



# Stretching

**Designed Specifically for  
Pre-Juvenile/Juvenile/Intermediate  
Skaters and Coaches**

## GENERAL GUIDELINES FOR ATHLETE DEVELOPMENT

### WARM-UP AND COOL-DOWN

**Purpose:** The skater should be able to execute both general and specific warm-up and cool-down exercises, as well as specific total-body flexibility exercises. Perform activity before and after on-ice practice and competitions. Use in association with strength training, plyometric training and endurance conditioning.

**General Warm-Up:** As an athlete, you should do a general warm-up of approximately five minutes (or until you are sweating). The warm-up consists of aerobic activity to increase heart rate, blood flow, muscle temperature, and breathing rate. This should be followed by total body static stretching. Warming up allows muscles to stretch more easily and joints to move more easily. Examples of aerobic activity are:

- Jogging in place or jogging stairs
- Jumping rope
- Bench stepping
- Slide board
- Jumping jacks

**Specific Warm-Up/Dynamic Flexibility:** You should perform specific dynamic movements after the general warm-up and stretching. Some examples are:

- Ankle bounces and double-arm swings
- Double-leg lateral jumps
- Single-leg skip bounds
- Trunk/torso rotations
- Dry land rotational jumps: ¼ turns, singles, axels, doubles, triples
- Footwork drills

**Cool-Down:** It is necessary to perform specific cool-down exercises in addition to stretching. These exercises are done after an intense practice session or competition program to enhance recovery and prepare for the following day. Cool-down exercises include:

- Light to moderate intensity aerobic exercise
  - -jogging in place (light & easy)
  - -easy stroking on ice (post practice)
  - -bench steps (low, easy pace)
  - -slide board (easy pace)
- Total body stretches, especially stretching those muscles utilized in the previous exercise or sport activity.

## FLEXIBILITY & STRETCHING

Flexibility is defined as the ability of a muscle to lengthen without injury. We normally think of a muscle that is stretched only when we are actively trying to lengthen our muscles to increase our flexibility, however, when a joint in the body is moved, the muscles around that joint on one side of the body are shortened (contracted) while the muscles on the other side of the body are lengthened (stretched). All muscles in the body cross at least one joint, and a joint must be moved (flexed, extended, rotated, etc.) in order for the muscle(s) to be stretched at that joint. Because of this, whenever a skater strokes, jumps, spins, and performs footwork the muscles in the working part of the body are contracting (tightening) and stretching or lengthening. Muscles shorten and lengthen through all movement, but this is not enough to increase flexibility for the sport of figure skating.

**Purpose of Flexibility Training:** Figure skaters need to *train* their muscles to be more flexible for a variety of reasons. Flexibility adds to the aesthetic appeal of long lines and extensions such as spirals, lay backs, various sit spin positions and extensions on landings and stroking. Also, when a skater takes a hard fall an injury occurs in the muscle or other soft tissue because a muscle is stretched beyond its "end point". The purpose of training muscles to be more flexible is to:

- Increase the range of motion
- Reduce muscle tension
- Increase the level of certain skills and muscular efficiency
- Reduce the severity or prevent injuries
- Improve body alignment and muscular symmetry
- Delay the onset of muscle fatigue and prevention of muscle soreness after training
- Promote mental relaxation and help the mind to take control of the body

Athletes in all sports develop muscle imbalances due to their day-to-day training. In figure skating, a skater always goes into jumps and spins rotating the same direction, landings are always on the same leg, and there are many other elements that are always started on the same foot or go the same direction. This causes the athlete to develop muscle imbalances simply from training. Hence, sports medicine doctors have established that skaters can have problems with inflexibility in specific areas of their bodies due to their training. Regular stretching can aid in alleviating muscle imbalances, injury prevention or reduce the severity of injuries.

Areas of the body that are generally tight for figure skaters are: lower back, hamstrings, calf and Achilles tendon, hip flexors, quadriceps, and groin. In addition to stretching these specific areas, stretches for the chest, upper back and shoulder area are also appropriate. It is important that these areas be stretched frequently. In order to realize the benefits of stretching, such as increased flexibility and injury prevention, how often one stretches is very important. ***It is best to stretch after a warm-up and particularly, after each skating session.***

**Types of Stretches:** There are several different types of stretches that you can practice, and it is important to know the types of stretches in order to choose the right type of stretch to perform.

