

555 GOLF TIPS

'PERFORMANCE EXCELLENCE'

FITNESS DRILLS

BASIC PHYSIOLOGY

The modern vision and approach to 'Fitness' is changing as we speak. Old rules are being discarded and new ones are being implemented. Our knowledge increases every day. We are, therefore, getting better at what we do. You shall benefit!

MUSCLES

Muscles are made up of thousands of tiny cylindrical cells called "Muscle Fibrillae" or fibers. They run parallel to each other and some can be as long as 30 cm. Muscles are connected to bones ('Skeletal Structure') by tendons, which consist of dense, strong yet pliable connective tissue. It is muscle fibers and tendons that we need to stretch to gain maximum benefits of good flexibility and to decrease the likelihood of 'Soft Tissue Injury' ('STI')

HOW MUSCLES REACT TO EXERCISE

Exercise is a disciplined form of physical activity designed to place stress on the 'Body Machine'. When this 'Bony Fleshy Machine' experiences and recovers from physical stress, it is better prepared and more capable of performing that particular physical activity in the future. This is the process of 'Fitness'.

Stress initially causes inflammation.

Increased cellular demand at the muscle site causes the heart to respond by pumping more vigorously and thus providing more 'Oxygen' and 'Nutrition' while removing physiological waste or by-products of this 'Muscular Work'. Look upon the muscles as a type of engine. When they do work, like a train locomotive, they give off residue and exhaust in their own form.

Higher blood volume naturally causes 'Swelling'. This applies pressure on the many nerve endings. We feel discomfort and even pain. When the 'Muscular Work' is completed, the 'Fibrillae Action' helps to push or pump the 'Used Blood' back to the heart and lungs to be replenished or renewed. Lactic acid and impurities must be removed!

When the exercising muscles stop 'Working' so too does the force that helps return the blood volume to the heart. This results in 'Blood Pooling' ('Increased Inter-Cellular Pressure'), which can be uncomfortable or even painful.

When the 'Stress or Work' is excessive, a lot of damage can occur to the individual fibers. This damage can occur in the form of 'Minute or Micro Tears' within the individual muscle or even

involve the ‘Tendons and Ligaments’. Swilling is a co-product! This results in discomfort and pain, which continues through the ‘Rest & Recovery Process’. During this period your performance may even deteriorate. You must reduce the ‘Applied Stress’ to prevent serious injury.

Too much or inappropriate exercise can have a disastrous effect on performance and can result in injury as well. Too much of a seemingly good thing can become a bad thing. That is why we seek out and respect prudent experienced advice from professional trainers and physiology scientists. Pay heed!

THE PROCESS

We need to be exposed to and involved in ‘Appropriate Exercise’! When we push the envelope foolishly, we become exposed to injury and the necessary recovery.

Athletes should know that ‘**Power & Range Of Motion**’ (‘ROM’) are vital ingredients in any physical game or athletic endeavour. Coaches are constantly in search of ways to improve ‘Power & ROM’.

If you are a basketball player, you need to jump higher, run faster and change directions more efficiently. Surprisingly, there is a tremendous controversy on what is the most efficient manner by which one might achieve this higher level of performance.

Let us see if we can clarify some relevant points. What is needed to achieve maximized performance?

‘**Change Only Takes Place Over Time**’ when and if specific tasks are accomplished and existing thresholds broken or overcome. Improving comes in few packages!

To find a way to improve athletic ‘Power’ we first need to define what it is. Power is simply the rate at which work can be performed. Work is defined as ‘The Product of Force and Distance’. The well-known formula for ‘Work’ is ‘**W=FD**’.

$$\frac{\text{POWER} = F \times D}{\text{TIME}}$$

When one examines this formula, one can see that there are several different ways to improve an athletes ‘Power’. If one alters either ‘Force’, ‘Distance’ or ‘Time’ the equation is altered. Keep in mind that ‘**One Horse Power is 550 Foot Pounds Per Second**’. Interestingly, we can create or accomplish one horsepower by lifting 550 pounds up one foot in one second or by lifting 1 pound 550 feet during the same period of time! Stay flexible in your view of ‘Power’. This knowledge will give us a baseline from which to register our thoughts.

Let us consider the ‘**Increase In Force**’. Increasing the ‘Force’ applied to a specific sports skill (‘While Keeping Distance & Time Constant’) is one way to increase ‘Athletic Power’. So, in order to increase the application of force, one must boost ‘Strength’ as this and ‘Force’ as synonymous.

Strength can be defined as ‘The Ability Of Skeletal Muscles To Produce Force’. If one can increase ‘Force’, then the above ‘Power’ equation can be enhanced. We must **‘Strengthen’!**

Let us consider the **‘Increase In Distance’**. Increasing the ‘Distance’ ‘Force’ is applied (‘While Keeping Force & Time Constant’) is another way to increase ‘Athletic Power’. The most efficient manner by which we might increase this factor is by increasing our ‘Flexibility’ (**‘Range Of Motion - ROM’**). We must **‘Stretch’!**

So, we come to the age-old physical tenet of **‘Stretch & Strengthen = Power’!**

Finally, let us consider the **‘Decrease In Time’**. Decreasing ‘Time’ during which a ‘Force’ is applied (‘While Keeping Force & Distance Constant’) is yet another way by which we might improve ‘Athletic Power’. By decreasing the ‘Time’ required to perform a specific skill means increasing the ‘Speed’ by which the skill (‘Motion’) is performed. If we can do the same ‘Work’ faster, we can increase the ‘Athletic Power’. The most effective and practical way to achieve this increase in speed (‘Decrease In Time’) is through relentless hours of task-specific or skill practice.

Thus, by the above understanding of ‘Horsepower’, (555 Foot Pounds / Second), if one lifts 550 X 2 = 1100 pounds one foot in one second, the ‘Power’ utilized is ‘Two Horsepower’. The ‘Power Component’ relationship is flexible but consistently balanced!

One must practice the skill exactly as it will be required under the pressure of real performance or competition. Anything short of this ‘Real Practice’ will not achieve the desired results under fire!

Growth is an undertaking and change that can only take place over time in certain space.

It is founded on **‘Desire’**, **‘Honesty’** and an ever **‘Open Mind’**.

Never lose sight of this conditional reality.

“Welcome Aboard!”
“Enjoy The Ride!”

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