is to assist you in developing greater insight into the interdependent relationship of the Seven Aspects of a Golfer's (your) Athleticism and help you visualize the potential positive and negative influences the condition of each Aspect can have on that of the others.

ASPECT ASSESSMENT—EXAMPLE #1

Aspect 1	Aspect 2	Aspect 3		Aspect 4	Aspect 5	Aspect 6		Aspect 7	
Lower Back Strength	Joint Integrity	Strength	Flexibility	Kinesthetic Awareness	Coordination	Tempo	Timing	Endurance	Recoverability
○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3
● + 2	● + 2	● + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2
○ + 1	○ + 1	○ + 1	○ + 1	○ + 1	○ + 1	● + 1	○ + 1	● + 1	● + 1
○ Balance	○ Balance	○ Balance	○ Balance	○ Balance	○ Balance	○ Balance	○ Balance	○ Balance	○ Balance
○ - 1	○ - 1	○ - 1	○ - 1	● - 1	● - 1	○ - 1	● - 1	○ - 1	○ - 1
○ - 2	○ - 2	○ - 2	● - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2
○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3

As indicated in both examples, when Aspect #3 is imbalanced in either direction, all other Aspects are affected. Notice how an imbalance in the Strength/Flexibility Axis, *in favor of strength* (example #1) quickened Swing Tempo, while an imbalance *in favor of flexibility* (example #2) slowed Swing Tempo. The Strength/Flexibility Axis actually controls Aspects #1 & #2—the Foundational Aspects, as well as Aspects #4, #5 & #6—the Finer Aspects. Therefore, Aspect #3 is considered the Master Controller of all Aspects with the exception of Aspect #7.

ASPECT ASSESSMENT—EXAMPLE #2

Aspect 1	Aspect 2	Aspect 3		Aspect 4	Aspect 5	Aspect 6		Aspect 7	
Lower Back Strength	Joint Integrity	Strength	Flexibility	Kinesthetic Awareness	Coordination	Tempo	Timing	Endurance	Recoverability
○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3
○ + 2	○ + 2	○ + 2	● + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2
○ + 1	○ + 1	○ + 1	○ + 1	○ + 1	○ + 1	○ + 1	○ + 1	○ + 1	○ + 1
○ Balance	○ Balance	○ Balance	○ Balance	○ Balance	○ Balance	○ Balance	○ Balance	○ Balance	○ Balance
○ - 1	○ - 1	○ - 1	○ - 1	● - 1	● - 1	● - 1	● - 1	● - 1	● - 1
● - 2	● - 2	● - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2
○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3

ASSESSING THE CONDITION OF EACH ASPECT IS BASED ON YOUR PERCEPTION OF ITS CONDITION MORE SO THAN ITS ACTUAL CONDITION. ACCURACY IN YOUR ASSESSMENTS AND PROFICIENCY IN THE DIAGNOSTIC PROCESS TAKES TIME. THE DEVELOPMENT OF BOTH CAN BE EXPEDITED WITH MORE FREQUENT ASSESSMENTS.

Aspect #4—Kinesthetic Awareness

Kinesthetic Awareness (KA) is your awareness of the position of your limbs (arms, legs, etc.), through the sensation(s) produced by muscle movement. It is the substance that enables Tiger to shape his golf shots like no golfer before him and the soil out of which Phil Mickelson's masterful short game grows.

A non-athletic, overweight golfer will typically have poor KA, while athletes such as gymnasts, wide receivers and martial arts experts will have an abundance of it.

A good example of KA (as it relates to the golfer) is the ability to determine *immediately* that you've taken your club back flat by the sensations felt in certain muscles. We're all capable of sensing blatant flaws in our swing by the sensations they produce in our muscles, especially *swing-plane* flaws. But golfers who possess a higher level of KA can detect even the smallest of swing flaws, enabling them to develop far more tightly grooved golf swings than golfers with poor KA.

Gauging KA

Kinesthetic Awareness is the ultimate *Swing Flaw Detection Mechanism.* I occasionally refer to (and gauge) a golfer's KA in terms of sound, with a loud (keen) sense of muscular awareness and feel being preferred. When your KA is poor, you can have a wide range of swing flaws that go virtually undetected (by muscular feel). On the other hand, when your KA is loud, or keen, the slightest flaw in your golf swing is detected by muscular feel, just as a microphone turned up all the way detects sound at a very low volume. The louder, or keener your KA, the more quickly you'll detect a flaw developing in your swing, once you begin your backswing.

Golfers who possess a high level of KA typically have very mechanical, almost robotic appearing swings with regard to swing plane—*like Tiger Woods and Ernie Els.* Why? Because even the slightest swing flaw, or variation from their "perfectly grooved swing," is immediately sensed by the muscles and interpreted by the brain as a bad swing. In other words, if their swing is not absolutely perfect, their muscles will instantly sense the imperfection and scream, "BAD SWING" to their brains. So as golfers with a high level of KA practice, their golf swings become more tightly grooved (like Tiger's) than those with less KA, because their higher sensitivity KA to swing flaws simply will not tolerate the feeling of a flawed golf swing.

Kinesthetic Awareness never reaches 100% because it continues to improve as long as you pursue it. Since a portion of your muscular awareness and sense of feel (KA) is in your mind, your level of KA can be increased by practicing focusing on your muscles while performing (golf specific) weight training movements—*those which conform to the specifications outlined in Chapter Two.*

KA and Coordination

Theoretically, the more KA you possess, the higher level of Coordination you can achieve. So KA should be considered a prerequisite to good Coordination. Furthermore, since good Coordination enables you to achieve even more KA, their relationship should also be considered synergistic, *where the effect of two things combined is greater than the sum of their effects when measured independently.*

Remember, KA is a combination of something you feel in your muscles and assess, or measure in your conscious mind. Therefore, improving your KA involves performing specific types of exercises, with a high level of concentration and focus on the muscles you're exercising, in order to heighten their sensitivity to specific movements and improve communication between your mind and your muscles. In the following chapter you'll learn how to employ Golf Specific Fitness Components that turn up the volume on your KA.

Important Points:

Kinesthetic Awareness is a by-product of:

- The proper balance of Strength and Flexibility (Aspect #3)
- The proper balance of Anaerobic and Aerobic Exercise (Aspect #7)

KINESTHETIC AWARENESS (ASPECT #4) IS DIRECTLY AFFECTED BY THE FOLLOWING GOLF SPECIFIC FITNESS COMPONENTS:

1. Component #2 - Weight/Repetition Range
2. Component #3 - Point of Focus
3. Component #4 - Mode of Execution
4. Component #5 - Anaerobic/Aerobic Axis

KINESTHETIC AWARENESS (ASPECT #4) IS CONSIDERED AN AREA OF A GOLFER'S ATHLETIC ABILITY.

The charts on the following page are referred to as Aspect Assessment Charts. Their purpose is to assist you in developing greater insight into the interdependent relationship of the Seven Aspects of a Golfer's (your) Athleticism and help you visualize the potential positive and negative influences the condition of each Aspect can have on that of the others.

ASPECT ASSESSMENT—EXAMPLE #1

Aspect 1	Aspect 2	Aspect 3		Aspect 4	Aspect 5	Aspect 6		Aspect 7	
Lower Back Strength	Joint Integrity	Strength	Flexibility	Kinesthetic Awareness	Coordination	Tempo	Timing	Endurance	Recoverability
○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3
○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2
○ + 1	○ + 1	○ + 1	○ + 1	○ + 1	○ + 1	○ + 1	○ + 1	○ + 1	○ + 1
◉ Balance	◉ Balance	◉ Balance	◉ Balance	○ Balance	○ Balance	○ Balance	○ Balance	◉ Balance	◉ Balance
○ - 1	○ - 1	○ - 1	○ - 1	◉ - 1	◉ - 1	◉ - 1	◉ - 1	○ - 1	○ - 1
○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2
○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3

Example #1 indicates that when Kinesthetic Awareness is compromised, Aspects #5 and #6 are also compromised.

ASPECT ASSESSMENT—EXAMPLE #2

Aspect 1	Aspect 2	Aspect 3		Aspect 4	Aspect 5	Aspect 6		Aspect 7	
Lower Back Strength	Joint Integrity	Strength	Flexibility	Kinesthetic Awareness	Coordination	Tempo	Timing	Endurance	Recoverability
○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3
○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2
◉ + 1	◉ + 1	◉ + 1	○ + 1	○ + 1	○ + 1	◉ + 1	○ + 1	○ + 1	○ + 1
○ Balance	○ Balance	○ Balance	○ Balance	○ Balance	○ Balance	○ Balance	○ Balance	◉ Balance	◉ Balance
○ - 1	○ - 1	○ - 1	◉ - 1	◉ - 1	◉ - 1	○ - 1	◉ - 1	○ - 1	○ - 1
○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2
○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3

Example #2 indicates that the inability to develop a high level of KA, is possibly the result of an imbalance in Aspect #3. Notice how when the Strength/Flexibility Axis is out of balance in favor of strength, KA and Coordination are reduced, Tempo quickens, causing the Tempo/Timing Axis to be thrown off. Notice how Aspects #1 and #2 responded to the imbalance in the Strength/Flexibility Axis.

ASSESSING THE CONDITION OF EACH ASPECT IS BASED ON YOUR PERCEPTION OF ITS CONDITION MORE SO THAN ITS ACTUAL CONDITION. ACCURACY IN YOUR ASSESSMENTS AND PROFICIENCY IN THE DIAGNOSTIC PROCESS TAKES TIME. THE DEVELOPMENT OF BOTH CAN BE EXPEDITED WITH MORE FREQUENT ASSESSMENTS.

Aspect #5—Coordination

Coordination can be defined as organized muscular action in executing complex movements. Total Coordination is defined as:

All muscles and muscle groups functioning properly to the exact degrees in relation to each other, to produce a desired result, or to perform a common task.

The common task in the sport of golf is obviously the golf swing. But there are few sports that require the body to perform a more complex movement that culminates in the degree of precision with which the golf swing must, in order to produce the desired effect. Therefore, Coordination as it relates to the golf swing is among the highest level that exists.

An athlete can be extremely coordinated, or display a high level of Coordination while performing one task, yet display poor Coordination in another. This explains why many football players who are praised by sports announcers as being extraordinary athletes with unparalleled Coordination, appear embarrassingly non-athletic when swinging a golf club. The reason is largely due to the football player's Strength/Flexibility Axis (Aspect #3) being appropriate for football, but inappropriate for golf. Nevertheless, the type and degree of Coordination necessary to execute a good golf swing leaves less margin for error than the type and degree of that required for most sports.

Dependency on Kinesthetic Awareness

Coordination can be improved with the appropriate golf specific exercises and by performing various sports specific drills. However, it is actually more a by-product of the proper balance of Strength and Flexibility (Aspect #3) and a high level of Kinesthetic Awareness (Aspect #4) than it is something golfers pursue directly. The more KA a golfer possesses, the higher level of Coordination he or she can achieve. So, Aspects #3 and #4 should be considered prerequisites to good Coordination. In the following chapter you'll learn to employ Golf Specific Fitness Components that help you develop the type of Coordination required for a good golf swing.

Remember, a 300 yard drive, hit straight down the middle of the fairway is the result of hundreds of muscles contracting and relaxing to varying degrees, in order to maintain exact anatomical angles,

while executing a specific total body movement at a high rate of speed, yet with good Tempo, to bring the club face to a perfectly square position, at one specific point in the golf swing. Now, change the *perfectly square position* part of that statement to *slightly out of square* and you just hit a 300 yard drive, 25 yards out of bounds—Get the Picture?

IMPORTANT POINTS:

COORDINATION IS A BY-PRODUCT OF:

- The proper balance of Strength and Flexibility (Aspect #3).
- A high level of Kinesthetic Awareness (Aspect #4).

COORDINATION (ASPECT #5) IS DIRECTLY AFFECTED BY THE FOLLOWING GOLF SPECIFIC FITNESS COMPONENTS:

1. Component #2 - Weight/Repetition Range
2. Component #3 - Point of Focus
3. Component #4 - Mode of Execution

COORDINATION (ASPECT #5) IS INDIRECTLY AFFECTED BY THE FOLLOWING GOLF SPECIFIC FITNESS COMPONENTS:

1. Component #5 - Anaerobic/Aerobic Axis

COORDINATION (ASPECT #5) IS CONSIDERED AN AREA OF A GOLFER'S ATHLETIC ABILITY.

The charts on the following page are referred to as Aspect Assessment Charts. Their purpose is to assist you in developing greater insight into the interdependent relationship of the Seven Aspects of a Golfer's (your) Athleticism and help you visualize the potential positive and negative influences the condition of each Aspect can have on that of the others.

ASPECT ASSESSMENT—EXAMPLE #1

Aspect 1	Aspect 2	Aspect 3		Aspect 4	Aspect 5	Aspect 6		Aspect 7	
Lower Back Strength	Joint Integrity	Strength	Flexibility	Kinesthetic Awareness	Coordination	Tempo	Timing	Endurance	Recoverability
○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3
○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2
○ + 1	○ + 1	○ + 1	○ + 1	○ + 1	○ + 1	○ + 1	○ + 1	○ + 1	○ + 1
● Balance	● Balance	● Balance	● Balance	○ Balance	○ Balance	○ Balance	○ Balance	● Balance	● Balance
○ - 1	○ - 1	○ - 1	○ - 1	● - 1	● - 1	● - 1	● - 1	○ - 1	○ - 1
○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2
○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3

Example #1 indicates that when Kinesthetic Awareness and Coordination are below par, Aspect #6 is affected. Remember, Coordination problems are often the result of problems in Aspect #3 and #4.

ASPECT ASSESSMENT—EXAMPLE #2

Aspect 1	Aspect 2	Aspect 3		Aspect 4	Aspect 5	Aspect 6		Aspect 7	
Lower Back Strength	Joint Integrity	Strength	Flexibility	Kinesthetic Awareness	Coordination	Tempo	Timing	Endurance	Recoverability
○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3
○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2
○ + 1	○ + 1	○ + 1	○ + 1	○ + 1	○ + 1	○ + 1	○ + 1	○ + 1	○ + 1
○ Balance	○ Balance	● Balance	● Balance	○ Balance	○ Balance	○ Balance	○ Balance	● Balance	● Balance
● - 1	● - 1	○ - 1	○ - 1	○ - 1	● - 1	● - 1	● - 1	○ - 1	○ - 1
○ - 2	○ - 2	○ - 2	○ - 2	● - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2
○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3

Example #2 indicates that problems in Aspects #1 and/or #2 (possibly from a minor injury) indirectly affect Coordination (due to pain), by reducing KA. Trying to assess the "correctness" of your golf swing through the sensation of muscle movements (KA), *while at the same time* having to deal with the sensation of pain, is like trying to listen to two radio stations at once. Depending on the severity of the pain, your sensitivity to muscle movements can be totally drowned out. Anytime pain is present, it will interfere with KA and cause a decline in golf performance.

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Aspect #6—Tempo/Timing Axis

Tempo and Timing have an extremely close (working) relationship with one another and, like strength and flexibility, they operate on an axis. If golfers attempt to swing either faster, or slower than what's natural to them, it can adversely affect their Timing. And remember, poor Timing negatively affects both Distance and Accuracy.

Kinesthetic Personality

Good Tempo and Timing are largely the result of being physically comfortable with your golf swing and they're both directly affected *for better or worse* by your level of physical conditioning and your athletic ability. But your actual *sense of tempo* resides in your mind with your Kinesthetic Awareness (Aspect #4). Your sense of tempo is called your Kinesthetic Personality (KP) which is your preferred *speed* and *style* of physical movement. What you need to understand is the manner in which you perform your exercise movements can temporarily alter your KP, and an altered KP usually means less than perfect timing.

Swing Tempo and Personality

A golfer's swing tempo is nearly always a mirror image of his personality. This can be seen in David Duval's swing tempo, which I call an "I don't care" Tempo. Ironically, it perfectly fits his personality. For comparison, look at Tiger's swing tempo. While he may not care either, his swing tempo is downright explosive and significantly faster than that of David Duval, which better fits his high energy, competitive personality. And how about Ernie Els, whose nickname is "Big Easy;" does his swing tempo perfectly fit his laid-back personality or what? I'm not sure Ernie's personality would allow him to over-swing if his life depended on it.

A defensive lineman's KP is programmed to produce abrupt, explosive movements, where an enormous amount of energy is released as fast as possible, in one tremendous blast. A golfer's KP on the other hand should be one that's programmed to produce a smooth, rhythmic and patient movement. This allows for a well-controlled golf swing with nice Tempo and perfect Timing.

You may say, “That can’t be true, look at Tiger’s swing tempo, it’s significantly faster than anyone’s on Tour and he’s the best golfer in the world.” That’s an excellent point. But Tiger’s superior strength combined with his unparalleled level of KA (Aspect #4) enables him to apply a significantly greater amount of muscular force to his downswing (than other golfers), without losing control or disrupting his perfect Timing. So for Tiger, the faster than normal swing tempo is not only consistent with his personality, but it’s quite manageable.

If a golfer with less KA (Aspect #4) attempted to apply this level of force to his downswing, his Timing would suffer tremendously. Golfers can only apply the amount of power they can control, without throwing off their Timing. This is just a simple way of saying Tempo and Timing operate on an axis that’s supported by KA (Aspect #4). Golfers generate maximum power and Clubhead Speed, only with the perfect Timing that good Tempo produces. No one proved this any better than David Duval, whose smooth and flawless Tempo (back in 1999) consistently produced tee-shots as long as any golfer on tour.

Regardless of how good of physical condition you’re in for golf, if your KP is programmed exclusively for speed, your Tempo/Timing Axis (Aspect #6) will be imbalanced and you’ll be incapable of developing a high level finesse in your golf game. As a result, you’ll never reach your full potential as a golfer. Like the Strength/Flexibility Axis, the Tempo/Timing Axis can be maintained and even improved by performing the appropriate type of golf specific exercises. In the following chapter you’ll learn to employ Golf Specific Fitness Components that help you find the Tempo/Timing Axis that’s natural to you.

IMPORTANT POINTS:

THE TEMPO/TIMING AXIS (ASPECT #6) IS A BY-PRODUCT OF:

- The proper balance of Strength and Flexibility (Aspect #3)
- A high level of Kinesthetic Awareness (Aspect #4)
- Good Coordination (Aspect #5)

THE TEMPO/TIMING AXIS (ASPECT #6) IS DIRECTLY AFFECTED BY THE FOLLOWING GOLF SPECIFIC FITNESS COMPONENTS:

1. Component #2 - Weight/Repetition Range
2. Component #3 - Point of Focus
3. Component #4 - Mode of Execution

THE TEMPO/TIMING AXIS (ASPECT #6) IS CONSIDERED AN AREA OF A GOLFER'S ATHLETIC ABILITY.

The charts on the following page are referred to as Aspect Assessment Charts. Their purpose is to assist you in developing greater insight into the interdependent relationship of the Seven Aspects of a Golfer's (your) Athleticism and help you visualize the potential positive and negative influences the condition of each Aspect can have on that of the others.

ASPECT ASSESSMENT—EXAMPLE #1

Aspect 1	Aspect 2	Aspect 3		Aspect 4	Aspect 5	Aspect 6		Aspect 7	
Lower Back Strength	Joint Integrity	Strength	Flexibility	Kinesthetic Awareness	Coordination	Tempo	Timing	Endurance	Recoverability
○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3
○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2
○ + 1	○ + 1	○ + 1	◉ + 1	○ + 1	○ + 1	○ + 1	○ + 1	○ + 1	○ + 1
○ Balance	○ Balance	○ Balance	○ Balance	○ Balance	○ Balance	○ Balance	○ Balance	◉ Balance	◉ Balance
◉ - 1	◉ - 1	◉ - 1	○ - 1	◉ - 1	◉ - 1	◉ - 1	◉ - 1	○ - 1	○ - 1
○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2
○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3

Example #1 indicates that when Swing Tempo is too slow, Timing can suffer. A closer look shows that Aspects #3, #4 & #5 may be the actual cause. Notice how Aspect #3 affected Aspects #1 and #2. Also, try to understand that the decline in Aspects #4 and #5 were likely caused by the imbalance in Aspect #3.

ASPECT ASSESSMENT—EXAMPLE #2

Aspect 1	Aspect 2	Aspect 3		Aspect 4	Aspect 5	Aspect 6		Aspect 7	
Lower Back Strength	Joint Integrity	Strength	Flexibility	Kinesthetic Awareness	Coordination	Tempo	Timing	Endurance	Recoverability
○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3
○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2
◉ + 1	◉ + 1	◉ + 1	○ + 1	○ + 1	○ + 1	◉ + 1	○ + 1	○ + 1	○ + 1
○ Balance	○ Balance	○ Balance	○ Balance	○ Balance	○ Balance	○ Balance	○ Balance	◉ Balance	◉ Balance
○ - 1	○ - 1	○ - 1	◉ - 1	◉ - 1	◉ - 1	○ - 1	◉ - 1	○ - 1	○ - 1
○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2
○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3

Example #2 indicates the golfer's Swing Tempo is too fast and as a result, Timing fell below par. It also indicates that Aspect #3 may be the actual cause. Notice Aspects #1, #2, #4 & #5 in this scenario and how their response is consistent with strength increase and a flexibility decrease.

ASSESSING THE CONDITION OF EACH ASPECT IS BASED ON YOUR PERCEPTION OF ITS CONDITION MORE SO THAN ITS ACTUAL CONDITION. ACCURACY IN YOUR ASSESSMENTS AND PROFICIENCY IN THE DIAGNOSTIC PROCESS TAKES TIME. THE DEVELOPMENT OF BOTH CAN BE EXPEDITED WITH MORE FREQUENT ASSESSMENTS.

Aspect #7—Endurance/Recoverability Axis

For many golfers, Aspect #7 can be the most elusive of the Seven Aspects of a Golfer's Athleticism. Without Aspects #1 and #2, you won't be able to play three holes. Without Aspect #7, your level of play will be on the decline from the time you start your round to the time you finish it and will continue to decline each day you play without adequate rest between rounds.

Just as golfers must balance their flexibility with strength, they must balance their Endurance with Recoverability. Having one without the other indicates your body is trained well for something other than playing golf *competitively*.

Endurance is only important if you enjoy playing as well on your second nine holes as you did your first. Recoverability, on the other hand, is only important when you need a strong performance for several consecutive days in a row i.e., *performing as well the second, third and fourth days of a tournament, as you did on the first.* So while Endurance is associated more with finishing your golf round strong, Recoverability is associated more with returning to finish strong three and four days in a row.

Endurance

Technically, improving your Endurance is not a complicated process. It can be improved with exercise, or by gradually increasing the amount of golf you play each week, or the number of holes you play each day (provided you eat in a manner that supports your increased physical activity).

Recoverability

On the other hand, to improve Recoverability, a golfer must not only be in good physical condition, but his muscles must be trained to accept rapid replenishment of fuel (carbohydrates). Remember, Tour Professionals play four consecutive days in a row. When they finish their first golf round (Day 1), they're usually beginning the second round (Day 2) within 16 to 18 hours and sometimes even less. If the muscles that produce their golf swing do not adequately *recover* in that 16 to 18 hour time period, they will not be able to *endure* as long the next day. This is simple (physiological) mathematics.

It's no different with your automobile. If a full tank of gas takes you 500 miles on the first day of a road trip and you begin driving on the second day without completely refilling your gas tank, you'll run out of gas before you reach 500 miles.

An *extremely fit* golfer who has poor Recoverability can be beginning the final day of his golf round (Day 4) with less than half of his full strength and Endurance level. How? If the golfer's daily Recoverability Rate is only 80% in 18 hours, for example, then at the beginning of each golf round, his strength and Endurance is 20% less than that of the previous day and it continues to decline 20% per day, every day a round is played without an additional rest day. Why? Because an 80% Recoverability Rate only allows a golfer to recover 80% of the strength with which he begins each golf round.

For example, if a golfer begins a tournament with a full 100% of his strength and only recovers 80%, then he obviously begins the second day at exactly 80% of his strength. After beginning the second day of the tournament at 80% and again only recovering 80% of that, he actually begins the third day with only 64% of the strength with which he began the tournament. If he only recovers 80% of the 64% with which he began the third day, he actually begins the fourth and last day with roughly 51% of the strength he had on the first day of the tournament. The Recoverability Chart below corresponds to this illustration.

ENDURANCE/RECOVERABILITY CHART

As the chart indicates, each day left our example golfer with 20% less Strength and Endurance than he had the previous day, because his Recoverability rate was only 80% in the approximate time period between finishing one round and beginning the next. Therefore, full recovery in approximately 16 to 18 hours (and sometimes less) would be considered a 100% Recoverability rate for a tour professional. This would enable them to begin each day of a golf tournament with as much strength and Endurance as they had on the first.

Golf Round	Begin Round Energy Level	% of Energy Recovered Over Night	Total Recovered Energy Level
Round 1	100%	80%	80%
Round 2	80%	80%	64%
Round 3	64%	80%	51%
Round 4	**51%**	80%	N/A

Golfers who do not participate in tournaments where they're required to play two, three or four days in a row do not require nearly as strong, or rapid of a Recoverability Rate. As long as the golfer's Recoverability Rate supports his/her playing and practicing schedule, for them it is considered 100%.

So for golfers who frequently play in tournaments, good Endurance with poor Recoverability is as detrimental as good Recoverability with poor Endurance. Like Strength and Flexibility and/or Tempo and Timing they have an extremely close working relationship with one another. The proper balance between the two is the key to playing good golf all of the time, especially on the final days of a tournament.

While the first Six Aspects of a Golfer's Athleticism may have sounded somewhat complicated, balancing Endurance and Recoverability is quite complicated, because it involves learning how to implement a wide variety of sports nutritional strategies. Without question, Aspect #7 is the most academically challenging of them all and requires by far the most effort in self-education and perseverance to master. In the following chapter you'll learn how to employ Golf Specific Fitness Components that support a healthy balance between Endurance and Recoverability, relative to your playing schedule.

IMPORTANT POINTS:

A BALANCED ENDURANCE/RECOVERABILITY AXIS IS BY-PRODUCT OF:

- Muscles that experience regular anaerobic exercise.
- Muscles that experience regular aerobic exercise.
- Muscles that experience regular anaerobic & aerobic exercise in the right proportion to one another, based on individual physiological requirements.
- Muscles that receive the appropriate ratio of dietary protein, carbohydrate and fat, *at the appropriate time throughout the day* (Sports Nutrition).
- Muscles that receive the appropriate ratio of dietary protein, carbohydrate and fat, following golf specific workouts (Sports Nutrition).
- An exercise schedule that allows the muscles to receive adequate rest.
- A high level of overall physical conditioning.

THE ENDURANCE/RECOVERABILITY AXIS (ASPECT #7) IS DIRECTLY AFFECTED BY THE FOLLOWING GOLF SPECIFIC FITNESS COMPONENTS:

1. Component #2 - Weight/Repetition Range
2. Component #5 - Anaerobic/Aerobic Axis
3. Component #6 - Sports Nutrition

THE ENDURANCE/RECOVERABILITY AXIS (ASPECT #7) IS CONSIDERED AN AREA OF A GOLFER'S PHYSICAL CONDITION.

The chart below is referred to as an Aspect Assessment Chart. Its purpose is to assist you in developing greater insight into the interdependent relationship of the Seven Aspects of a Golfer's (your) Athleticism and help you visualize the potential positive and negative influences the condition of each Aspect can have on that of the others.

ASPECT ASSESSMENT—EXAMPLE

Aspect 1	Aspect 2	Aspect 3		Aspect 4	Aspect 5	Aspect 6		Aspect 7	
Lower Back Strength	Joint Integrity	Strength	Flexibility	Kinesthetic Awareness	Coordination	Tempo	Timing	Endurance	Recoverability
○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3
○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2
○ + 1	○ + 1	○ + 1	○ + 1	○ + 1	○ + 1	○ + 1	○ + 1	○ + 1	○ + 1
○ Balance	○ Balance	○ Balance	○ Balance	○ Balance	○ Balance	○ Balance	○ Balance	○ Balance	○ Balance
○ - 1	○ - 1	◉ - 1	◉ - 1	◉ - 1	◉ - 1	◉ - 1	◉ - 1	○ - 1	○ - 1
◉ - 2	◉ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	◉ - 2	◉ - 2
○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3

When the Endurance/Recoverability Axis is compromised, all Aspects are compromised. This is particularly the case with Aspects #1 and #2 over a period of time. Since they can neither "endure" a golf round, nor "recover" from one, they progressively deteriorate and continue to do so until they're able to experience an adequate period of inactivity for Recovery.

ASSESSING THE CONDITION OF EACH ASPECT IS BASED ON YOUR PERCEPTION OF ITS CONDITION MORE SO THAN ITS ACTUAL CONDITION. ACCURACY IN YOUR ASSESSMENTS AND PROFICIENCY IN THE DIAGNOSTIC PROCESS TAKES TIME. THE DEVELOPMENT OF BOTH CAN BE EXPEDITED WITH MORE FREQUENT ASSESSMENTS.

Aspects of a Golfer's Athleticism Summary

The manner in which the Seven Aspects of a Golfer's Athleticism were explained in this chapter was by no means an ordinary explanation of physical conditioning and athletic ability, but one designed to help you better understand the *nature* of each aspect and, more importantly, each Aspect's *interdependent relationship* with the others. Understanding the Seven Aspects in this manner will make it easier for you to see how the Six Components of a Golf Specific Fitness Program (in the following chapter) influence them and how *their collective and cooperative condition* influences the Five Golf Performance Indexes (in Chapter Three).

Below is a short summary of the Seven Aspects of a Golfer's Athleticism and their interdependent relationship.

Aspects #1 & #2—Lower Back Strength & Integrity and Joint Integrity, are the foundational Aspects. They're considered to be the most important Aspects of a Golfer's Athleticism, because their condition quite literally *supports* the other Aspects, *with the exception of Aspect #7*.

Aspect #3—The Strength/Flexibility Axis, is considered the Master Controller of all Aspects (excluding Aspect #7). The *condition* of Aspect #3 *literally determines* the condition of the foundational Aspects (Aspects #1 & #2) and creates the atmosphere that determines the extent to which Aspects #4, #5 & #6 can develop. In other words, Aspect #3 *directly governs* the development of all Aspects, *with the exception of Aspect #7*.

Aspects #4, #5 & #6—Kinesthetic Awareness, Coordination and the Tempo/Timing Axis, are considered the finer Aspects of a Golfer's Athleticism and they have an extremely interdependent working relationship with one another. While each of these Aspects depends and thrives on the foundation created by Aspects #1, #2 & #3, their operation is somewhat independent of them. However, when Aspects #4, #5 & #6 are in good condition, golfers are able to maintain Aspects #1, #2 & #3 with less effort.

Aspect #7—The Endurance/Recoverability Axis, has a significant influence on the other Aspects, yet for the most part it operates independently of them. Depending on the golfer's age and level of physical conditioning, Aspect #7 will affect certain Aspects more than others.

REMEMBER, EACH ASPECT OF A GOLFER'S ATHLETICISM:

- influences the condition of the other Aspects;
- is affected by all fitness strategies; and
- directly influences golf performance.

Before proceeding to Chapter Two, it may be beneficial to go back and (one Aspect at a time), consider the following:

1. How your fitness strategies are affecting each Aspect (one Aspect at a time)
2. How the condition of each Aspect is affecting the other Six Aspects
3. How the condition of each Aspect is influencing your golf performance

In order to protect your physical condition and athletic ability *relative to golf performance* and to continually improve your golf performance with your fitness program, you must ask yourself those three questions on a regular basis.

IMPORTANT POINTS:

- **ASPECTS #1, #2, #3 & #7 ARE AREAS OF A GOLFER'S PHYSICAL CONDITIONING.**
- **ASPECTS #4, #5, & #6 ARE AREAS OF A GOLFER'S ATHLETIC ABILITY.**

Now that you have a basic understanding of the Seven Aspects of a Golfer's Athleticism and how the condition of each affects that of the others, you're more capable of understanding how the Six Components of a Golf Specific Fitness Program influence them.

Chapter Two

The Six Components of a Golf Specific Fitness Program

Chapter Two Learning Objectives:

- How the Six Components of a Golf Specific Fitness Program affect/influence the condition of each Aspect of a Golfer's Athleticism
- Which Golf Specific Fitness Components influence each Aspect and why

Introduction to The Six Components of a Golf Specific Fitness Program

In the previous chapter you learned that the Seven Aspects of a Golfer's Athleticism have an extremely intricate working relationship with one another, with the condition of each Aspect having a powerful influence on the condition of the others. So in order to avoid improving the condition of one Aspect of a Golfer's Athleticism at the expense of one or more of the others, special attention must be given to the golf specific fitness program's design.

The golfer's fitness program must be broken down into separate sections with each being designed specifically to improve the condition of one or more of the Seven Aspects of a Golfer's Athleticism. Each section must then be carefully adjusted to exert a positive effect on the targeted Aspect (s), without negatively affecting one or more of the others. In short, a "Golf Specific" Fitness Program is one whose components have been modified to prioritize all Seven Aspects of a Golfer's Athleticism. Regardless of the degree of difficulty this may involve, a Golf Specific Fitness Program should enhance every Aspect of a Golfer's Athleticism, just as the football player's fitness program enhances every Aspect of his. Otherwise, the program cannot be considered "Golf Specific."

Specificity

The term specificity as it relates to fitness training is defined as: *The principle that the body adapts specifically to the training stimuli it is required to deal with. The body will perform best at the specific speed, type of muscular contraction, muscle group usage, and energy source usage it has become accustomed to in training.* If the body adapts specifically to the training stimuli it is required to deal with, then the training stimuli a golfer's body must experience (from a fitness program) in order to improve their golf game, is the type that helps them develop, improve and maintain the physical and athletic design specifications required for playing golf. Since we've already outlined those specifications in the previous section with the Seven Aspects of a Golfer's Athleticism, we can write the design specifications for a Golf Specific Fitness Program *specifically* to enhance them.

While the golfer's physical and athletic design specifications are outlined using *Aspects*, the design specifications for a Golf Specific Fitness Program are outlined using *Components*. According to the PPES©, there are Six Components in a Golf Specific Fitness Program and each is designed to have a *specific* effect on one or more of the Seven Aspects of a Golfer's Athleticism. As long as all Six Components of a Golfer's Fitness Program are adjusted to the *approximate* specifications disclosed

in this section, the program as a whole will have a positive effect on all Seven Aspects of a Golfer's Athleticism.

