



SECTION 3

Fitness and Nutrition



An Understanding of the Importance of Proper Physical Conditioning and Nutrition for Officials

Upon completion of this section you will have a better understanding of the following:

- The importance of conditioning;
- How proper physical preparation can enhance performance;
- Appropriate stretching techniques and programs;
- How to design your own conditioning program;
- Effective nutrition and hydration strategies;
- Relaxation techniques.

Fitness and Nutrition

Introduction

- An important and often overlooked component of an officiating program is fitness and nutrition. This section of the manual identifies and discusses four aspects of fitness and nutrition as they relate to officiating. They are:
 - Stretching
 - Relaxation
 - Conditioning, and
 - Nutrition
- Medical and fitness experts agree that stretching is the single most important part of an exercise work-out in preventing injuries, reducing muscle tension and promoting flexibility. No matter how tight you are, you can learn to stretch properly. Not only will you stay active and fit, but you will also have fun, perform to your maximum capacity, prevent unnecessary pain, and minimize the risk of injury. Included are stretches for the major muscle groups of your legs, hip and shoulder joints, as well as poses that open the spinal column. The ideal program includes stretching before and after the game, with a longer session on non-game days. Regular practice is essential. Stick with it; the results will come.
- A brief discussion on relaxation as it relates to stress reduction and mental wellness has been included in this section. If used properly, relaxation techniques can help you to achieve peak performance levels while helping to reduce tension both on and off the ice.
- The most obvious component of fitness and nutrition is conditioning. Just as hockey players are expected to have certain levels of physical and mental conditioning, so to be hockey officials. Cardiovascular Endurance, and Muscle Strength, Power and Endurance are presented to assist officials in designing and participating in a proper conditioning program.
- Nutrition is an often overlooked component of an officiating program. Proper nutrition and hydration will optimize performance and help officials avoid fatigue, which can contribute to injuries. Along with a general discussion of nutrition, guidelines for pre- game and post-game meals have been included, in conjunction with various points regarding hydration.

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- Hockey officials who follow the proper program of fitness and nutrition will have higher levels of energy, recover quicker from fatigue, possess a smaller risk of injury, look and feel better, experience mental alertness, and have more fun calling a game.

Stretching

Non-Game Days (All Year Long)

- Ideally, stretching routines should be tailored to your needs. This suggested practice offers a beneficial routine for ice hockey officials. The time you spend on stretching/ relaxing will directly impact your performance. Move slowly and smoothly into the stretch, hold, breathe, concentrate and feel the stretch, and come out of the stretch as carefully as you went into it. There should be no pain - but a sense of opening, extension and release.
- The following is a listing of suggested stretches for non-game days. Please note that any of the other stretches described in the Game Day Stretching section can also be done in conjunction with the Non-Game Day stretches described here.

<ul style="list-style-type: none"> - Postural Alignment - Feet - Ankles 	<p>MOUNTAIN POSE Stand with feet parallel and hip width apart. Balance weight between heels and balls of feet, between right and left leg, between inner and outer edges of feet.</p> <ul style="list-style-type: none"> • Variation A: Keeping balls of feet on floor, lift toes and spread them apart. • Variation B: Stand on toes, lifting heels high.
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Figure 1



Figure 2



Figure 3



Figure 4

<ul style="list-style-type: none"> - Legs (hamstrings, lower legs) 	<p>LEG STRETCH Toes of standing foot to face table, with pelvis square to the table and hips equal distance from the floor. The foot on the table is pointing towards the ceiling, with the heel stretching away from the body.</p>
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Figure 5

<p>CHEST EXPANSION With hands clasped behind back, straighten elbows, pulling hands towards the floor, rolling shoulder blades together.</p> <ul style="list-style-type: none"> • Variation: move both hands to left against left rib cage. Lower shoulders, and draw shoulder blades together and down. Left elbow moves toward spine and down. Repeat on other side. 	<ul style="list-style-type: none"> - Shoulders - Chest - Neck - Quadriceps - Ankles
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Figure 6

<ul style="list-style-type: none"> - Lower Back - Buttocks - Side of Hip 	<p>LYING DOWN SPINAL TWIST Shoulders must stay on the floor. Move onto left outer hip before beginning rotation. Head and neck rotate to right. Use the breath to relax and deepen the twist. Repeat on other side.</p>
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Figure 7

<p>RELAXATION Lie on back with legs either straight or with lower legs resting on a chair (especially for those with lower back tightness). Keep warm, head supported if necessary to release neck or shoulder tightness.</p>	<ul style="list-style-type: none"> - All of Body - Calming of Mind
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Below is a summary list of stretches for non-game days. It is strongly recommended that, for maximum benefit, these exercises be done in the order listed.