Passive – usually performed when an outside force (towel or partner) applies stretch to a relaxed joint. The stretch must be performed slowly in order to prevent injuries due to forceful manipulation of the body part. Communication between the partners is imperative.

\*\*Static – can be performed alone and refers to when a muscle is slowly lengthened to its “end point”, held for 15-30 seconds and repeated three to five times. Slowly “creep” further into the stretch as the tension in the muscle begins to relax. ***Recommended type of stretching.*** Researchers have demonstrated that permanent lengthening is achieved when static stretching is performed slowly, at lower force and for longer duration while the core body temperature is elevated.

Ballistic – “bouncing” a stretch. This is more likely to initiate the stretch reflex, which is a nerve response that tells the muscle to contract if it is stretched beyond its limit. This is the point where injury could occur. You must be careful not to over stretch (go beyond the “end point”) and injure the muscle. ***Generally not recommended.***

Dynamic or Functional – the ability to use a range of joint movement for a particular movement within sport or physical activity. These movements are performed either slowly or rapidly. Dynamic or Functional stretching is considered a type of ballistic stretch and caution should be used when performing this type of stretch. A warm-up is recommended before stretching and then progress to static stretching before attempting any dynamic type of stretching.

PNF – proprioceptive neuromuscular facilitation. Techniques are: contract/relax and contract/relax against contract. You need to know which is the target muscle, move to the end point, put the target muscle on tension, then contract the target muscle during the stretch while relaxing the opposing muscle. The contraction does not have to be maximum, only 50% of the contraction. Hold the contraction for five seconds, move to the new end point, and hold the stretch for 12-15 seconds and repeat the process. PNF stretching develops strength, and it meets the goals of joint stability and mobility due to muscular contractions. ***To be able to do this kind of stretching safely and effectively requires specific instruction and thorough understanding.***

**Using Proper Technique:** You need to know and use proper technique in flexibility training. First, warm up to prepare your muscles and joints for stretching. Your warm-up needs to be five to eight minutes in length, or enough to increase body temperature to point you begin to sweat. Suggested warm-up activities are: jogging in place, biking, jumping rope, jumping jacks, and/or continuous, rhythmic movement to increase respiration, heart rate, and blood flow to the muscles to be stretched. (Stretching is not a warm-up.)

As you stretch, concentrate on the area of your body that is being stretched in order to develop body awareness. This will help in allowing the muscles to relax and lengthen during your stretching. **Hold your stretch for 15 to 30 seconds, release slightly, and repeat the stretch three to five times.** The beginning of a stretch might feel “comfortably uncomfortable”. This is called the “**end point**” of a stretch and **you should not force the muscle to stretch beyond the end point.** However, as you hold the stretch, the tension in the muscle should ease a bit. At this time you can ease a bit further into the stretch to lengthen the muscle a little more. By holding the stretch until the tension eases, you can develop a new end point in the stretching muscle, thus safely stretching further.

A developmental stretch is a static stretch that helps increase flexibility by easing further into the stretch. As the tension in the muscle diminishes, this new position is held. Breathing should be slow and rhythmical. **Inhale at the beginning of the stretch and exhale going into the stretch position. Breathe slowly and relax while holding the stretch.** A stretch should not be painful or cause muscle soreness.

***It is recommended that you stretch after each warm-up, after each workout and after each skating session.***

Researchers recommend that you **practice static stretches** so your muscles can relax and the stretch can be sustained. (Ballistic stretching or bouncing the stretch can cause pulling or tearing in the muscle fibers if it is not performed in a controlled type manner – caution should be used). During static stretching it is a good time to relax, breath deeply, concentrate on the muscles being stretched, how your body feels and to have quiet time for yourself.

**What Areas to Stretch:** All disciplines in figure skating need to pay attention to the following areas of the body to stretch. These general stretches that need to be included each time the skater warm-up, exercises and skates.

Head/Neck  
Chest  
Upper & Lower back  
Sides of the Torso  
Shoulder area - front & back  
Calf & Achilles

Quadriceps  
Hamstrings  
Hip Flexors  
Groin  
Hip Abductors (outer thigh)  
Hip Adductors (inner thigh)

Typically tight muscles in skaters are:

Quadriceps - front thigh  
Gluteal Group - buttocks muscles  
Erector spinae - lower back  
Hip Abductors - outer thigh

Iliopsoas - hip flexors  
Gastroc - calf muscles  
Achilles Tendon

## **HOW & WHEN TO USE DYNAMIC OR FUNCTIONAL STRETCHING**

Dynamic stretching is a type of stretch that can be used before skating practice and performance to lengthen the muscles, around the joint, that are used in specific movements such as spirals, lay backs, Ina Bauers, lunges and shoot-the-duck position.