The Golf Specific Fitness Program Specifications outlined by Components #1 through #4 deal exclusively with the golf specific weight training movements, with Component #1 consisting of three distinctive categories:

1. Component #1 - Anatomy, Biomechanics & Kinesiology
   A) Lower Back & Posture
   B) Anatomical Angles
   C) Range of Motion
2. Component #2 - Weight & Repetition Range
3. Component #3 - Point of Focus
4. Component #4 - Mode of Execution & Exercise Movement Tempo
5. Component #5 - Aerobic/Anaerobic Axis
6. Component #6 - Sports Nutrition

Each Golf Specific Fitness (GSF) Component listed above affects/influences the *condition* of one or more of the Seven Aspects of a Golfer's Athleticism. The Components themselves are not your fitness program, but rather make up the framework on which your fitness program is constructed. The exact variation of each Golf Specific Fitness Component that has the most positive effect on the *condition* of the Seven Aspects will vary from golfer to golfer and will ultimately be determined over a period of time.

So remember, a Golf Specific Fitness Component is simply a fitness strategy that's been adjusted to exert a positive effect on *one or more* of the Seven Aspects of a Golfer's Athleticism, and a Golf Specific Fitness Program is a fitness program whose Components have been adjusted to exert a positive effect on *all* Seven Aspects of a Golfer's Athleticism.

As you read through the explanation of each Golf Specific Fitness Component, you must make it a point to remember that the *condition* of the Seven Aspects of a Golfer's Athleticism:

- is directly affected by all fitness strategies and exercise prescriptions (GSF Components);
- directly influences the *condition* of the other Aspects of a Golfer's Athleticism and;
- directly influences golf performance—*The Golf Performance Indexes* (Chapter Three).

Component #1—Anatomy, Biomechanics & Kinesiology

Lower Back & Posture

Lower back vulnerability is always the number one consideration when beginning an exercise movement. Maintaining *correct exercise posture* while performing golf specific weight training movements is critical to the improvement of all areas of golf performance. You must consciously involve the lower back muscles during your golf specific weight training movements. This is not only for lower back strength, but so you can develop a sense of muscular awareness and feel (Aspect #4) in the spinal erector and hamstring muscles and, more importantly, *the ability to control them* (Aspect #5). Acquiring and maintaining perfect posture during exercise movements is brought about most accurately by learning to identify it by the sensations in your spinal erector and hamstring muscles.

Prior to doing your first golf specific weight training repetition, you should ask yourself this question: Does my lower back feel like it's in a safe and powerful position from which to perform this exercise?

Learning to bend from the hips (hip joint) rather than the lumbar area (low back) is critical to improving Lower Back Strength and Integrity. Doing so not only strengthens the lower back muscles, but it also lengthens the hamstring muscles, which relieves the lower back from unnecessary responsibility. Flexible hamstring muscles also allow you to bend further forward while maintaining a passive arch (mild extension) in the spine. A passive arch is the safest and most powerful anatomical position from which the lumbar spine can operate and perform rotation.

This anatomical position (passive arch) stimulates the development of stronger, thicker lower back and gluteus muscles, which help protect the lumbar spine and the sacroiliac joint's complex ligament structure (an area in the low back that is particularly prone to injuries from the golf swing) from the destructive forces exerted on them by the rotation of the golf swing.

The lower back muscles must be worked intensely in order for them to endure these destructive forces. Furthermore, thick, powerful lower back and spinal erector muscles (particularly the deep spinal and multifidus muscles) have far more to do with Clubhead Speed and Distance than you may realize.

While strong spinal muscles are critical to Lower Back Strength and Integrity, there are several other conditions that are necessary to reduce lower back vulnerability and protect the lower back from injury. As stated previously, real Lower Back Strength and Integrity is a product of the following physical conditions:

- Flexible Hamstring Muscles
- Strong Lower Back Muscles
- Healthy Sacroiliac Ligaments (and all lower back ligaments)
- Powerful Gluteus Muscles
- Strong Abdominal Muscles

Anatomical Angles

Whenever possible, the actual angles of exercise movements should be modified so they position the muscles in a manner that allows them to reproduce the muscular action they perform during the golf swing, in terms of biomechanics and kinesiology. This not only stimulates strength increases in the muscles that perform the golf swing, but it improves the golfer's ability to *consciously* use those muscles as they're used during the golf swing.

Some golf specific exercise movements fall far short when compared to the extent of anatomical involvement in the actual golf swing. However, exercise movements that are designed to stimulate or engage a particular muscle group through its entire *golf related* range of motion, independently of the other muscles that are normally involved in the golf swing, are still golf specific exercise movements, in a biomechanical and kinesiological sense. They are simply classified as *partial* golf specific exercise movements.

In order to protect the golfer's joints, exercise movements that require the muscles to pull our limbs in the opposite direction they're pulled during the golf swing must be performed routinely. This strategy not only offsets the imbalancing effect the golf swing exerts on the musculature, but it's essential to maintaining a balance of strength in the muscles on all sides of a joint, which maximizes Joint Integrity and helps prevent injury.

Finally, whether an exercise movement is biomechanically and kinesiologically similar to the golf swing or not, it can still be considered a golf specific exercise movement provided:

1. It conforms to the specifications outlined in Golf Specific Fitness Components #1, #2, #3 & #4.
2. It enhances one or more of the Seven Aspects of a Golfer's Athleticism.
3. It does not enhance one Aspect of a Golfer's Athleticism at the expense of one or more of the others.

Range of Motion

Each weight training movement should be modified to travel through as full of a Range of Motion (ROM) as possible to make sure your strength and flexibility increase proportionately. Exercising the muscles through their entire (ROM) requires them to operate from a fully stretched position, to a fully flexed position. This not only develops strength over a muscle's entire line of pull, (particularly at a muscle's insertion which is more important when a limb is fully extended) but it ensures muscular flexibility will be maintained and possibly even improved while muscular strength is being developed. This approach also strengthens tendons and helps maintain healthy ligaments, by subjecting them to tension from every possible anatomical angle, along the respective muscle's line of pull, particularly at the fully extended position.

This is the *principle Component* for acquiring a balance of strength and flexibility in the muscles, which again improves Joint Integrity and creates an atmosphere in which KA and Coordination can thrive.

NOTE: In order to ensure a balance of strength and flexibility is maintained, every set of golf specific weight training exercises should be followed by a basic stretching exercise that targets the respective muscle group. Otherwise, weight training could potentially hinder muscular flexibility and therefore would not be considered "golf specific."

IMPORTANT POINTS:

COMPONENT #1 DIRECTLY AFFECTS THE FOLLOWING ASPECTS OF A GOLFER'S ATHLETICISM:

1. Aspect #1 - Lower Back Strength & Integrity
2. Aspect #2 - Joint Integrity
3. Aspect #3 - Strength/Flexibility Axis

The Golf Specific Fitness Component in the left column that is shaded either directly or indirectly influences the condition of the Aspects of a Golfer's Athleticism in the right columns that are shaded.

GOLF SPECIFIC FITNESS COMPONENT #1

The Six Golf Specific Fitness Components	Each Fitness Component affects the Aspects listed below:	The Seven Aspects of a Golfer's Athleticism
1 Ana, Biom. & Kines.	1, 2 & 3	1 Lower Back Integrity
2		2 Joint Integrity
3		3 Strength/Flexibility Axis
4		4 Kinesthetic Awareness
5		5 Coordination
6		6 Tempo/Timing Axis
		7 Endurance/Recoverability Axis

Component #2—Weight/Repetition Range

The amount of weight with which you perform your weight training exercises determines whether or not you can implement Golf Specific Fitness Components #3 and #4 during the weight training movement. More importantly, it's critical to maintaining the finer Aspects of a Golfer's Athleticism.

The amount of weight used to perform *golf specific* weight training movements should not be determined by random choice, but by repetition range. Golf specific weight training movements should be done with a lighter poundage—one that allows you to perform *a minimum of fifteen repetitions and a maximum of around twenty-five repetitions*, with the preferred number (for most golf specific weight training exercises) being at or near twenty.

Performing your weight training movements with a higher repetition range allows you to increase your strength gradually, without hindering your flexibility, throwing off your sense of touch (KA), or risking injury. And since the higher repetition range *by design* involves using lighter weights, it allows you to begin strengthening your lower back muscles with an amount of weight that is not only safe, but one that allows you to become *kinesthetically aware of a strong postural position*. This is critical to a powerful golf swing. The lighter weight you're forced to use when performing higher repetitions also allows you to focus on developing a better sense of muscular feel (KA) in all of your muscles and provides you with an opportunity to practice your Exercise Movement Tempo as well. Using heavier weights prevents you from doing either.

And finally, a higher repetition range makes the muscles more metabolically active by improving their ability to assimilate protein and store fuel in the form of carbohydrates. This not only improves Endurance, but it dramatically improves your Recoverability rate as well. And while weight training is considered to be an *anaerobic* exercise, weight training with higher repetitions has an *aerobic* effect on the body because it significantly increases the involvement of your cardiovascular and cardiopulmonary systems. Since the effects of the higher repetition range are both *anaerobic* and *aerobic*, it improves Endurance and Recoverability simultaneously, which improves the Endurance/Recoverability Axis (Aspect #7).

Maximum Perfect Repetition Range (MPRR)

In direct contrast to weight training for football and other sports requiring maximum strength, the repetitions with golf specific weight training *should never be performed to muscular failure, but to perfection*. Maximum Perfect Repetition Range (MPRR) is the number of perfectly executed repetitions you can perform with a given weight before the movement becomes flawed due to muscular fatigue.

Continuing to perform repetitions beyond MPRR not only increases the risk of injury, but it produces denser, less flexible muscles that take longer to recover between workouts. In PPES© terms, it imbalances the Strength/Flexibility Axis which negatively affects KA, Coordination, the Tempo/Timing Axis and the Endurance/Recoverability Axis.

Benefits of MPRR

The main benefit of MPRR is that it governs the intensity of your weight training in order to protect the finer Aspects (Aspects #4, #5, & #6) and helps ensure your sense of touch (KA) adjusts in proportion to your increase in strength.

Remember, using a higher repetition range ensures the weight you use will be light enough so Golf Specific Fitness Components #3 (Point of Focus) and #4 (Mode of Execution) can be implemented during the weight training movement—*this allows everything else to fall into place naturally*.

IMPORTANT POINTS:

COMPONENT #2 DIRECTLY AFFECTS THE FOLLOWING ASPECTS OF A GOLFER'S ATHLETICISM:

1. Aspect #1 - Lower Back Strength & Integrity
2. Aspect #2 - Joint Integrity
3. Aspect #3 - Strength/Flexibility Axis
4. Aspect #4 - Kinesthetic Awareness
5. Aspect #5 - Coordination
6. Aspect #6 - Tempo/Timing Axis
7. Aspect #7 - Endurance/Recoverability Axis

COMPONENT #2 ALSO WORKS IN TANDEM WITH COMPONENT #5.

The Golf Specific Fitness Component in the left column that is shaded either directly or indirectly influences the condition of the Aspects of a Golfer's Athleticism in the right columns that are shaded.

GOLF SPECIFIC FITNESS COMPONENT #2

The Six Golf Specific Fitness Components	Each Fitness Component affects the Aspects listed below:	The Seven Aspects of a Golfer's Athleticism
1 Ana, Biom. & Kines.	1, 2 & 3	1 Lower Back Integrity
2 Weight/Repitition Range	1, 2, 3, 4, 5, 6 & 7	2 Joint Integrity
3		3 Strength/Flexibility Axis
4		4 Kinesthetic Awareness
5		5 Coordination
6		6 Tempo/Timing Axis
		7 Endurance/Recoverability Axis

Component #3—Point of Focus

Point of Focus is basically a *variation* of a training technique Arnold Schwarzenegger made popular in the early seventies called the **visualization**. It's a subtly powerful golf specific fitness concept in that it can profoundly improve your KA, your Coordination and your Tempo/Timing Axis.

Visualization Concept

When performing traditional weight training exercises, you're basically required to push or pull the weight and to mentally focus either on the weight (in the form of dumbbells, barbells or the handle of an exercise machine) you're lifting, or perhaps your exercise form. A *pure* golf specific weight training movement on the other hand requires you to pull a particular limb (arm, leg, etc.) from the point of full extension, to full contraction, while focusing predominately on the *sensation* (feeling) in the muscle pulling that limb. Learning to use this technique properly can make a pair of five pound dumbbells feel like a pair of twenty pounders. This technique also serves as a safeguard because it allows you to improve your golf related areas of physical conditioning and athletic ability with lighter weights.

Disassociation

In direct contrast to weight training principles for most sports, as a golfer you should try to mentally disassociate from *any* sensation of the weight being held in your hands. In all, you must learn to focus on the sensation in the muscles doing the pulling, the muscular action involved in the movement, the limb (arm, leg, etc.) the muscle pulls and the Exercise Movement Tempo (Component #4). It is by becoming proficient at this technique that you'll develop maximum KA (Aspect #4), which again is a prerequisite to good Coordination (Aspect #5).

Eyes Closed Technique—*Lights Out*

One of the best ways to practice the point of focus technique, *specifically to improve KA*, is to perform your exercise movements with your eyes closed. After all, eliminating one of your five senses always results in the others being enhanced. Closing your eyes simply forces you to depend on muscular feel to determine whether or not you're performing the weight training movement correctly.

Remember, KA is a product of something you feel in your muscles and measure, or assess with your mind. Whether you employ the *eyes closed* technique or not, you should always *allow* the feeling in your muscles to dictate the manner in which you perform your weight training movements. Otherwise, your weight training movements may improve the condition of one Aspect at the expense of one or more of the others.

Remember, KA (Aspect #4) is the Aspect that enables you to determine whether or not your golf swing is correct by muscular feel, which helps minimize swing flaws.

IMPORTANT POINTS:

COMPONENT #3 DIRECTLY INCREASES KA (ASPECT # 4).

POINT OF FOCUS (COMPONENT #3), DIRECTLY AFFECTS THE FOLLOWING ASPECTS OF A GOLFER'S ATHLETICISM:

1. Aspect #1 - Lower Back Strength & Integrity
2. Aspect #2 - Joint Integrity
3. Aspect #3 - Strength/Flexibility Axis
4. Aspect #4 - Kinesthetic Awareness
5. Aspect #5 - Coordination
6. Aspect #6 - Tempo/Timing Axis

COMPONENT #3 WORKS IN TANDEM WITH COMPONENT #4.

The Golf Specific Fitness Component in the left column that is shaded either directly or indirectly influences the condition of the Aspects of a Golfer's Athleticism in the right columns that are shaded.

GOLF SPECIFIC FITNESS COMPONENT #3

The Six Golf Specific Fitness Components	Each Fitness Component affects the Aspects listed below:	The Seven Aspects of a Golfer's Athleticism
1 Ana, Biom. & Kines.	1, 2 & 3	**1** Lower Back Integrity
2 Weight/Repitition Range	1, 2, 3, 4, 5, 6 & 7	**2** Joint Integrity
3 Point of Focus	1, 2, 3, 4, 5 & 6	**3** Strength/Flexibility Axis
4		**4** Kinesthetic Awareness
5		**5** Coordination
6		**6** Tempo/Timing Axis
		7 Endurance/Recoverability Axis

Component #4—Mode of Execution (Exercise Movement Tempo)

This is an extremely important principle in Golf Specific Fitness. As previously mentioned, football players and power lifters use traditional weight training principles to build power and explosiveness, with no regard for their sense of Tempo or Timing. Golfers on the other hand must not only strive to improve their sense of Tempo and their Timing, but they must constantly be on guard against physical activities that could hinder them.

Golfers on strength training programs that do not regard the Seven Aspects of a Golfer's Athleticism and their interdependent relationship as being important are literally playing Russian roulette with their golf games.

As previously stated, a pure golf specific weight training movement is performed in a non-stop, rhythmic fashion, with the *predominate focus* being on *muscular feel* and the *overall feel* of the movement. But the *secondary focus* should be on the *Tempo* of each movement, just as it is with the golf swing.

Explosive Movements

One of the more popular weight training movements for football players and power lifters is the speed rep. The speed rep is an explosive movement (most commonly used on the bench press) that involves moving a large amount of weight from one point to another in one abrupt move. Explosive movements program the football players' and power lifters' muscles to release a tremendous amount of power with lightning fast speed. This is highly appropriate for them, because it enhances their desired manner of muscular action. However, it's inappropriate for golfers because it hinders their desired manner of muscular action. The golfer's desired manner of muscular action has more to do with rhythm and Tempo, *which are literally on the opposite end of the muscular action spectrum from explosiveness.*

Patient Movements

Golfers have the same opportunity to enhance their desired manner of muscular action with weight training just as football players and power lifters. Golfers should perform what I refer to as *patient movements.* Patient movements are simply weight training movements performed with a smoother,

more rhythmic Tempo—*like your ideal golf swing*. The emphasis is actually more on the rhythm and Tempo of the movement than the weight in your hands.

EXERCISE MOVEMENT TEMPO AND VISUALIZATION

One of the strategies I use to help golfers improve their sense of Tempo and their Timing through weight training is another version of the visualization technique. Visualizing the exercise movement as an oval motion as opposed to a linear motion allows you to avoid any abrupt changes in direction at the fully extended and fully contracted positions. With no abrupt changes in direction, a non-stop, rhythmic Tempo can be established and actually practiced. This allows you to ingrain your preferred sense of Tempo and progressively improve your Tempo/Timing Axis (Aspect #6), as you develop your strength. Now, this does not mean you should perform your weight training movements with a circular motion. It simply means that during the exercise, you should attempt to see it as an oval motion, *in your mind's eye* and by doing so you'll perform a smoother, more rhythmic movement.

In order to establish a smoother, more rhythmic movement, you should consider performing the positive and the negative portions of your golf specific weight training movement at *approximately* the same speed. If your Weight/Repetition Range is correct according to the specifications outlined in Golf Specific Fitness Component #2, each repetition should last approximately one second (or less) on the positive portion of the movement and approximately one second (or less) on the negative portion. Whatever duration (in seconds) it takes to execute the positive portion of the repetition, the negative portion of the repetition should be *approximately* the same. This should only be considered a guide to establishing good Exercise Movement Tempo—one that mirrors a smooth golf swing.

The real key however to performing golf specific weight training movements with flawless Tempo *is not* in focusing on the positive and negative portions of the movement, *but in developing a seamless transition from the positive portion of the movement to the negative portion, and from the negative portion of the movement to the positive portion.* Without a smooth, seamless transition, the weight training movement could program your KP and your Tempo/Timing Axis (Aspect #6) for something other than playing golf.

This Component of a Golf Specific Fitness Program must be maintained in order to fully develop (and to avoid hindering) the finer Aspects of a Golfer's Athleticism (Aspects #4, #5 & #6) during the strength building process.

IMPORTANT POINTS:

COMPONENT #4 DIRECTLY AFFECTS THE FOLLOWING ASPECTS OF A GOLFER'S ATHLETICISM:

1. Aspect - #4 Kinesthetic Awareness
2. Aspect - #5 Coordination
3. Aspect - #6 Tempo/Timing Axis

COMPONENT #4 INDIRECTLY AFFECTS THE FOLLOWING ASPECTS OF A GOLFER'S ATHLETICISM:

1. Aspect - #1 Lower Back Strength & Integrity
2. Aspect - #2 Joint Integrity
3. Aspect - #3 Strength/Flexibility Axis

COMPONENT #4 WORKS IN TANDEM WITH COMPONENT #3. TOGETHER, THEY HAVE A SYNERGISTIC EFFECT ON ALL SIX ASPECTS OF A GOLFER'S ATHLETICISM LISTED ABOVE.

The Golf Specific Fitness Component in the left column that is shaded either directly or indirectly influences the condition of the Aspects of a Golfer's Athleticism in the right columns that are shaded.

GOLF SPECIFIC FITNESS COMPONENT #4

The Six Golf Specific Fitness Components	Each Fitness Component affects the Aspects listed below:	The Seven Aspects of a Golfer's Athleticism
1 Ana, Biom. & Kines.	1, 2 & 3	1 Lower Back Integrity
2 Weight/Repitition Range	1, 2, 3, 4, 5, 6 & 7	2 Joint Integrity
3 Point of Focus	1, 2, 3, 4, 5 & 6	3 Strength/Flexibility Axis
4 Mode of Execution	1, 2, 3, 4, 5 & 6	4 Kinesthetic Awareness
5		5 Coordination
6		6 Tempo/Timing Axis
		7 Endurance/Recoverability Axis

Component #5—Anaerobic/Aerobic Axis

Being able to do an hour of aerobic exercise and an hour of anaerobic exercise daily is not only good for you, but speaks volumes about your physical condition and overall health. However, that type of exercise regimen is not necessarily appropriate for golfers. The volume and intensity of an exercise program at that level could prevent a full recovery from taking place in the time period outlined in Aspect #7. Remember, golf is an extremely unique sport with strict physical and athletic design specifications. As previously stated, an exercise program can be great for the majority of athletes and help them achieve a high level of athletic performance, yet include one strategy that makes it detrimental to the golfer's performance. While both Anaerobic and Aerobic exercise provide numerous benefits for golfers, our concern with them in this segment is their effect on Endurance and Recoverability, relative to golf performance, i.e., the Endurance/Recoverability Axis (Aspect #7).

The information in the following pages is fairly complex. However, its purpose is only to give you a more in-depth understanding of the physiology that supports Endurance and Recoverability, relative to golf performance. If you find the information difficult to understand, just remember that maximum Endurance and rapid Recoverability depend on your anaerobic and aerobic systems being trained regularly. So including a moderate amount of both types of exercise in your weekly golf specific fitness regimen is suggested for peak golf performance. The information in this segment is actually more applicable to Tour Professionals than it is to the average golfer.

Anaerobic Exercise and the Muscles

Anaerobic exercise is the resistance training (weight training), or the strength producing type of exercise in a golf specific fitness program. It directly increases *the muscles'* Endurance capacity (due to increased glycogen storage) and accelerates *the muscles'* Recoverability Rate.

Aerobic Exercise and the Body

Aerobic exercise is the walking, cycling, or jogging variety of a golf specific fitness program. It increases the metabolism, improves the efficiency of the cardiovascular and cardiopulmonary systems, directly improves *the body's* Endurance and accelerates the Recoverability Rate.

So, anaerobic exercise directly increases the *muscles'* Endurance capacity by training them to store larger amounts of fuel (glycogen), while aerobic exercise directly increases the *body's* Endurance capacity by improving its ability to burn stored fat for fuel and by increasing the efficiency of all metabolic processes. In short, *anaerobic* exercise deals primarily with the muscles and *aerobic* exercise deals more with the body as a whole.

FUEL SOURCES

For golfers, anaerobic exercise is not just for strengthening muscles, but to train them to absorb fuel quickly by depleting their *primary fuel source* (glycogen) on a regular basis. We'll learn more about this process in Component #6.

Muscles that are not trained anaerobically rarely experience any measurable depletion in their fuel stores, so they're not as proficient at reabsorbing fuel (in the form of carbohydrates). As a result, the speed at which they can recover is limited. On the other hand, muscles that are trained anaerobically on a regular basis undergo the depletion phase routinely, *making them highly proficient at the refueling process*. In short, regular anaerobic exercise trains the muscles to absorb fuel at an accelerated rate, in order to prepare for the next anaerobic exercise session.

When muscles experience partial depletion of their fuel stores on a regular basis from light to medium intensity anaerobic exercise, the metabolic process of using, replenishing and storing the muscles' fuel (glycogen) is enhanced (that is if enough of the right type of calories are consumed following the workout). So, regular anaerobic exercise can significantly increase the speed at which you recover from your golf rounds (Recoverability). However, there is a limit to how much anaerobic exercise you can do in order to obtain the desired effect.

ANAEROBIC EXERCISE—*VOLUME & INTENSITY*

The volume and intensity of your anaerobic exercise program must match your playing schedule. Take Tour Professionals for example; their anaerobic exercise cannot exceed a certain *volume* or their muscles will be depleted beyond the point of being totally *refueled* by the next day. Further, it cannot exceed a certain level of *intensity*, or too much muscle tissue will be broken down and the recovery process will be prolonged. Using weights that are too heavy can break down their muscle tissue

beyond the point of fully recovering by their tee-time the next day. It can also leave the Tour Professional's body in a tired, convalescing state the following day, which defeats the purpose altogether. In short, too much anaerobic exercise will deplete the Tour Professional's muscles beyond their capability to fully recover by their tee-time the following day. Amateur golfers who do not play on consecutive days can usually exercise longer and more vigorously without negatively affecting the Endurance and Recoverability Aspects of their golf game.

Remember, in addition to improving Aspects #1 through #6, anaerobic exercise *for golfers* is to increase the *muscles'* Recoverability Rate by making them highly receptive to the refueling process. However, anaerobic exercise that is outside of the guidelines specified in Components #1, #2, #3 & #4 can prevent your muscles from enduring and/or recovering in a manner that is appropriate for golf.

Before an exact volume of anaerobic exercise (golf specific weight training) can be prescribed, it must first be learned in accordance with the specifications outlined in Components #1 through #4 of a golf specific fitness program. Once that has been accomplished, you should begin experimenting to learn the volume, intensity and frequency of anaerobic exercise that produces positive results in Aspects #1 through #6. When you feel confident in those two areas, you should begin paying attention to the volume, intensity and frequency of anaerobic exercise that maximizes both your Endurance and your Recoverability and that which helps you establish the balance of each (Endurance/Recoverability Axis) that best suits your playing schedule.

Balancing Aerobic Exercise with Anaerobic Exercise

As previously stated, aerobic exercise (walking, cycling, or jogging) directly increases the *body's* Endurance and Recoverability Rate by improving the efficiency of all metabolic processes. *Since regular aerobic exercise improves the body's ability to burn stored body fat for fuel, the body is more capable of making the transition to stored body fat when the muscles' fuel stores (glycogen) become depleted toward the end of a golf round.* However, too much aerobic exercise can cause the body dip heavily into the muscles' fuel stores during an aerobic exercise session. This can hinder your anaerobic training and significantly prolong the muscles' recovery process. Twenty to forty minutes or so of aerobic exercise, from three to five days a week is usually sufficient to obtain the desired aerobic effect.

However, employing the higher repetition range (Component #2) with your golf specific weight training movements causes your anaerobic workout to have an *aerobic affect* on the body. So golfers who

master Golf Specific Fitness Component #2 (Weight/Repetition Range) and shorten the rest periods between sets can often exclude cardiovascular exercise from their workout regimen altogether and still have well-trained anaerobic and aerobic systems and, as a result, a balanced Endurance/Recoverability Axis. In either case, all we want from our aerobic training is for it to keep our body running at a higher level of efficiency (increased metabolism). Once your metabolism is running strong, your aerobic exercise will enhance the effects of your anaerobic exercise and vice versa, making the effects of the combination synergistic.

So in terms of the Endurance/Recoverability Axis, anaerobic exercise directly affects the muscles and indirectly affects the body as a whole, while aerobic exercise directly affects the body as a whole and indirectly affects the muscles. Learning to combine the proper type and volume of aerobic exercise, with the proper type and volume of anaerobic exercise *described in Golf Specific Fitness Components #2, #3 & #4*, is the goal and will likely take some time. As long as the Anaerobic/Aerobic Axis is maintained, the Endurance/Recoverability Axis will likely be maintained. *While this is not the traditional explanation of anaerobic and aerobic exercise, it is the one that best explains their effect on the Endurance/Recoverability Axis and golf performance.*

Finally, the ratio of anaerobic exercise (weight training) to aerobic exercise (cardiovascular training) that's considered balanced varies greatly among golfers so the process of establishing your Aerobic/Anaerobic Axis is one that will come about largely through trial and error. Attempting to balance them by spending approximately the same amount of time doing each is a good place to begin.

Remember, one of the definitions of axis is an *alliance* or a *partnership*. The purpose of the partnership between these two types of exercise is to maintain a balance between your Endurance and your Recoverability Rate, so you'll finish your golf round strong (Endurance) and begin your subsequent golf rounds at full strength (Recoverability).

IMPORTANT POINTS:

- Anaerobic Exercise - Increases *Strength* and Improves Recoverability
- Aerobic Exercise - Increases *Metabolism* and Improves Endurance
- *Increased Strength* - Aids Endurance
- *Increased Metabolism* - Aids Recoverability

COMPONENT #5 DIRECTLY AFFECTS THE FOLLOWING ASPECTS OF A GOLFER'S ATHLETICISM:

1. Aspect #1 - Lower Back Strength & Integrity
2. Aspect #2 - Joint Integrity
3. Aspect #3 - Strength/Flexibility Axis
4. Aspect #4 - Kinesthetic Awareness
5. Aspect #5 - Coordination
6. Aspect #7 - Endurance/Recoverability Axis

COMPONENT #5 WORKS IN TANDEM WITH COMPONENT #2 AND COMPONENT #6

The Golf Specific Fitness Component in the left column that is shaded either directly or indirectly influences the condition of the Aspects of a Golfer's Athleticism in the right columns that are shaded.

GOLF SPECIFIC FITNESS COMPONENT #5

The Six Golf Specific Fitness Components	Each Fitness Component affects the Aspects listed below:	The Seven Aspects of a Golfer's Athleticism
1 Ana, Biom. & Kines.	1, 2 & 3	**1** Lower Back Integrity
2 Weight/Repitition Range	1, 2, 3, 4, 5, 6 & 7	**2** Joint Integrity
3 Point of Focus	1, 2, 3, 4, 5 & 6	**3** Strength/Flexibility Axis
4 Mode of Execution	1, 2, 3, 4, 5 & 6	**4** Kinesthetic Awareness
5 Anaerobic/Aerobic Axis	1, 2, 3, 4, 5 & 7	**5** Coordination
6		**6** Tempo/Timing Axis
		7 Endurance/Recoverability Axis

Component #6—Sports Nutrition

Good nutritional habits play an important role in keeping your body weight down and maintaining general health. But for peak golf performance, our concern is not with consuming protein to build muscle; limiting dietary fat for weight loss; paying attention to cholesterol, triglycerides, or any of the standard health issues. Our concern is primarily with how our sports nutritional strategies affect golf performance, i.e., Endurance and Recoverability (Aspect #7). So to make sure your diet regimen does not improve your health at the expense of your golf performance, it's essential that you develop a broader understanding of sports nutrition.

Due to genetic differences, successful sports nutritional strategies can vary greatly from one golfer to the next. So learning the blend of sports nutritional strategies that are the most productive for you is the key. Doing so will not only help you develop (and maintain) a stronger healthier physique, but it will help you maximize your Endurance, increase your Recoverability Rate; and most importantly, develop the proper balance between the two.

Macro Nutrient Ratios

When golfers begin experiencing fatigue during their golf rounds, they usually focus their efforts on improving endurance, while poor Recoverability may be the problem. Unfortunately, Recoverability strategies are among the many unaddressed athletic performance enhancement issues golfers face today. With the current golf specific fitness strategies being so heavily focused on Endurance, it would actually be easier to train the golfer's body to endure 36 holes, every other day for a month, than to play 18 holes, four days in a row, *at 100% of their strength*.

Maximizing both your Endurance and your Recoverability while keeping them balanced with each other can be challenging. It requires several nutritional variables to be in the perfect ratio, so all of the nutritional deficits created by your daily physical activities are replenished on a daily basis.

Depending on the *type* and *intensity* of physical activity you experience throughout a given day, the *ratio* of macro nutrients (protein, fat and carbohydrates) in each meal necessary to meet your needs can fluctuate. As a golfer, you must understand sports nutrition well enough to adjust to the ratio of protein, carbohydrates and fats in each of your daily meals, so both your Endurance and Recoverability requirements are met consistently.

Many golfers eat extremely healthy diets, choosing to eat only clean, fat-free foods of high nutritional quality, yet they continue to struggle with Strength, Endurance and efficiency during their golf round. This is often because the combination of foods, regardless of how healthy, is inappropriate for their type of athletic performance. As a result, it doesn't adequately fuel their body for golf, nor does it refill the nutritional deficit created by their daily physical activities.

For example, high quality gasoline will certainly keep your lawn mower engine running clean and lengthen its life. However, if the engine requires a mixture of 80% gas and 20% oil and you decided to change the mixture to 90% gas and 10% oil, simply because it sounded like a cleaner or healthier mixture, the engine's efficiency would be reduced. While the 90% gas mixture sounded stronger, as if it would increase efficiency, *it was clearly wrong for that engine*. Similarly, the body must have the proper ratio of fuel (carbs, proteins and fats), in order to perform at an optimal level throughout an entire golf round and to recover quickly for the next.

Physiological Responses to Carbohydrates—*Insulin*

Sports nutrition, as it relates to golfers, involves more than just eating the proper ratio of protein, carbohydrates and fats. It also involves making sure you're taking in the proper types of each (particularly carbohydrates), at the appropriate times throughout the day, in order to influence the physiological processes that support *the type and degree of Endurance and/or Recoverability* necessary for your *type and level of athletic performance.*

What many golfers fail to realize is a lot of the healthy *low-fat or zero-fat foods* they eat while attempting to enhance their *physical* and *athletic* performance may actually have a negative effect on their energy levels and hinder their ability to recover quickly for their next golf round. Yet if those same foods were eaten at a different time of the day and/or combined differently, not only would they improve the golfer's Endurance, but they would boost their Recoverability rate as well. To become proficient at employing this strategy, you must learn which foods serve as the fuel for the different classifications of exercise.

Different types of exercise use different types of fuel, just as golf carts use electricity and lawn mowers use gas. You can't charge up your lawn mower engine with electricity any more than you can gas up your golf cart batteries. The type of fuel used by each is totally different.

When speaking in terms of sports nutrition, there are basically two types of exercise and for the most part, each is fueled by a different type of food. One type of exercise is called Aerobic and the other is called Anaerobic.

Aerobic exercises such as brisk walking, cycling, or slow jogging are less intense on the muscles, yet more demanding on your cardiovascular and cardiopulmonary systems. *Stored body fat is the primary source of fuel for low intensity aerobic exercise such as walking.*

Anaerobic exercises such as weight training, calisthenics, or sprinting are more intense and more demanding on the muscles than aerobic exercise. *Carbohydrates are the primary fuel source for all anaerobic activity.*

Since the golf swing involves slightly more intense muscular involvement than low intensity aerobic exercise, it obviously falls under the classification of *anaerobic* exercise. So to ensure adequate Endurance and Recovery of the *muscles* from a day of golf, we must use sports nutritional strategies for directly fueling and refueling the muscles. This involves consuming carbohydrates.