- | | | |
|----|--|-------------------------|
| 1. | Mountain Pose - including feet and ankle stretches | 1 minute |
| 2. | Leg Stretches Using Table | 1 minute each |
| 3. | Chest Expansion | 1 minute |
| 4. | Lying Down Spinal Twist | 1 minute each (3 times) |
| 5. | Relaxation | 10 to 20 minutes |

Game Days (Pre-Game Preparations)

- The “inner game” - how you prepare psychologically for the hockey game - can make all the difference between a good and a bad performance. Use these stretches to focus inward, to pay attention to your breathing and to be aware of how you feel physically and mentally. This will increase concentration, develop awareness and prepare the body for the upcoming game.
- The following is a list of sequenced stretches for pre-game preparation:



Figure 8

<ul style="list-style-type: none"> - Legs (hamstrings) - Back 	<p>TABLE STRETCH Elbows straight, with shoulders rolling away from ears. Feet hip-width apart, legs straight, spine straight.</p>
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Figure 9

<p>LUNGE Forward leg perpendicular to the floor, both hips facing forward. Back leg stretching backwards as far as is comfortable, knee on the floor. Back straight. With each exhalation allow pelvis to drop towards the floor keeping shoulders and upper chest lifted.</p>	<ul style="list-style-type: none"> - Shoulders - Hamstrings - Groin - Quadriceps (front of hips) - Lower Back
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Figure 10

<p>RUNNER'S STRETCH From a kneeling position bring left foot forward until knee makes a 90 degree angle with foot flat on floor. Hands on floor, in line with toes and facing forward. Lengthen chest along thigh (keep chest and thigh together), slowly straighten front leg taking pelvis towards ceiling. Back heel slowly descends toward the floor.</p>	<ul style="list-style-type: none"> - Hamstrings - Lower Leg - Achilles tendon
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Figure 11

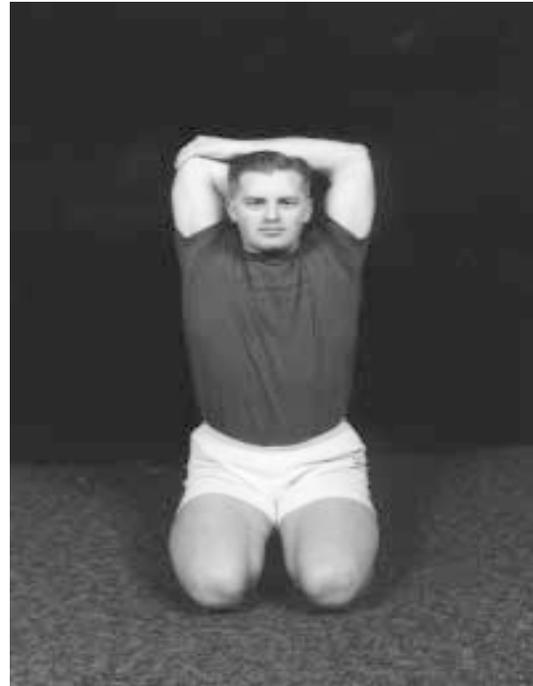


Figure 12

<ul style="list-style-type: none"> - Thighs - Shins - Ankles - Shoulders - Upper Arm - Quadriceps - Ankles - Shoulders - Chest - Ribs - Arms 	<p>HERO'S POSE Sit with buttocks on heels, toes pointing straight back. If ankles are tight or uncomfortable place a tightly rolled towel under angle joint. If knees hurt, spread legs apart and place firm pillows or a bolster under buttocks (Figure 11).</p> <ul style="list-style-type: none"> • Variation A: SHOULDER STRETCH in Hero's Sitting Pose. Rotate left palm upward, inhale, moving arm toward ceiling. Bend elbow, placing palm on back of neck. Use opposite hand to pull elbow slightly back and towards centre (Figure 12). • Variation B1: ARM & RIB STRETCH. Interlock fingers, extend arms straight, slowly pushing the palms to ceiling. Move slightly to left, extending right arm to ceiling and pushing right foot down against the floor. Repeat to other side (Figure 13). • Variation B2: Hold towel or strap between hands, keeping hands shoulder-width apart (Figure 13).
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Figure 13



Figure 14



Figure 15

<p>- Back (especially lower area)</p>	<p>CAT STRETCH Knees and feet hip width apart. Slowly round the back beginning at the lower spine (coccyx), moving one vertebrae at a time, then beginning at the lower back again begin to round the back in the opposite direction (Figures 14 and 15).</p>
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Figure 16



Figure 17

<p>- Lower Back - Hips - Hamstrings - Groin</p>	<p>HIP FLEXOR STRETCH Bring right knee to chest, using hands to gently guide and pull the shin. Left heel pushes into the floor, keeping left leg straight. Repeat on other side.</p> <ul style="list-style-type: none"> • Variation: For those with lower back problems - Left leg stays bent with foot flat on the floor. For those with knee problems - Hold under right knee (Figure 16).
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<p>KNEES TO CHEST With buttocks, lower back, shoulders and head resting against the floor, bring knees to chest - support legs with hands. Allow lower back and buttocks to spread and rest against the floor (Figure 17).</p>	<p>- Lower Back - Hips</p>
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Below is a summary list of stretches for game days. It is strongly recommended that, for maximum benefit, these exercises be done in the order listed.

