

Check out the latest OFF-ICE TRAINING tips:

- 1. Warm-up dynamically to improve mobility and reduce the risk of injury.**

Why? In preparation for exercise, the body should be moved through large ranges of motion in all three planes of motion (sagittal, frontal and transverse). This dynamic movement excites the nervous system, warms muscles and lubricates joints while improving movement mechanics and mobility (coordination, balance, strength & flexibility).

How? Perform a variety of walking, skipping, lunging, kicking, bending and twisting movements (and combinations of two or more) for 10-15 minutes before exercise.
- 2. Train movements, not muscles!**

Why? The human body is a kinetic chain that operates as an integrated functional unit, with muscles, joints and the central nervous system working interdependently to produce movement. Muscles do not work in isolation! Unlike bodybuilding then, sport performance training prepares the body to move with speed, strength, coordination and stability. The goal is function, not form.

How? Incorporate multi-joint, not single-joint (isolation) exercises in to workouts. For example, choose squats over leg extensions or leg curls. Choose exercises that move the body the way it is moved on the ice. Rather than a forward lunge, choose a diagonal (or hockey) lunge. Include explosive side passes with a medicine ball rather than doing crunches on the floor.
- 3. Choose ground-based movements.**

Why? Most sport skills are initiated by applying force with the feet against the ground. In hockey, the more force an athlete can apply against the ice with the edge of the skate blade, the faster they will accelerate and more effectively they move. Lifting exercises and conditioning drills should be chosen which enhance ground-based force production. Obviously exercises performed seated or lying down do not enhance this potential.

How? The squat (single and double leg) and Olympic movements (clean, snatch and jerk) are recognized as the best movements for increasing force production. Plyometrics and hockey-specific agility drills are also beneficial.
- 4. Choose unilateral movements.**

Why? Hockey is a game played mostly on one leg. Rarely are both feet on the ice at the same time. Skating involves pushing explosively off one leg and then the other. This ability to generate force at high rates of speed with one leg at a time is crucial for on-ice success and can be significantly improved with unilateral training.

How? Squatting, leg pressing and other bilateral leg exercises are limited in value for hockey players. Single-leg squats, lunges, single-leg deadlifts and step-ups performed in all 3 planes of motion are exceptional. Plyometric drills that focus on a unilateral take-off and landing are also great.
- 5. Train the core the way it is used on the ice.**

Why? The core is the body's center of gravity. It is the area where all movement begins. There are 29 muscles that attach to the lumbo-pelvic-hip complex and these muscles operate as a functional unit to stabilize the spine during movement. When the core is weak, inefficient movement results and risk of injury is elevated. Since hockey is played primarily on one leg, core stabilization strength and endurance is crucial for effective movement. Rotation is another important movement in hockey that requires excellent core stabilization strength.

How? Include stabilization exercises like bridging and 1-leg balancing. Bridging (on your elbows, shoulders, heels or knees) involves holding an isometric (static) position while keeping the core muscles contracted. For example, drop from a pushup position down on to your elbows and forearms, keeping your back flat and your abs tight. Hold this position (with only your toes and elbows on the floor) for 20 seconds. Repeat. Add 5 seconds each week. To improve rotary power use medicine ball throws (against a wall) or standing twists using a resistance cord.
- 6. Train on unstable surfaces.**

Why? Training in an unstable environment increases training intensity because it requires

increased levels of joint stabilization and neuromuscular efficiency. A skate blade is 3 millimeters wide- most definitely an unstable surface! Unlike running, skating requires exceptional unilateral stability because the surface contact area is minimal. Since the central nervous system will only allow prime movers (muscles) to be recruited to the degree that the joint can be stabilized, it is important to optimize stabilization strength and neuromuscular control before training for absolute strength improvement.

How? Many innovative, challenging (and fun) modalities exist for training stabilization strength and neuromuscular control. The most popular tool is the Swiss Ball (SB). It can be used for core, upper body and lower body training. For example, performing a traditional crunch on a SB dramatically increases the recruitment of core musculature increasing the effectiveness of the exercise. Similarly, a single-leg squat or split squat performed with the back leg elevated on a SB significantly increases the activation of ankle, knee, hip and core stabilizers, while the prime movers are also being strengthened. Balance boards, foam rollers, air-filled disks and other modalities are also popular tools for hockey-specific training.

7. **Incorporate variety and progression.**

Why? There is no magic training program. All programs need to be varied on a regular basis to achieve optimum performance. The specific variables that must be manipulated to ensure continuous improvement include: volume, intensity, movement tempo or velocity, rest, and exercise difficulty. These variables should be adjusted based on training goals, phase of training, and individual strengths and weaknesses.

How? Training programs should include a variety of exercises that involve different types of muscle contractions (eccentric, isometric, concentric), different speeds of movement and the use of different modalities. At least one training variable should be adjusted in your workouts every 2 weeks. For example, a single-leg squat could be progressed to a single-leg squat on an unstable surface, or with dumbbells.

8. **Train the appropriate energy systems.**

Why? Hockey is an anaerobic intermittent game. In other words, it is a game of intense bursts followed by periods of rest. The anaerobic energy system is challenged during the intense bursts while the aerobic energy system is involved during the recovery period between shifts. Both systems must be exceptionally well developed to perform optimally. Metabolic training to enhance aerobic and anaerobic capacity for the game of hockey should focus on interval training. As the season approaches, work intervals should be gradually lengthened while rest intervals should be gradually reduced.

How? Interval training can be done with any mode of exercise- biking, running, climbing, skating. Short intervals (0-15), medium intervals (15-45) and long intervals (45-90) can be alternated within a training cycle. When aerobic capacity is the goal, combine long intervals with one or two steady-state workouts per week. Closer to the season, when anaerobic capacity is the goal, short and medium intervals should be emphasized.

9. **Finish with a static stretch.**

Why? At the beginning of a workout the goal is to improve functional (or dynamic) flexibility using integrated movement activities. After a workout, when the body is warm and loose, static stretching is essential for improving postural dysfunctions, muscle imbalances, increasing soft tissue flexibility (in all three planes of motion), and enhancing recovery by increasing blood flow to muscle tissue.

How? After each workout spend 5-15 minutes statically stretching the muscle groups used during the workout. These passive stretches should take the muscle to the point of tension where it should be held for a minimum of 20 seconds.

10. **Recover strategically.**

Why? Recovery from exercise can be accelerated with proper attention to stretching, massage, nutrition and sleep. Some techniques like stretching massage and contrast showering draw fresh oxygenated blood in to muscles and promote the elimination of waste products. Nutritionally, ingesting the right substances (food and supplements) at the right times can make a huge difference. Specifically, replacing glycogen (muscle fuel) with quality carbohydrates, repairing muscle tissue with quality protein, ingesting antioxidants to assist with cellular recovery and glutamine to keep the immune system

supported expedites the recovery process.

How? After each workout spend 5-15 minutes statically stretching the muscle groups used during the workout. These passive stretches should take the muscle to the point of tension where it should be held for a minimum of 20 seconds. Next, self-massage using a foam roller or massage stick is a great strategy. Self-massage should be followed by a contrast shower (alternate cold-hot-cold-hot for 2 minutes each). Nutritionally, a 3:1 carbohydrate to protein snack should be consumed within 30-40 minutes and all fluids should be replaced. A well-balanced meal should follow within 2 hours. In addition to a multi-vitamin, extra antioxidants (Vitamins C & E in particular) should be supplemented. Glutamine (5g/day), available in pill and powder form, can also be supplemented to assist with tissue repair and immune system function. Be sure this is age appropriate for each individual athlete.