When carbohydrates such as apples, bananas, rice and pasta are consumed, they're broken down by the digestive system, converted to glucose (sugar) and then released into the bloodstream. This causes the blood glucose concentration level to rise above its *set point* (which is approximately 90mg-100mg/100ml of blood). The pancreas senses the increased glucose concentration in the blood and responds by secreting the hormone *insulin* directly into the bloodstream.

The role of insulin is to transport (facilitate the uptake of) the excess glucose from the bloodstream, into the muscles. As insulin removes the glucose from the bloodstream, the blood glucose concentration level is lowered back down to the *set point* level and the muscles' fuel stores are replenished. Once the glucose is stored in the muscles it's called glycogen, which again is the primary fuel source for *anaerobic activity.*

Simply put, the golf swing depletes the muscles' glycogen stores and consuming carbohydrates afterward replenishes the muscles' glycogen stores, with the latter part of this process being facilitated by the hormone *insulin.* This explanation represents the basic depletion/repletion process over one meal. The actual number of meals required to fully replenish the muscles depends on how depleted they are following a golf round.

Physiological Responses to Different Types of Carbohydrates

Since some carbohydrates are more complex than others they take longer to digest. These carbohydrates cause a slower, more gradual release of glucose into the bloodstream. Conversely, some carbohydrates are less complex than others and are digested more easily. This allows them to enter the bloodstream faster, causing a rapid rise in the blood glucose concentration level.

Research indicates that it is largely the *speed* at which a particular carbohydrate food enters the bloodstream after it's eaten that determines the *amount* of insulin the pancreas secretes to transport the glucose extracted from that carbohydrate into the muscles. Unfortunately, when the pancreas secretes *too much insulin*, it often has the reverse effect on the muscles. Rather than transporting glucose into the muscles, *too much insulin can cause the muscles to resist (insulin resistance) the uptake of glucose*. When this happens, the excess insulin drives the glucose into the (more receptive) liver and fat cells, thus rapidly lowering your blood glucose concentration level and your energy level as well. Carbohydrates have a wide variety of *entry rates* and it's critical that golfers consume the right type at the right time.

The Glycemic Index

The *Glycemic Index* (following page) is a chart/table that rates carbohydrate foods by the speed they enter the bloodstream, as compared to glucose. Glucose (sugar) is rated at 100 and is the standard by which all other carbohydrates are measured. For example, if a carbohydrate enters the bloodstream only half as fast as pure glucose, its rating would be 50. The faster a food enters the bloodstream, the higher its glycemic rating and the more insulin is secreted when it's consumed. The slower it enters the bloodstream, the lower its glycemic rating and the less insulin is secreted when it's consumed.

THE GLYCEMIC INDEX

THE "A" LIST COOL CARBS GI (0 - 50)	THE "B" LIST WARM CARBS GI (50 - 70)	THE "C" LIST HOT CARBS GI (70 - 100+)
Apple (39)	Banana (62)	Watermelon (72)
Apple juice (40)	Kiwi (58)	Baked potato (111)
Cherry (22)	Mango (60)	Carrot (92)
Grape (22)	Pineapple (66)	Instant potato (86)
Grapefruit (25)	Raisin (64)	Broad beans (79)
Orange (40)		
Orange juice (46)	Brown rice (66)	Corn flakes (92)
Peach (28)	Rye bread (60)	Instant Cream of Wheat (74)
Pear (33)	Pita bread (57)	Crispix (87)
Plum (24)	White bread (70)	Golden Grahams (76)
	Pasta (50+)	Grape Nuts Flakes (80)
Black-eyed peas (33)	Sweet corn (60)	Rice Chex (89)
Butter beans (28)	Taco shells (68)	Team (82)
Chick peas (33)		Total (76)
Kidney beans (25)	Shredded wheat (67)	Rice cakes (90)
Lentils (30)	Cream of wheat (66)	
Lima beans (32)	Grape nuts (67)	**Glucose (100)**
Navy beans (31)	Nutri grain (66)	**Maltose (105)**
Pinto beans (45)	Oatmeal (65)	
Rice - Uncle Ben's	Special K (54)	
converted (38)	Puffed wheat (67)	
Soya beans (20)		
Split peas (32)		**Glycemic Index-Very Low,**
Sweet potato (48)		**Not Rated**
Bulgur bread (50)		Asparagus
Mixed grain bread (31)		Broccoli
Oat bran bread (50)		Cabbage
Whole meal rye (41)		Cauliflower
Pumpernickel (41)		Greens
		Green beans
All bran (38)		Lettuce
Oat bran (50)		Mushrooms
Rice bran (20)		Onions
Toasted muesli (43)		Tomatoes
Almonds (15)		
Cashews (15)		
Pecans (15)		
Peanuts (15)		
Fructose (25)		
Lactose (45)		
Milk (32)		

THE FOODS LISTED ON THIS CHART ARE ONLY INTENDED TO PROVIDE YOU WITH EXAMPLES OF FOODS WITH WIDE RANGES OF GLYCEMIC RATINGS. THE PURPOSE OF THIS IS TO HELP YOU BEGIN TO DEVELOP A FEEL FOR JUDGING A FOOD'S "APPROXIMATE" GLYCEMIC INDEX RATING, WITHOUT HAVING TO RESEARCH THAT FOOD. YOU CAN FIND THE GLYCEMIC INDEX RATING OF JUST ABOUT ANY FOOD ON THE WEB.

CARBOHYDRATE CHOICES

High glycemic carbohydrate foods such as those on the C List (Hot Carbs, Glycemic Rating 70-100) are broken down easily by the digestive system. This allows them to enter the bloodstream relatively quickly prompting a larger than normal insulin response. They are poor carbohydrate choices for pre-round meals, because they cause your blood glucose concentration level to rise abruptly and then fall abruptly, which nearly always sabotages your golf round. These carbohydrates (Glycemic Rating 70 -100) can also promote fat storage when consumed at the wrong time.

However, muscles whose glycogen stores have been depleted via anaerobic exercise (light weight training) are highly sensitive to insulin and the refueling process. Therefore those same high glycemic carbohydrates are good choices for your post-workout, or muscle fuel (glycogen) replenishing meal. Their rapid entry rate causes them to prompt a larger insulin response, which literally drives the fuel (glucose) into the depleted muscles, thus replenishing them rapidly. Research (Zawadzki et al. 1992) shows that combining high glycemic carbohydrates such as potatoes, with protein (eggs, chicken etc.) for a post-workout meal contributed to a much higher rate of muscle fuel replenishment than when either was ingested separately.

In order to set the physiological stage (prepare the muscles) for rapid Recoverability, you might consider doing a *moderate amount* of low intensity anaerobic exercise following your golf round. Theoretically, this would *partially* deplete the muscles of their fuel (glycogen) stores, making them more sensitive to the refueling hormone *insulin* and therefore more receptive to the fuel (glucose) insulin transports. This strategy can enhance the Recoverability process while allowing you to avoid the soreness that comes from high intensity anaerobic exercise.

Muscles that aren't depleted by anaerobic exercise are not as sensitive to the hormone insulin, or the fuel (glucose) it transports. Therefore they are less receptive to the refueling process and cannot be refueled as completely *in a given time period*, regardless of how perfect the carbohydrate choice. As previously stated, if the muscles aren't receptive, the fuel (glucose) is diverted to the liver and/or the fat cells, which is not the best case scenario for any athlete. Simply put, you can't fill your gas tank while the gas cap is on. Anaerobic exercise removes the gas cap from your muscles, allowing insulin to deliver the fuel (glucose) to them. Remember, high glycemic carbohydrates (B & C list) are for refueling the muscles and are to be included primarily in your *post-workout meals*.

During your golf round, your carbohydrate choices should be different. Carbohydrates such as apples and oranges (Glycemic Rating 30-40) are of the low glycemic variety and are not broken down as easily by the digestive system. As a result, they enter the bloodstream more slowly, prompting a minimal insulin response. This allows the blood glucose concentration level to rise gradually and remain elevated for a prolonged period of time, providing you with a sustained level of energy, *which is perfect for the sport of golf.*

Also, research shows that exercise actually mutes the insulin response. This means the mild aerobic exercise you're getting on the course by walking to your ball, in addition to the low glycemic carbohydrates (apples, oranges, etc.) you're eating for energy, promotes stability in your blood sugar concentration level and establishes the perfect physiological state for sustained energy during your golf round.

Remember, insulin directs the excess glucose from your bloodstream into your muscles. The excessive amount of insulin produced by high glycemic carbs would rapidly lower your blood sugar and your energy level along with it thus sabotaging your golf round. The strategy on the golf course should always be to maintain your blood sugar level, not jack it way up or load your muscles. Therefore foods that enter the bloodstream slowly such as those on the A List (Cool Carbs)—ones that do not prompt a significant insulin response are preferred during your golf round.

Blood Sugar Management Strategies

Before your Golf Round

About an hour prior to your golf round you should consume a breakfast consisting of a moderate amount of protein (20 to 40 grams) and low to medium glycemic carbohydrates (60 to 100 grams), with a small amount of dietary fat to sustain your blood sugar level and to prolong the time period in which the meal supplies energy.

During your Golf Round

During your golf round you should (strategically) consume *lower glycemic carbohydrates* to minimize insulin secretion, in order to maintain a more stable blood glucose concentration level along with

a *small amount of dietary fat* to sustain your blood sugar level and to prolong the time period in which the meal supplies energy.

Tiger has been known to eat apples during his round—*probably as a means of promoting stability in his energy level.* Apples are second to none at providing energy without an abrupt drop off. Also, adding a couple of peanut butter crackers can significantly prolong the energy supplied by an apple. The fat in the peanut butter combines with the sugar in the apple, further slowing its entry rate and extending the period of time in which the (food) combination supplies energy.

Following your Golf Round

After your golf round you should consume medium to high glycemic carbohydrates in order to facilitate the recovery process. This is particularly the case with golfers who prefer to do their anaerobic workouts immediately after their golf rounds. When the muscles are partially depleted from a moderately intense anaerobic workout session, the higher insulin levels dramatically enhance the refueling process. This is not the traditional dietary approach that respects weight loss, but a strategic approach that respects Recoverability. In fact, overdoing this strategy will surely promote weight gain. So don't be misled into thinking you can polish off a plate of pasta and follow it up with a couple of pieces of chocolate cake on the evenings you do your anaerobic workout. You'll look like an offensive lineman inside of 90 days—*moderation is the key*.

Learning to adjust your diet to regulate your body's blood glucose concentration level and subsequent insulin secretion is the key to improving Endurance and Recoverability. Doing so enables you to place your body in the preferred physiological state (Endurance or Recovery) when necessary. Again, this involves learning to combine the different types and amounts of food, to prompt the desired insulin response at the appropriate time, to produce the desired effect, which is either Endurance or Recovery.

Carbohydrates to Consume:

- Medium and high glycemic carbohydrates (B and/or C list) such as potatoes, rice or pasta *following your golf rounds and your workouts* for rapid Recovery.
- Low glycemic carbohydrates (A list) such as apples and oranges *prior to your golf round* for sustained Endurance.
- Low glycemic carbohydrates (A list) such as apples and oranges *during your golf round*, for sustained Endurance.

Since each golfer is unique, the physiological responses to various carbohydrate foods and food combinations that produce the desired effect (Endurance or Recovery) will vary from golfer to golfer. For this reason, improving your Endurance and Recoverability, while learning to balance them with each other can be extremely challenging and require a superior level of understanding in sports nutrition. Depending on each individual, acquiring that level of understanding can be a complicated process, requiring a considerable amount of self-education and perseverance to fully master. Therefore it would greatly benefit you to purchase a book on Sports Nutrition.

IMPORTANT POINTS:

COMPONENT #6 DIRECTLY AFFECTS THE FOLLOWING ASPECTS OF A GOLFER'S ATHLETICISM:

1. Aspect #1 Lower Back Strength & Integrity
2. Aspect #2 Joint Integrity
3. Aspect #7 Endurance/Recoverability Axis

COMPONENT #6 WORKS IN TANDEM WITH COMPONENT #5 AND MUST BE DESIGNED SPECIFICALLY TO ACCOMMODATE IT.

The Golf Specific Fitness Component in the left column that is shaded either directly or indirectly influences the condition of the Aspects of a Golfer's Athleticism in the right columns that are shaded.

GOLF SPECIFIC FITNESS COMPONENT #6

The Six Golf Specific Fitness Components	Each Fitness Component affects the Aspects listed below:	The Seven Aspects of a Golfer's Athleticism
1 Ana, Biom. & Kines.	1, 2 & 3	**1** Lower Back Integrity
2 Weight/Repitition Range	1, 2, 3, 4, 5, 6 & 7	**2** Joint Integrity
3 Point of Focus	1, 2, 3, 4, 5 & 6	**3** Strength/Flexibility Axis
4 Mode of Execution	1, 2, 3, 4, 5 & 6	**4** Kinesthetic Awareness
5 Anaerobic/Aerobic Axis	1, 2, 3, 4, 5 & 7	**5** Coordination
6 Sports Nutrition	1, 2, 3 & 7	**6** Tempo/Timing Axis
		7 Endurance/Recoverability Axis

SPORTS PSYCHOLOGY—*THE SEVENTH COMPONENT*

The Six Components of a Golf Specific Fitness Program are fitness strategies golfers implement specifically to improve their physical condition and athletic ability for the purpose of enhancing golf performance. Sports Psychology, on the other hand, is a strategy golfers implement to protect their *mental and/or emotional* state, so it doesn't exert a negative effect on their *existing physiological* state, which of course negatively affects golf performance. Unlike the Six Components, it can not be implemented to improve a golfer's physical condition. So while the Six Components are implemented to influence positive change, Sports Psychology is implemented to prevent negative change. This fundamental difference disqualifies Sports Psychology from being classified as a legitimate Golf Specific Fitness Component. However, since your psychological state plays such a critical role in maintaining your physiological state, particularly when the pressure is on, Sports Psychology is considered the *Seventh Component*.

PHYSIOLOGICAL RESPONSES TO MENTAL AND EMOTIONAL STATES

Each year, especially in the Four Majors, we see a few Tour Professionals experience the dreaded meltdown when they're coming down the stretch. For example, the enormous pressure felt during a three foot putt when everything is on the line prompts a number of physiological changes, i.e., increased adrenaline, elevated heart rate, etc.

Depending on the extent of these physiological responses, they have the power to almost completely suppress KA, thus substantially reducing your (available) Coordination. Since KA and Coordination directly influence Power, Timing, Accuracy and Putting (Refer to Cause/Effect Sheet in Chapter Five), it's safe to say that when they suffer, your golf game suffers as well.

EMOTIONS—COVERT ACTIONS WITH OVERT RESPONSES

Regardless of how perfect your physical condition and athletic ability may be for golf, they're absolutely worthless to you if your mental and/or emotional state alters them during your golf round. So in order to maintain the full benefit of your enhanced physical condition and athletic ability when the pressure is on, you should consider implementing some form of Sports Psychology.

IMPORTANT POINTS:

THE SEVENTH COMPONENT—*SPORTS PSYCHOLOGY* INDIRECTLY AFFECTS THE FOLLOWING ASPECTS OF A GOLFER'S ATHLETICISM, VIA PHYSIOLOGICAL RESPONSES:

1. Aspect #4 Kinesthetic Awareness
2. Aspect #5 Coordination
3. Aspect #6 Tempo/Timing Axis
4. Aspect #7 Endurance/Recoverability Axis

THE SEVENTH COMPONENT—*SPORTS PSYCHOLOGY* WORKS IN TANDEM WITH COMPONENT #6.

The Golf Specific Fitness Component in the left column that is shaded either directly or indirectly influences the condition of the Aspects of a Golfer's Athleticism in the right columns that are shaded.

THE SEVENTH COMPONENT

The Six Golf Specific Fitness Components	Each Fitness Component affects the Aspects listed below:	The Seven Aspects of a Golfer's Athleticism
1 Ana, Biom. & Kines.	1, 2 & 3	**1** Lower Back Integrity
2 Weight/Repitition Range	1, 2, 3, 4, 5, 6 & 7	**2** Joint Integrity
3 Point of Focus	1, 2, 3, 4, 5 & 6	**3** Strength/Flexibility Axis
4 Mode of Execution	1, 2, 3, 4, 5 & 6	**4** Kinesthetic Awareness
5 Anaerobic/Aerobic Axis	1, 2, 3, 4, 5 & 7	**5** Coordination
6 Sports Nutrition	1, 2, 3 & 7	**6** Tempo/Timing Axis
* Sports Psychology *The Seventh Component*	4, 5, 6 & 7	**7** Endurance/Recoverability Axis

NON-CONFORMING FITNESS COMPONENTS

If you find yourself involved in some form of exercise that cannot be classified within one of the Six Golf Specific Fitness Components, it doesn't mean you must abandon the exercise, or that it can't benefit your golf game. It simply means since your new exercise cannot be categorized by one of the Six Golf Specific Fitness Components, you don't readily know which Aspects of a Golfer's Athleticism it affects, or how it affects them. This means you'll have to learn for yourself how your "Non-Conforming" Fitness Component affects your golf related areas of physical conditioning and athletic ability (Seven Aspects), by monitoring your progress with the PPES© Software. Assessing the *condition* of the Seven Aspects to determine the value of your golf specific fitness strategies is explained in more detail throughout the following sections of this book.

Do you remember the last sentence in the Introduction that read, "*the future books in your personal golf specific fitness bible must be written by you"?* Well, this is one of the situations to which that sentence was referring. The name of this particular book in your Personal Golf Specific Fitness Bible will be titled "Non-Conforming" Fitness Components.

Golf Specific Fitness Components Summary

Components #1, #2, #3 & #4 basically provide you with some (approximate) guidelines within which your weight training movements should be performed and give you insight into how they affect your physical condition and athletic ability relative to golf performance (Seven Aspects).

Component #1 is simply doing your golf specific weight training movements correctly and with good form.

Component #2 is basically making sure the amount of weight you choose allows you to perform the desired number of repetitions, with perfect exercise form.

Component #3 is focusing on the muscles you're exercising during your weight training movements and making a concentrated effort to be aware of the physical sensations (feeling) those movements produce.

Component #4 is simply doing your weight training movements with a smooth and rhythmic Tempo—*one that's consistent with that of your natural golf swing*.

The next two Components help you understand how to develop a balanced Golf Specific Fitness Program and how to support it with the appropriate blend of sports nutrition.

Component #5 helps you understand the difference between Anaerobic exercise and Aerobic exercise for the purpose of learning to do the amount of each that best supports your Endurance/Recoverability Axis (Aspect #7).

Component #6 gives you a basic understanding of sports nutritional principles and how applying them can affect Endurance and Recoverability, *as they relate to golf performance*.

The Seventh Component is employed to help you maintain a more calm mental and emotional state, thus minimizing the physiological responses resulting from increased pressure during your golf round. Remember, your emotions are "covert actions" with "overt responses."

A Final Note Regarding Stretching Exercises

As vital as flexibility is to the golf swing, you may be shocked that stretching itself is not considered a Golf Specific Fitness Component. The purpose of this is to help golfers completely disassociate *intense stretching* as being part of a *healthy* Golf Specific Fitness Program. Stretching to golfers should be no different than bathing and eating—two things that healthy people do routinely and moderately, *but never intensely*. Doing either *intensely* is the evidence of an (emotionally) unhealthy person. While regular intense stretching doesn't necessarily indicate poor (physical) health, it can certainly cause it, i.e., *poor joint integrity, poor lower back integrity and reduced muscle elasticity*. Golfers should perform moderate, low intensity stretching exercises so routinely that the muscles never have a chance to lose their flexibility. For example, you should always do some *low intensity* stretching exercises:

- at the beginning of both your anaerobic and aerobic workouts (immediately following your warm-up);
- after every set of weight training exercises;
- at the end of both your anaerobic and aerobic workouts;
- before your golf round, (after a short warm-up);
- after your golf round and;
- any other time your muscles feel tight, or like they need to be stretched.

If you're performing *moderate* stretching exercises at these times, planned stretching sessions will never be necessary. Besides, weight training exercises that conform to the specifications outlined in Golf Specific Fitness Components #1 and #2 already keep the muscles very supple and they help maintain healthy joints as well. Under these conditions, routine, low intensity stretching is sufficient to maintain a full, healthy ROM in all of your joints and more importantly, the balance of strength and flexibility in your muscles that's appropriate for you.

Remember, the Six Components of a Golf Specific Fitness Program, themselves, are not your fitness program; **THEY ARE THE FRAMEWORK OF YOUR GOLF SPECIFIC FITNESS PROGRAM**. Over time, you will learn the **VARIATION** of each Golf Specific Fitness Component that has the most positive effect on your golf related areas of physical conditioning and athletic ability, i.e., **THE SEVEN ASPECTS OF A GOLFER'S (YOUR) ATHLETICISM.**

But keep this in mind; since our bodies are always changing (with age and environment), the variation of each Component that has a positive effect on the (your) Seven Aspects will change as well. The information in the following chapter will teach you how to monitor your golf performance, in order to determine which Aspect (s) may be in less than desirable condition. This will help you determine when modifications to one or more of the Golf Specific Fitness Components may be necessary.

Again, the Golf Specific Fitness Components provide the guidelines within which all areas of your Golf Specific Fitness Program should be maintained. It is your (and/or your personal trainer's) responsibility to monitor your progress in terms of golf performance (Chapter Three), make accurate assessments of all Seven Aspects and when necessary, determine what modifications of the Golf Specific Fitness Components are warranted. The more familiar you become with how the variation of each Golf Specific Fitness Component you employ affects each of your Seven Aspects, the more proficient you'll become in making accurate modifications to those Components.

As with all athletes, modifying your fitness (training) program to maintain peak performance is not only nothing new, but it's a never ending process, so **GET USED TO IT**, your golf game depends on it.

CHAPTER THREE

THE FIVE GOLF PERFORMANCE INDEXES

CHAPTER THREE LEARNING OBJECTIVES:

- How the condition of each Aspect of a Golfer's Athleticism influences the Five Golf Performance Indexes
- What the Golf Performance Indexes reveal about your Seven Aspects
- Which Aspects of a Golfer's Athleticism influence each Golf Performance Index
- How to measure your Golf Specific Fitness Level, i.e. *How to calculate your Primary Golf Performance Level and your Overall Golf Performance Level*

The Five Golf Performance Indexes

As critical of a role as fitness plays today in achieving the highest level of golf performance, as of yet (June 2006) there are are still no legitimate standards of measurement in place for evaluating a golfer's physical condition and athletic ability, *in terms of golf performance.*

Up to this point we've defined seven distinctive golf related areas of physical conditioning and athletic ability (Seven Aspects) and six distinctive golf specific fitness strategies (Six Components) that influence them. Now we must learn:

- How the *condition* of the Seven Aspects of a Golfer's Athleticism both *directly* and *indirectly* influences specific areas of golf performance.
- How to determine the *condition* of the Seven Aspects of a Golfer's Athleticism by monitoring fluctuations *in the areas of golf performance they directly influence*—the Golf Performance Indexes.

Standards of Measurement

As stated in the opening paragraph of this book, golfers are getting in great physical condition as measured by muscle tone, body fat percentage and cardiovascular health. Those three standards of measurement indicate the degree to which three areas of the golfer's physical condition have improved. They do not, however (and cannot), indicate whether or not the *condition* of the Seven Aspects of a Golfer's Athleticism has improved, nor do they indicate if the golfer's golf game has improved. Therefore, using them to measure your progress does not allow you (or your trainer) to diagnose problems in physical conditioning and athletic ability *relative to golf performance*. Without the appropriate type of performance data, evaluating your golf specific fitness strategies is impossible. The standards of measurement used to evaluate an athlete's physical condition and athletic ability must measure their performance in their respective sport.

The Golfer's Vitals

In January of each year while a new golf season is beginning, the college football recruiting season goes into full swing. One of the things that makes the recruiting season so enjoyable is the process of

comparing recruits in various positions by their vitals, i.e. Height, Body Weight, Bench Press, Squat, 40 Yard Dash and Vertical Leap. The vitals are the standards of measurement that tell us who the football player is, both physically and athletically. More importantly, they enable coaches to determine the degree to which a football player's physical condition and athletic ability will help them play a particular position, *at their present height and weight*. So one of the many things these evaluations help coaches determine is the approximate body weight at which each football player will perform at his highest level at various positions.

The standards of measurement (vitals) used to evaluate bodybuilders are *assessments* of Muscle Size, Muscle Symmetry and Overall Leanness. If bodybuilders try to lose too much body fat, or lose body fat too quickly while preparing for a contest, they may also lose muscle size, which could negatively affect the quality and symmetry of their physiques. The above evaluations enable bodybuilders to maintain maximum muscle size with minimum body fat. As with football players, evaluating bodybuilders by their vitals on a regular basis helps them maintain the highest level in each area of measurement their body will allow, without negatively affecting one or more of the others.

The standards of measurement used to evaluate football players and those used to evaluate bodybuilders enable them to make accurate assessments of their physical condition and athletic ability as it relates to their sport. The bodybuilder's standards of measurement cannot be used to evaluate football players, nor can the football player's be used to evaluate bodybuilders. And clearly, attempting to use either to evaluate golfers is downright ludicrous. Again, the standards of measurement used to evaluate an athlete's physical condition and athletic ability must be specific to the sport in which the athlete plays.

The standards of measurement that allow us to evaluate the golfer's physical condition and athletic ability *relative to golf performance* are called Golf Performance Indexes:

- Golf Performance Index #1 - Power
- Golf Performance Index #2 - Timing
- Golf Performance Index #3 - Accuracy
- Golf Performance Index #4 - Endurance
- Golf Performance Index #5 - Recoverability

THE FORMULAS USED TO CALCULATE EACH GOLF PERFORMANCE INDEX *AND THE RATIONALE BEHIND THEM* ARE EXPLAINED IN DETAIL LATER IN THIS CHAPTER.

The Golf Performance Indexes are considered to be the golfer's vitals. Like the football player's vitals, Golf Performance Indexes tell us who the golfer is both physically and athletically *in terms of golf performance*.

Since the *condition* of the Seven Aspects of a Golfer's Athleticism directly influences the Five Golf Performance Indexes, monitoring fluctuations in the Five Golf Performance Indexes is the appropriate method for determining the *condition* of the Seven Aspects of a Golfer's Athleticism. So the Five Golf Performance Indexes both individually and collectively indicate the overall condition of the Seven Aspects of a Golfer's Athleticism.

This diagnostic method enables us to determine which Aspects may be responsible for periodic declines in golf performance. Once an Aspect is diagnosed as being in less than desirable condition, you and/or your trainer can either modify the Golf Specific Fitness Components that target that particular Aspect, or eliminate the fitness strategies you suspect are negatively affecting its condition. It is through this continual process that you'll acquire and maintain the type of physical conditioning and athletic ability that supports peak golf performance.

Remember, Golf Performance Indexes reflect the condition of the Seven Aspects of a Golfer's Athleticism and help you (and your instructors) determine the value of your golf specific fitness program. They are the only standards of measurement that allow you to evaluate your physical condition and athletic ability in terms of golf performance. The following pages explain the Golf Performance Indexes and their Calculation Formulas.

Following the explanation of each Golf Performance Index there are two charts. The first chart indicates which Aspects of a Golfer's Athleticism *directly* influence that particular Golf Performance Index and which Aspects *indirectly* influence it. The second chart (Aspect Diagnosis/Component Prescription) is designed to help you connect the fluctuations that occur in that particular Golf Performance Index to the Golf Specific Fitness Components (fitness strategies) that may have caused them.

GOLF PERFORMANCE INDEX #1—POWER

Power is measured by your *average* Clubhead Speed with your driver. Measuring Clubhead Speed is the best way to gauge increases and decreases in raw strength as it relates to the sport of golf. But while Clubhead Speed is directly affected by increases in strength, it's also a by-product of the Strength/Flexibility Axis (Aspect #3) and the Tempo/Timing Axis (Aspect #6). Therefore, strength (or flexibility) increases that do not conform to the specifications outlined in Aspect #3, or those that have a negative effect on Aspect #6 will not only fail to increase your Clubhead Speed, but may actually decrease it. Remember, strength increases that are appropriate for golfers will usually increase Clubhead Speed and produce a corresponding increase in Distance. On the other hand, strength increases that are inappropriate for golfers will either decrease Clubhead Speed, or increase Clubhead Speed while causing problems in the Timing and/or Accuracy Indexes.

For example, an increase in Clubhead Speed (Power Index) without a proportional increase in Driving Distance will produce a decreased Timing Factor (Timing Index) which usually indicates a less efficient golf swing. Also, an increase in Clubhead Speed (Power Index) accompanied by a slight loss of Accuracy will produce a decreased Accuracy Index which (potentially) indicates a less manageable golf swing. This is explained more thoroughly in the Timing Index section.

At this point, it may be helpful to return to Chapter One and review Lower Back Strength & Integrity, Joint Integrity, the Strength/Flexibility Axis and the Tempo/Timing Axis to consider how the condition of each may be affecting your Power.

IMPORTANT POINTS:

- Aspects #1, #3 (golf related areas of physical conditioning), #4, #5 & #6 (golf related areas of athletic ability) directly affect Power (Clubhead Speed).
- Aspect #2 indirectly affects Power.
- Aspect #7 can directly affect Power late in a golf round and on the 2nd, 3rd or 4th consecutive days of playing golf.

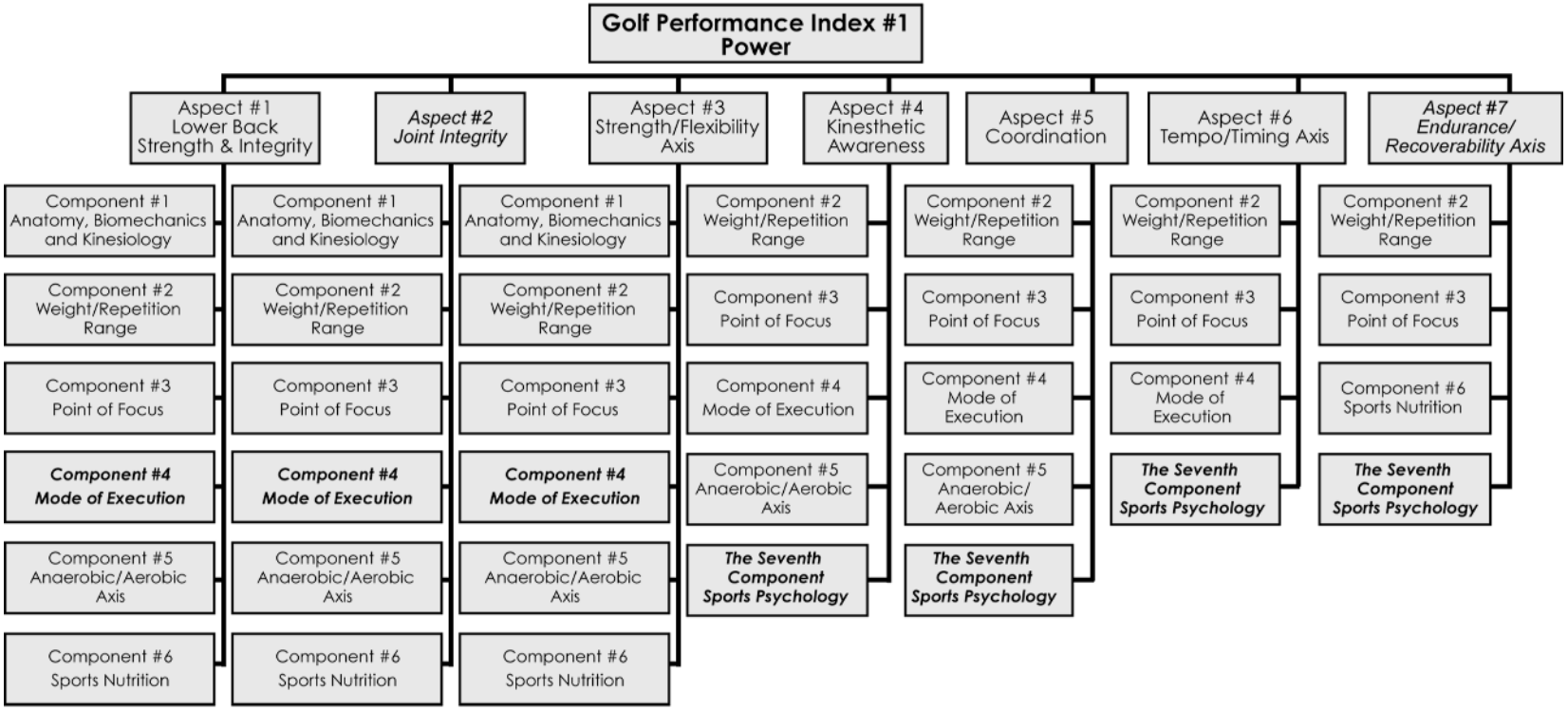
ILLUSTRATIONS FOR GOLF PERFORMANCE INDEX #1—POWER

The *condition* of each Aspect of a Golfer's Athleticism listed below that is shaded directly influences the Golf Performance Index in the right column that is shaded.

The Golf Performance Index below that is shaded, is directly affected by the *condition* of the Aspects of a Golfer's Athleticism in the left column that are shaded and *indirectly affected by those in italics.*

1 Lower Strength & Back Integrity	**1** Power
2 *Joint Integrity*	**2** Timing
3 Strength/Flexibility Axis	**3** Accuracy
4 Kinesthetic Awareness	**4** Endurance
5 Coordination	**5** Recoverability—*Tournaments Only*
6 Tempo/Timing Axis	
7 *Endurance/Recoverability Axis*	

Learning *which* Aspects influence *which* Golf Performance Indexes and then how the *condition* of each Aspect influences each Golf Performance Index is essential to developing an optimum Golf Specific Fitness Program. Since the exact influence an Aspect's condition has on each Golf Performance Index can vary considerably from golfer to golfer, you must learn this process as it relates to you and your golf performance.



IMPORTANT POINTS:

- If a decline in Power (Clubhead Speed) occurs, the Condition of the Aspects of a Golfer's Athleticism that support Power should be re-assessed.
- Once a particular Aspect is diagnosed to be the problem, you should review the Golf Specific Fitness Components that influence its condition. The variation of the Golf Specific Fitness Component you use is what should be investigated.
- Aspects in *italics* indicate the Condition of that Aspect has an indirect effect on the Golf Performance Index above.
- Components in *italics* indicate that Component has an indirect effect on the Aspect of a Golfer's Athleticism it affects.

The next two Golf Performance Indexes (Timing and Accuracy) indicate whether or not an increase in Power (Clubhead Speed) is manageable.