- | | | | |
|----|---|--------------------|----------------------|
| 1. | Table Stretch | 1 minute | |
| 2. | Lunge | 1 minute each side | |
| 3. | Runner's Stretch | 1 minute each side | |
| 4. | Shoulder movements - sitting in Hero's Pose | | |
| | a. | Shoulder Stretch | 1 minute each side |
| | b. | Arm - Rib Stretch | 30 seconds each side |
| 5. | Cat Stretch | 3 times | |
| 6. | Hip Flexor Stretch | 1 minute each | |
| 7. | Knees to Chest | 1 to 3 minutes | |

Skating Warm-Up (Note: All stretches to be done on the ice while skating)



Figure 18



Figure 19

Toe in - Toe out: 5 reps each direction, each leg. Increases hip internal and external rotation. Increasing hip flexibility can enhance your propulsive force on the ice (Figures 18 and 19).



Figure 20



Figure 21

Knee Crosses: 5 reps each direction, each leg. Increases groin flexibility. A wider stride can enhance speed (Figures 20 and 21).

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Figure 22

Skates Apart-Together
Stretches the groin.
(Figures 22 and 23).



Figure 23



Figure 24

Knee Pull: Pull and hold for five count, each leg. Stretches the butt
(Figure 24).

Quad Stretch: Pull and hold for five count, each leg. Stretches quadriceps
(Figure 25).



Figure 25

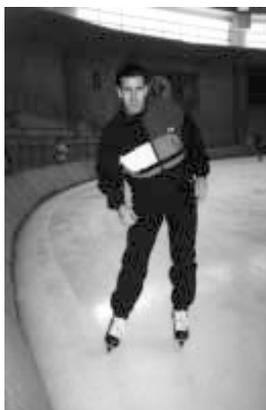


Figure 26

Stationary Hip Rotations
5 reps in each direction
Figures 26 and 27).



Figure 27

Post-Game Stretch-Out (Cool-Down)

- This group of exercises is best done immediately following a game when the body is warm. Active muscle contraction and relaxation during cool-down promote the removal of lactic acid and other metabolic waste products associated with the development of muscle soreness. Below is the recommended post game stretch - out series of exercises:



Figure 28

WALL STRETCH

Lower back and buttocks must stay resting against the floor. If possible buttocks stay close to wall, knees straight and feet relaxed. Hands on abdomen, feeling the breath in, moving the abdomen upwards, and on the exhalation drop the belly back toward the spine (Figure 28).

- Variation A: Active wall stretch. The legs become active, gently tighten the thighs and stretch the heels and the back of the lower legs towards the ceiling (Figure 29).

- Legs
- Lower Back



Figure 29



Figure 30

V- SPLIT (Inner Thigh Stretch)

From the wall stretch position slowly open legs as far as is comfortable. Hands on abdomen. Inhale and exhale slowly to enhance the release (Figure 31)

- Inner Thigh



Figure 28

LYING DOWN HAMSTRING STRETCH

From the wall stretch position bend the left knee, placing foot flat against the wall. Lengthen through back of right leg, stretching heel towards the ceiling and dropping pelvis onto the floor. Repeat other side. Use the exhalation to extend the back of the leg (Figure 30).

- Hamstrings
- Achilles Tendon

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Figure 32

→
- Lower Back
- Outer Hip
- Buttocks

←
- Groin



Figure 33

WALL TWIST

With feet flat on wall and knees making a 90 degree angle, slowly slide or move the feet down the wall until knees and thighs rest against the floor. Keep shoulders flat on the floor and turn the head in the opposite direction. On an inhalation, slowly bring the legs up to the centre position and then repeat on the other side (Figure 33).

BUTTERFLY (Knee-Thigh Stretch)

From wall stretch bring soles of feet together and as close to groin as possible. Gently push knees, keeping lower back relaxed against the floor (Figure 32).

- Variation: Feet on floor with the toes against the wall.



Figure 34



Figure 35

SIDE-THIGH STRETCH

- Variation A: Gently place right ankle across top of left knee, keeping both buttocks on the floor. Repeat on other side (Figure 34).
- Variation B: Left foot is placed on the wall, right ankle across left knee (Figure 35).

- Outer Hip

RUNNER'S STRETCH

From a kneeling position bring left foot forward until knee makes a 90 degree angle with foot flat on floor. Hands on floor, in line with toes and facing forward. Lengthen chest along thigh (keep pelvis towards ceiling. Back heel slowly descends toward the floor (Figure 36).

- Hamstrings
- Lower Leg
- Achilles Tendon



Figure 36



Figure 37



Figure 38

- A: - Back
 - Legs
 - Hips
- B: - Back
 - Shoulders

CHILD POSE

Sitting on heels, extend chest along thighs, resting forehead on the floor with arms along side the body, palms facing upward. If head does not touch the floor make fist of your hands, placing one on top of the other vertically then place your forehead on top of them (Figure 37). Feel the breath moving through your back as you inhale and exhale.

- Variation A: With arms at sides.
- Variation B: With arms above head (Figure 38).

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Below is a summary list of stretches for post-game days. It is strongly recommended that, for maximum benefit, these exercises be done in the order listed.

