

## IMPORTANCE OF STRENGTH AND CONDITIONING FOR HOCKEY

The sport of Hockey is one of the most demanding sports in the world. It requires each athlete to be strong and powerful all while maintaining speed and agility. These specific aspects are trainable and the off-season is the time to do it. With the absence of practice and games the body can now focus on improving its structural elements. Tissues like muscle and bone which need to be stimulated to grow. Strength training supplies the stimulation necessary to evoke an increase in both of these tissues. Research supports this claim and helps to shine light on the benefits associated with the correct application of strength and conditioning programs.

With the increase in the amount of people taking part in hockey specific training it becomes even more important to make sure you are not left behind. Every hockey player knows that having a physical advantage is vital to the game. Coaches are always looking for athletes who can show a dominant edge over opponents. This dominant edge is the direct result of athletes who use their summer as a time to undergo sport specific training. Those who choose to forgo off-season training can only expect to remain the same year in and year out. Improvements only come from hard work and dedication.

With the right conditioning program every player can improve their game. From new found speed to more powerful shots. These aspects of hockey become even more important as you progress through the levels of amateur hockey. Each year the demand for more foot speed and physicality are increased. Any sport specific skill requires consistent training which is the key to any positive adaptation.

## WHAT TO TRAIN AND WHY

In a hockey conditioning program it is very important that the training includes all relevant requirements of the sport. The main areas that should be addressed include components of flexibility, strength, power, speed, agility and anaerobic capacity.

Flexibility is important in all sporting situations (and in daily life) as it aids injury prevention, muscle force production and improved swing mechanics. A muscle can only contract as forcefully as its antagonistic muscle can relax. Stretching promotes relaxation in the muscles and thus can help in all aspects of your hockey shot. Proper flexibility through the trunk allows for optimal trunk rotation and greater stick speed.

Stretching also relates to injury prevention. According to several studies the most commonly occurring injuries among amateur hockey players are groin injuries followed by shoulder then wrist injuries, often caused by over-use and inflammation of the area. Any similar explosive movements repeated over and over will train and condition some muscles whilst others are neglected. At the most obvious level, the hockey shot is performed in the same direction every time. Unequal forces are placed on one side of the body compared to the other. This results in subtle changes in posture and muscular balance that can create issues further down the road. Larger muscle groups might develop at the expense of smaller, stabilizing muscles, which puts them under a disproportional amount of strain - what can be referred to as a muscle imbalance.



It only takes a few weak muscles to cause postural changes over time, that may weaken them further until the end result is chronic pain and over-use injuries. While a hockey conditioning program is by no means a cure-all, it is the best solution for tackling the underlying cause of musculo-skeletal injuries. By adding in a few choice exercises to specifically stretch and strengthen these weaker areas, they become more resistant to over-use, tearing and inflammation. If you take some time off each year and focus on restoring an optimal balance you can prevent future injuries.

## EMPHASIS ON CORE TRAINING

The core encompasses more than just the abdominals and low back muscles, it is the entire lumbar-pelvic-hip complex. The core is the power producing center of the body and it must be a focus of any successful training program, as recruitment of the core muscles is an integral part of every athletic movement. A strong core is imperative for injury prevention, functional mobility and maintaining correct posture. The core stabilizing muscles become engaged when the body stabilizes itself when balance is challenged. Balance and core training are synonymous as a strong core transfers to a stable shoulder and pelvic girdle and then distally to the prime movers, the arms and legs. Due to the complexity of the system, it must be incorporated into every training movement with an understanding of its importance and its role with regards to stabilization and mobilization. In addition to creating power, the core also protects one's body from overuse injuries that may result from a high volume of training.

To improve an athlete's balance, the athlete must be challenged from various angles, and for different intensities and durations. To maintain balance when subjected to such challenges, the athlete struggles to gain his equilibrium in relation to the force of gravity (maintain his centre of mass within a base of support). This act requires constant, accurate, sensory perceptual feedback and the coordinated co-activation of agonist and antagonist muscle groups. Resultant improvements in balance will increase the athlete's ability to fully utilize their strength and power.

All exercises in a hockey conditioning program must take posture and the body's position during the entire range of movement into consideration. Correct posture will increase a hockey player's power, balance, and efficiency of movement, ultimately leading to improved performance.

A Hockey Strength and Conditioning Program must not only include the demands of the sport but also the movements related to the sport. It is imperative when attempting to train athletes that the exercises replicate the muscle mechanics, muscle synchronization, neuromuscular requirements and muscle physiology of the game demands through the use of sport-specific drills.

## INJURY REHABILITATION

After the hockey season has come to a close there are bound to be nagging injuries that have been put off to continue playing through the playoffs. These issues can now be assessed and a plan of action can be implemented to start the healing process. Along with the progression of the rehabilitation process a sequential application of strength training can occur. If you have an injured shoulder what's stopping you

from training the remainder of your body. The mistake often made by people with injuries is to stop activity all together. This not only causes more problems but you also go through the physiological process of detraining. Inactivity results in a reduction of stress placed on the body and causes your body to lose muscle mass. As you can see it is imperative to target an injury while continuing with a training program. This means that you can improve your performance by correcting the existing injury and enhancing the rest of your musculature.



## PERIODIZATION

In the early phase of any conditioning program, a functional strength foundation must be developed. After the body becomes accustomed to the various weight lifting techniques the next step is to increase muscle mass. Following an increase in lean body mass the next logical phase is to develop peak strength and power while using more hockey specific exercises and movements. Finally it is important to maintain the strength and power that has been developed.

### **Phase 1 - Build a Foundation**

The exercises in this phase are more conventional and use moderate weights. At this stage the most important goal is prepare the body for the demands of sessions later on. It is also a time to address some of the imbalances inherent in many hockey players. There are two purposes to this phase. Firstly it prepares muscles, ligaments, tendons and connective tissue for more demanding exercises; and secondly, it helps to target neglected, stabilizing muscles.

### **Phase 2 – Increase Lean Body Mass**

This phase is all about increasing muscle, tendon and bone densities. The adaptation to these tissues will enhance the following strength phase to come. Without this phase the body will not respond optimally to the stresses involved in maximum force generation.

### **Phase 3 - Develop Hockey-Specific Strength and Power**

Once a solid foundation of lean mass has been built, it's time to increase strength and convert those gains into explosive power. Hockey requires many powerful movements which are the result of a combination of strength and speed. Becoming stronger and then developing the ability to apply that strength quickly is the real key to athletic movements. That's how you'll increase your shot speed and play with a more physical edge.

### **Phase 4 – Master Conditioning**

During the off-season (ideally) you've built new lean mass and strength, which will help to balance your musculature. You then progressed onto a more hockey-specific, more demanding program to help develop your power. Now the goal is to maintain those gains in strength and power that you've worked hard to develop. Of course it's always good to vary the program every few weeks or so. This way you can avoid overtraining certain muscle groups while neglecting others. It also acts as mental stimulation to keep the body and mind 'guessing'!



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## TRAINING PROGRAM

Our hockey program was created with a focus on individual improvements in strength, power, speed, and agility. Each athlete will be given personalized exercises which will target individual weaknesses and allow for the development of a more complete athlete. Each session will utilize advanced strength training techniques with an emphasis on sport specific movements. A periodized training program will ensure the each athlete continues to progress during the off-season. The main idea behind this program is to create a stable base from which athletic movements can be performed in a more efficient manner with greater force generation.