Golf Performance Index #2—Timing

The primary purpose of the Timing Factor is to measure the efficiency of your golf swing. Good Timing obviously produces maximum Distance at a given Clubhead Speed. Therefore, the Timing Factor is calculated by dividing Driving Distance by Clubhead Speed.

If your car engine's Timing is compromised, it will run less efficiently and produce less horsepower than it's designed to produce at a given RPM. Similarly, if your golf swing's Timing is compromised, it will produce less Distance at a given Clubhead Speed. Since perfect Timing produces maximum Distance at a given Clubhead Speed, less than perfect Timing will obviously produce less Distance at the same Clubhead Speed.

For example, a 270 yard tee-shot at a Clubhead Speed of 100 mph produces a Timing Factor of 2.7, which indicates excellent Timing. Conversely, a 220 yard tee-shot at a Clubhead Speed of 100 mph produces a Timing Factor of 2.2 and obviously indicates poor Timing (among other things). Depending on a golfer's Clubhead Speed (which can range from below 50 mph to more than 125 mph), an acceptable Timing Factor can range from below 2.2 to more than 2.7.

One of the more common reasons for the degree of variation in Timing Factors among golfers whose Clubhead Speeds are identical is the trajectory of their tee-shots. Some golfers hit the ball higher than average while others hit the ball lower than average. Because of the different trajectories, one golfer's tee-shot may be 30 yards longer than that of the other golfer. This scenario can produce Timing Factors from the bottom of the acceptable range, to the top and yet both golfers could still have fairly good Timing. Implementing changes in your golf swing and trying new equipment (new driver, different golf ball, etc.) can also influence your Timing Factor. So it's up to you, your Golf Instructor and/or your PPES© Certified Fitness Instructor to be aware of all potential influencing factors so you don't mistakenly attribute fluctuations in your Timing Factor to your golf specific fitness program. This applies to positive fluctuations as much as it does negative.

What's important to understand is the purpose for calculating the Timing Factor is not necessarily to expose poor Timing, but to establish a norm so when deviations from that norm occur, they can be investigated. Like the other Golf Performance Indexes, fluctuations in the Timing Factor provide

insight into the *condition* of the Seven Aspects. If your average Clubhead Speed increases from 110 mph to 120 mph over a 90 day period, but your Timing Factor drops from 2.6 to 2.3 with no modifications to your golf swing or changes in equipment, it's safe to say your newly acquired strength (Aspect #3) has had a negative effect on Aspects #3, #4, #5, and #6, *resulting in a less efficient golf swing*.

The Timing Index is influenced *directly* the golfer's golf related areas of athletic ability (Aspects #4, #5, & #6) and *indirectly* by the golfer's golf related areas of physical conditioning (Aspects #1, #2, #3 & #7).

Remember, strength increases that do not conform to the specifications outlined in Aspects #3, #4, #5 and #6 can result in a less comfortable golf swing, which is generally a less efficient golf swing and will be exposed by a reduced Timing Factor.

At this point, it may be helpful to return to Chapter One and review the Strength/Flexibility Axis, KA, Coordination and the Tempo/Timing Axis to consider how the condition of each may be influencing your Timing.

IMPORTANT POINTS:

- Aspects, #4, #5 and #6 (golf related areas of athletic ability) directly affect Timing.
- Aspect #1, #2, #3 & #7 (golf related areas of physical conditioning) indirectly affect Timing.
- Aspect #7 can directly affect Timing late in a golf round, or on the 2nd, 3rd or 4th consecutive day of golf.

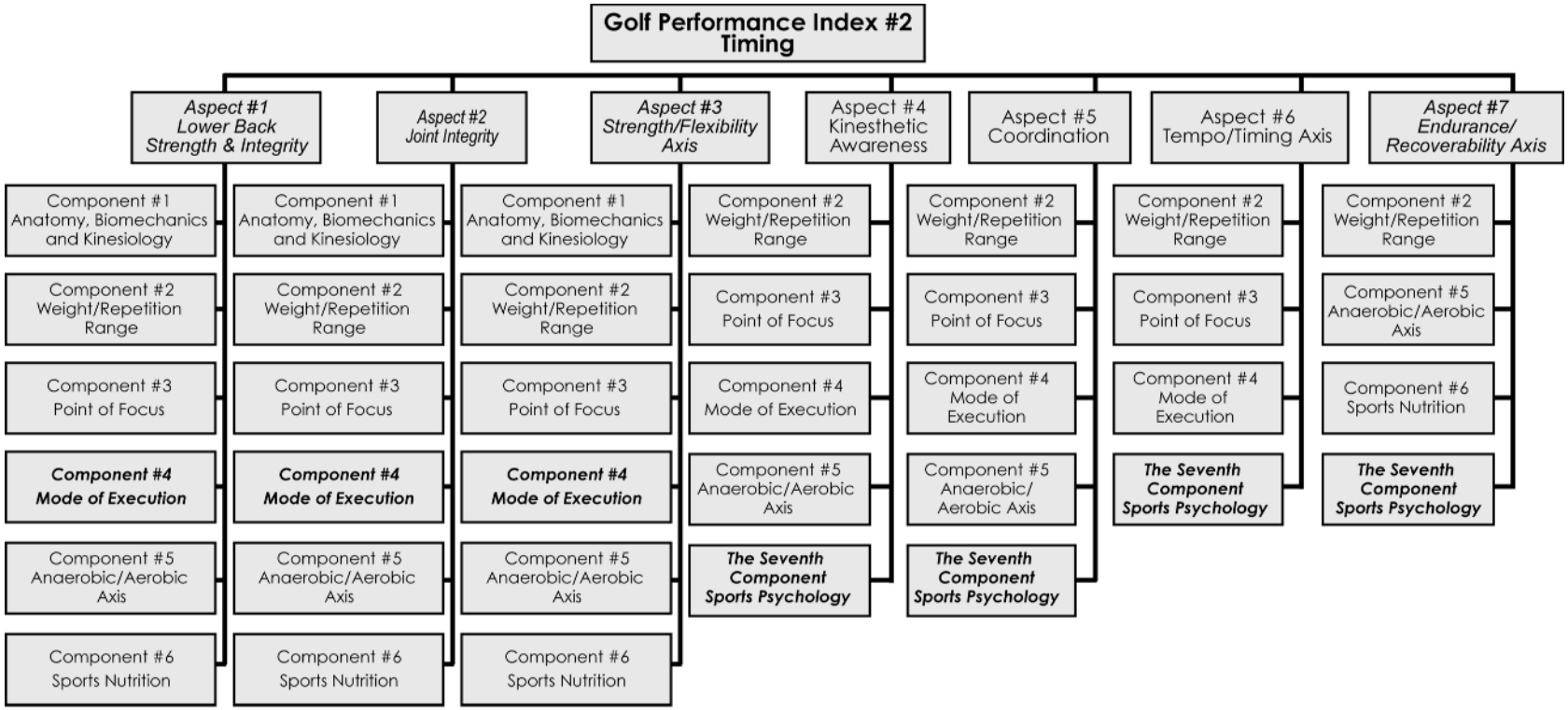
ILLUSTRATIONS FOR GOLF PERFORMANCE INDEX #2—TIMING

The *condition* of each Aspect of a Golfer's Athleticism listed below that is shaded directly influences the Golf Performance Index in the right column that is shaded.

The Golf Performance Index below that is shaded, is directly affected by the *condition* of the Aspects of a Golfer's Athleticism in the left column that are shaded and *indirectly affected by those in italics.*

1 *Lower Strength & Back Integrity*	**1** Power
2 *Joint Integrity*	**2** Timing
3 *Strength/Flexibility Axis*	**3** Accuracy
4 Kinesthetic Awareness	**4** Endurance
5 Coordination	**5** Recoverability—*Tournaments Only*
6 Tempo/Timing Axis	
7 *Endurance/Recoverability Axis*	

Learning *which* Aspects influence *which* Golf Performance Indexes and then how the *condition* of each Aspect influences each Golf Performance Index is essential to developing an optimum Golf Specific Fitness Program. Since the exact influence an Aspect's condition has on each Golf Performance Index can vary considerably from golfer to golfer, you must learn this process as it relates to you and your golf performance.



IMPORTANT POINTS:

- If a decline in Timing (Driving Distance ÷ Clubhead Speed) occurs, the Condition of the Aspects of a Golfer's Athleticism that support Timing should be re-assessed.
- Once a particular Aspect is diagnosed to be the problem, you should review the Golf Specific Fitness Components that influence its condition. The variation of the Golf Specific Fitness Component you use is what should be investigated.
- Aspects in *italics* indicate the Condition of that Aspect has an indirect effect on the Golf Performance Index above.
- Components in *italics* indicate that Component has an indirect effect on the Aspect of a Golfer's Athleticism it affects.

GOLF PERFORMANCE INDEX #3—ACCURACY

The game of golf rewards golfers for an increase in Power yet penalizes them when it results in a loss of Accuracy and/or the ability to execute on and around the green. If you increase your average Clubhead Speed from 110 mph to 120 mph and you're averaging 300 yards per tee-shot, yet averaging only two fairways per round, it's obvious your strength increase is not manageable.

Accuracy is measured by adding Driving Accuracy Percentage to Greens in Regulation Percentage and then dividing the sum by two. While the Timing Factor (Driving Distance ÷ Clubhead Speed) indicates the *efficiency* of your golf swing *with your newly acquired strength*, the Accuracy Index (Driving Accuracy % + Greens in Regulation % ÷ 2) indicates the *manageability* of your golf swing *with your newly acquired strength.* More specifically, it indicates whether or not your strength increase has had a negative effect on the other Aspects. Slow, steady strength increases are preferred for golfers because they allow Aspects #4, #5, and #6 to improve *simultaneously* and *proportionately* to strength.

The Accuracy Index is directly influenced by the golfer's golf related areas of athletic ability (Aspects #4, #5 & #6) and indirectly influenced by the golfer's golf related areas of physical conditioning (Aspects #1, #2, #3 & #7).

Together, the Timing Index (Timing Factor) and the Accuracy Index qualify an increase in strength or Power (Clubhead Speed) as either being acceptable for golf performance, or unacceptable.

Before looking at the charts on the following pages, it's important to understand that the Accuracy Index does not necessarily reflect the condition of your golf related areas of athletic ability. It is only a standard of measurement *that can be used* to determine their individual and collective condition. As with the other Golf Performance Indexes, it is ultimately up to you to determine in fluctuations in the Accuracy Index are being influenced by your golf related areas of athletic ability, problems with your golf swing or both.

At this point, it may be helpful to return to Chapter One and review KA, Coordination and the Tempo/Timing Axis to consider how the condition of each may be affecting your Accuracy.

IMPORTANT POINTS:

- Aspects #4, #5 & #6 (golf related areas of athletic ability) directly affect Accuracy.
- Aspects #1, #2, #3 & #7 (golf related areas of physical conditioning) indirectly affect Accuracy.
- Aspect #7 can directly affect Accuracy late in a golf round, or on the 2nd, 3rd or 4th consecutive day of golf.

ILLUSTRATIONS FOR GOLF PERFORMANCE INDEX #3—ACCURACY

The *condition* of each Aspect of a Golfer's Athleticism listed below that is shaded directly influences the Golf Performance Index in the right column that is shaded.

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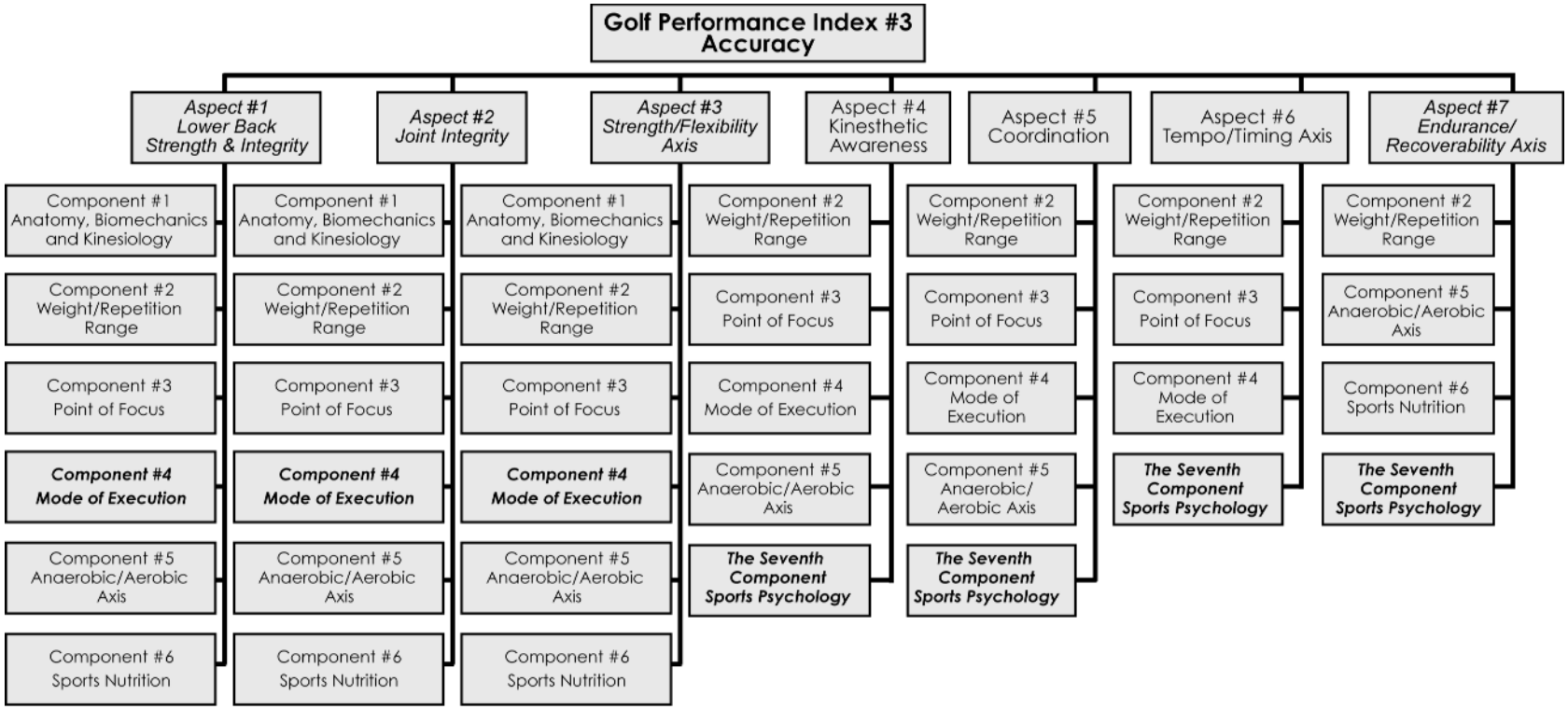
1 *Lower Strength & Back Integrity*	**1** Power
2 *Joint Integrity*	**2** Timing
3 *Strength/Flexibility Axis*	**3** Accuracy
4 Kinesthetic Awareness	**4** Endurance
5 Coordination	**5** Recoverability—*Tournaments Only*
6 Tempo/Timing Axis	
7 *Endurance/Recoverability Axis*	

Learning *which* Aspects influence *which* Golf Performance Indexes and then how the *condition* of each Aspect influences each Golf Performance Index is essential to developing an optimum Golf Specific Fitness Program. Since the exact influence an Aspect's condition has on each Golf Performance Index can vary considerably from golfer to golfer, you must learn this process as it relates to you and your golf performance.



IMPORTANT POINTS:

- If a decline in Accuracy (Driving Accuracy % + GIR % ÷ 2) occurs, the Condition of the Aspects of a Golfer's Athleticism that support Accuracy should be re-assessed.
- Once a particular Aspect is diagnosed to be the problem, you should review the Golf Specific Fitness Components that influence its condition. The variation of the Golf Specific Fitness Component you use is what should be investigated.
- Aspects in *italics* indicate the Condition of that Aspect has an indirect effect on the Golf Performance Index above.
- Components in *italics* indicate that Component has an indirect effect on the Aspect of a Golfer's Athleticism it affects.

GOLF PERFORMANCE INDEX #4—ENDURANCE

If you consistently score higher on your second nine holes than you score on your first nine, there's a good chance you're running out of gas. Looking back at your recent scorecards will help you to determine if that's been your trend.

I used to calculate my golf clients' Endurance by dividing their second nine hole score back into their *average* first nine hole score. If their score on the second nine was consistently as low or lower than their *average* first nine hole score, I considered their Endurance to be satisfactory. However, the problem with this approach was that it didn't take into consideration that *score does not always accurately (nor directly) reflect a golfer's energy level.*

For example, you can be extremely tired by the time you get to the back nine and still score well by sinking a couple of 12 foot putts or by chipping in, *while the areas of golf performance that require all the energy take a nosedive.*

When measuring Endurance as it relates to golf performance, we must measure the areas of golf performance that require the most physical energy to maintain, i.e., Clubhead Speed, Timing and Accuracy (Driving Accuracy and Greens in Regulation). Since all three of these areas are measured from a full golf swing, they not only require the most physical energy to maintain, but they're the areas affected the *earliest* and the *most drastically* when your energy level begins to decline. However, anyone who's been playing golf for any length of time knows that putting nearly always suffers when you're running out of gas. So the formula for calculating your Endurance factors in Putting Average as well.

THE ENDURANCE FORMULA

{Clubhead Speed × Timing × Accuracy ÷ Average Putts/Hole (on 2nd nine hole round)}

÷

{Clubhead Speed × Timing × Accuracy ÷ Average Putts/Hole (average of all 1st nine hole rounds)} = ENDURANCE PERCENTAGE (NOT TO EXCEED 100%)

Remember, the Endurance Formula compares the physical energy you have on your second nine holes to the physical energy you *average on your first nine holes.*

Keep this in mind though; Endurance problems can also be caused by poor Recoverability. During a four day tournament, if you do not fully recover from your first golf round, you'll obviously run out of gas sooner on your subsequent rounds. This will directly affect the Endurance Index and possibly leave the Recoverability Index looking problem free. It is a common occurrence and it must be diagnosed (and resolved) by you and/or your PPES© Certified Fitness Instructor. Nevertheless, the Endurance Index measures fluctuations primarily in a golfer's physical conditioning.

The Endurance Index is influenced *directly* by the golfer's golf related areas of physical conditioning (Aspects #1, #2, #3 & #7).

At this point, it may be helpful to return to Chapter One and review the Endurance/Recoverability Axis to consider how it may be affecting your Endurance.

IMPORTANT POINTS:

- Aspects #1, #2, #3 & #7 (golf related areas of physical conditioning) directly affect Endurance.

ILLUSTRATIONS FOR GOLF PERFORMANCE INDEX #4—ENDURANCE

The *condition* of each Aspect of a Golfer's Athleticism listed below that is shaded directly influences the Golf Performance Index in the right column that is shaded.

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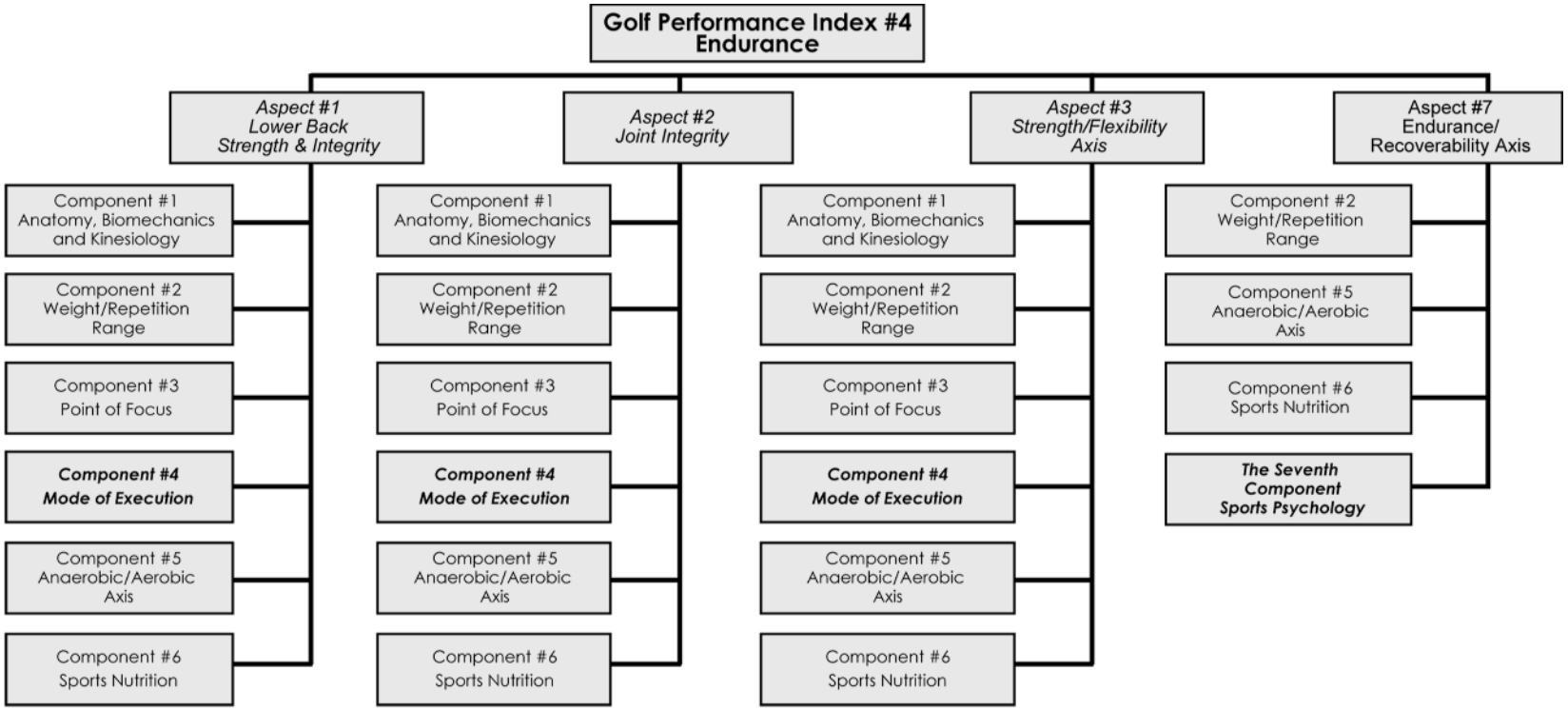
1 *Lower Strength & Back Integrity*	**1** Power
2 *Joint Integrity*	**2** Timing
3 *Strength/Flexibility Axis*	**3** Accuracy
4 Kinesthetic Awareness	**4** Endurance
5 Coordination	**5** Recoverability—*Tournaments Only*
6 Tempo/Timing Axis	
7 *Endurance/Recoverability Axis*	

Learning *which* Aspects influence *which* Golf Performance Indexes and then how the *condition* of each Aspect influences each Golf Performance Index is essential to developing an optimum Golf Specific Fitness Program. Since the exact influence an Aspect's condition has on each Golf Performance Index can vary considerably from golfer to golfer, you must learn this process as it relates to you and your golf performance.



IMPORTANT POINTS:

- If a decline in Endurance {Clubhead Speed × Timing × Accuracy ÷ Average Putts/Hole (on 2nd nine hole round)} ÷ {Clubhead Speed × Timing × Accuracy ÷ Average Putts/Hole (average of all 1st nine hole rounds)} occurs, the Condition of the Aspects of a Golfer's Athleticism that support Endurance should be re-assessed.
- Once a particular Aspect is diagnosed to be the problem, you should review the Golf Specific Fitness Components that influence its condition. The variation of the Golf Specific Fitness Component you use is what should be investigated.
- Aspects in *italics* indicate the Condition of that Aspect has an indirect effect on the Golf Performance Index above.
- Components in *italics* indicate that Component has an indirect effect on the Aspect of a Golfer's Athleticism it affects.

GOLF PERFORMANCE INDEX #5—RECOVERABILITY

Recoverability is primarily a measurement for golfers who regularly play in tournaments that require them to play two or more consecutive days in a row. As with Endurance, I used to calculate my golf clients' Recoverability by dividing their second 18 hole score, back into their *average* first 18 hole score. If their score on the second 18 holes was consistently as low or lower than their *average* first 18 hole score, I considered their Recoverability to be satisfactory. But the problem with this approach was the same as that of the old Endurance Formula in that it didn't take into consideration that *score does not always accurately (nor directly) reflect a golfer's energy level.*

As with Endurance, when measuring Recoverability as it relates to golf performance, we must measure the areas of golf performance that require the most physical energy to maintain, which are Clubhead Speed, Timing and Accuracy (Driving Accuracy and Greens in Regulation ÷ 2). Again, these areas not only require the most physical energy to maintain, but they're the areas affected the *earliest* and the *most drastically,* when your energy level begins to decline. Therefore the Recoverability Formula is almost identical to the Endurance Formula.

THE RECOVERABILITY FORMULA

{Clubhead Speed × Timing × Accuracy ÷ Average Putts/Hole (on 2nd, 3rd or 4th 18 hole round)}

÷

{Clubhead Speed × Timing × Accuracy ÷ Average Putts/Hole (average of all 1st 18 hole rounds)} = RECOVERABILITY PERCENTAGE (NOT TO EXCEED 100%)

Remember, the Recoverability Formula above compares the physical energy you have on your second, third and fourth 18 holes to the physical energy you *average on your first 18 holes.*

As previously stated, if you're not fully recovering from your previous round, you'll run out of gas sooner on the following round. While this is obviously a Recoverability issue, it may appear to be an Endurance issue, because it could manifest itself in the Endurance Index. In fact, most Endurance problems among PGA Tour Players are actually Recoverability problems manifesting themselves in the Endurance Index. Again, it's up to you and/or your PPES© Certified Fitness Instructor to make an accurate diagnosis. Nevertheless, the Recoverability Index measures fluctuations primarily in a

golfer's Physical Conditioning.

The Recoverability Index is influenced *directly* the golfer's golf related areas of physical conditioning (Aspects #1, #2, #3 & #7).

At this point, it may be helpful to return to Chapter One and review the Endurance/Recoverability Axis to consider how it may be affecting your Recoverability.

IMPORTANT POINTS:

- Aspects #1, #2, #3 & #7 (golf related areas of physical conditioning) directly affect Recoverability.

ILLUSTRATIONS FOR GOLF PERFORMANCE INDEX #5—RECOVERABILITY

The *condition* of each Aspect of a Golfer's Athleticism listed below that is shaded directly influences the Golf Performance Index in the right column that is shaded.

1 *Lower Strength & Back Integrity*

2 *Joint Integrity*

3 *Strength/Flexibility Axis*

4 Kinesthetic Awareness

5 Coordination

6 Tempo/Timing Axis

7 *Endurance/Recoverability Axis*

The Golf Performance Index below that is shaded, is directly affected by the *condition* of the Aspects of a Golfer's Athleticism in the left column that are shaded and *indirectly affected by those in italics.*

1 Power

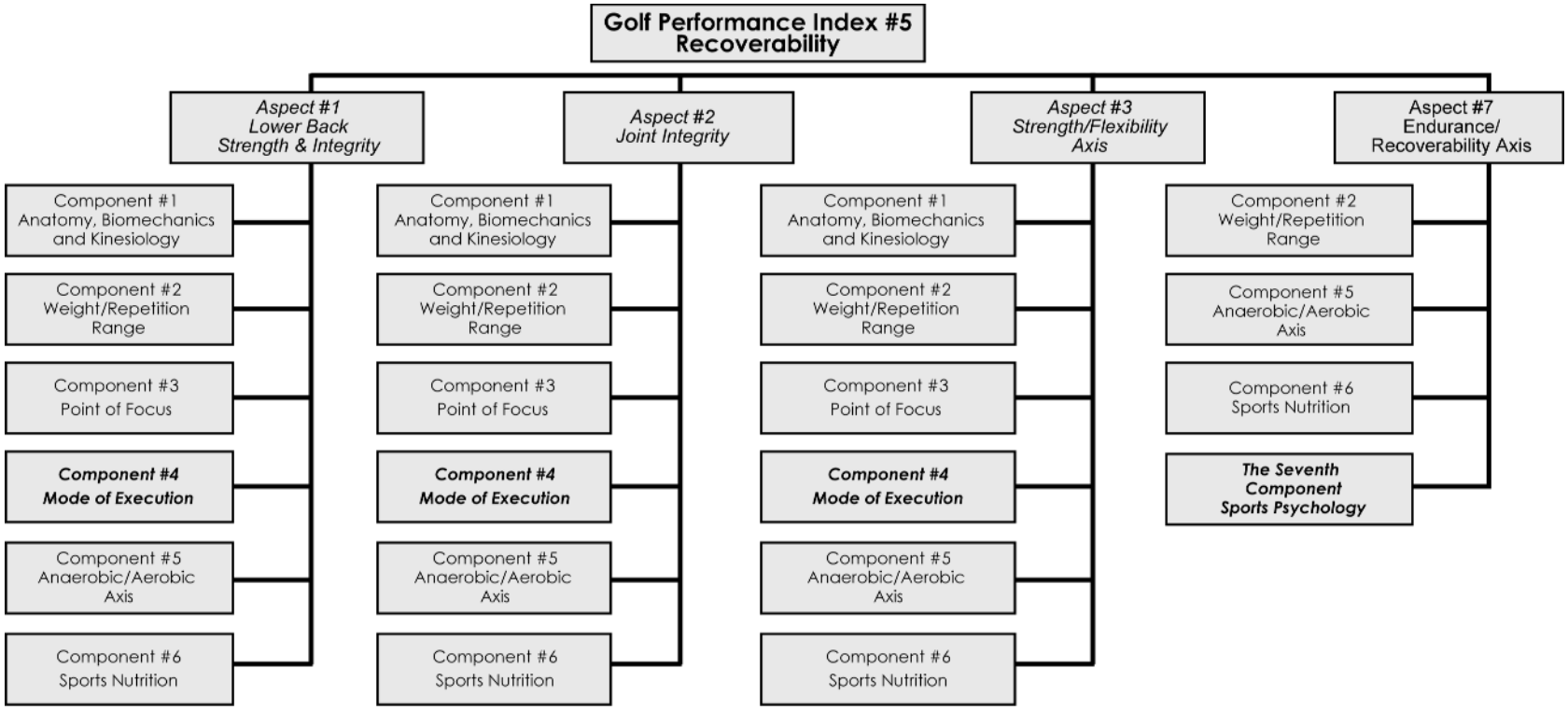
2 Timing

3 Accuracy

4 Endurance

5 Recoverability—*Tournaments Only*

Learning *which* Aspects influence *which* Golf Performance Indexes and then how the *condition* of each Aspect influences each Golf Performance Index is essential to developing an optimum Golf Specific Fitness Program. Since the exact influence an Aspect's condition has on each Golf Performance Index can vary considerably from golfer to golfer, you must learn this process as it relates to you and your golf performance.



IMPORTANT POINTS:

- If a decline in Recoverability {Clubhead Speed × Timing × Accuracy ÷ Average Putts/Hole (on 2nd, 3rd, or 4th 18 hole round)} ÷ {Clubhead Speed × Timing × Accuracy ÷ Average Putts/Hole (average of all 1st 18 hole rounds)} occurs, the Condition of the Aspects of a Golfer's Athleticism that support Recoverability should be re-assessed.
- Once a particular Aspect is diagnosed to be the problem, you should review the Golf Specific Fitness Components that influence its condition. The variation of the Golf Specific Fitness Component you use is what should be investigated.
- Aspects *italics* indicate the Condition of that Aspect has an indirect effect on the Golf Performance Index above.
- Components in *italics* indicate that Component has an indirect effect on the Aspect of a Golfer's Athleticism it affects.

Golf Performance Index Calculation Formulas

As stated in Chapter One:

- Aspects #1, #2, #3, and #7 are considered areas of a golfer's Physical Condition.
- Aspects #4, #5 and #6 are considered areas of a golfer's Athletic Ability.

Since Golf Performance Indexes #2 and #3 (Timing & Accuracy) measure fluctuations in *golf related* areas of athletic ability, they primarily reflect the condition of and reveal problems in Aspects #4, #5 and #6. Golf Performance Indexes #4 and #5 (Endurance & Recoverability) on the other hand measure fluctuations in *golf related* areas of physical conditioning. Therefore they (primarily) reflect the condition of and reveal problems in Aspects #1, #2, #3 and #7. Golf Performance Index #1 (Power) is a combination of both physical conditioning and athletic ability, so it can reflect the condition of or reveal problems in any one, or all Seven Aspects of a Golfer's Athleticism. Knowing which Aspects are responsible for fluctuations in each Golf Performance Index allows you to address problems in those Aspects by adjusting the Golf Specific Fitness Components that influence them. The Aspect Diagnosis/Component Prescription Charts following the explanation of each Golf Performance Index were designed to assist you in the diagnostic and prescription process.

Again, the Calculation Formulas for the Individual Golf Performance Indexes are as follows:

- Power = Clubhead Speed
- Timing = Driving Distance ÷ Clubhead Speed
- Accuracy = Driving Accuracy % + Greens in Regulation % ÷ 2
- Endurance = {Clubhead Speed × Timing × Accuracy ÷ Average Putts/Hole (on 2nd nine hole round)} ÷ {Clubhead Speed × Timing × Accuracy ÷ Average Putts/Hole (average of all 1st nine hole rounds)}
- Recoverability = {Clubhead Speed × Timing × Accuracy ÷ Average Putts/Hole (2nd, 3rd or 4th 18 hole round)} ÷ {Clubhead Speed × Timing × Accuracy ÷ Average Putts/Hole (average of all 1st 18 hole rounds)}

The Primary and Overall Golf Performance Ratings

While the individual Golf Performance Indexes reveal the condition of the Seven Aspects by measuring specific areas of golf performance, the Primary and Overall Golf Performance Ratings reveal your Golf Specific Fitness Level by measuring golf performance *as a whole*.

Power or an increase thereof is measured in terms of Clubhead Speed, which usually results in increased Distance. So Power is probably the most popular reason golfers begin exercise programs. But as previously stated, the game of golf rewards golfers for increases in Distance, yet penalizes them when that Distance results in a loss of Accuracy and/or the ability to execute, on and around the green. For this reason, the Primary and Overall Golf Performance Ratings are calculated with a formula that factors in 18 Hole Score and Putting Average with the Five Golf Performance Indexes. This also ensures the Golf Performance Ratings will neither reward nor penalize you excessively, *or more than your actual golf score would reflect*.

The Primary Golf Performance Rating (PGPR)

In the *Primary* Golf Performance Rating (PGPR), an increase in Power (Clubhead Speed) is qualified as being either beneficial to the golfer's game, or detrimental to their game, by its influence on Golf Performance Indexes #2, #3, #4, #5 and Putting Average.