1. Wall Stretch
2. V-Split
3. Lying Down Hamstring Stretch
4. Wall Twist
5. Butterfly
6. Side-Thigh Stretch (A or B variation)
7. Runner's Stretch
8. Child Pose



Relaxation

Stress Reduction

Stress is a fact of modern life and there is no magic cure. The best way to arm yourself against life's big and little crises is with a well-rounded repertoire of relaxation techniques, physical as well as mental. To reduce stress you must first learn to relax the body. Stress can trigger intense reactions such as the "fight or flight" response, which increases metabolism, blood pressure, heart rate and respiration rates. The relaxation response is a process which brings about a physiological change and counteracts the harmful effects of stress. Progressive relaxation is based on the important premise that when muscles are freed from tension, anxiety will be eliminated. This is important for officials on the night preceding a game and most beneficial in centering down following a game. Exercise can also be used as a form of mental and physical relaxation. The preceding stretching program, performed with focused attention to integrate relaxation, breathing and correct postural alignment, will enhance this relaxation response. With practice, you will be able to control your own tension levels. Through regular practice of stretching, relaxation and breathing exercises, you will be able to prepare yourself prior to and during competition so as to best produce peak performance levels. The benefits of these techniques remain unquestioned by those willing to give it a chance.

Mental Wellness - Breathing

Deep breathing works both to prevent harmful reactions to stress and to help relieve physical and mental tensions. Taking a few, slow deep breaths can help break the stress cycle and calm you down. Even when you can't control the situation, you can always control your reaction to those circumstances. Deep breathing is one of the simplest yet most effective stress management techniques. You can do it anywhere, at any time. It becomes even more effective with practice. Schedule a few minutes each day to practice deep breathing. A good time is when you are doing the wall series in the stretching program. Breathe slowly through the nose. Allow the abdomen to rise, and the ribs to expand. Hold briefly, then slowly exhale (through the nose), allowing the abdomen to rest back toward the spine, and the back of the body to rest deeply onto the floor. Since exhaling is the most relaxing phase of breathing - *aaahhh* - take longer to exhale than to inhale. Changes in your breathing affect your mind. When you are tired, a deep breath can make you more alert. When you are feeling anxious or worried, a few deep breaths can help to calm you down. In a game situation during a stoppage of play, take a few slow deep breaths - use these moments to relax, focus and revitalize yourself.

This will help to bring both the mind and the body to a centered, balanced state, thereby eliminating the tension that hinders concentration and performance. The results will leave the mind awake and alert - which will improve your mental performance. When officiating, these few moments spent at the appropriate time will bring you clearly back to the present moment (not dwelling on the past), to stay centered and balanced. A few slow deep breaths will keep your mind focused on the game and assist in balancing tension levels. Physically you will feel refreshed and energized. As you become more skilful with deep breathing techniques, you will be better able to focus your mind, reduce physical fatigue and, therefore, more consistently perform at your maximal level of proficiency.

Sports Fitness for Hockey Officials

- One of the first steps in understanding the importance of fitness for hockey officials is to recognize yourself as an athlete. Just as hockey players have unique physical and mental demands placed upon them during competition, officials have demands placed on them as well.
- Research done at the University of Alberta by Wilkens, Petersen and Quinney shows the physical demands of amateur hockey officiating. Their data indicate that amateur officials have heart rates averaging 80% of maximum during games, ranging between 150 - 180 beats per minutes.
- The researchers cite three reasons for the high heart rates:
 - constant stopping and starting,
 - a lot of upper body movements,
 - Psychological stress.

It is extremely important for hockey officials to have high levels of fitness in order to keep up with the play, be in the right place at the right time, and make good calls.

- An official who has a high level of fitness will: have higher levels of energy (especially at the end of a period and the game); not be affected by fatigue in making calls; recover quickly from fatigue; look better; feel better; and have more fun calling a game.
- Five components of sports fitness are important for hockey officials:
 - Cardiovascular (CV) Endurance (also called Aerobic Fitness)
 - Cardiovascular Power (also called Anaerobic Fitness)
 - Muscle Strength, Power and Endurance
 - Flexibility
 - Body Fat Percentage
- This section will discuss CV Endurance and Muscle Strength, Power and Endurance.



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CV Endurance - Aerobic Fitness

- Aerobic fitness defined, is the ability to perform physical work for extended periods without extreme fatigue. This component of fitness is the most important for hockey officials. Cardiovascular endurance is important because officials are on the ice for the entire game without rest.
- Aerobic fitness is also important because it is the basis upon which most other components of fitness are developed (CV Power, Muscle Fitness and Body Fat Percentage).
- Some specific benefits of high CV endurance are as follows:
 - Less fatigue
 - Decreased body fat percentage
 - Improved ability to handle stress
 - Ability to skate fast for longer
 - More energy toward end of game
 - Quicker recovery between periods/games
 - Ability to work-out harder
 - Decreased risk of heart disease

Note: Consult an exercise professional if you are unfamiliar with cardiovascular training technique, exercises, rules, breathing pattern and/or proper mechanics of exercise.