Calculation Formula for the Primary Golf Performance Rating (PGPR)

Clubhead Speed ÷ 18 Hole Score × Timing Factor × Accuracy % × Endurance % × Recoverability % ÷ Putting Average (Avg. Putts/Hole) = PGPR (See the Formula View Chart at the end of this Chapter)

- A *higher number* for the Primary Golf Performance Rating (PGPR) indicates a *higher* golf specific fitness level.

Notice in the formula that right from the beginning Clubhead Speed is divided by 18 hole score. This initial calculation produces the *base number,* which is multiplied by the other Golf Performance Indexes to obtain the PGPR.

This initial calculation (Clubhead Speed ÷ by 18 Hole Score) is considered the *short version* of the Golf Performance Rating Formula. Why? *Because it allows you to see if your 18 hole score is decreasing as your Clubhead Speed is increasing, which is obviously the desired result.* In short, this calculation alone enables you to determine if your fitness program is helping your golf game or hurting it, as a whole. (See the Formula View Chart at the end of this Chapter)

THE NEXT FIVE CALCULATIONS IN THE PRIMARY GOLF PERFORMANCE RATING FORMULA FURTHER REDUCE THE PRIMARY GOLF PERFORMANCE RATING BY FACTORING IN MORE SPECIFIC AREAS OF GOLF PERFORMANCE.

The second calculation in the PGPR formula involves multiplying the number produced by the first calculation (Clubhead Speed ÷ 18 Hole Score) by the Timing Factor. This allows the PGPR to reflect whether or not your new increased Clubhead Speed is as efficient as your previous (pre-exercise routine) Clubhead Speed. Since the Timing Factor can range from below 2.2 to more than 2.7, it can significantly increase, or decrease your PGPR. (See the Formula View Chart at the end of this Chapter)

The third calculation in the PGPR formula involves multiplying the number produced by the previous calculation (Clubhead Speed ÷ 18 Hole Score × Timing Factor), by Accuracy %, which reduces the PGPR by the percentage of Accuracy that is lost. This allows the PGPR to reflect whether or not your new increased Clubhead Speed is as *physically* manageable as your previous (pre-exercise routine) Clubhead Speed. (See the Formula View Chart at the end of this Section)

The fourth calculation in the PGPR formula involves multiplying the number produced by the previous calculation (Clubhead Speed ÷ 18 Hole Score × Timing Factor × Accuracy %), by Endurance %, which reduces the PGPR by the percentage of Endurance that is lost. (See the Formula View Chart at the end of this Section)

The fifth calculation in the PGPR formula involves multiplying the number produced by the previous calculation (Clubhead Speed ÷ 18 Hole Score x Timing Factor × Accuracy % × Endurance %), by Recoverability %, which reduces the PGPR by the percentage of Recoverability that is lost. (See the Formula View Chart at the end of this Chapter)

THE FINAL CALCULATION HAS A POWERFUL INFLUENCE ON THE PGPR; IT CAN SIGNIFICANTLY INCREASE IT, OR DECREASE IT.

The final calculation in the PGPR formula involves dividing your Putting Average (average putts per hole) back into the number produced by the fifth calculation (Clubhead Speed ÷ 18 Hole Score × Timing Factor × Accuracy % × Endurance % × Recoverability %). *Even a slight increase in Putting Average during the strength building process can significantly reduce your PGPR. (See the Formula View Chart at the end of this Chapter)*

By design, the Timing Factor, *which measures the efficiency of your golf swing*, Accuracy, *which measures the manageability of your golf swing* and Putting Average, *which indicates whether or not the finer Aspects of a Golfer's Athleticism (Aspects #4, #5 & #6) are being maintained*, have a powerful influence on the PGPR. The purpose of this is to force you to prioritize *improving golf performance* during the strength building process, as opposed to goals that are more physical in nature. This PGPR Formula allows all areas of your physical conditioning (Aspects #1, #2, #3, & #7) and all areas of your athletic ability (Aspects #4, #5, & #6) to influence the Primary Golf Performance Rating (PGPR).

REMEMBER:

YOUR PRIMARY GOLF PERFORMANCE RATING (PGPR) IS YOUR ACTUAL GOLF SPECIFIC FITNESS LEVEL**.**

THE OVERALL GOLF PERFORMANCE RATING (OGPR)

The OGPR is obtained by dividing your PGPR *back into* your Clubhead Speed. As a result, it measures your golf performance, relative to your Power (Clubhead Speed). The function of the OGPR is similar to that of the handicap system, in that it levels the playing field between golfers with higher Clubhead Speeds and those with lower Clubhead Speeds, by preventing the higher Clubhead Speeds of younger, stronger golfers from being used as a strength. The OGPR also allows the Golf Performance levels (Golf Specific Fitness Levels) of golfers with different Clubhead Speeds to be compared. Since the Overall Golf Performance Rating (OGPR) levels the playing field between golfers at different strength levels (golfers with different Clubhead Speeds), it is the Golf Performance Rating used to determine the winners of The Playfit Golf Performance Tournaments.

A good example of how the OGPR works can be seen on the chart at the end of this Chapter. The chart shows the golfer's PGPR calculated on 3/5/2001 to be significantly higher than that calculated on 1/8/2001. This is obviously because their Clubhead Speed was much greater on 3/5/2001, which produced a higher numerical value from the onset. But notice when their PGPR was divided back into their Clubhead Speeds, the OGPR for those two dates (1/8 and 3/5) are equal. This indicates the Golfer's *golf related areas of physical conditioning and athletic ability* were on as high a level for their 110 MPH Clubhead Speed, as they were for their 125 MPH Clubhead Speed. The Overall Golf Performance Rating (OGPR) also allows golfers at different strength levels to compete, just as high handicap golfers compete with low handicap golfers by subtracting their handicaps from their score.

CALCULATION FORMULA FOR THE OVERALL GOLF PERFORMANCE RATING (OGPR)

Clubhead Speed ÷ PGPR = OGPR (See the Formula View Chart at the end of this Chapter)

- A *lower number* for the Overall Golf Performance Rating (OGPR) indicates a *higher* golf specific fitness level.

REMEMBER:

YOUR OVERALL GOLF PERFORMANCE RATING (OGPR) IS YOUR RELATIVE GOLF SPECIFIC FITNESS LEVEL.

The chart on the following page is called the Golf Performance Rating Explanation Chart. This chart displays the Golf Performance Rating Formulas on the left and provides an explanation of each formula on the right, thus helping you acquire a better understanding of their diagnostic potential.

Calculation	PRIMARY GOLF PERFORMANCE RATING (PGPR) FORMULA	EXPLANATION OF CALCULATIONS
1	Power (Average Clubhead Speed)	The Power Index indicates a golfer's strength level. By dividing the golfer's Power by their average 18 hole score, a factor is produced that indicates how well the golfer performs for their strength level. This factor is also the base numerical value by which the remaining Indexes are multiplied in the PGPR Formula. This initial calculation is considered is the short version of the Golf Performance Rating Formula because it allows golfers to observe if their score is decreasing as their Clubhead speed (reflecting strength) is increasing, which is the desired result. (Aspects 1, 2, 3, 4, 5 & 7)
÷	÷	
2	(18 Hole Score) For Playfit Golf Performance Tournaments (18 Hole Score minus Handicap) is used.	
×	×	The Timing Index measures the efficiency of the golf swing. By multiplying a golfer's Power (Clubhead speed) by the Timing Factor, the efficiency of their golf swing is factored into the PGPR Formula. (Aspects #1, #2, #3, #4, #5 & #7)
3	Timing Factor (Driving Distance ÷ Clubhead Speed)	
×	×	The Accuracy Index measures the manageability of the golf swing. By multiplying the factor produced by the previous calculation, by the Accuracy Index, the manageability of their golf swing is factored into the PGPR Formula. (Aspects #1, #2, #3, #4, #5 & #7)
4	Accuracy (Driving Accuracy % + Greens in Regulation % ÷ 2)	
×	×	The Endurance Index measures the level of golf performance a golfer displays on the second nine holes to that which they average on their first nine holes. By multiplying the factor produced by the previous calculation, by the Endurance Index, the golfer's Endurance is factored into the PGPR Formula. (Aspects #1, #2, #3 & #7)
5	Endurance {Clubhead Speed × Timing × Accuracy ÷ Average Putts/Hole (on 2nd nine holes)} ÷ {Clubhead Speed × Timing × Accuracy ÷ Average Putts/Hole (average 1st nine holes)}	
×	×	The Recoverability Index measures the level of golf performance a golfer displays on the second, third and fourth 18 hole rounds of a tournament, to that which they average on their first 18 hole round. By multiplying the factor produced by the previous calculation, by the Recoverability Index, the golfer's Recoverability is factored into the PGPR Formula. (Aspects #1, #2, #3 & #7)
6	Recoverability {Clubhead Speed × Timing × Accuracy ÷ Average Putts/Hole (on 2nd, 3rd & 4th 18 holes)} ÷ {Clubhead Speed × Timing × Accuracy ÷ Average Putts/Hole (average 1st 18 holes)}	
÷	÷	By design, the Putting Average stat has a powerful influence on the Primary Golf Performance Rating Formula. Dividing the sum of the previous calculation by the putting average stat, allows a golfer's putting performance to be factored into the PGPR Formula. Again, this is by design because it forces golfers to prioritize the finer Aspects of a Golfer's Athleticism (Aspects #4, #5 & #6) during the strength building process.
7	Average Putts/Hole	
=	=	Since the Primary Golf Performance Rating is obtained by factoring in Power, Timing, Accuracy, Endurance, Recoverability, Eighteen Hole Score and Putting Average, it reveals a golfer's Golf Specific Fitness Level by factoring in all relevant areas of golf performance. So the Primary Golf Performance Rating is simply a factor, or a numerical value that indicates a golfer's Golf Specific Fitness Level. The PGPR is the golfer's actual Golf Specific Fitness Level because it is based on their actual level of Power, which again is their Clubhead Speed.
PGPR	Primary Golf Performance Rating (PGPR)	
Calculation	**Overall Golf Performance Rating (OGPR) Formula**	**EXPLANATION OF CALCULATIONS**
1	Power (Average Clubhead Speed)	By dividing the PGPR back into the golfer's Power, a common factor that is relative to each golfer's level of Power (Clubhead Speed) is produced. This calculation levels the playing field much like a golfer's handicap levels the playing field between high and low handicap golfers. Since the OGPR is relative to a golfer's Power, it allows golfers to compare their Golf Specific Fitness Level to that of other golfers, regardless of their strength level.
÷	÷	
2	Primary Golf Performance Rating (PGPR)	
=	=	
OGPR	Overall Golf Performance Rating (OGPR)	The OGPR is the golfer's relative Golf Specific Fitness Level, because it is relative to his/her Power, i.e., Clubhead Speed.

SUMMARY

The Five Golf Performance Indexes both individually and collectively provide insight into the *condition* of the Seven Aspects of a Golfer's Athleticism, which ultimately determines the golfer's Golf Specific Fitness Level. The key to developing a high level of golf performance through fitness is in monitoring fluctuations in the individual Golf Performance Indexes and then accurately evaluating the condition of the (your) Seven Aspects. Remember, this process requires you to learn *for yourself* which Aspects are responsible for fluctuations in each Golf Performance Index.

The two charts at the end of this chapter illustrate two different manners in which your golf performance data will be displayed by the PPES© Software *after several entries*. The first of the two charts displays your golf performance data in *Formula View*. The purpose of this chart is to give you an example of the entire Golf Performance calculation process and allow you to see how the Overall Golf Performance Rating works in comparison to the Primary Golf Performance Rating. With these examples, neither Endurance nor Recoverability was calculated, but rather were factored in at 100%. Note though that the Primary and Overall Golf Performance Ratings would drop significantly if either the Endurance or Recoverability Index were to read below 100%.

The second of these two charts displays your golf performance data in *Actual View*. This chart provides an example of how your Golf Performance Indexes, your Primary Golf Performance Rating and your Overall Golf Performance Rating will be displayed by the PPES© Software. Remember, these charts are only examples designed to familiarize you with the process of viewing your golf performance data. The PPES© Software functionality is explained in greater detail in Chapter Six.

REMEMBER:

- YOUR PRIMARY GOLF PERFORMANCE RATING IS YOUR **ACTUAL** GOLF SPECIFIC FITNESS LEVEL.
- YOUR OVERALL GOLF PERFORMANCE RATING IS YOUR **RELATIVE** GOLF SPECIFIC FITNESS LEVEL.

THE VERY LAST CHART IN THIS CHAPTER IS THE FIRST OF TWO CAUSE/EFFECT CHARTS IN THE PPES© BOOK. IT IS DESIGNED TO HELP YOU UNDERSTAND THE RELATIONSHIP BETWEEN THE SEVEN ASPECTS OF A GOLFER'S ATHLETICISM, THE SIX COMPONENTS OF A GOLF SPECIFIC FITNESS PROGRAM AND THE FIVE GOLF PERFORMANCE INDEXES. THE DIAGNOSTIC RELATIONSHIP IS FROM INDEX TO ASPECT AND THE PRESCRIPTION RELATIONSHIP IS FROM COMPONENT TO ASPECT. *THE SECOND CAUSE/EFFECT CHART IN THE PPES© BOOK IS IN CHAPTER FIVE.*

PLAYFIT GOLF PERFORMANCE RATING—*FORMULA VIEW*

PRIMARY GOLF PERFORMANCE RATING FORMULA

	base number		calculation 1		calculation 2		calculation 3		calculation 4		calculation 5		calculation 6		
Date of Golf Round	Clubhead Speed	÷	Eighteen Hole Score	x	Timing Factor	x	Accuracy Percentage	x	Endurance Percentage	x	Recoverability Percentage	÷	Average Putts/Hole	=	PGPR
1/1/2001	110	÷	71	x	2.53	x	72.20%	x	100%	x	100%	÷	1.773	=	1.60
1/8/2001	110	÷	70	x	2.53	x	69.95%	x	100%	x	100%	÷	1.802	=	1.53
1/15/2001	115	÷	70	x	2.47	x	68.30%	x	100%	x	100%	÷	1.742	=	1.58
1/22/2001	120	÷	70	x	2.38	x	66.20%	x	100%	x	100%	÷	1.749	=	1.53
1/29/2001	120	÷	69	x	2.39	x	68.65%	x	100%	x	100%	÷	1.779	=	1.59
2/5/2001	120	÷	69	x	2.39	x	70.55%	x	100%	x	100%	÷	1.74	=	1.68
2/12/2001	125	÷	69	x	2.38	x	66.70%	x	100%	x	100%	÷	1.749	=	1.64
2/19/2001	125	÷	70	x	2.37	x	67.75%	x	100%	x	100%	÷	1.751	=	1.64
2/26/2001	125	÷	69	x	2.35	x	69.70%	x	100%	x	100%	÷	1.726	=	1.71
3/5/2001	125	÷	69	x	2.38	x	69.30%	x	100%	x	100%	÷	1.717	=	1.74
Average Reading	*119.5*		*69.63*		*2.42*		*68.93*		*100%*		*100%*		*1.752*		*1.62*

CALCULATIONS FOR THE GOLF PERFORMANCE INDEXES ARE:

1. Power = Clubhead Speed (in MPH)
2. Timing = Driving Distance ÷ Clubhead Speed
3. Accuracy = Driving Accuracy % + GIR % ÷ 2
4. Endurance = {Clubhead Speed × Timing × Accuracy ÷ Average Putts/Hole (on 2nd nine holes)} ÷ {Clubhead Speed × Timing × Accuracy ÷ Average Putts/Hole (on aver age 1st nine holes)}
5. Recoverability = {Clubhead Speed × Timing × Accuracy ÷ Average Putts/Hole (on 2nd, 3rd or 4th eighteen holes)} ÷ Clubhead Speed × Timing × Accuracy ÷ Average Putts/Hole (on average 1st eighteen holes)}

OVERALL GOLF PERFORMANCE RATING FORMULA

Date of Golf Round	Clubhead Speed	÷	PGPR	÷	OGPR
1/1/2001	110	÷	1.60	÷	68.75
1/8/2001	110	÷	1.53	÷	71.8
1/15/2001	115	÷	1.58	÷	72.78
1/22/2001	120	÷	1.53	÷	78.43
1/29/2001	120	÷	1.59	÷	75.47
2/5/2001	120	÷	1.68	÷	71.4
2/12/2001	125	÷	1.64	÷	76.2
2/19/2001	125	÷	1.64	÷	76.2
2/26/2001	125	÷	1.71	÷	73
3/5/2001	125	÷	1.74	÷	71.8
	119.5		*1.62*		*73.58*

IMPORTANT POINTS:

A higher number is preferred for the Primary Golf Performance Rating (PGPR) shown at the top of the page.

A lower number is preferred for the Overall Golf Performance Rating (OGPR) shown above right.

The **PGPR** indicates a golfer's actual golf specific fitness level.

The **OGPR** on the other hand indicates a golfer's golf specific fitness level, relative to their Power. By dividing each golfer's **PGPR** back into their Clubhead Speed, their golf performance rating becomes relative to their clubhead speed (power). This levels the playing field between golfers with higher Clubhead Speeds and those with lower Clubhead Speeds, just as it does when high handicap golfers subtract their handicap from their total score, making it comparable to the score of lower handicap golfers. For example, the Overall Golf Performance Rating (OGPR) above indicates the Golfer's Golf Specific Fitness Level on 1/8/2001 was as high for their 110 MPH Clubhead Speed as it was on 3/5/2001 with their 125 MPH Clubhead Speed. So the OGPR ultimately indicates a golfer's Golf Specific Fitness Level *relative to their level of strength,* i.e., Clubhead Speed (Power) Since the Overall Golf Performance Rating (OGPR) levels the playing field between golfers with different Clubhead Speeds, it is the Golf Performance Rating used to determine the winners of The Playfit Golf Performance Championship Tournament.

PLAYFIT GOLF PERFORMANCE RATING—*ACTUAL VIEW*

	A	B	C	D	E	F	G
Date of Golf Round	Power	Timing	Accuracy	Endurance	Recoverability	PGPR	OGPR
1/1/2001	110	2.53	72.20%	100%	100%	1.6	68.75
1/8/2001	110	2.53	69.95%	100%	100%	1.53	71.8
1/15/2001	115	2.47	68.30%	100%	100%	1.58	72.78
1/22/2001	120	2.38	66.20%	100%	100%	1.53	78.43
1/29/2001	120	2.39	68.65%	100%	100%	1.59	75.47
2/5/2001	120	2.39	70.55%	100%	100%	1.68	71.4
2/12/2001	125	2.38	66.70%	100%	100%	1.64	76.2
2/19/2001	125	2.37	67.75%	100%	100%	1.64	76.2
2/26/2001	125	2.35	69.70%	100%	100%	1.71	73
3/5/2001	125	2.38	69.30%	100%	100%	1.74	71.8
Average Reading	*119.5*	*2.42*	*68.93%*	*100%*	*100%*	*1.62*	*73.58*

Above is an example of how the Golf Performance Indexes will appear on the PPES© Software after several entries. The previous page was an example of the Golf Performance Indexes displayed in Formula View. Remember, the purpose of the Formula View option is simply to allow you to view your Golf Performance Indexes as they appear in the actual formula used to obtain the Primary Golf Performance Rating (PGPR). The Calculations for the Individual Golf Performance Indexes (Golf Specific Fitness Stats), the Primary Golf Performance Rating (PGPR) and the Overall Golf Performance Rating (OGPR) are as follows:

COLUMN A - Power = Clubhead Speed (in MPH).
COLUMN B - Timing = Driving Distance ÷ Clubhead Speed.
COLUMN C - Accuracy = Driving Accuracy % + Greens in Regulation % ÷ 2.
COLUMN D - Endurance = {Clubhead Speed × Timing × Accuracy ÷ Average Putts/Hole (on 2nd nine hole round)} ÷ {Clubhead Speed × Timing × Accuracy ÷ Average Putts/Hole (average of all 1st nine hole rounds)}
COLUMN E - Recoverability = {Clubhead Speed × Timing × Accuracy ÷ Average Putts/Hole (2nd, 3rd, or 4th 18 hole round)} ÷ {Clubhead Speed × Timing × Accuracy ÷ Average Putts/Hole (average of all 1st 18 hole rounds)}
COLUMN F - PGPR = Clubhead Speed ÷ 18 Hole Score × Timing × Accuracy % × Endurance % × Recoverability % ÷ Average Putts/Hole.
COLUMN G - OGPR = Clubhead Speed ÷ PGPR.

A HIGHER NUMBER IS PREFERRED FOR THE PRIMARY GOLF PERFORMANCE RATING (PGPR) IN COLUMN F—YOUR ACTUAL GOLF SPECIFIC FITNESS LEVEL.

A LOWER NUMBER IS PREFERRED FOR THE OVERALL GOLF PERFORMANCE RATING (OGPR) IN COLUMN G—YOUR RELATIVE GOLF SPECIFIC FITNESS LEVEL.

The PGPR (Row F) evaluates golfer's athletically with Golf Performance Indexes B & C (Timing & Accuracy), which indicate the efficiency and the manageability of their golf swing at the current Clubhead Speed. And, the PGPR evaluates golfers physically with Golf Performance Indexes D & E (Endurance & Recoverability), which indicate the manageability of their physical condition, relative to golf performance. In short, the PGPR rates golfers by the degree to which their physical condition and athletic ability relative to golf performance are maintained, as their Clubhead Speed (which reflects strength) increases.

The OGPR (Row G) indicates a golfer's golf specific fitness level, relative to their Power. By dividing each golfer's PGPR back into their Clubhead Speed, their golf performance rating becomes relative to their Clubhead Speed (Power). This levels the playing field between golfers with higher Clubhead Speeds and those with lower Clubhead Speeds, just as it does when high handicap golfers subtract their handicap from their total score, making it comparable to the score of lower handicap golfers.

PPES© CAUSE/EFFECT CHART #1

PPES© Book Chapter Two	The numbers below represent the Aspects affected by the Golf Specific Fitness Component directly to their left.	PPES© Book Chapter One	The numbers below represent the Golf Performance Indexes influenced by the Aspect directly to their left.	PPES© Book Chapter Three
The Six Golf Specific Fitness Components		**The Seven Aspects of a Golfer's Athleticism**	Indexes in Italics indicate an indirect effect.	**The Five Golf Performance Indexes**
1. Ana., Biom. & Kinesiology	1, 2 & 3	1. Lower Back Integrity	1, 2, 3, ***4 & 5***	1. Power
2. Weight/Repetition Range	1, 2, 3, 4, 5, 6 & 7	2. Joint Integrity	1, 2, 3, ***4 & 5***	2. Timing
3. Point of Focus	1, 2, 3, 4, 5 & 6	3. Strength/Flexibility Axis	1, 2, 3, ***4 & 5***	*3. Accuracy (A + B ÷ 2)* *A = Driving Accuracy %* *B = Greens in Regulation %*
4. Mode of Execution	1, 2, 3, 4, 5 & 6	4. Kinesthetic Awareness	1, 2, 3 and Putting Ave.	
5. Anaerobic/Aerobic Axis	1, 2, 3, 4, 5 & 7	5. Coordination	1, 2 & 3	4. Endurance
6. Sports Nutrition	1, 2, 3 & 7	6. Tempo/Timing Axis	1, 2 & 3	5. Recoverability (Multiple Day Tournaments Only)
(7th.) Sports Psychology *The 7th. Component*	4, 5, 6 & 7	7. Endurance/ Recoverability Axis	***1, 2, 3***, 4 & 5	
Each Golf Specific Fitness Component listed above either directly or indirectly affects the *condition* of the Aspects of a Golfer's Athleticism listed in the column directly to its right.	**Influence** → ← **Prescription**	The *condition* of each Aspect of a Golfer's Athleticicsm listed above either directly or indirectly influences the Golf Performance Indexes listed in the column directly to its right.	**Influence** → ← **Diagnosis**	Each Golf Performance Index listed above is either directly or indirectly influenced by the *condition* of one or more of the Seven Aspects of a Golfer's Athleticism. Therefore, they are capable of revealing the condition of the Seven Aspects of a Golfer's Athleticism.

By monitoring the Five Golf Performance Indexes and the Four Main Golf Stats, you can learn to determine whether your fitness program is helping your golf game, or hurting it. If a decline in golf performance is indicated by one of the Five Golf Performance Indexes, or the Four Main Golf Stats, you and/or your PPES© Certified Personal Fitness Instructor can review the information and determine which of the Seven Aspects of a Golfer's Athleticism is/are responsible. Once a diagnosis has been made, the Golf Specific Fitness Components that target the particular Aspect (s) in question can be modified/adjusted to resolve the problem, i.e., *bring the condition of the Aspect (s) in question up to par and into balance with that of the others*.

Over time, you will become familiar with how various golf specific fitness strategies (and variations of The Golf Specific Fitness Components) affect the *condition* of the Seven Aspects of a Golfer's your) Athleticism and how the *condition* of the Seven Aspects of a Golfer's (your) Athleticism in-turn influences the Five Golf Performance Indexes and the Four Main Golf Stats. It is with this information and through this process that you'll be able to personalize and continually refine your Golf Specific Fitness Program for Peak Golf Performance, regardless of the physical condition it helps you achieve.

Chapter Four

The Four Main Golf Stats

Chapter Four Learning Objectives:

- How the Four Main Golf Stats are influenced by the Golf Performance Indexes
- How the Four Main Golf Stats are influenced by the Seven Aspects of a Golfer's Athleticism
- How to calculate your Playfit Golf Rating

THE FOUR MAIN GOLF STATS

Golfers who begin exercise programs generally begin to feel stronger within a month or so and shortly thereafter find themselves striking the ball with more power. Most golfers interpret this as an improved golf game, while their Four Main Golf Stats indicate otherwise. This is a common misinterpretation, *but one that is virtually impossible to make when using the Playfit Golf Rating Formula to measure improvement.*

The purpose of this chapter is to provide you with some insight on how the Four Main Golf Stats are influenced by the Seven Aspects of a Golfer's Athleticism and to give you a simple method for determining (conclusively) whether your fitness program is helping your golf game or hurting it.

When speaking in terms of golf specific fitness, we consider the Four Main Golf Stats to be:

- Golf Stat #1 - Driving Distance
- Golf Stat #2 - Driving Accuracy
- Golf Stat #3 - Greens in Regulation (GIR)
- Golf Stat #4 - Putting Average (Average Putts per Round)

The reason that these four are considered to be the main ones is that both individually and collectively, they are capable of reflecting nearly all positive and negative fluctuations in golf performance without any help from the others. For example, if you make a birdie, it will either be the result of a one putt, a chip in, or hitting a par five in two and then two-putting, all of which would have already affected the Putting Average and/or the GIR Stat.

Conversely, if you were measuring sand saves, or scrambling for example, just being in the position to attempt either would indicate you had missed the green, which will already have had a negative effect on the GIR Stat. Since all additional golf stats such as birdies, eagles, sand saves etc. will have already affected (for better or worse) one or more of the Four Main Golf Stats, the others simply aren't necessary to determine if your fitness program is helping your golf game, or hurting it.

As previously stated, degrees of muscle tone, body fat percentage and cardiovascular health do not directly affect Driving Distance, Driving Accuracy, GIR, or Putting Average. They are areas of physical conditioning that *first* affect the Seven Aspects of a Golfer's Athleticism, which in turn directly

influence the Five Golf Performance Indexes and the Four Main Golf Stats.

Driving Distance

Driving Distance is directly proportionate to Clubhead Speed, the standard of measurement for Golf Performance Index #1 (Power). However, poor Timing does not allow a given Clubhead Speed to produce the amount of Distance it should. So, when Driving Distance drops, you should review Golf Performance Index #1 (Power), or Golf Performance Index #2 (Timing) and the Aspects of a Golfer's Athleticism that influence them.

When Driving Distance consistently drops late in a golf round, the problem can usually be traced back to poor Endurance, poor Recoverability, or both.

- Golf Performance Indexes #1 and #2 directly affect Driving Distance
- Golf Performance Indexes #4 and #5 indirectly affect Driving Distance

Driving Accuracy

The Driving Accuracy Stat is covered by Golf Performance Index #3, which combines Driving Accuracy and Greens in Regulation. When investigating a decrease in Driving Accuracy, be sure to remember that unmanageable Power and poor Timing negatively affect all forms of Accuracy and can ultimately be traced back to problems in one or more of the Seven Aspects.

When Driving Accuracy is consistently lower on the back nine, the problem can usually be traced back to poor Endurance, poor Recoverability, or both.

- Golf Performance Indexes #1 and #2 directly affect Driving Accuracy
- Golf Performance Indexes #4 and #5 indirectly affect Driving Accuracy

Greens in Regulation (GIR)

The GIR Stat is also covered in Golf Performance Index #3, which is calculated by combining Driving Accuracy and Greens in Regulation. When investigating decreases in the GIR Stat, be sure to remember that unmanageable Power and poor Timing negatively affect all forms of Accuracy and can ultimately be traced back to problems in one or more of the Seven Aspects.

When the GIR Stat is consistently lower on the back nine, the problem can usually be traced back to poor Endurance, poor Recoverability, or both.

- Golf Performance Indexes #1 and #2 directly affect the Greens in Regulation Stat
- Golf Performance Indexes #4 and #5 indirectly affect the Greens in Regulation Stat

Putting Average

Putting Average is your average number of putts per round and *is not directly influenced* by any of the Golf Performance Indexes, *but by Kinesthetic Awareness* (Aspect #4). Golfers whose Putting Average suffers when they begin exercising may not necessarily be in a putting slump, but are possibly dealing with a KA issue, *possibly due to a rapid strength increase (among other things)*. Power increases that have a negative effect on a golfer's KA is excessive and will have a negative effect on all of the finer Aspects of a Golfer's Athleticism. Again, slow, steady strength increases are preferred because they allow your sense of muscular feel (KA) to adjust proportionately. And like the other Three Main Golf Stats, Putting Average can drop late in a golf round, due to poor Endurance, poor Recoverability, or both.

Keep in mind though, a drop in the Putting Average Stat doesn't necessarily indicate a problem with KA. It should, however, at least raise the question. Still, when there is a drop in the Putting Average stat, golfers and/or their PPES© Certified Fitness Instructor should review the Seven Aspects and the Six Components to determine if their fitness strategies and/or exercise prescriptions are within the specified guidelines.

The Playfit Golf Rating

The Playfit Golf Rating is obtained with a formula comprised of the Four Main Golf Stats. Unlike the Golf Performance Ratings, the Playfit Golf Rating does not measure Endurance or Recoverability, rather it judges strength increases by the degree to which they are accurate. More specifically, it judges an increase in Driving Distance by its effect on Driving Accuracy, GIR and Putting Average, *which is basically weighing your Strength against your Accuracy.* By judging an increase in Driving Distance by its affect on Driving Accuracy, GIR and Putting Average, the Playfit Golf Rating compares your newly acquired strength (Power), to its effect on KA, Coordination and the Tempo/Timing Axis. The Playfit Golf Rating Formula is as follows:

Calculation Formula for The Playfit Golf Rating

Driving Distance × Driving Accuracy % × Greens in Regulation % ÷ Putting Average (Per Round) = Playfit Golf Rating.

A Higher Number for the Playfit Golf Rating indicates that a higher level of golf specific fitness is being maintained. The calculation formula for the Playfit Golf Rating judges an increase in Driving Distance by the percentage to which it is accurate. In fact, it allows an increase in Driving Distance that is unmanageable to penalize you disproportionately to your actual score.

Also, notice that Putting Average is divided back into the product of Driving Distance × Driving Accuracy % × GIR %. Factoring in Putting Average, allows your putting performance, which is supported by KA, to heavily influence your Playfit Golf Rating. This is by design because it forces you to prioritize the Seven Aspects of a Golfer's Athleticism, (particularly the finer Aspects i.e., #4, #5 & #6), during the strength building process, as opposed to pursuing goals that are more physical in nature, such as good muscle tone and a lower body fat percentage.

The chart on the following page allows you to see that an increase in Driving Distance that results in any loss of Accuracy whatsoever is considered by the Playfit Golf Rating to be a tremendous liability because it nearly always results in a lower level of golf performance.

For example, if you begin an exercise program and your Driving Distance increases from 250 yards to 260 yards, but your Driving Accuracy decreases from 78% to 71% (the equivalent of missing only one additional fairway per round), the product of the *initial calculation* (Driving Distance × Driving Accuracy %) in your Playfit Golf Rating will be reduced from 195 to 184 (the difference between 250 × 78% verses 260 × 71%), as the chart below indicates. If you're driving the ball 250 yards before you begin your fitness program, your drive has to increase a minimum of 25 yards for your Playfit Golf Rating to withstand an Accuracy loss of only one fairway per round.

Driving Distance	x	Driving Accuracy	=	Product
250	**x**	**78% (11 out of 14 Fairways)**	**=**	**195**
The examples below indicate the extent to which an increase in driving distance that results in missing only 1 additional fairway per round reduces the **product** of the initial calculation in the Playfit Golf Rating.				
Driving Distance	**x**	**Driving Accuracy**	**=**	**Product**
260	x	71% (10 out of 14 Fairways)	=	184
265	x	71% (10 out of 14 Fairways)	=	188
260	x	71% (10 out of 14 Fairways)	=	191
275	**x**	71% (10 out of 14 Fairways)	**=**	**195**

So the Playfit Golf Rating imposes a particularly harsh judgment on an increase in Driving Distance that results in any loss of Driving Accuracy whatsoever. The only way to improve your Playfit Golf Rating is to maintain your Driving Accuracy, your GIR % and your Putting Average, as your Driving Distance increases. Otherwise you're simply trading Accuracy for Distance, which (according to his Four Main Golf Stats and Playfit Golf Rating over the past five years) is what David Duval *may have done*. While David's Driving Distance increased, his Driving Accuracy and GIR % decreased. What's even more revealing is that his Putting Average worsened as well. As previously mentioned, exercising with heavy weights can reduce KA, which in turn would have a negative effect on putting.

Remember, a strength increase that has a negative effect *on any form of Accuracy* indicates your body is being trained for something other than the sport of golf. The idea is to gradually increase Driving Distance, while at worst maintaining (but preferably improving) Driving Accuracy, GIR and Putting Average. The bottom line is an increase in Driving Distance that negatively affects Driving Accuracy, GIR and Putting Average, indicates your strength increase has negatively affected one or more of the (your) Seven Aspects and therefore *is not 100% golf specific*.

The Playfit Golf Rating Chart on the following page displays the Four Main Golf Stats, the Playfit Golf Ratings and the Yearly Progress Factors of several Tour Professionals over a five year period. The Four Main Golf Stats of each Tour Player, from the 1999 Golf Season were used to calculate their initial Playfit Golf Rating. All subsequent increases and decreases are compared to that year. Each

Tour Pro's *approximate stats* were recorded some time following the PGA Tournament each year. *Permission to use this information was granted exclusively for illustration purposes; it does not indicate the PPES© is endorsed by the PGA Tour.*

The Yearly Progress Factor (for each Pro) indicates the difference in their Playfit Golf Rating from year to year. The Overall Progress Factor (for each Pro) indicates the difference in their Playfit Golf Rating from the first time it was calculated, to the present, or to the most recent calculation. Therefore, it is only listed in the current year.

THE PLAYFIT GOLF RATING

Year	Tour Professional	Driving Distance	×	Driving Accuracy	×	GIR%	÷	Ave. Putts/Round (Ave. Putts/Hole)	=	Playfit Golf Rating	Yearly Progress Factor	Overall Progress Factor
1999	Tiger Woods	293.1	×	71.30%	×	71.40%	÷	31.68 (1.76)	=	4.7		
2000	Tiger Woods	298	×	71.20%	×	75.20%	÷	30.90 (1.717)	=	5.16	Plus .46	
2001	Tiger Woods	295.1	×	67.30%	×	71.30%	÷	31.84 (1.769)	=	4.44	Minus .72	Minus .26
2002	Tiger Woods	298.1	×	69.20%	×	72.90%	÷	32.29 (1.794)	=	4.66	Plus .22	Minus .04
2003	Tiger Woods	299.5	×	62.70%	×	68.60%	÷	31.17 (1.732)	=	4.13	Minus .53	Minus .57
2004	Tiger Woods	302	×	57.3%	×	66.5%	÷	30.99 (1.734)	=	3.71	Minus .42	Minus .99
1999	David Duval	286.8	×	70.40%	×	69.40%	÷	31.46 (1.748)	=	4.45		
2000	David Duval	283.5	×	72.10%	×	70.50%	÷	31.52 (1.751)	=	4.62	Plus .17	
2001	David Duval	296.1	×	66.60%	×	68.90%	÷	31.91 (1.773)	=	4.25	Minus .37	Minus .20
2002	David Duval	292.2	×	62.50%	×	63.70%	÷	31.48 (1.749)	=	3.69	Minus .56	Minus .76
2003	David Duval	283	×	44.40%	×	54.40%	÷	31.89 (1.772)	=	2.14	Minus 1.55	Minus 2.31
2004	David Duval	287.4	×	53.1%	×	57.6%	÷	32.95 (1.831)		2.66	Plus .22	Minus 1.79
1999	Vijay Singh	284.3	×	66.80%	×	68.70%	÷	32.01 (1.781)	=	4.07		
2000	Vijay Singh	279.9	×	67.90%	×	71.10%	÷	32.02 (1.779)	=	4.22	Plus .15	
2001	Vijay Singh	285.9	×	68.00%	×	69.30%	÷	30.83 (1.713)	=	4.37	Plus .15	Plus .30
2002	Vijay Singh	285.5	×	67.20%	×	68.80%	÷	31.78 (1.766)	=	4.15	Minus .22	Plus .08
2003	Vijay Singh	301.9	×	63.40%	×	69.50%	÷	31.33 (1.741)	=	4.25	Plus .10	Plus .18
2004	Vijay Singh	301.1	×	60.6%	×	72.8%	÷	31.73 (1.763)	=	4.19	Minus .06	Plus .12
1999	Phil Mickelson	285.7	×	66.60%	×	68.70%	÷	32.01 (1.781)	=	4.07		
2000	Phil Mickelson	288.7	×	66.90%	×	71.10%	÷	32.02 (1.779)	=	4.22	Plus .15	
2001	Phil Mickelson	293.7	×	69.20%	×	69.30%	÷	30.83 (1.713)	=	4.37	Plus .15	Plus .30
2002	Phil Mickelson	290.2	×	66.20%	×	68.80%	÷	31.78 (1.766)	=	4.15	Minus .22	Plus .08
2003	Phil Mickelson	306	×	63.40%	×	69.50%	÷	31.33 (1.741)	=	4.25	Plus .10	Plus .18
2004	Phil Mickelson	295.2	×	63.3%	×	69.3%	÷	31.44 (1.747)	=	4.12	Plus 1.01	Plus 1.09
1999	Davis Love	283	×	70.70%	×	68.30%	÷	31.59 (1.755)	=	4.32		
2000	Davis Love	288.7	×	66.10%	×	69%	÷	31.48 (1.749)	=	4.18	Minus .14	
2001	Davis Love	298.2	×	64.70%	×	68.70%	÷	31.91 (1.773)	=	4.15	Minus .03	Minus .17
2002	Davis Love	288.2	×	64.40%	×	65.00%	÷	31.91 (1.773)	=	3.78	Minus .37	Minus .54
2003	Davis Love	299.2	×	64.60%	×	68.40%	÷	31.53 (1.752)	=	4.19	Plus .41	Minus .13
2004	Davis Love	300	×	60.3%	×	63.8%	÷	31.50 (1.750)	=	3.66	Minus .53	Minus .66
1999	Ernie Els	278.2	×	66.70%	×	66.30%	÷	31.98 (1.777)	=	3.84		
2000	Ernie Els	278.4	×	71.40%	×	66.50%	÷	31.48 (1.749)	=	4.19	Plus .35	
2001	Ernie Els	283.1	×	66.00%	×	66.40%	÷	31.91 (1.798)	=	3.83	Minus .36	Minus .01
2002	Ernie Els	282.2	×	64.30%	×	62.80%	÷	31.39 (1.744)	=	3.63	Minus .20	Minus .21
2003	Ernie Els	303.3	×	61.30%	×	68.50%	÷	31.77 (1.765)	=	4.00	Plus .37	Plus .16
2004	Ernie Els	298.4	×	56.3%	×	65.4%	÷	31.21 (1.734)	=	3.52	Minus .48	Minus .32
1999	Sergio Garcia	282.9	×	68.40%	×	64.10%	÷	31.86 (1.77)	=	3.89		
2000	Sergio Garcia	278.3	×	73.60%	×	61.90%	÷	31.19 (1.733)	=	4.06	Plus .17	
2001	Sergio Garcia	287.8	×	73.10%	×	68%	÷	31.32 (1.740)	=	4.56	Plus .50	Plus .67
2002	Sergio Garcia	292.3	×	69.80%	×	64.50%	÷	31.82 (1.768)	=	4.13	Minus .43	Plus .24
2003	Sergio Garcia	300.9	×	57.40%	×	66.10%	÷	32.54 (1.808)	=	3.50	Minus .63	Minus .39
2004	Sergio Garcia	295	×	59.2%	×	70.7%	÷	32.18 (1.831)	=	3.83	Plus .33	Minus .06

Most of the Tour Pros listed are known to be following exercise programs. Theoretically, the chart indicates the effect their strength increases had on their Accuracy and Putting over five consecutive

seasons. At the very least, it allows us to compare Accuracy and Putting to Driving Distance and decide for ourselves how our fitness program may be affecting our golf related areas of physical conditioning and athletic ability (Seven Aspects of a Golfer's Athleticism).

Notice the increases in each Tour Pro's Driving Distance from year to year and how those increases affected their other Three Stats. David Duval's stats are particularly enlightening in this regard, because of the dramatic transformation in his physique over this five year period. Again, these comparisons indicate whether or not the golfers were able to maintain their level of Accuracy and keep their Putting Average respectable as their strength increased. If their Accuracy and Putting suffered when their Distance increased, there are possibly problems within their golf specific fitness programs that negatively affected their golf related areas of physical conditioning and athletic ability. Be sure to observe the Putting Stats for each Tour Pro as well. Again, a progressive increase in Putting Average suggests a possible *previous* decrease in KA (Aspect #4)—*something that almost always results from using weights that are too heavy.*

Of course the most noticeable PGRs over this period are those of David Duval. Declines in some of the areas can certainly be attributed to his injuries and other health problems. However, the drastic drop in putting performance, combined with the decrease in GIR is highly indicative of a (dramatic) drop in KA—one that could very well be the result of working out with weights that are simply too heavy to preserve a golfer's golf related areas of Athletic Ability, while they're pursuing a higher level of Physical Conditioning. Whether or not this is actually the case with David is ultimately for David and his instructors to decide, not us. Our job is to learn as much as we can from the experiences of others and to use what we learn to help us determine how our fitness program is affecting our game.

One particularly enlightening comparison is that between David Duval's Golf Stats and Progress Factors over five years and those of Phil Mickelson. Not only are Phil's considerably better than David's and the other golfers considered by the media to be in "good shape," but his Playfit Golf Rating is significantly higher as well. And unlike David, Phil's physique changed very little if any over that time period. This indicates that if in fact Phil was exercising at all, *whether or not he realized it*, his fitness program was prioritizing his golf game, not his physique.

Regarding the decline in Tiger's progress factors from 2000 to 2001; his performance in 2000 was so phenomenal that a decline in a few of the stats was pretty much inevitable. Also, there was a brief period about midway through the 2001 season where Tiger struggled a bit and as a result, his stats plummeted. Keep in mind though, Tiger's physique has never undergone a dramatic physical transfor-

mation and therefore his golf specific fitness program is not (and has never been) in question. Again, we're not trying to promote certain golfers over others; we're simply trying to get you to observe the "golf performance" results of golfers whose physiques have undergone a dramatic physical transformation and those whose physiques have not.

If you consider the correlation between each Tour Pro's Playfit Golf Rating (PGR) and their overall performance in the respective year, beginning with the most recent year, the PGRs of Vijay and Phil literally jump off the page. Phil's PGR improved significantly from the previous year and he won his first Major Title, while Vijay's PGR remained high, helping him win another Major title. Also, notice the incredible consistency in Vijay's PGR over this five year period, compared to those of the other players. This indicates his fitness program is not only right for him, but it in no way negatively affects his golf related areas of physical conditioning and/or athletic ability.

It’s also important to understand that negative readings on the Playfit Golf Rating Chart do not necessarily indicate problems in one of the Tour Professional's fitness program, nor do positive readings indicate conclusively that their fitness program is purely golf specific. For example, each has made changes in their golf swing over this five year period, experimented with different equipment and experienced the normal, everyday problems that can influence their stats *in both directions.*

However, if one of them, or any golfer for that matter, is claiming their fitness program is *dramatically improving* their golf game, either their Four Main Golf Stats, their Playfit Golf Rating, or their Progress Factors (on the far right side of the chart) should reflect an improvement. If they don't, it's likely that their fitness program has only improved their health—*a change that can actually influence golf performance in either direction.*

Regardless of your level of play, the Four Main Golf Stats, the Playfit Golf Rating and the Progress Factors indicate conclusively whether your golf specific fitness program is helping your golf game, or hurting it.

REGARDING THE PPES© SOFTWARE:

The “yearly” progress factor *shown on the previous chart* was added only to show you each Tour Professional's (approximate) progress from year to year. The actual Progress Factors provided on the PPES© Software are slightly different.

The Progress Factor on the PPES© Software will indicate the difference in your Playfit Golf Rating from entry to entry, while the Overall Progress Factor will indicate the difference in your Playfit Golf Rating from your very first entry to the most recent.

Chapter Five

Putting it All Together—*Cause/Effect*

Chapter Five Learning Objective:

To begin learning the cause/effect relationship between:

- The Six Components of a Golf Specific Fitness Program
- The Seven Aspects of a Golfer's Athleticism
- The Five Golf Performance Indexes
- The Four Main Golf Stats

PUTTING IT ALL TOGETHER—*CAUSE/EFFECT*

The purpose of this chapter is to help you understand the cause/effect relationship between The Six Golf Specific Fitness Components, The Seven Aspects of a Golfer's Athleticism, The Five Golf Performance Indexes and The Four Main Golf Stats, in both directions, i.e., *from Golf Specific Fitness Component to Golf Performance Index and from Golf Performance Index back to Golf Specific Fitness Component*. In the first four chapters you learned the following:

- The Six Golf Specific Fitness Components directly affect the Condition of the Seven Aspects of a Golfer's Athleticism.
- The *Condition* of the Seven Aspects of a Golfer's Athleticism both directly and indirectly influences the Five Golf Performance Indexes and the Four Main Golf Stats.
- The Five Golf Performance Indexes and the Four Main Golf Stats both individually and collectively indicate the overall *Condition* of the Seven Aspects of a Golfer's Athleticism, which ultimately determines our *Golf Specific Fitness Level*.

Therefore, by monitoring fluctuations in the Five Golf Performance Indexes and to a lesser degree the Four Main Golf Stats (primarily putting), you can determine conclusively whether your fitness program is helping your golf game, or hurting it. If a decline in golf performance is indicated by one of the Five Golf Performance Indexes, or the Four Main Golf Stats, you (and/or your PPES© Certified Fitness Instructor) can review the information and determine if the *condition* of one or more of the Seven Aspects is responsible. Once that's been determined, the Golf Specific Fitness Components that target the Aspect (s) in question can be modified to correct the area (s) of weakness.

Over time, you'll become familiar with how variations of the Six Golf Specific Fitness Components affect the *condition* of the Seven Aspects of a Golfer's Athleticism and how the *condition* of the Seven Aspects of a Golfer's Athleticism influences the Five Golf Performance Indexes (and the Four Main Golf Stats). The continually increasing familiarity with this diagnostic/prescription process will enable you to personalize and continually refine your Golf Specific Fitness Program for Peak Golf Performance.

While the Aspect Diagnosis/Component Prescription Charts in Chapter three are probably more suitable for helping you connect fluctuations in your golf performance to the Golf Specific Fitness Components that influenced them, this chapter includes a chart that allows you to see the relationship between The Six Golf Specific Fitness Components, The Seven Aspects of a Golfer's Athleticism, The

Five Golf Performance Indexes and The Four Main Golf Stats, all on one page. It's referred to as the Cause/Effect Chart and it also assists you in tracing golf performance problems (indicated by negative fluctuations in the Five Golf Performance Indexes and the Four Main Golf Stats), back to the fitness strategies that may have caused them.

Regardless of which of the Five Golf Performance Indexes, or Four Main Golf Stats indicates a decline in golf performance, any one of the Seven Aspects of a Golfer's Athleticism could be responsible, or all of them for that matter. Remember, we're all genetically unique in that each of our bodies has a preferred physiological state that allows each of the Seven Aspects to operate unrestrained and at an optimum level. So for accuracy in the diagnostic/prescription process, it's up to you and/or your PPES© Certified Fitness Instructor to process the information correctly.

PPES© PROCESS OF GOLF PERFORMANCE PROBLEM (ASPECT) DIAGNOSIS:

The Five Golf Performance Indexes and The Four Main Golf Stats → **The Seven Aspects of a Golfer's Athleticism** → **The Six Components of a Golf Specific Fitness Program**

PPES© PROCESS OF GOLF SPECIFIC EXERCISE (COMPONENT) PRESCRIPTION:

The Six Components of a Golf Specific Fitness Program → **The Seven Aspects of a Golfer's Athleticism** → **The Five Golf Performance Indexes and The Four Main Golf Stats**

Whether you're a Golfer, PGA Golf Professional, or a PPES© Certified Fitness Instructor, you should make a point to study the Cause/Effect Chart on the following page regularly, *as well as the Aspect Diagnosis/Component Prescription Charts in Chapter Three.* Doing so will familiarize you with their (cause/effect) relationship, significantly improve your ability to diagnose the *condition* of the Seven Aspects of a Golfer's (your) Athleticism and assist you in making more accurate modifications to the Six Golf Specific Fitness Components as well.

PPES© Cause/Effect Chart #2

PPES© Book Chapter Two	The numbers below represent the aspects affected by the golf specific fitness component directly to their left.	PPES© Book Chapter One	The numbers below represent the golf performance indexes influenced by the aspect directly to their left.	PPES© Book Chapter Three	PPES© Book Chapter Four
The Six Golf Specific Fitness Components		**The Seven Aspects of a Golfer's Athleticism**	Indexes in Italics indicate an indirect effect.	**The Five Golf Performance Indexes**	**The Four Main Golf Stats**
1. Ana., Biom. & Kinesiology	1, 2 & 3	1. Lower Back Integrity	1, 2, 3, ***4 & 5***	1. Power	1. Driving Distance
2. Weight/Repetition Range	1, 2, 3, 4, 5, 6 & 7	2. Joint Integrity	1, 2, 3, ***4 & 5***	2. Timing	*2. Driving Accuracy **
3. Point of Focus	1, 2, 3, 4, 5 & 6	3. Strength/Flexibility Axis	1, 2, 3, ***4 & 5***	*3. Accuracy (A + B ÷ 2)*	*3. Greens in Regulation **
4. Mode of Execution	1, 2, 3, 4, 5 & 6	4. Kinesthetic Awareness	1, 2, 3 and Putting Ave.	*A = Driving Accuracy %* *B = Greens in Regulation %*	4. Putting Average
5. Anaerobic/Aerobic Axis	1, 2, 3, 4, 5 & 7	5. Coordination	1, 2 & 3	4. Endurance	
6. Sports Nutrition	1, 2, 3 & 7	6. Tempo/Timing Axis	1, 2 & 3	5. Recoverability (Multiple Day Tournaments Only)	
(7th.) Sports Psychology *The 7th. Component*	4, 5, 6 & 7	7. Endurance/ Recoverability Axis	***1, 2, 3***, 4 & 5		
Each Golf Specific Fitness Component listed above either directly or indirectly affects the *condition* of the Aspects of a Golfer's Athleticism listed in the column directly to its right.	**Influence** → ← **Prescription**	The *condition* of each Aspect of a Golfer's Athleticicsm listed above either directly or indirectly influences the Golf Performance Indexes listed in the column directly to its right.	**Influence** → ← **Diagnosis**	Each Golf Performance Index listed above is either directly or indirectly influenced by the *condition* of one or more of the Seven Aspects of a Golfer's Athleticism. Therefore, they are capable of revealing the condition of the Seven Aspects of a Golfer's Athleticism.	Each Golf Stat listed above is either directly, or indirectly influenced by the condition of one or more of the Seven Aspects of a Golfer's Athleticicsm. Therefore, they too are capable of revealing the condition of the Seven Aspects.

By monitoring the Five Golf Performance Indexes and the Four Main Golf Stats, you can learn to determine whether your fitness program is helping your golf game, or hurting it. If a decline in golf performance is indicated by one of the Five Golf Performance Indexes, or the Four Main Golf Stats, you and/or your PPES© Certified Fitness Instructor can review the information and determine which of the Seven Aspects of a Golfer's Athleticism is/are responsible. Once a diagnosis has been made, the Golf Specific Fitness Components that target the particular Aspect (s) in question can be modified/adjusted to resolve the problem, i.e., *bring the condition of the Aspect (s) in question up to par and into balance with that of the others*.

Over time, this process will help you become familiar with how various golf specific fitness strategies (and variations of The Golf Specific Fitness Components) affect the *condition* of the Seven Aspects of a Golfer's (your) Athleticism and how the *condition* of the Seven Aspects of a Golfer's (your) Athleticism in-turn influences the Five Golf Performance Indexes and the Four Main Golf Stats. It is with this information and through this process that you'll be able to personalize and continually refine your Golf Specific Fitness Program for Peak Golf Performance, regardless of the physical condition it helps you achieve.

Chapter Six

The Playfit Performance Enhancement System Software—*Scope & Functionality*

Chapter Six Learning Objectives:

- How to obtain your Golf Performance Information on the Golf Course
- How to record the Golf Performance Information obtained on the Golf Course
- How to monitor your Golf Specific Fitness level

The Playfit Performance Enhancement System Software

The purpose of this chapter is to teach you how to use the PPES© Software so you can monitor fluctuations in your (or your client's) Golf Performance Indexes, determine how your (or your client's) fitness strategies are affecting various areas of your golf game and, of course, measure your approximate Golf Specific Fitness Level. As previously stated, the condition of the Seven Aspects of a Golfer's Athleticism directly influences the Five Golf Performance Indexes. Since your Golf Specific Fitness Level is calculated with a formula comprised of the Five Golf Performance Indexes, it (your Golf Specific Fitness Level) is ultimately determined by both *the collective and the cooperative* condition of the Seven Aspects of a Golfer's Athleticism.

Once you begin your golf specific fitness program your strength will gradually begin to increase. The PPES© Software Program will reveal the effect your strength increase has on the finer Aspects of a Golfer's (your) Athleticism, *or when speaking in terms of golf performance*, the effect increases in Clubhead Speed have on Timing, Accuracy, Endurance, Recoverability and Putting.

Since measurable strength increases typically do not occur in less than a couple of weeks, recording your Golf Performance Data at least every two weeks is sufficient. This frequency will allow you to see a more significant increase in your strength, as measured by Clubhead Speed and how that strength increase is affecting the other Golf Performance Indexes. However, the more frequently you record the required information from your golf rounds, the more accurate your golf performance analysis will be. Recording your Golf Performance Data weekly is ideal; every two weeks is our minimum recommendation. Recording the data weekly not only helps you become more familiar with the overall process, but it helps you learn to distinguish between fluctuations in golf performance that are influenced by your physical conditioning and/or athletic ability and those which are influenced by problems you may be experiencing with your swing. This ability is essential to developing a golf specific fitness program that perfectly addresses your individual needs. Again, you can record your Golf Performance Data as often as you choose—*every two weeks is simply the minimum recommendation*. The information on the following pages will help you get started using the PPES© Software.

The following information must be obtained during your golf round and recorded on the PPES© Scorecard:

- Clubhead Speed - (par 4 and par 5 holes, 8 entries minimum per 18 holes, four per 9 holes)
- Driving Distance - (par 4 and par 5 holes, 8 entries minimum per 18 holes, four per 9 holes)
- Driving Accuracy - (par 4 and par 5 holes)
- Greens in Regulation - (all 18 holes)
- Putts per Hole - (all 18 holes)
- Score - (all 18 holes)
- First 9 Hole Score, Second 9 Hole Score and 18 Hole Score

Once the (required) information is recorded on the printed PPES© Scorecard, it must then be entered into the virtual scorecard on the PPES© Software program.

It's essential that your golf performance data is entered correctly, so be sure to read the guidelines for scorecard entry on the following pages carefully. The accuracy of your Golf Performance Rating depends on the correctness of the data entered into the virtual scorecard—*improperly filling out the virtual scorecard can also prevent the software from calculating altogether, so read this chapter carefully.*

Once the information is entered into the virtual scorecard, the PPES© Software will process it and respond with individual readings on:

- The Five Golf Performance Indexes
- The Four Main Golf Stats
- A Primary Golf Performance Rating
- An Overall Golf Performance Rating
- A Playfit Golf Rating

This initial golf performance analysis will serve as a benchmark (point of reference) from which the PPES© Software measures the influence your Golf Specific Fitness Program has on your future golf performance. Again, the more often you enter the required information, the more accurate your Golf Performance Analysis will be.

Guidelines for Obtaining and Entering Playfit Scorecard Information

Clubhead Speed

Measuring your Clubhead Speed on the golf course *during your round* is essential to obtaining accurate Golf Performance Ratings. So if you do not have a portable Clubhead Speed analyzer, we strongly recommend that you get one. The more popular ones can be found on the PlayfitGolf.com Website for a competitive price.

However, if you do not have a portable Clubhead Speed analyzer, measuring Clubhead Speed in the practice area (four readings before your golf round and four readings after your golf round) is the next best alternative. But remember, since Timing is measured by dividing Driving Distance by Clubhead Speed, an accurate Timing Factor can only be obtained when Clubhead Speed and Driving Distance are recorded from the same swing. So if you take your Clubhead Speed measurements using the alternative method and then record your Driving Distance during your round, your Timing Factor will not be 100% accurate. This will obviously affect the accuracy of your Primary Golf Performance Rating (PGPR) and your Overall Golf Performance Rating (OGPR). It will however allow you to see the effect your strength increase is having on all other areas of golf performance, which is the main purpose of the PPES©. Therefore this method does have some benefit.

However, if you prefer your Timing Factor, Primary Golf Performance Rating (PGPR) and Overall Golf Performance Rating (OGPR) to be 100% accurate, then your Clubhead Speed measurement must be obtained from your tee-shots during your golf round with a portable Clubhead Speed analyzer.

The PPES© Software requires a minimum of eight Clubhead Speed readings to process your Golf Performance Rating—*four from the front nine and four from the back nine.* If at the end of your golf round you were only able to record your Clubhead Speed on six holes for example (four on the front and only two on the back), you must fill in the final two with the average Clubhead Speed reading obtained on your second nine holes. Also, the number of Driving Distance readings must be consistent with the number of Clubhead Speed readings *and they should be from the same holes as well.*

REMEMBER:

- Clubhead Speed should be recorded on a minimum of eight holes per round, four recordings minimum per nine holes.
- The number of Clubhead Speed readings on the front nine must match the number of those on the back nine.

DRIVING DISTANCE

GPS is obviously the best way to measure you Driving Distance and, more than likely, all courses will have them within a few years. But since only a few courses have GPS systems today and not all golfers have portable GPS units, many of you will have to obtain your Driving Distance by other means.

Determining your approximate Driving Distance on a particular hole is usually a matter of stepping off the yardage from the 100, or 150 yard markers to your ball. Since most golfers play on the same golf course from week to week, this shouldn't be too difficult. However, if your tee-shot comes to rest far from the center of the fairway, on the edge of the fairway, or in the deep rough, obtaining an accurate Driving Distance can be a little more difficult. In these cases, stand at your ball and look back towards the center of the fairway, *at a 90 degree angle*, measure the yardage from the 100 or 150 yard markers to that point and make the appropriate calculation.

On the holes where your driver or 3-wood could have been used but was not, you must leave that area of the PPES© Scorecard blank. This will tell the PPES© Software to exclude that hole from the total holes requiring Driving Distance and Clubhead Speed entries.

When you hit your tee-shot out of bounds, your Driving Distance will be recorded by your second tee-shot; that is if you still choose to record Driving Distance on that hole.

If at the end of your golf round you were only able to record your Driving Distance on six holes for example (4 on the front and only 2 on the back), you must fill in the final two with the average the first 2 on your 2nd nine holes. This also applies to Clubhead Speed. Furthermore, the number of club-

head Speed readings must match the number of Driving Distance readings *and they must also be from the same holes*.

REMEMBER:

- Driving Distance should be recorded on a minimum of eight (8) holes.
- The number of Driving Distance readings on the front nine must match the number of those on the back nine.
- Driving Distance readings and Clubhead Speed readings must be from the same holes.

CLUBHEAD SPEED AND DRIVING DISTANCE RELATIONSHIP

The total number of Clubhead Speed and Driving Distance readings per round must be equal, with a minimum of eight per round being required—*four from the front nine and four from the back nine.* But to ensure an accurate evaluation of your golf performance level, your Clubhead Speed and Driving Distance readings must be obtained from the same holes. You cannot record Clubhead Speed from a hole on which you smashed a 320 yard drive out of bounds and then record Driving Distance from a hole on which you hit a 3-wood 240 yards in the center of the fairway and expect an accurate analysis of your golf performance, because it will not reveal an accurate Timing Factor. Also, the number of Clubhead Speed and Driving Distance readings on the back nine must match the number of those on the front nine, with a minimum of four per nine holes being required. *This requirement is absolutely critical for the calulation of your Endurance and your Recoverability.* See Formulas for Timing, Endurance and Recoverability in Chapter Three.

DRIVING ACCURACY

Driving Accuracy is recorded by entering a one (1) when you hit the fairway and a zero (0) when you miss the fairway. Entries should be made on all par four and par five holes which usually totals 14 holes. However, on the holes where your driver or 3-wood could have been used but was not, you must leave that area of the Virtual PPES© Scorecard blank. This will tell the software to exclude that hole from the number of possible fairways. *Driving Accuracy is measured only when you use your driver, or your 3-wood, not your 4-iron.* An out of bounds ball is simply a missed fairway that requires a zero (0) to be recorded for Driving Accuracy.

IMPORTANT POINT:

Since penalty strokes—strokes assessed without making an actual golf swing, cannot be attributed to physical conditioning and/or athletic ability, they are not a part of the calculation process. An accurate Golf Performance Rating can only be calculated with strokes produced by physical movement, or when the club strikes the ball. Therefore, golfers who are trying to accurately assess their Golf Performance Level should not include penalty strokes using this system (unless you take a drop). If you're in this category, never assess the two (2) stroke penalty with an out of bounds tee-shot, rather assess one (1) stroke (the shot you hit OB) and enter a zero (0) for a missed fairway. Then, when you tee it up to hit another ball, you'll be playing your second shot. You'll record your Clubhead Speed and Driving Distance from this tee-shot. Now the fact that you'll be lying two after this shot does not mean you lose your opportunity to obtain a one (1) for GIR if you hit the green on your next shot (your third shot). Remember, each shot stands alone in this format. An out of bounds tee-shot only affects your Driving Accuracy and is not permitted to carry over to affect GIR—this would be a double penalty.

GREENS IN REGULATION

Greens in Regulation (GIR) are recorded by entering a one (1) when the green is hit within regulation and a zero (0) when it is not. Being on the fringe (two inches off the green) unfortunately does not constitute hitting the green. Also, hitting a par five in two does not allow you to put a two (2) in the GIR column, rather than a one (1). Either you hit a green within regulation, or you don't. A one (1) or a zero (0) are the only values to be recorded in the GIR column.

PUTTING AVERAGE

Enter your exact number of putts on each hole. Enter a zero (0) if you chip in.

IMPORTANT POINT:

Golfers who play on golf courses with a 9 and/or 18 hole par other than the traditional par 36 and par 72, need not be concerned; their Golf Performance Analysis will be flawed if they play one course with a par 70 and then other courses with par a 71 and/or a par 72. The PPES© Software was designed to accommodate these course differences and makes the necessary calculations to convert the data to match the traditional par 36 front 9, par 36 back 9 and par 72 for the total 18.

Each time you decide to measure your golf performance, all you have to do is print a blank copy of the PPES© Scorecard (example on the following page), record the required information during your golf round and enter that information into the virtual PPES© Scorecard when you're finished playing. For wireless applications, visit the PlayfitGolf.com Website to see when they become available.

The series of charts on the following pages combine to provide an example of the PPES© Software functionality and are as follows:

- The PPES© Scorecard;
- An example of the PPES© Scorecard completely filled out; and
- The Information Verification Chart, *which allows you to verify whether or not the information you entered from your golf round is correct.*

From the Information Verification Chart you will have a choice of which golf performance data you prefer to view; Golf Performance Indexes or Four Main Golf Stats. And, the manner in which you prefer to view it; Actual View or Formula View.

PPES© SCORECARD

A	Date										Par										Par	Par
B	Hole Number	1	2	3	4	5	6	7	8	9		10	11	12	13	14	15	16	17	18		
C	Par (3, 4 or 5)																					
											Score										Score	Score
D	Clubhead Speed																					
E	Driving Distance																					
F	Driving Accuracy																					
G	Greens in Regulation																					
H	Putts Per Hole																					
I	Score																					

ROW C - Enter the complete scorecard for the course you are playing, i.e., the par of each hole (3, 4, or 5), the first and second nine holes (34, 35, 36, etc.) and the par of all eighteen holes (70, 71, 72, etc.), prior to beginning your round. Doing so is absolutely necessary for the PPES© Software to make the appropriate calculations.

ROW D - Enter Clubhead Speed from holes where a Driver or 3-Wood was used. Enter nothing on par 3s and on holes where you chose not to use a Driver or 3-Wood. A minimum of eight Clubhead Speed readings is required. A minimum of four Clubhead Speed readings must come from your 1st nine holes and four Clubhead Speed readings from your 2nd nine holes. If you do not have a minimum of eight Clubhead Speed readings by the completion of your round, an average of the Clubhead Speed readings *from the second nine holes (back nine) must be used to fill in the remaining spaces.*

ROW E - Enter your Driving Distance in yards. If you missed the fairway, be sure to measure your Driving Distance accurately. If you hit the ball out of bounds, enter your Driving Distance from your second ball. Enter nothing if you used a club other than your Driver or your 3-Wood. Enter nothing on all par 3s. A minimum of eight Driving Distance readings is required; four must come from your 1st nine holes and four from your 2nd nine holes.

ROW F - Enter a (1) if you hit the fairway. Enter a zero (0) if you missed the fairway. Enter nothing if you used a club other than your Driver or your 3-Wood. Enter nothing on all par 3s.

ROW G - Enter a one (1) if you hit the green. Enter a zero (0) if you missed the green.

ROW H - Enter the exact number of putts from the Actual Green or Putting Surface (Not from the Fringe). Enter a zero (0) if you chip in.

ROW I - Enter your score on each hole, your 1st nine hole score, your 2nd nine hole score and your 18 hole score.

YOU MAY RECORD YOUR GOLF PERFORMANCE DATA EVERY TIME YOU PLAY IF YOU SO CHOOSE; ONCE EACH MONTH IS THE MINIMUM. BI-WEEKLY IS THE FREQUENCY WE RECOMMEND.

PPES© SCORECARD

A	Date										Par										Par	Par 72
B	Hole Number	1	2	3	4	5	6	7	8	9	36	10	11	12	13	14	15	16	17	18	36	Par 72
C	Par (3, 4 or 5)	4	4	3	4	5	3	4	4	5		4	3	5	4	4	3	4	5	4		
											Score										Score	Score
D	Clubhead Speed	120			117			121		118	119			116		119		118	114		116.75	117.875
E	Driving Distance	280			275			285		290	282.5			285		275		300	280		285	283.75
F	Driving Accuracy	1			1	0		1	1	1	83.33%	0		1	0	1		1	1	0	57%	69.23%
G	Greens in Regulation	1	1	1	1	0	0	1	1	1	77.70%	1	0	1	1	0	1	0	1	1	66.60%	72.22%
H	Putts Per Hole	2	2	2	2	1	2	2	2	2	1.88	2	2	2	2	2	2	2	2	1	1.88	1.88
I	Score	4	4	3	4	5	4	4	4	5	37	4	4	5	4	5	3	5	5	3	38	75

Above is an example of the Virtual PPES© Scorecard, completed by a golfer during his round. The information in the far right column is calculated by the software after the required information is entered. Once the information from the Virtual PPES© Scorecard has been entered and calculated, you may print the completed scorecard (as shown above) to provide a physical record, rather than just a virtual one.