- **ALWAYS WARM-UP BEFORE ENGAGING IN AEROBIC EXERCISE**

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	Off Season			In Season
	Mar/Apr/May	Jun/Jul	Aug	
Frequency: Days/Week	4 - 6	3 - 5	3	2 - 4
Duration in Minutes	30 - 40	25 - 35	20 - 30	20 - 30
Intensity (see page 3-19)				
Heart Rate	60% Heart Rate Reserve	70% Heart Rate Reserve	80% Heart Rate Reserve	60%-70% Heart Rate Reserve
Rating of Perceived Exertion	Fairly Light	Somewhat Hard	Somewhat Hard - Hard	Fairly Light - Somewhat Hard
Talk Test	Conversation	Conversation	Does not apply	Conversation

- Activities:

Skating Specific

- In-Line Skating
- Skating Machine
- Stair Master
- Bike (Stationary or Moving)
- Slide Board

Non-Skating Specific

- Running
- Cross-Country Ski Machine
- Rowing
- Skipping
- Aerobics/Exercise Class
- Racquetball/Squash

- The highest levels of CV Endurance are attained when engaging in the following activities:

- Running
- Stair Master
- Bike (Stationary)
- Cross-Country Skiing or Machine

Intensity (Three Methods of Determining Exercise Intensity)

- Target Zone - Heart Rate Reserve
 - $220 - \text{Age} = \text{PMHR}$ (Personal Maximum Heart Rate)
 - $\text{PMHR} - \text{RHR}$ (Resting Heart Rate) = Range
(NOTE: $\text{RHR} = 15 \text{ second pulse} \times 4$)
 - $\text{Range} \times 0.6 + \text{RHR} = 60\% \text{ level}$
 $\text{Range} \times 0.7 + \text{RHR} = 70\% \text{ level}$
 $\text{Range} \times 0.8 + \text{RHR} = 80\% \text{ level}$
- Rating of Perceived Exertion
 - Fairly Light
 - Somewhat Hard
 - Hard
- Talk Test
 - When doing aerobic exercise, you should be able to carry on a relatively normal conversation. If you are breathing so hard that you cannot talk...slow down.

Special Considerations

- On game days, a full work-out should be avoided. A light work-out for ten to 15 minutes could be used as a warm-up before or a cool-down after a game.
- A high intensity work-out should be avoided the day before a game.

Muscle Strength, Power and Endurance

- All three components of muscle fitness are important for hockey officials. However, strength is the most important of the three.
- If you have a high level of motivation for exercise (and available equipment), developing all three components of muscle fitness with the use of weights is easy. However, if you do not have access to weights (or you are not motivated to weight train), you can still receive a strength stimulus by using calisthenic exercises such as: push-ups, curl-ups (sit-ups), pull-ups, lunges, etc.

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- Hockey officiating requires a unique combination of all the components of muscle fitness. Skating for 60 minutes and involvement in prolonged player altercations require muscle endurance. Explosive skating requires muscle power. Low to medium intensity skating, avoiding puck and body contact and general muscle tone require muscle strength.
- Weight training will increase muscle mass. Increased muscle mass means increased calories burned which will help reduce body fat percentage.

Weight Training

Note: Consult an exercise professional if you are unfamiliar with weight training technique, exercises, rules, breathing pattern and/or proper mechanics of lifting.

	Off Season			In Season
	March/April	May/June	July/August	
Training Emphasis	Basic Strength	Endurance	Power	Maintenance
Frequency: Days/Week	3	3	3	2 - 3
Volume: Sets/Work-out	1 - 3	1 - 3	1 - 3	1 - 2
Repetitions: Intensity	5 - 8 Moderate Wt.	12 - 20 Light Weight	3 - 5 Heavy Weight	2 - 4 Very Heavy
Rest Between Sets in Secs.	60 - 90	90 - 120	120 - 180	90 - 120

Note: Always take a day of rest between work-outs. Weight training three days per week will increase muscle strength. Weight training two days per week will maintain muscle strength.



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- It is very important to follow the correct lifting techniques and know the “rules” of weight training. When you perform the exercises correctly using the proper technique, you get maximum benefits from your work-out.
- Exercises:

Upper Body

- Bench Press
- Seated Cable Row or
- Single Arm Row
- Shoulder Press
- Lat Pull Down

Torso

- Curl-ups (Sit-ups)
- Back Extension

Legs

- Squats or Leg Press
- Knee Extension
- Knee Curl
- Lunges

Note: Consult an exercise professional if unfamiliar with the exercises.

Calisthenic Strength Training

	Off Season			In Season
	March/April	May/June	July/August	
Training Emphasis	Basic Strength	Endurance	Power	Maintenance
Frequency: Days/Week	3	3	3	2 - 3
Volume: Sets/Work-out	2 - 4	2 - 4	2 - 4	1 - 3
Repetitions: Intensity	10 - 20	20 - Max.	10 - 15 Speed Element	10 - 20
Rest Between Sets in Secs.	60 - 90	90 - 120	120 - 180	90 - 120

Note: Always take a day of rest between work-outs.

- If knee pain or severe leg pain is experienced before, during or after plyometrics, do not proceed with the present work-out or the next work-out. Stretch and ice the injury.

Note: Consult an exercise professional if unfamiliar with this form of exercise.