When the golfer uses a club other than a Driver, or 3-Wood, the Driving Distance Column should be left blank. Regarding Clubhead Speed, a minimum of eight readings for the round is required. Four readings must come from the front nine and four from the back nine.

In the Driving Accuracy Column, a one (1) indicates the golfer hit the fairway and a zero (0) indicates he missed the fairway. Driving Distance and Driving Accuracy are not applicable on Par 3s.

In the Greens in Regulation Column, a one (1) indicates the golfer hit the green and a zero (0) indicates he missed the green. In the Clubhead Speed Column, the golfer recorded his Clubhead Speed and his Driving Distance from the same holes. As with Driving Distance, a minimum of eight Clubhead Speed readings for each round is required, with four readings coming from the front nine and four readings coming from the back nine.

The following page provides an example of how the software will display the calculated performance data from the Virtual PPES© Scorecard above on your computer screen, imediately following the initial calculation.

INFORMATION VERIFICATION PAGE

Raw Data Entered	Calculated Values	Golf Performance Indexes	Playfit Golf Stats
Average Clubhead Speed	117.875	Power 117.875 View Progress Factor / View Graph	Driving Distance 283.75 View Progress Factor / View Graph
Average Drive Distance	283.75	Overall Golf Performance Rating 107.15 View Progress Factor / View Graph	Overall Progress Factor View Graph
Driving Accuracy	9 (13)	Accuracy 70.72% View Progress Factor / View Graph	Greens In Regulation % 72.22% View Progress Factor / View Graph
Greens In Regulation	13 (18)	Endurance 77.57% View Progress Factor / View Graph	Putts/ Round 34 (1.88) View Progress Factor / View Graph
Total Putts	34	Primary Golf Performance Rating 1.10 View Progress Factor / View Graph	Playfit Golf Rating 4.19 View Progress Factor / View Graph
1st Nine Hole Score	37	Recoverability NA View Progress Factor / View Graph	
2nd Nine Hole Score	38		
Eighteen Hole Score	75	Timing 2.40 View Progress Factor / View Graph	Driving Accuracy % 69.23% View Progress Factor / View Graph

The "View Progress Factor" feature displays the numerical difference between the new reading and the previous reading, (via pop-up window), when the mouse pointer is placed over the hyperlink.

The "View Graph" feature displays the history of readings in the respective Index on a Graph, allowing you to more clearly see increases and decreases (trends developing) in all areas of golf performance over a period of time. See PPES© Graphs later in this chapter.

If any of the Four Main Golf Stats, the Five Golf Performance Indexes, the Primary Golf Performance Rating, the Overall Golf Performance Rating, or the Playfit Golf Rating, indicate either a significant, or progressive (more than two consecutive readings) decline in golf performance, you should refer to the Cause/Effect Charts in Chapters Three and Five. These Charts will help you determine which (if any) of the Seven Aspects of a Golfer's Athleticism may be in less than desirable condition and therefore responsible for the decline in golf performance. It will also help you determine which (if any) of the Six Golf Specific Fitness Components need to be modified in order to correct the problem.

Again, from the Information Verification Chart above, the PPES© Software Program will give you the option of viewing your golf performance data *in Formula View,* or *in Actual View*. The next two charts are examples the Golf Performance Data as it will appear on your computer screen in Actual View and in Formula View. These charts illustrate how the Five Golf Performance Indexes, the Primary Golf Performance Rating and the Overall Golf Performance Rating will be displayed after entering the required information *from several golf rounds*.

GOLF PERFORMANCE RATING CHART—*ACTUAL VIEW*

	A	B	C	D	E	F	G
Date of Golf Round	Power	Timing	Accuracy	Endurance	Recoverability	PGPR	OGPR
1/1/2001	110	2.53	72.20%	100%	100%	1.6	68.75
1/8/2001	110	2.53	69.95%	100%	100%	1.53	71.8
1/15/2001	115	2.47	68.30%	100%	100%	1.58	72.78
1/22/2001	120	2.38	66.20%	100%	100%	1.53	78.43
1/29/2001	120	2.39	68.65%	100%	100%	1.59	75.47
2/5/2001	120	2.39	70.55%	100%	100%	1.68	71.4
2/12/2001	125	2.38	66.70%	100%	100%	1.64	76.2
2/19/2001	125	2.37	67.75%	100%	100%	1.64	76.2
2/26/2001	125	2.35	69.70%	100%	100%	1.71	73
3/5/2001	125	2.38	69.30%	100%	100%	1.74	71.8
Average Reading	*119.5*	*2.42*	*68.93%*	*100%*	*100%*	*1.62*	*73.58*

Above is an example of how the Golf Performance Indexes will appear on the PPES© Software after several entries. Page 148 is an example of the Golf Performance Indexes displayed in Formula View. Remember, the purpose of the Formula View option is simply to allow you to view your Golf Performance Indexes as they appear in the actual formula used to obtain the Primary Golf Performance Rating (PGPR).

The Calculations for the Individual Golf Performance Indexes (GSF Stats), the Primary Golf Performance Rating (PGPR) and the Overall Golf Performance Rating (OGPR) are as follows:

COLUMN A - Power = Clubhead Speed (in MPH).

COLUMN B - Timing = Driving Distance ÷ Clubhead Speed.

COLUMN C - Accuracy = (Driving Accuracy % + Greens in Regulation %) ÷ 2.

COLUMN D - Endurance = {Clubhead Speed × Timing × Accuracy ÷ Average Putts/Hole (on 2nd nine holes)} ÷ {Clubhead Speed × Timing × Accuracy ÷ Average Putts/Hole (average of all 1st nine holes)}

COLUMN E - Recoverability = {(Clubhead Speed × Timing × Accuracy ÷ Average Putts/Hole (on 2nd eighteen holes)} ÷ {(Clubhead Speed × Timing × Accuracy ÷ Average Putts/Hole (average of all 1st eighteen holes)}

COLUMN F - PGPR = Clubhead Speed ÷ 18 Hole Score × Timing × Accuracy % × Endurance % × Recoverability % ÷ Average Putts/Hole.

COLUMN G - OGPR = Clubhead Speed ÷ PGPR.

REMEMBER:

A HIGHER NUMBER IS PREFERRED FOR THE PRIMARY GOLF PERFORMANCE RATING (PGPR) IN COLUMN F.
A LOWER NUMBER IS PREFERRED FOR THE OVERALL GOLF PERFORMANCE RATING (OGPR) IN COLUMN G.

The PGPR (Row F) evaluates golfers athletically with Golf Performance Indexes B & C (Timing & Accuracy), which indicate the efficiency and the manageability of their golf swing at the current Clubhead Speed. And, the PGPR evaluates golfers physically with Golf Performance Indexes D & E (Endurance & Recoverability), which indicate the manageability of their physical condition, relative to golf performance. In short, the PGPR rates golfers by the degree to which their physical condition and athletic ability relative to golf performance are maintained, as their Clubhead Speed (which reflects strength) increases.

The OGPR (Row G) indicates a golfer's golf specific fitness level, relative to their Power. By dividing each golfer's PGPR back into their Clubhead Speed, their Golf Performance Rating becomes relative to their Clubhead Speed (Power). This levels the playing field between golfers with higher Clubhead Speeds and those with lower Clubhead Speeds, just as it does when high handicap golfers subtract their handicap from their total score, making it comparable to the score of lower handicap golfers.

GOLF PERFORMANCE RATING CHART—*FORMULA VIEW*

PRIMARY GOLF PERFORMANCE RATING FORMULA

	base number		calculation 1		calculation 2		calculation 3		calculation 4		calculation 5		calculation 6		
Date of Golf Round	Clubhead Speed	÷	Eighteen Hole Score	x	Timing Factor	x	Accuracy Percentage	x	Endurance Percentage	x	Recoverability Percentage	÷	Average Putts/Hole	=	PGPR
1/1/2001	110	÷	71	x	2.53	x	72.20%	x	100%	x	100%	÷	1.773	=	1.60
1/8/2001	110	÷	70	x	2.53	x	69.95%	x	100%	x	100%	÷	1.802	=	1.53
1/15/2001	115	÷	70	x	2.47	x	68.30%	x	100%	x	100%	÷	1.742	=	1.58
1/22/2001	120	÷	70	x	2.38	x	66.20%	x	100%	x	100%	÷	1.749	=	1.53
1/29/2001	120	÷	69	x	2.39	x	68.65%	x	100%	x	100%	÷	1.779	=	1.59
2/5/2001	120	÷	69	x	2.39	x	70.55%	x	100%	x	100%	÷	1.74	=	1.68
2/12/2001	125	÷	69	x	2.38	x	66.70%	x	100%	x	100%	÷	1.749	=	1.64
2/19/2001	125	÷	70	x	2.37	x	67.75%	x	100%	x	100%	÷	1.751	=	1.64
2/26/2001	125	÷	69	x	2.35	x	69.70%	x	100%	x	100%	÷	1.726	=	1.71
3/5/2001	125	÷	69	x	2.38	x	69.30%	x	100%	x	100%	÷	1.717	=	1.74
Average Reading	*119.5*		*69.63*		*2.42*		*68.93*		*100%*		*100%*		*1.752*		*1.62*

CALCULATIONS FOR THE GOLF PERFORMANCE INDEXES ARE:

1. Power = Clubhead Speed (in MPH)
2. Timing = Driving Distance ÷ Clubhead Speed
3. Accuracy = Driving Accuracy % + GIR % ÷ 2
4. Endurance = {Clubhead Speed × Timing × Accuracy ÷ Average Putts/Hole (on 2nd nine holes)} ÷ {Clubhead Speed × Timing × Accuracy ÷ Average Putts/Hole (on average 1st nine holes)}
5. Recoverability = {Clubhead Speed × Timing × Accuracy ÷ AveragePutts/Hole (on 2nd, 3rd or 4th eighteen holes)} ÷ {Clubhead Speed × Timing × Accuracy ÷ Average Putts/Hole (on average 1st eighteen holes)}

OVERALL GOLF PERFORMANCE RATING FORMULA

Date of Golf Round	Clubhead Speed	÷	PGPR	÷	OGPR
1/1/2001	110	÷	1.60	÷	68.75
1/8/2001	110	÷	1.53	÷	71.8
1/15/2001	115	÷	1.58	÷	72.78
1/22/2001	120	÷	1.53	÷	78.43
1/29/2001	120	÷	1.59	÷	75.47
2/5/2001	120	÷	1.68	÷	71.4
2/12/2001	125	÷	1.64	÷	76.2
2/19/2001	125	÷	1.64	÷	76.2
2/26/2001	125	÷	1.71	÷	73
3/5/2001	125	÷	1.74	÷	71.8
	119.5		*1.62*		*73.58*

IMPORTANT POINTS:

A HIGHER NUMBER IS PREFERRED FOR THE PRIMARY GOLF PERFORMANCE RATING (PGPR).

A LOWER NUMBER IS PREFERRED FOR THE OVERALL GOLF PERFORMANCE RATING (OGPR).

The **PGPR** indicates a golfer's actual golf specific fitness level. The **OGPR** on the other hand, indicates a golfer's golf specific fitness level, relative to their Power. By dividing each golfer's **PGPR** back into their Clubhead Speed, their golf performance rating becomes relative to their Clubhead Speed (Power). This levels the playing field between golfers with higher Clubhead Speeds and those with lower Clubhead Speeds, just as it does when high handicap golfers subtract their handicap from their total score, making it comparable to the score of lower handicap golfers. For example, the Overall Golf Performance Rating (OGPR) above indicates the Golfer's Golf Specific Fitness Level on 1/8/2001 was as high for their 110 MPH Clubhead Speed as it was on 3/5/2001 with their 125 MPH Clubhead Speed. So the OGPR ultimately indicates a golfer's Golf Specific Fitness Level *relative to their level of strength*, i.e., Clubhead Speed (Power).

NOTE: Since the Overall Golf Performance Rating (OGPR) levels the playing field between golfers with different Clubhead Speeds, it is the Golf Performance Rating used to determine the winners of The Playfit Golf Performance Tournaments.

WHEN REVIEWING YOUR GOLF PERFORMANCE INFORMATION, REMEMBER THE FOLLOWING:

- Golf Performance Indexes #2 and #3 (Timing & Accuracy) are directly influenced by your golf related areas of athletic ability. Therefore, fluctuations in those two Indexes primarily indicate potential problems in Aspects #4, #5, & #6.

- Golf Performance Indexes #4 and #5 (Endurance & Recoverability) are directly influenced by your golf related areas of Physical Conditioning. Therefore, fluctuations in those two Indexes primarily indicate potential problems in Aspects #1, #2, #3, & #7.

- Golf Performance Index #1 (Power) is directly influenced by both your golf related areas of Physical Conditioning and golf related areas of Athletic Ability. Therefore, fluctuations in the Power Index indicate potential problems in Aspects #1, #2, #3, #4, #5, #6, and indirectly in Aspect #7.

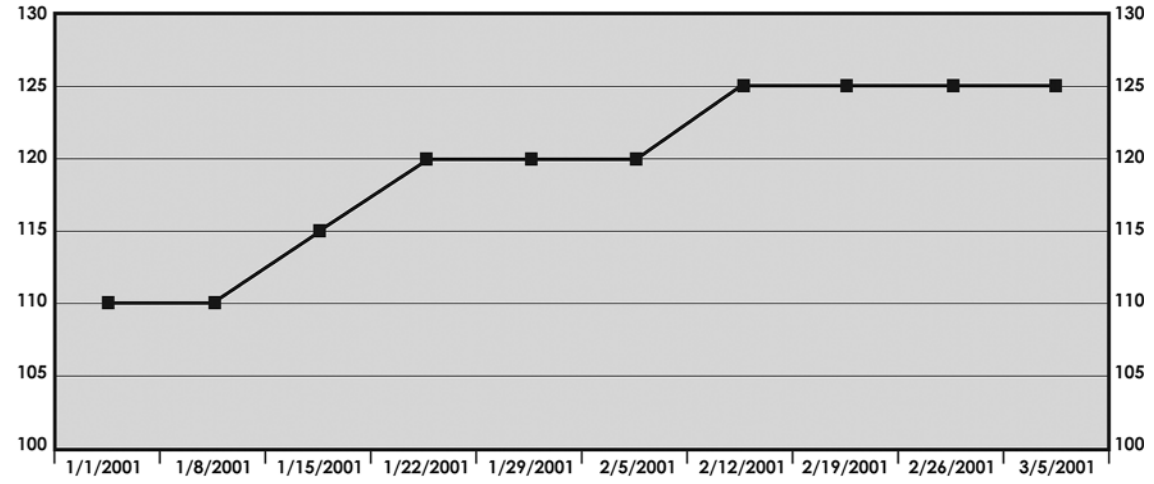
- Since the condition of Aspects #1, #2, #3 & #7 directly affects Aspects #4, #5, & #6, fluctuations in Golf Performance Indexes #2 & #3 (which reflect the condition of Aspects #3, #5, & #6), can be indirectly caused by Aspects #1, #2, #3, & #7.

- Your Primary Golf Performance Rating is your Actual Golf Specific Fitness Level.

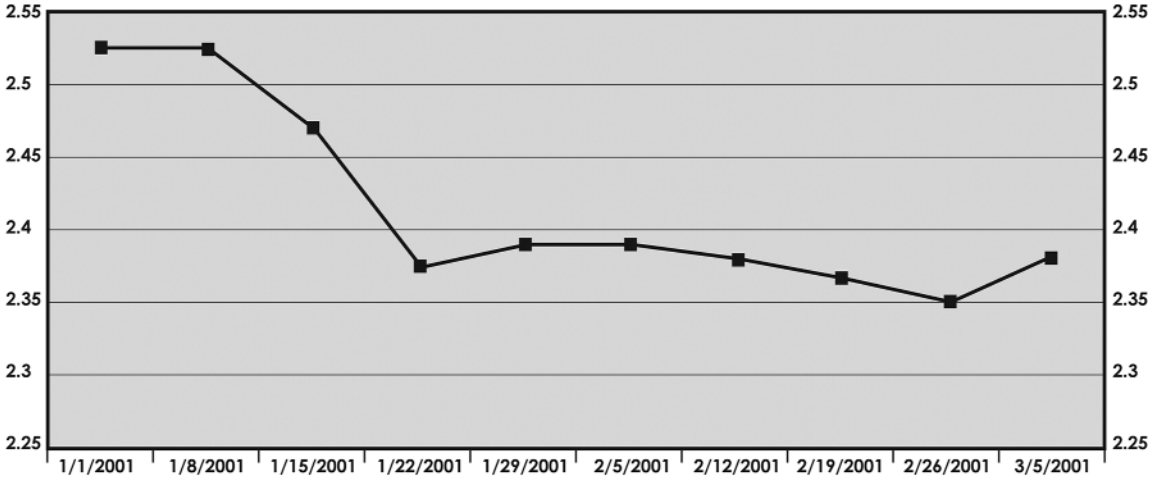
The following pages illustrate the graphs provided by the PPES© Software that allow you to see trends developing in your Golf Performance Indexes, your Primary Golf Performance Rating and your Overall Golf Performance Rating. These graphs correspond to the data on the Golf Performance Rating Page *Actual View*. There is a separate graph for:

- Each Golf Performance Index (five total)
- The Primary Golf Performance Rating (one total)
- The Overall Golf Performance Rating (one total)

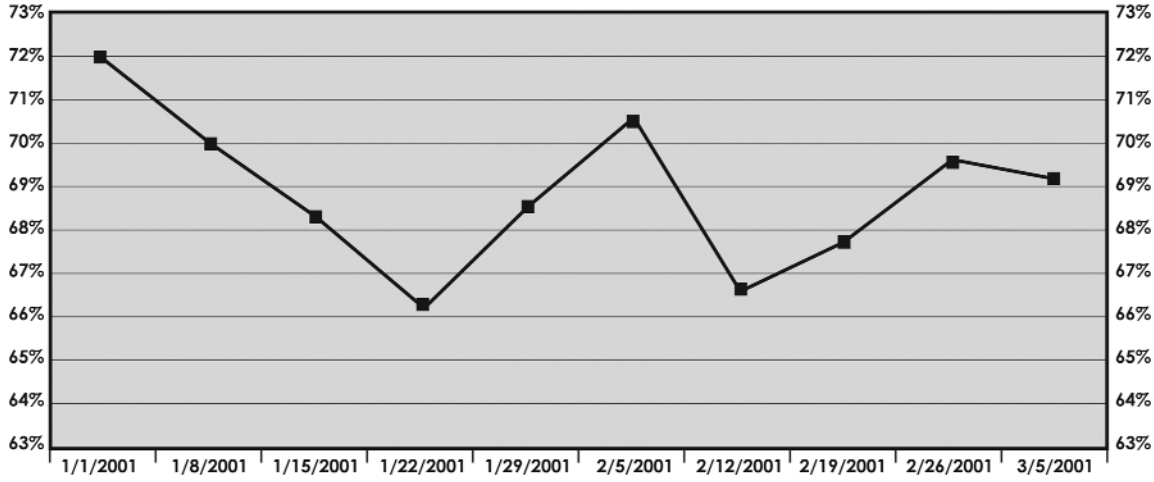
POWER GRAPH



TIMING GRAPH



ACCURACY GRAPH



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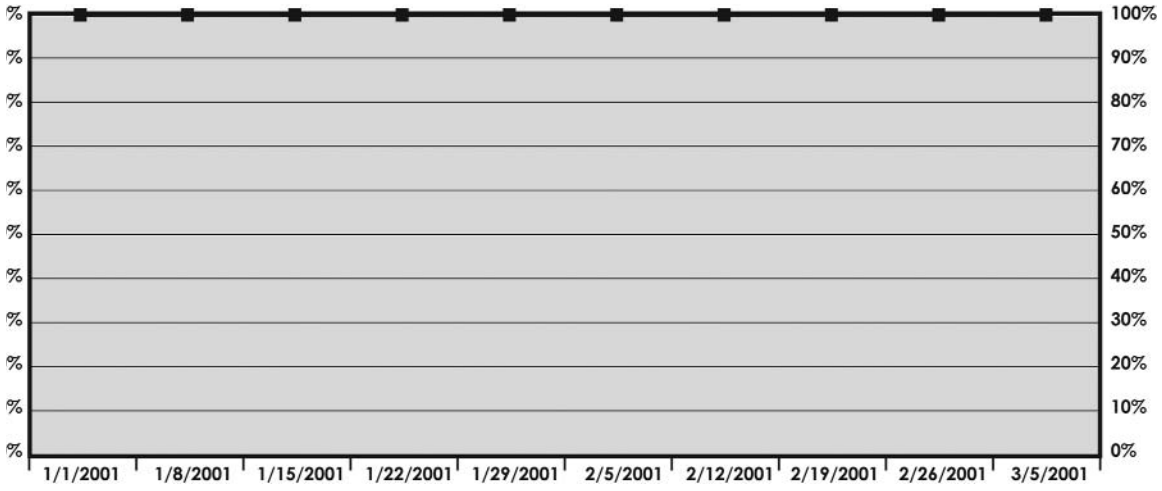
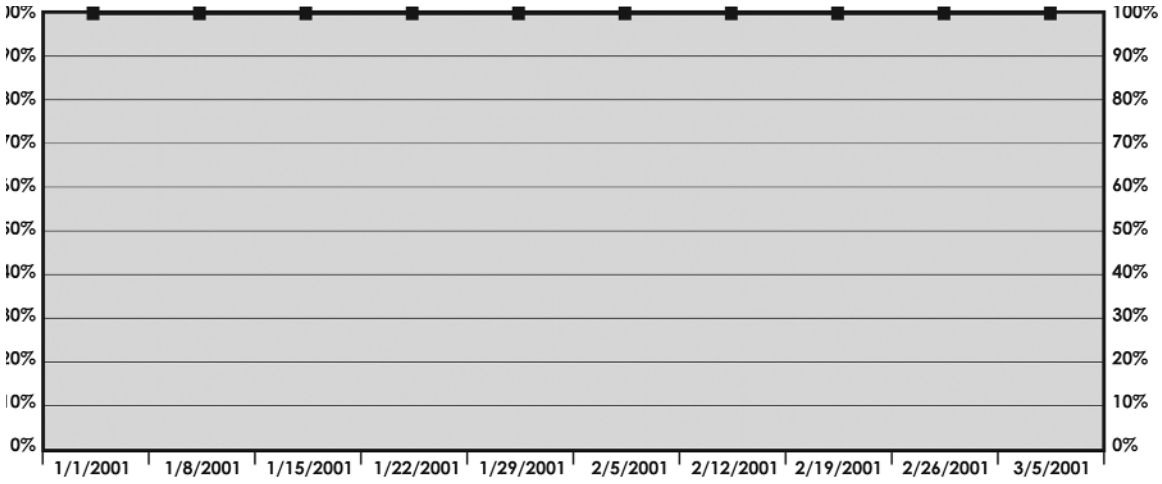
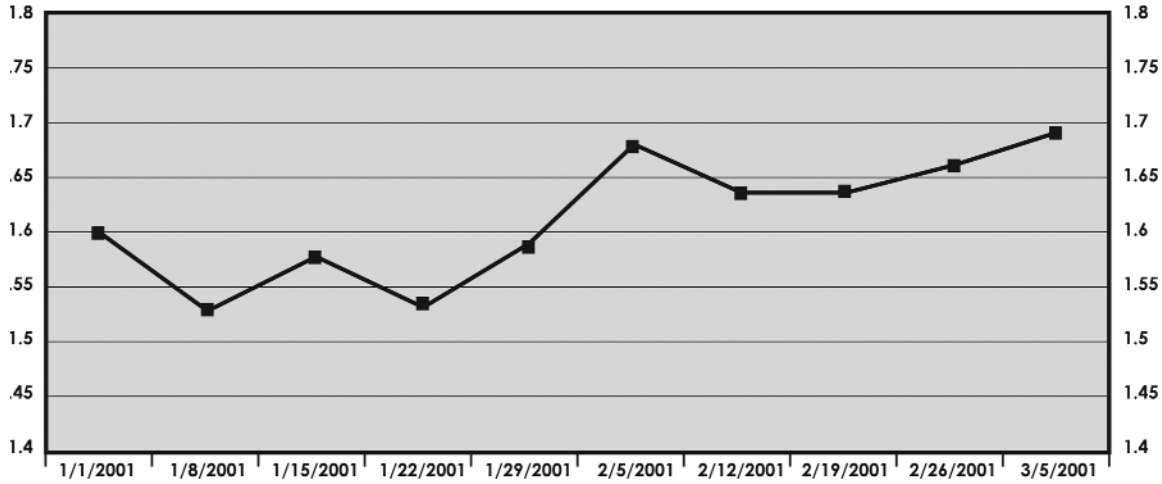


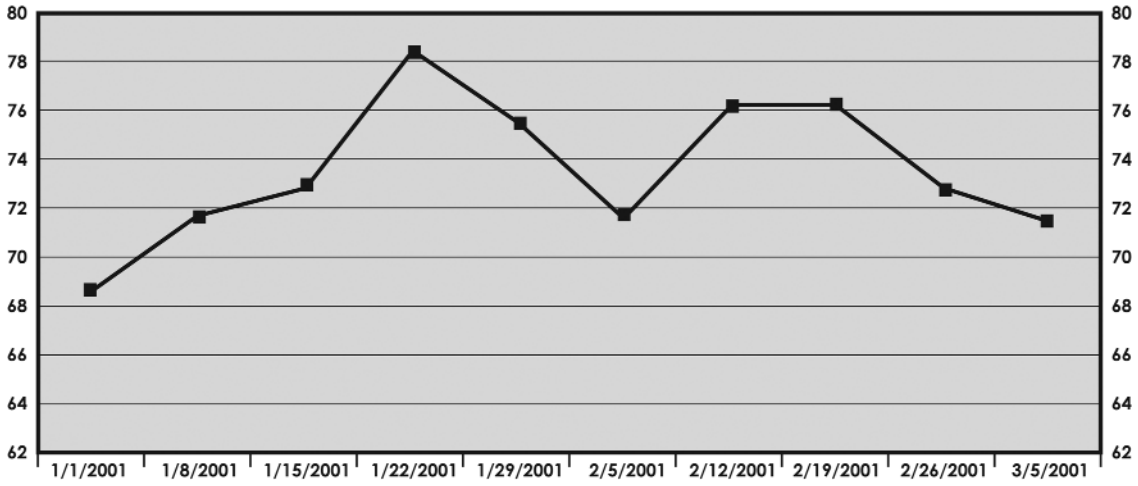
RECOVERABILITY GRAPH



PRIMARY GOLF PERFORMANCE RATING GRAPH



OVERALL GOLF PERFORMANCE RATING GRAPH



AGAIN, WHEN VIEWING THESE GRAPHS, REMEMBER THAT THE TRENDS DISPLAYED ON EACH GRAPH CORRESPOND TO THE DATA ON THE GOLF PERFORMANCE RATING CHART (ACTUAL VIEW). IN ORDER TO VIEW THE TRENDS IN YOUR GOLF PERFORMANCE INDEXES AND GOLF PERFORMANCE RATINGS, LIKE THOSE ABOVE, YOU HAVE TO RECORD YOUR DATA ON THE GOLF COURSE AND ENTER IT.

The charts on the following page are the Playfit Golf Rating Charts in Actual View and in Formula View. These charts provide examples of how your Four Main Golf Stats and your Playfit Golf Rating will be displayed on your computer screen *in Actual View and in Formula View,* after entering the required information *from several golf rounds*.

PLAYFIT GOLF RATING CHART—*ACTUAL VIEW*

Date of Entry	Driving Distance	Driving Accuracy	GIR%	(Putts/Round)	Playfit Golf Rating	Progress Factor	Overall Progress Factor
1/1/2001	285.7	66.60%	67.10%	31.66 (1.759)	4.03	N/A	N/A
1/8/2001	288.7	66.90%	68.10%	31.06 (1.726)	4.23	Plus .20	Plus .20
1/15/2001	293.7	69.20%	70.20%	30.87 (1.715)	4.62	Plus .39	Plus .59
1/22/2001	286.8	70.40%	69.40%	31.46 (1.748)	4.45	Minus .17	Plus .42
1/29/2001	283.5	72.10%	70.50%	31.51 (1.751)	4.62	Plus .17	Plus .59
2/5/2001	296.1	66.60%	68.90%	31.91 (1.773)	4.25	Minus .37	Plus .22
2/12/2001	293.1	71.30%	71.40%	31.69 (1.761)	4.7	Plus .45	Plus .67
2/19/2001	294.3	72.00%	71.30%	31.17 (1.732)	4.84	Plus .14	Plus .81
2/26/2001	297.2	70.60%	72.10%	31.06 (1.726)	4.87	Plus .04	Plus .84
3/5/2001	298	71.20%	75.20%	30.90 (1.717)	5.16	Plus .29	Plus 1.13
Average Reading	291.71	69.69%	70.42%	31.33 (1.74/hole)	4.57	Plus .29	Plus 1.13

PLAYFIT GOLF RATING CHART—*FORMULA VIEW*

Date of Entry	Driving Distance	x	Driving Accuracy	x	GIR%	÷	(Putts/Round)	=	Playfit PGA Rating	Progress Factor		Overall Progress Factor
1/1/2001	285.7	x	66.60%	x	67.10%	÷	31.66 (1.759)	=	4.03	N/A		N/A
1/8/2001	288.7	x	66.90%	x	68.10%	÷	31.06 (1.726)	=	4.23	Plus .20		Plus .20
1/15/2001	293.7	x	69.20%	x	70.20%	÷	30.87 (1.715)	=	4.62	Plus .39		Plus .59
1/22/2001	286.8	x	70.40%	x	69.40%	÷	31.46 (1.748)	=	4.45	Minus .17		Plus .42
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2/26/2001	297.2	x	70.60%	x	72.10%	÷	31.06 (1.726)	=	4.87	Plus .04		Plus .84
3/5/2001	298	x	71.20%	x	75.20%	÷	30.90 (1.717)	=	5.16	Plus .29		Plus 1.13
Average Reading	291.71		69.69%		70.42%		31.33 (1.74/hole)		4.57	Plus .29		Plus 1.13

IMPORTANT POINTS:

THE PROGRESS FACTOR IS THE DIFFERENCE BETWEEN THE MOST RECENT PLAYFIT GOLF RATING AND THE PREVIOUS PLAYFIT GOLF RATING.

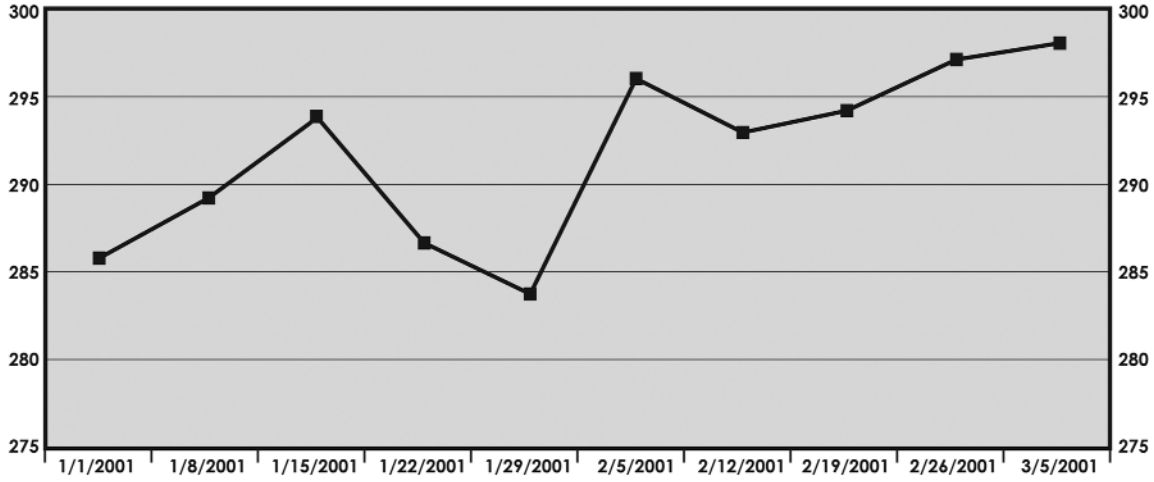
THE OVERALL PROGRESS FACTOR IS THE DIFFERENCE BETWEEN THE MOST RECENT PLAYFIT GOLF RATING AND THE VERY FIRST PLAYFIT GOLF RATING.

Remember, unlike the Golf Performance Indexes, the Playfit Golf Rating System above does not indicate how your Golf Specific Fitness Program is affecting specific areas of golf performance, rather it allows you to see exactly how your golf specific fitness program is affecting your actual golf game as a whole. In short, the Playfit Golf Rating and the Progress Factors indicate conclusively whether your Golf Specific Fitness Program is helping your golf game, or hurting it.

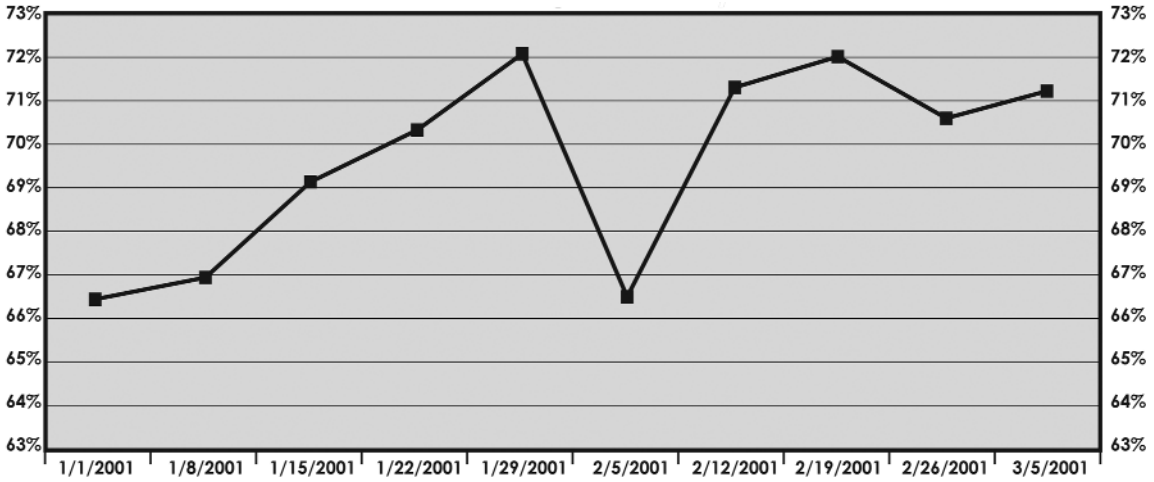
Below are illustrations of the graphs provided by the PPES© Software that allow you to see trends developing in your Four Main Golf Stats and your Playfit Golf Rating. *These graphs correspond to the data on the Playfit Golf Rating Page Actual view.* There is a separate graph for:

- Each Four Main Golf Stats (four total)
- The Playfit Golf Rating (one total)

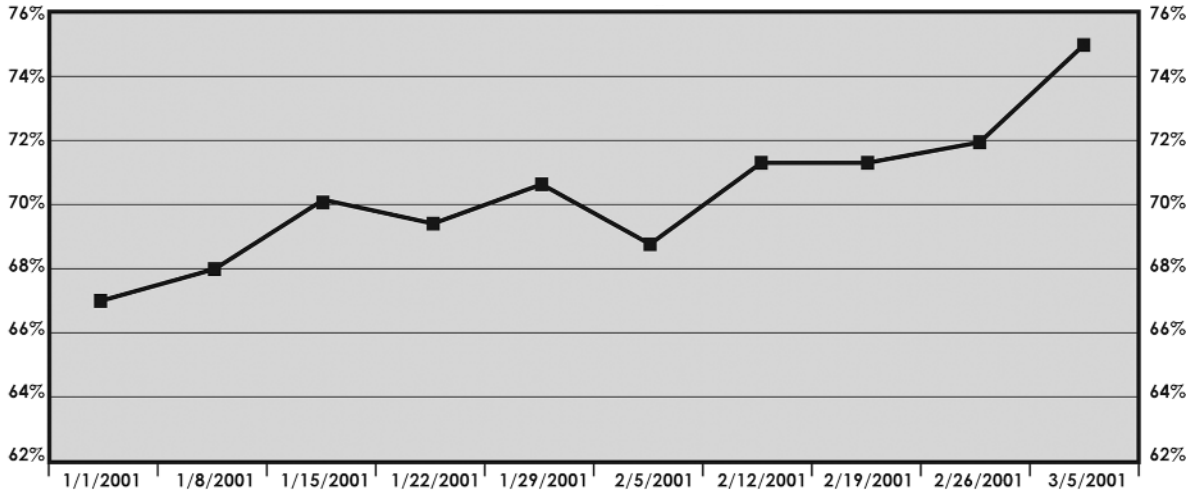
DRIVING DISTANCE GRAPH



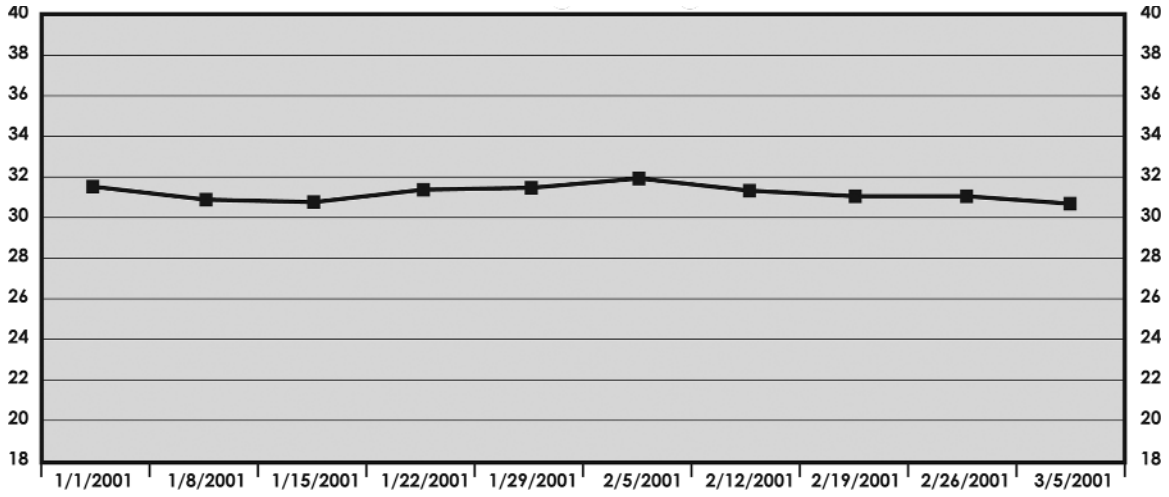
DRIVING ACCURACY GRAPH



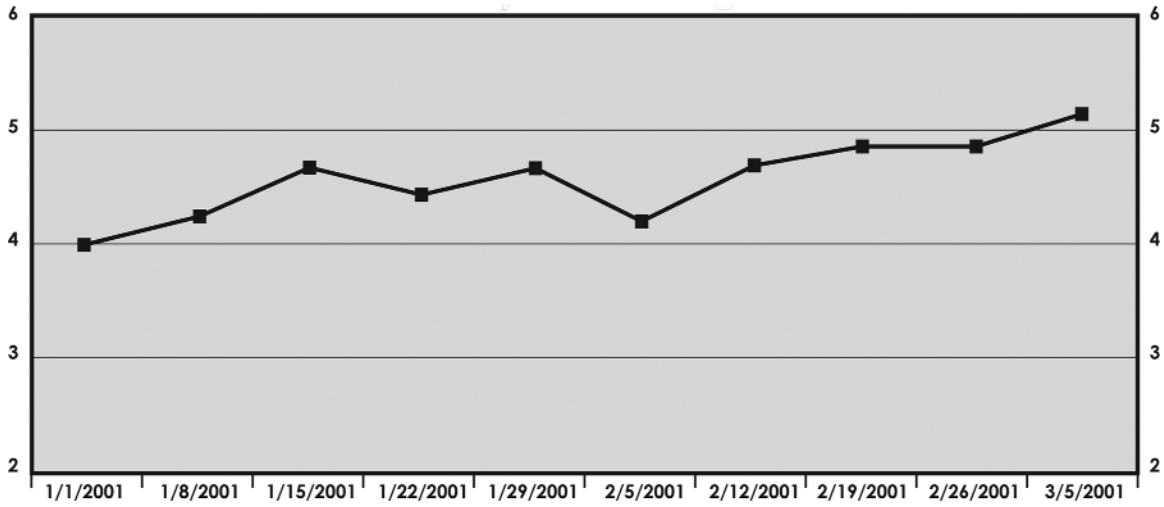
GREENS IN REGULATION GRAPH



PUTTING AVERAGE GRAPH



PLAYFIT GOLF RATING GRAPH



AGAIN, WHEN VIEWING THE GRAPHS ON THE PREVIOUS PAGE, REMEMBER THE TRENDS DISPLAYED ON EACH GRAPH CORRESPOND TO THE DATA ON THE PLAYFIT GOLF RATING PAGE (ACTUAL VIEW). IN ORDER TO VIEW THE TRENDS IN YOUR FOUR MAIN GOLF STATS AND PLAYFIT GOLF RATING, LIKE THOSE ABOVE, YOU HAVE TO RECORD YOUR DATA ON THE GOLF COURSE AND ENTER IT.

ASSESSING THE CONDITION OF SEVEN ASPECTS OF A GOLFER'S ATHLETICISM

As stated at the beginning of the book, the Seven Aspects of a Golfer's Athleticism are literally the control rods of all golf performance. In order to help you become sensitive to the condition of your Seven Aspects of Athleticism, it's critical that you begin attempting to assess the condition of each on a regular basis. The chart on the following page is an example of the Aspect Assessment Chart provided on the PPES© Software Program.

This is not a clear-cut assessment like measuring body fat percentage, or the size of your biceps, but one that's based on your *perceived condition* of each Aspect, rather than its actual condition. So until you become familiar with the assessment process, it's unlikely your initial assessments (first 5-10) will be accurate. However, that's part of the learning process and it's perfectly fine in the beginning. Over a period of time, the regular assessments will help increase your sensitivity to changes in the condition of each Aspect and make you more aware of how those changes influence your Golf Performance Indexes.

By comparing your *perceived condition* of each aspect (based on the way your body feels and performs during your golf round), to the golf performance data each round produces, over time you'll learn to determine the variation of the Six Golf Specific Fitness Components that have the most positive effect on your Seven Aspects. Ideally, you should complete an Aspect Assessment Chart each time you enter the required information, but no less than once each month.

REMEMBER, THE DESIRED CONDITION OF EACH ASPECT IS IN THE BALANCED (BAL.) POSITION. WHEN THE CONDITION OF ONE OR MORE OF THE SEVEN ASPECTS EITHER FALLS BELOW, OR RISES ABOVE THE BALANCED POSITION, THE OTHER ASPECTS CAN BE NEGATIVELY AFFECTED. IN ORDER TO DEVELOP A BETTER UNDERSTANDING OF THE RELATIONSHIP EACH ASPECT HAS WITH THE OTHERS, WE SUGGEST YOU REVIEW CHAPTER ONE PRIOR TO MAKING YOUR MONTHLY ASPECT ASSESSMENTS, OR AT LEAST UNTIL YOU DEVELOP A BETTER FEEL FOR THE ASSESSMENT PROCESS AND GET SOME EXPERIENCE UNDER YOUR BELT.

ASPECT ASSESSMENT CHART

Aspect 1	Aspect 2	Aspect 3		Aspect 4	Aspect 5	Aspect 6		Aspect 7	
Lower Back Strength	Joint Integrity	Strength	Flexibility	Kinesthetic Awareness	Coordination	Tempo	Timing	Endurance	Recoverability
○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3	○ + 3
○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2	○ + 2
○ + 1	○ + 1	○ + 1	○ + 1	○ + 1	○ + 1	○ + 1	○ + 1	○ + 1	○ + 1
○ Balance	○ Balance	○ Balance	○ Balance	○ Balance	○ Balance	○ Balance	○ Balance	○ Balance	○ Balance
○ - 1	○ - 1	○ - 1	○ - 1	○ - 1	○ - 1	○ - 1	○ - 1	○ - 1	○ - 1
○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2	○ - 2
○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3	○ - 3

Again, assessing the condition of each Aspect is based on your perceived condition of each Aspect. Being able to see the assessed condition of each Aspect on one page helps you determine if the condition of one may be negatively affecting the condition of (one or more of) the others. Below are a few tips that will help you learn to accurately assess the condition of each Aspect.

ASPECT #1 - How does your lower back feel? Weak, Painful, Loose, Fine, Strong, Tight?

ASPECT #2 - How do your joints feel? Weak, Painful, Loose, Fine, Strong, Tight?

ASPECT #3 - Do you feel your muscular strength exceeds a healthy balance with muscular flexibility, or the opposite? If so, to what degree?

ASPECT #4 - To what degree are you able to feel your golf swing? Is there a distinctive difference between the feeling of your "perfect" golf swing and that of your "flawed" golf swing? Does your present level of sensitivity allow you to determine the physical, or biomechanical nature of a flaw?

ASPECT #5 - How well do you manage your golf swing in a physical sense? Are all phases of your golf swing easily executed, or are there certain phases where you lack control?

ASPECT #6 - Does your Swing Tempo feel comfortable to you? According to your Timing Factor, is your golf swing efficient?

ASPECT #7 - How is your energy level during your second nine holes? How well do you perform on the second, third and fourth days of a tournament, as compared to the first day?

In order to become proficient in the assessment process, it's important that you give each area deep consideration and really try to follow the PPES© path for diagnostics.

Golf Specific Fitness Program Monitoring

In order to determine how your fitness strategies are affecting your golf performance, you must be able to link the golf performance data you're reading to the fitness strategies that influenced it. For example, if you've just entered the information into the Virtual PPES© Scorecard and you're viewing the performance data (Power, Timing, Accuracy, etc.) it's essential that you're able to review the fitness strategies you were using throughout the preceding weeks. After all, those golf specific fitness strategies would obviously be the ones that produced your latest golf performance data. The only way you can eliminate ineffective or counterproductive golf specific fitness strategies is by observing the influence they have on your Golf Performance Indexes and painstakingly scrutinizing the variation of the each golf specific fitness strategy you're using.

Now this does not mean you need to write down every single thing you do, in every single workout. It does, however, mean you should make a few notes concerning the *variation* of the Six Golf Specific Fitness Components you employ each workout. Then, when negative fluctuations in your Golf Performance Indexes occur, you can review your workout notes and determine if the *variation* of one or more of the Six Golf Specific Fitness Components you employed needs to be adjusted.

The Golf Specific Fitness Program Notes Page on the PPES© Software provides specific categories where you can type in a few notes regarding *the variation of* your Golf Specific Fitness Program. You would simply make a few notes in each section of the template regarding the exercises you performed and the variation of each Golf Specific Fitness Component you employed.

The following page is simply an example of the Golf Specific Fitness Program Notes Template provided on the PPES© Software, *with an example of a golfer's notes*.

GOLF SPECIFIC FITNESS PROGRAM NOTES

WEIGHT TRAINING EXERCISES:

- Squats
- Pull-downs
- Lateral Raises, Abdominal Crunches & Hyper-Extensions

STRETCHING EXERCISES:

- Hamstring Stretches (fairly intense)
- Lower Back Stretches (mild)

CARDIOVASCULAR EXERCISES:

- Treadmill (30 minutes at 3.8 MPH and on a 6 degree incline)

GOLF SPECIFIC FITNESS COMPONENTS NOTES:

Component #1 - Performed normal weight training movements, no major modifications.

Component #2 - I performed 15 to 20 reps on all exercises.

Component #3 - I was able to focus on my muscles much better with my eyes closed.

Component #4 - Good and smooth. My Exercise Movement Tempo is by far at best with a 15 to 20 repetition weight. Heavier weights (10 to 12 rep weight) make establishing good Exercise Movement Tempo impossible for me.

Component #5 - Anaerobic (weight training session lasted approximately 40 minutes). Aerobic (cardio lasted approximately 30 minutes).

Component #6 - I've been eating less than normal and missing breakfast too often. At this point, it doesn't seem to be affecting my Endurance or my Recoverability, but I don’t feel quite as strong.

GOLF INSTRUCTION NOTES

The PPES© Software will also prompt you to list any (new) Golf Instruction you've implemented and/or make a few general notes, to ensure you don't mistakenly attribute an increase or decrease in golf performance to your physical condition or your golf specific fitness program. For example:

GOLF INSTRUCTION NOTES:

"My Golf Instructor adjusted my grip and restricted my hip turn during my backswing. I'm not yet comfortable with the changes. I think it's affecting my Distance and my Accuracy because my fitness program has been producing positive results and I've made no changes."

Remember, the primary purpose of monitoring fluctuations in your Golf Performance Indexes is to help you determine the condition of the Aspects that support and/or influence them. And, if the condition of one or more of them is below par, the PPES© Book will help you understand how to adjust the Golf Specific Fitness Components to bring their condition up to par. The Aspect Diagnosis/Component Prescription Charts in Chapter Three are particularly helpful in the diagnostic/prescription process.

Again, the more often you record your golf performance data, the more accurate your golf performance analysis will be. *Again, our minimum recommendation is to record your golf performance data once every two weeks, but ideally you should record it from every round you play.*

A Note to Fitness Instructors

In order to measure your client's progress, a Golf Performance Rating must be established prior to their first training session. So in addition to the initial Fitness Assessment, make sure your client obtains the required Golf Performance Data during a golf round and obtains their initial Golf Performance Rating. This initial Golf Performance Rating will serve as the reference point from which the PPES© Software measures the influence your Golf Specific Exercise Prescriptions have on your client's golf performance. Once your client's initial Golf Performance Rating is established, you will proceed as you do with all of your clients (or as you see fit).

As you begin teaching the golf specific fitness program, you'll see that it's not all that different from a general fitness program. The minor differences are mostly in Golf Specific Fitness Components #1, #2, #3 and #4 and of course in the way progress is measured. In fact, someone watching you train a golf specific fitness client may not be able to tell you were doing something that much different than you do with your general fitness clientele. The three slight differences between a general fitness program and a golf specific fitness program are:

1) During the weight training portion of their session, you should try to use free weights as often as possible and make an effort to teach your clients to perform the weight training movements according to the specifications outlined in Golf Specific Fitness Components #1, #2, #3 and #4.
2) You should try to help your client discover the ratio of Aerobic Exercise to Anaerobic Exercise (Component #5) that meets their needs (with respect to Aspect #7).
3) The sports nutritional strategy you help your client develop must be based at least partially on the physiological information in Golf Specific Fitness Component #6.

And finally, when starting your client on a golf specific fitness program, it's important that you do not complicate the process for them, or for yourself. If you're reading this book, you're already an experienced personal trainer and you'll need to draw on that experience when making periodic modifications to your client's fitness program, based on fluctuations in their Golf Performance Indexes. So just do what you do and understand that improvement for golfers is simply measured differently than it is for your general fitness clientele.

Chapter Seven

The Playfit Golf Performance Tournament Format

Chapter Seven Learning Objectives:

- Golf Performance Tournament Rules & Regulations
- Golf Course Setup for Tournament Qualifying Rounds
- Golf Performance Tournament Scoring Strategies

The Playfit Golf Performance Tournament Format

The purpose of this chapter is to familiarize you with the Playfit Golf Performance Tournament Format, help you understand the rationale behind the Tournament Rules and Regulations and to get you excited about this totally new angle of golf competition. *Even golfers who don't care about exercising for golf will be intrigued by this new angle from which they can compete against themselves, their friends and the golf course.*

Introduction to The Playfit Golf Performance Tournament Format

The Annual Playfit Golf Performance Championship Series is a grassroots golf tournament that allows golfers to compare their new, improved golf specific fitness level each year, to that of other golfers, *in a competitive arena.* The winners of this tournament are not determined by their eighteen hole score, but by their *Overall Golf Performance Rating*, which is obtained with a formula comprised of the Five Golf Performance Indexes, i.e., Power, Timing, Accuracy, Endurance and Recoverability (Reference Chapters Three and Six).

Remember, this unique scoring system exposes the effect strength increases have on the more delicate Aspects of a Golfer's Athleticism. *More specifically, the effect Clubhead Speed increases have on Timing, Accuracy, Endurance, Recoverability and Putting*. So in this tournament format, golfers are rewarded for maximum Clubhead Speed and Driving Distance, *which reflect strength and power*, yet penalized when they have a negative effect on Timing, Accuracy, Endurance, Recoverability and Putting.

And since the Golf Performance Indexes measure the areas of golf performance that are influenced by a golfer's golf related areas of physical conditioning and athletic ability (Seven Aspects), *collectively*, they indicate a golfer's "golf specific" fitness level. So in addition to being intensely challenging and a lot of fun, the Annual Playfit Golf Performance Championship helps to further familiarize golfers (and their instructors) with the Golf Performance Indexes and helps them understand what they're capable of revealing about them physically and athletically, *relative to golf performance.*

So theoretically, the Annual Playfit Golf Performance Championship will reveal the most fit golfer each year, *in terms of actual golf performance*, thus helping everyone in the golf world make the distinction between the type of physical conditioning that improves the golfer's physique and that which improves their golf performance.

Qualifying Rounds for the Playfit Golf Performance Championship will be held only at PPES© equipped Golf & Country Clubs across the Country.

TOURNAMENT RULES AND REGULATIONS

One of the main things to keep in mind with the Golf Performance Tournament Format is that it's virtually impossible to attribute a stroke *that was not produced by an actual golf swing*, to physical conditioning and/or athletic ability. Therefore, the two stroke penalty does not apply in this format and no strokes are assessed unless the club strikes the ball. If a ball is hit out of bounds, the stroke from that shot and that shot only is assessed. The only time a shot is assessed without the club striking the ball is when standard USGA Rules *that are not overruled by the Golf Performance Tournament Format* apply, such as taking a drop from an unplayable situation, grounding your club in the sand, causing the ball to move while removing debris, hitting the wrong ball, etc.

Another major difference in the Golf Performance Tournament Format is that each shot stands on its own. *This means an out of bounds tee-shot will only affect Clubhead Speed, Driving Distance and Driving Accuracy; it cannot affect the opportunity to obtain a point for Greens in Regulation unless it's on a par three hole.* The Tournament Rule Chart at the end of this chapter provides the specifics on these fundamental differences.

This chapter will only provide the basic Golf Performance Tournament Rules & Regulations—ones that are less likely to be modified from year to year. Specific Golf Performance Tournament Rules & Regulations and Golf Course Specifications will be posted on the PlayfitGolf.com Website each year, prior to the qualifying rounds.

GOLF COURSE SETUP FOR QUALIFYING ROUNDS

In order to give golfers of all levels an equal opportunity to win, golf course is set-up must be taken into consideration. Therefore, PPES© Certified Tournament Directors at all participating courses will use the same guidelines when setting up their course.

The course specifications for the Playfit Golf Performance Tournament Qualifying Rounds are as follows:

- All Tees (red, blue, gold, championship, etc.) will be set in the middle of their designated areas.
- Clubhead Speed and Driving Distance are to berecorded on four holes on the front and four holes on the back. These eight holes should be those which provide golfers with the greatest chance of hitting the fairway, while attempting to hit one of their longer drives.
- *Participating Golf & Country Clubs will employ a reliable GPS System to record Driving Distance; portable GPS Systems such as the SkyCaddie™ by SkyGolf® are recomended to Golf & Country Clubs that do not have Golf Course GPS Systems installed on their golf carts.*
- All pins will be placed in the approximate center of the green, or in the area determined by the PPES© Tournament Director as those which provide the golfer with the absolute greatest chance of hitting the green.

Rules of Play

In order to provide as much consistency across the country, USGA rules will govern play except where PPES© rules may apply. The local PPES© Certified Tournament Director will resolve any disputes during the tournament and his/her decision will be final.

Amateurs must use their valid current USGA Handicap Index Revision that is in effect ten days prior to the qualifying round. All official rounds will be recorded on a PPES© Scorecard issued by, and returned to the PPES© Certified Tournament Director. Each card must be signed by the player and attested by another player in the group.

Guidelines for collecting the data to be entered on the PPES© Scorecard are provided in Chapter Six of the PPES© Book. However more specific protocol must be followed when competition exists. Where questions may arise from different situations on different golf courses please refer to the PlayfitGolf.com website for clarification and updates to all rules.

Keeping Score on the PPES© Scorecard

Clubhead Speed:

- A driver and or 3-wood only may be used and neither can exceed forty-six inches in length.
- There will be four entries on each nine holes, for a total of eight, to be designated by your PPES© Tournament Director.
- Clubhead Speed entries must be recorded on par four and par five holes with the driver or 3-wood.
- If for any reason the Clubhead Speed analyzer does not record a swing, an average of the other measurable swings for that nine hole side will be recorded—*the calculation of which to be performed by the PPES© Tournament Director.*
- If the tee-shot is hit OB, a second ball will be hit and Clubhead Speed will be recorded from that ball.

DRIVING DISTANCE:

- *Participating Golf & Country Clubs will employ a reliable GPS System to record Driving Distance; portable GPS Systems such as the SkyCaddie™ by SkyGolf® are recomended to Golf & Country Clubs that do not have Golf Course GPS Systems installed on their golf carts.*
- Driving Distances will be recorded on the holes designated by the PPES© Tournament Director, to correspond with those on which Clubhead Speed is recorded.
- If the Clubhead Speed analyzer doesn't read, Driving Distance will stand.
- If the tee-shot is hit OB, a second ball will be hit and Driving Distance will be recorded from that ball.

DRIVING ACCURACY:

- Driving Accuracy will be recorded on all par four and par five holes,
- If any part of the ball touches the fairway, the ball is deemed in the fairway.
- If any club, other than the driver or 3-wood is used on one of the holes, the area of the PPES© Scorecard for recording Driving Accuracy on that hole will be left blank.
- If the tee-shot is hit OB, Driving Accuracy point is lost on that hole and a second ball will be hit; the GIR opportunity however is unaffected.

GREENS IN REGULATION (GIR):

- Par three holes: After one stroke from the teeing ground, if any part of the ball is touching the green of the hole being played, record a one (1) on the PPES© Scorecard. If the ball does not come to rest on the green after the first stroke, record a zero (0).
- Par four holes: After the first or second stroke from the teeing ground, if any part of the ball is touching the green of the hole being played, record a one (1) on the PPES© Scorecard. If the ball does not come to rest on the green after the first or second stroke, record a zero (0).
- Par five holes: After the first, second, or third stroke from the teeing ground, if any part of the ball is touching the green of the hole being played, record a one (1) on the PPES© Scorecard. If the ball does not come to rest on the green after the first, second, or third stroke, record a zero (0).
- For the purpose of scoring Greens in Regulation only, any penalty strokes for lost ball, out of bounds, unplayable lie, or relief from a hazard, will be assessed after the ball has been holed.

PUTTS PER HOLE:

- After the ball comes to rest on the green, record the total number of strokes taken until the ball has been holed for each of the eighteen holes.
- If a golfer should hole out from off the green, record a zero (0) on the PPES© Scorecard for that hole.

SCORE:

- On each of the eighteen holes, record the total number of strokes taken, including any penalty strokes, according to the USGA Rules of Golf.

ANY ADDITIONAL TOURNAMENT RULES AND REGULATIONS, MODIFICATIONS OR UPDATES TO THOSE CURRENTLY IN PLACE WILL BE POSTED ON THE PLAYFITGOLF.COM WEBSITE.

PLAYFIT GOLF PERFORMANCE TOURNAMENT SCORING STRATEGIES

The Playfit Golf Performance Tournament will actually make you a better golfer because the scoring strategies you'll learn in this format will significantly improve your ability to score in the traditional format.

THE TEE-SHOT

Whether you're teeing off on a par five, a par four or a par three, *the tee-shot is literally the foundation of your score*. On par fours and par fives, a well placed tee-shot puts you in position to hit the green in regulation or to even fire at the pin, while on a par three it allows you to putt (rather than chip) for birdie. On the other hand, a poor tee-shot on a par four or a par five can prevent you from hitting the green in regulation and force you to scramble for par. This is also the case on a par threes. So in the normal scoring format, the tee-shot is clearly the most important shot on a hole.

But the tee-shot is even more important in the Golf Performance Tournament Format. For example, in the normal scoring format, a bad tee-shot can often be overcome by a good second shot, or some solid work around the green. But that's impossible in the Golf Performance Tournament Format

because each shot has an independent and permanent effect on your score (your Golf Performance Rating). More importantly, there are four critical measurements in the golf performance rating obtained from the tee-shot, Clubhead Speed, Driving Distance, Timing and Driving Accuracy. So even if you were to hole out your second shot, these four measurements (Clubhead Speed, Driving Distance, Timing and Driving Accuracy) would still be factored into your score. So in a nutshell, a 350 yard drive that settles two inches off the fairway is far less forgiving on your golf performance rating than on your actual score, because you don't have an opportunity to recover from it.

In order to obtain maximum Clubhead Speed, plenty of Distance, Accuracy and a good Timing Factor on your tee-shot, you should focus on making a good smooth swing with good Tempo. This will help produce good Timing, which typically produces maximum Distance at a given Clubhead Speed. In addition to producing a good Timing Factor, a smooth swing with good Tempo is more likely to leave your tee-shot in the fairway than trying to smash the ball in an attempt to maximize your Clubhead Speed and Distance measurements. And by all means make sure you're lined up correctly. To refresh your memory on how devastating missing the fairway in this tournament format (scoring system) can be, review chart in Chapter Four.

SHOT PLACEMENT

Another thing to consider with your tee-shot is how it's going to affect your second shot. A long tee-shot that settles on the edge of the fairway is obviously still in the fairway, which takes care of Driving Accuracy. But if it prevents you from hitting the green on your next shot, it really can't be considered a total success because your Accuracy Rating will suffer by missing the green. Remember, the Accuracy Index is a combination of Driving Accuracy and Greens in Regulation. While a long, accurate tee-shot with good Timing is ultimately what you're trying to accomplish, if it leaves you in poor position to hit the green with your second shot, it cannot be considered 100% successful, because missing the green will substantially reduce your Golf Performance Rating.

So in addition to hitting the fairway, the placement of your tee-shot (in the fairway) is crucial. It should place you in the best possible position to hit the green, thus preserving your Total Accuracy Rating for the hole and providing you with a good putting opportunity.

In order to become as competitive in this tournament as you're capable of becoming, be sure to visit the Scoring Strategies Forum on the PlayfitGolf.com Website frequently.

Important Point:

GOLFERS ATTEMPTING TO QUALIFY ON GOLF COURSES WITH 9 AND/OR 18 HOLE PARS OTHER THAN THE TRADITIONAL PAR 36 AND PAR 72, NEED NOT BE CONCERNED THEIR GOLF PERFORMANCE ANALYSIS WILL BE ALTERED IN ANY WAY, OR THAT THEIR OPPORTUNITY TO QUALIFY WILL BE LESSENED. THE PPES© SOFTWARE WAS DESIGNED WITH THESE COURSE DIFFERENCES IN MIND AND MAKES THE NECESSARY CALCULATIONS TO CONVERT THE DATA TO MATCH THE TRADITIONAL PAR 36 FRONT, PAR 36 BACK AND PAR 72 EIGHTEEN.

The chart below specifies the standard Playfit Golf Performance Tournament Rules.

TOURNAMENT RULE CHART

Tee Shot Out of Bounds, in Hazard or Lost			
Par of Hole	**Initial Effect**	**Additional Effect**	**Course of Action**
Par 3	1 shot penalty (per attempt)	GIR opportunity lost.	Hit 2nd Ball; Record Clubhead Speed & Distance on 2nd ball.
Par 4	1 shot penalty (per attempt), loss of Driving Accuracy.	GIR opportunity unaffected.	Hit 2nd Ball; Record Clubhead Speed & Distance on 2nd ball.
Par 5	1 shot penalty (per attempt), loss of Driving Accuracy.	GIR opportunity unaffected.	Hit 2nd Ball; Record Clubhead Speed & Distance on 2nd ball.
2nd Shot Out of Bounds, in Hazard or Lost			
Par of Hole	**Initial Effect**	**Additional Effect**	**Course of Action**
Par 3	1 shot penalty (per attempt)	GIR opportunity lost.	Hit 2nd Ball.
Par 4	1 shot penalty (per attempt)	GIR opportunity lost.	Hit 2nd Ball.
Par 5	1 shot penalty (per attempt)	GIR opportunity unaffected.	Hit 2nd Ball.
3rd Shot Out of Bounds, in Hazard or Lost			
Par of Hole	**Initial Effect**	**Additional Effect**	**Course of Action**
Par 3	1 shot penalty (per attempt)	GIR opportunity lost.	Hit 2nd Ball.
Par 4	1 shot penalty (per attempt)	GIR opportunity lost.	Hit 2nd Ball.
Par 5	1 shot penalty (per attempt)	GIR opportunity lost.	Hit 2nd Ball.

Additional Rules:	Course of Action
Clubhead Speed Analyzer does not record.	Record the average of the previous Clubhead Speed Measurements.
Clubhead Speed Analyzer does not record on 1st hole.	Record the average of the subsequent Clubhead Speed Measurements.
GPS System fails to provide distance measurement.	Step off approximate yardage from golf course yardage markers.

EPILOGUE

As stated in the opening paragraph of this book, the number and variety of Golf Specific Fitness Programs being offered has increased substantially over the past few years. So in order to protect both the golfer and the sport from fitness programs that improve the golfer's physical condition at the expense of their performance on the golf course, it's critical to have standards by which this new area of instruction can be judged. So at this point, the stage is set for the PPES© to become *the official standard* used by the PGA, the PGA Tour, PGA Golf Professionals, Golf Academies, High School & College Golf Teams, Golf Specific Fitness Instructors and of course Golfers for evaluating *and monitoring* their physical condition and athletic ability in terms of golf performance.

As broad and complex as the PPES© Book is, the truth is it barely scratches the surface of golf specific fitness. The few pages of text used to enlighten you on each Aspect of a Golfer's Athleticism, each Golf Specific Fitness Component and each Golf Performance Index, only form the foundation on which hundreds of thousands of pages of new information will be written *to expand on them*, by thousands of PGA Golf Professionals, Physical Therapists, Sports Nutritionists and PPES© Certified Fitness Instructors (on the PlayfitGolf.com Website).

For this reason, the PPES© will likely spawn a *golf specific health and fitness education explosion*, similar to that which Joe Weider spawned in the mid seventies, with the help of bodybuilders such as Arnold Schwarzenegger. Combined with the unique blend of education and competition set in motion by the Playfit Project, this will significantly elevate the educational level of everyone associated with the sport of golf, on the subject of golf specific health and fitness.

As we move further into the new millennium, a new breed of golfer will emerge. This new breed will have tremendous Clubhead Speed, accompanied by a phenomenal sense of touch and display a significantly more powerful physique than those displayed by golfers a decade ago. Tiger already fits this profile, especially regarding the Clubhead Speed/Touch comparison. While his measure of physical conditioning and athletic ability is exceptional today, rest assured, *it will be the standard for tomorrow*. Nevertheless, fitness for the golfer is here to stay. In just a few short years, being a competitive golfer *without* a fitness program will be regarded as ridiculous as being competitive *with* one was regarded in the past.

God Bless and Remember to Playfit™
John Knight

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ACSM Resource Manual

The Premier Golf Specific Fitness System, for Health Conscious and Performance Minded Golfers of all Ages

The Playfit Performance Enhancement System (PPES©) is a Universal Golf Specific Fitness System and the *Core Component* of the Playfit Project. It is designed to develop golfers *from the inside out* by helping them understand how their fitness strategies and their personal trainer's exercise prescriptions affect their *golf related* areas of physical conditioning and athletic ability.

This powerful educational/diagnostic tool has been in development for approximately 7 years and is the brain child of John Knight, the son of a PGA Golf Professional, a golfer for 37 years and a Sport Specific Fitness Instructor for nearly 25 years.

The PPES© provides a brilliant account of the cause and effect of golf specific fitness strategies and serves as a template for golf specific health & fitness education.

Unlike the current methods of evaluating the golfer's fitness level, which involves measuring improvements in their physical condition (Strength, Flexibility, Range of Motion, Body Fat Percentage etc.), the PPES© teaches golfers how to measure their fitness level *in terms of Golf Performance with Golf Performance Indexes (Power, Timing, Accuracy, Endurance and Recoverability).* As a result, the PPES© accommodates everyone in the golf industry, helping them to become either better golfers, better instructors, or both.

As the *Core Component* of the Playfit Project, the PPES© sets in motion an intense and perpetual learning process, while its complexity spawns a unique blend of education and competition between golfers and instructors on the PPES© Support System:

- The PlayfitGolf.com Website
- GolfSpecificFitnessMagazine.com
- PlayfitGolfMD.com

The PPES© is also the *foundation* of the most difficult and educational golf tournament in the history of the game—*The Annual Playfit Golf Performance Championship.*

The Playfit Project for Golfers

"BUILDING GOLFERS FROM THE INSIDE OUT"