	Off Season			In Season
	March/April	May/June	July/August	
Frequency: Days/Week	2	2	2 - 3	2
Duration: Sets/Work-out	2 - 3	2 - 3	3 - 4	2 - 3
Intensity: Foot Strikes	20 - 30	30 - 40	40 - 50	30 - 50
Rest Between Sets in Min.	2 - 4	2 - 4	2 - 4	2 - 4
Exercise	Jumps in Place (see Figure 39)	Lateral Hops (see Figure 40)	1. Hockey Hops (see Figure 41) 2. Dry Skating (see Figure 42)	1. Hockey Hops 2. Dry Skating

- Exercises:
 - **Jump in Place:** Vertical jumps in place. Take off and land on two feet. Jump as high as possible and spend as little time on the ground as possible. Help with arms.
 - **Lateral Hop:** Lateral/horizontal hops from side to side. Take off and land on two feet. Jump as far to the side as possible and spend as little time on the ground as possible. Help with arms.

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- **Hockey Hop:** Vertical hops in place with one leg. Push off with the right leg, hop in air and land on left leg, etc. Bend knee to 45 - 90 degrees when landing. Arms behind back for balance.
- **Dry Skating:** Horizontal hops from side to side. Push off to side with right leg, land on left leg and push off. Arms behind back or move in skating motion. Spend as little time on the ground as possible.

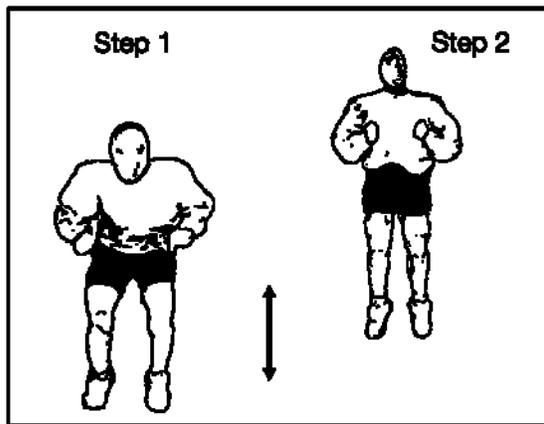


Figure 39 - Jump in Place

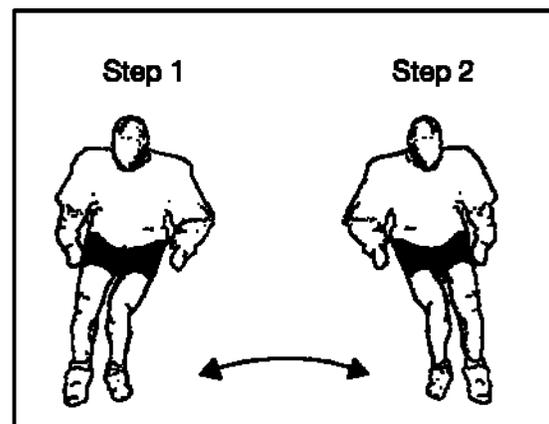


Figure 40 - Lateral Hop

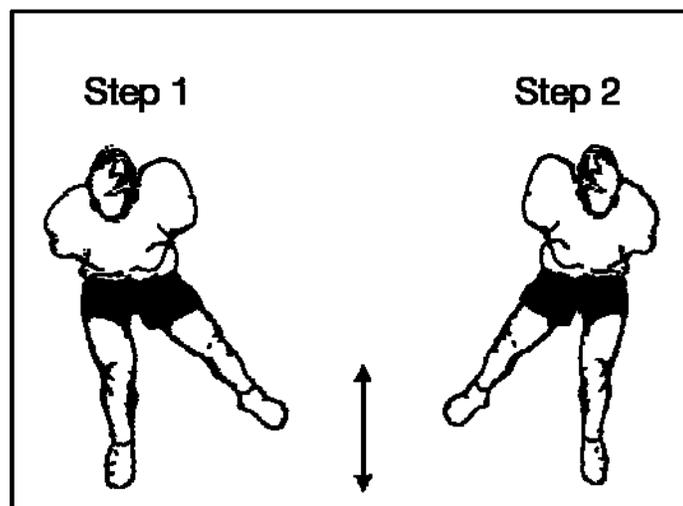


Figure 41- Hockey Hop

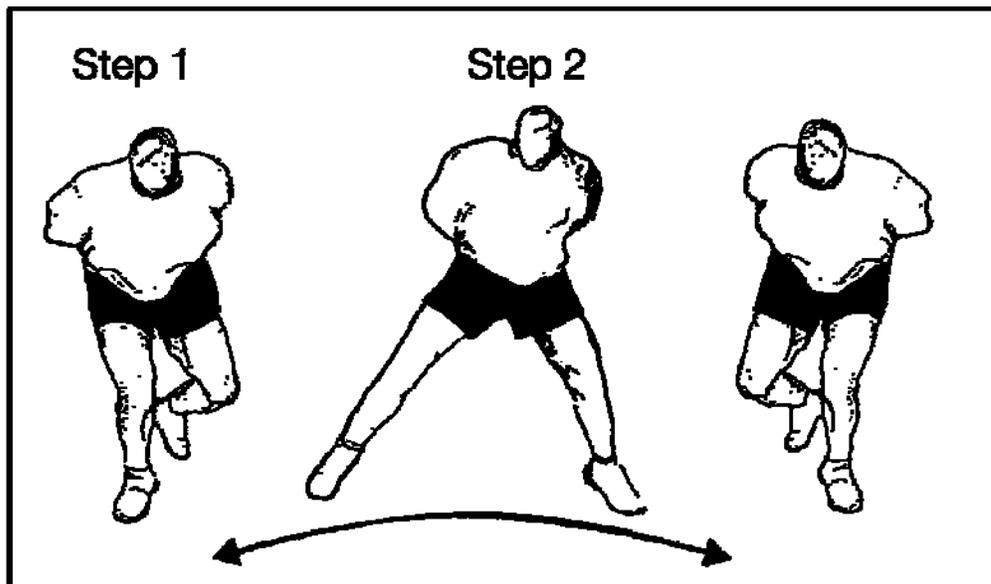


Figure 42 - Dry Skating

Special Considerations

- Plyometrics should not be done the day before or the day of a game.
- Perform the jumps and hops on a soft surface, wearing good gym shoes.
- Always warm-up for five to ten minutes (running, biking, or skipping) before starting the jump training.

Nutrition and Hydration

The body is similar to an engine in that it needs fuel. The body will only put out what it takes in. An official who is not performing up their level of ability may not be eating adequately or drinking sufficient amounts of fluids. An official who rests well (at least 8-10 hours of sleep per night) and eats well, will feel well on the ice and be able to put forth a good effort during games. Proper nutrition and hydration will optimize performance, and help officials avoid fatigue, which can ultimately lead to injuries. A properly balanced diet everyday is more important than the pre-game meal.



Nutrition

- The foundation of a well-balanced diet should include 55 - 65% carbohydrates, 10 - 15% protein and 25 - 30% fat. In practical terms, approximately 60% of the food in a meal should be carbohydrates.
- Carbohydrates include pasta, rice, vegetables, fruits, breads and cereals.
- Proteins include meats, fish, poultry, eggs and milk.
- The Food Guide to Healthy Eating translates nutrient sources into food choices from the four food groups (see pages 3-31 and 3-32).

Recommended Servings/Day

1.	Grain Products (breads and cereals)	5 - 12
2.	Vegetables and Fruit	5 - 10
3.	Milk Products	2 - 4
4.	Meat and Alternatives	2 - 3

- A high carbohydrate diet is often used to improve performance before competition and during training periods:
 - The high carbohydrate diet promotes maximal energy storage for optimal performance.
 - A low fat intake facilitates a high carbohydrate intake.
 - Adequate protein facilitates muscle building and production of antibodies to fight infections.
 - A variety of foods should be used to obtain all essential vitamins and minerals.
 - Adequate fluids must be taken to maintain proper hydration.
- Scientific research has proven that athletes do not need supplements (protein, amino acids, vitamins, etc.) if they eat a well-balanced diet.
- Nutritional disorders are becoming more common in girls and women. Athletic females, especially those who participate in sports in which body weight is important for performance, may be at risk of developing an eating disorder. Anorexia nervosa is an intense and obsessive preoccupation with thinness.

Bulimia is characterized by alternating bingeing with self-induced vomiting. Medical attention should be sought for any affected individuals.



The Pre-Game Meal: Guidelines

- Eat safe, familiar foods.
- The meal should be eaten at least 2 - 4 hours before the game.
- Scale down your meal to snack size if eating 1 - 2 hours before a game.
- Foods eaten at the pre-game meal should be:
 - **High in carbohydrates:** carbohydrates are easily digested and provide energy. Examples are pasta, rice, cereals, vegetables, fruits and breads.
 - **Adequate fluids:** water, juices, sport drinks and low-fat milk are ideal.
 - **Low in sugar:** soft drinks and candy bars are not recommended, as they can cause stomach cramping and may increase insulin production which will decrease blood sugar levels. Diluted fruit juices or sport drinks are a good choice.
 - **Low fat:** avoid fried foods, especially fast foods such as chips, hot dogs, french fries and peanut butter. These products are high in fat and will not digest easily. Low fat examples include salad, skim milk and steamed vegetables.
 - **Low fibre:** low fibre foods will reduce the heavy feeling in the stomach. Limit bran cereals, bran muffins, and raw vegetables. Examples of low fibre foods are fresh fruit, rice and pasta.
 - **High protein in moderation:** protein requires longer time to digest. Avoid steaks, hamburgers, hot dogs and deli meats. Use chicken and low-fat dairy products.
 - **Low in salt:** salt can dehydrate.
 - **Low caffeine:** avoid soft drinks (especially cola) and coffee as caffeine promotes dehydration.
 - **Note:** Females require more iron and calcium in their diets than males.

Examples of Pre-Game Meals

- Stir fried vegetables and small pieces of chicken served over a bed of rice. Glass of skim milk and a glass of water. Fresh fruit.
 - Home made vegetable soup, sandwiches (with little butter or mayonnaise, brown bread, lean meats). Glass of skim milk and a glass of water. Fresh fruit.
 - Pasta with tomato and meat sauce. Glass of skim milk and a glass of water. Fresh fruit.
- Athletes requiring in-depth nutritional guidance for weight gain, weight loss, or proper balance in their diet should be referred to a registered dietician/sport nutritionist.

The Post-Game Meal: Guidelines

- The meal should be eaten within 1 - 2 hours after completion of the game.
- Foods eaten at the post-game meal should be:
 - **High in carbohydrates:** carbohydrates are necessary to replenish depleted energy stores. Pasta and fruit are ideal post-game carbohydrates.
 - **Adequate fluids:** dehydration post-game is the norm and must be corrected. Avoid caffeine products such as colas and coffee as they promote further dehydration as well as decrease the amount of restful sleep obtained post- game.
 - **Low fat:** avoid fast and fried foods. These products are high in fat, difficult to digest and do not provide the appropriate nutrition needed.
 - **High protein in moderation:** steaks, hamburger, chicken, veal, fish and cheese are excellent sources of protein needed to replenish stores.
 - **Low in salt:** salt can dehydrate.

Examples of Post-Game Meals

- Pasta with meat sauce or chicken and salad. Fresh fruit, fruit drinks, skim milk and water.
- Steak, veal or fish with rice or pasta and salad. Fresh fruit, fruit drinks, skim milk and water.



Hydration

- Water is essential to prevent dehydration.
- Staying hydrated optimizes performance.
- Fluids should be taken before, during and after games.
- Do not wait to drink fluids only when one is thirsty. Vigorous exercise blunts the thirst mechanism.
- Do not restrict fluids during games.
- Fluids should be taken in small quantities at regular intervals.
- Water should be cool to promote stomach emptying.
- Encourage adequate daily hydration with water, fruit juices and milk.
- Soft drinks containing caffeine should be limited as they increase urine production and fluid loss. The carbonation can cause gastrointestinal distress in some individuals.
- Alcohol consumption is not permitted for an official prior to a game and is recommended not to be used post-game. Alcohol consumption when normal dehydration is present post-game leads to more rapid intoxication and is at any time a risk management situation.

Summary

Conditioning and stretching are key components to superior officiating. The higher level of fitness you have, the better you will perform.

Working out should be an enjoyable experience. You will have more success when you choose a form of exercise you like. Exercise should not be painful. You may experience some exercise induced discomfort, however, if you are in extreme pain, you are either working too hard or injured.

You will get maximum benefit from these programs when you adhere to the guidelines as prescribed within this section. It is important to schedule your work-out into your day the same as you would important meetings. Your stretching or conditioning program is an important meeting. . it can enhance your performance on the ice and improve your physical and mental health.

Eating a properly balanced diet everyday is crucial to good health and maximum athletic performance.

Pre-game and post-game foods greatly affect athletic performance. It is the fuel your body uses during the game and as such is the fuel you must replenish post-game.

Food Guide TO HEALTHY EATING

Enjoy a variety of foods from each group every day.

Choose lower-fat foods more often.



SECTION 3



Food Guide TO HEALTHY EATING FOR PEOPLE FOUR YEARS AND OVER

Different People Need Different Amounts of Food

The amount of food you need every day from the 4 food groups and other foods depends on your age, body size, activity level, whether you are male or female and if you are pregnant or breast-feeding. That's why the Food Guide gives a lower and higher number of servings for each food group. For example, young children can choose the lower number of servings, while male teenagers can go to the higher number. Most other people can choose servings somewhere in between.

<p>Grain Products 5-12 SERVINGS PER DAY</p>	<p>1 Serving</p> <p>1 Slice Cold Cereal 30 g Hot Cereal 175 mL, 3/4 cup</p> <p>2 Servings</p> <p>1 Bagel, Pita or Bun Pasta or Rice 250 mL, 1 cup</p>	
<p>Vegetables & Fruit 5-10 SERVINGS PER DAY</p>	<p>1 Serving</p> <p>1 Medium Size Vegetable or Fruit Fresh, Frozen or Canned Vegetables or Fruit 125 mL, 1/2 cup Salad 250 mL, 1 cup Juice 125 mL, 1/2 cup</p>	
<p>Milk Products SERVINGS PER DAY Children 4-9 years: 2-3 Youth 10-14 years: 3-4 Adults: 2-4 Pregnant & Breast-feeding Women: 3-4</p>	<p>1 Serving</p> <p>Milk 250 mL, 1 cup Cheese 2 Slices 50 g Yogurt 175 g, 3/4 cup</p>	<p>Other Foods</p> <p>Taste and enjoyment can also come from other foods and beverages that are not part of the 4 food groups. Some of these foods are higher in fat or Calories, so use these foods in moderation.</p>
<p>Meat & Alternatives 2-3 SERVINGS PER DAY</p>	<p>1 Serving</p> <p>Meat, Poultry or Fish 50-100 g Fish 1/3-2/3 Can 50-100 g Beans 125-250 mL Eggs 1-2 Eggs Tofu 100 g, 1/3 cup Peanut Butter 30 mL, 2 tbsp</p>	



Enjoy eating well, being active and feeling good about yourself. That's *VITALITY*