It is recommended that the body temperature first be raised by a warm-up. Then start with slow static stretching to the end point. After the muscles have been stretched, the athlete can progress to controlled slow velocity methodical activity and then to higher velocity functional activities such as splits, spirals, lunges, etc. For example, if a skater needs to stretch the muscles used in a spiral, start with stretching the hamstrings, hip flexors, quadriceps and abductors (inner thighs). Then the skater's body is ready to move in and out of sport specific movements quickly.

## **References**

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## SUMMARY

### WARM-UP, FLEXIBILITY AND COOL-DOWN

General Warm-up – approximately five minutes of activity to gradually increase heart rate and blood flow, joint fluid and deep muscle temperature:

- jogging in place or stairs
- jumping rope
- bench stepping
- slide board
- jumping jacks

Flexibility – see General and Quick Stretch Routines:

- perform stretches only after a general warm-up.
- stretch morning and evening, before and after activity.
- hold a constant stretch (not painful) for 15-30 seconds. Do not bounce!
- stay relaxed and breathe normally.
- focus and mentally prepare for your upcoming practice or performance.

Specific Warm-Up – gradually more strenuous and quicker skating specific moves

- drills should be performed on a soft landing surface (mats, wooden floor, grass)
- wear proper shoes (cross-trainers or high-top basketball shoes)
- perform drills with maximal effort concentrating on body-control, quickness, maximal vertical height with appropriate landing positions.

DRILL SEQUENCE:

**Ankle Bounces:** two sets of five bounces (total = 10)

**Arm Swings:** two sets of five arm swings (total = 10)

Rest period = 1 minute

**¼ squat jumps in place or lateral movement:** one set of five jumps (total = five)

Rest period = two minutes

**Single-Leg Skip Bounds:** one set of eight (total = eight)

Rest period = one minute

**Torso Rotations:** two sets of 10 rotations

Rest period = 30 seconds

## FOOTWORK DRILLS:

### **Rotational jumps:**

¼ turns: one set with double-leg landing (total = two)  
one set with single-leg landing

Singles: two sets of three singles (total = six)

Axels: two sets of two axels (total = four)

Doubles: two sets of two doubles (total = four)

Rest period = one minute

Cool-Down – following intense practice session or competition, for improved recovery and less soreness the following day:

- moderate to light intensity stroking on ice or any general warm-up activity, three to five minutes.
- total body stretching (stretches need to be held for one minute).

## **SKATER'S CHECKLIST FOR OFF-ICE COMPETITION OR PRACTICE PREPARATION**

### **Warm-Up/Cool-Down and Flexibility Stretching (Before practice or competition)**

General Warm-Up (using one or more of the following). Duration: five to eight minutes)

- |   |   |                                      |
|---|---|--------------------------------------|
| <input type="checkbox"/> Jumping rope     | <input type="checkbox"/> Bench stepping | <input type="checkbox"/> Slide board |
| <input type="checkbox"/> Jogging in place | <input type="checkbox"/> Jogging stairs |                                      |

Total-Body Flexibility stretching:

- |   |   |   |
|---|---|---|
| <input type="checkbox"/> Neck                   | <input type="checkbox"/> Chest            | <input type="checkbox"/> Torso/abdominal    |
| <input type="checkbox"/> Arms/shoulders         | <input type="checkbox"/> Hips/waist       | <input type="checkbox"/> Thighs (upper leg) |
| <input type="checkbox"/> Lower back             | <input type="checkbox"/> Calf (lower leg) | <input type="checkbox"/> Shin area          |
| <input type="checkbox"/> Hamstrings (upper leg) |   |   |

### **Before On-Ice Practice/Competition Program (specific warm-up/dynamic flexibility)**

If possible:

- perform warm-up at least 60 minutes before taking the ice for your on-ice warm-up
- utilize a soft landing surface and adequate footwear
- emphasize:
  - \*body control
  - \*quickness
  - \*maximal effort
  - \*power and concentration

Specific Jumping - low intensity plyometric drills

- Jumps in place (double-leg = ankle bounces with double-arm swings)
- Jumps for height and distance (double-leg = lateral ¼ squat jumps)
- Jumps for height (single-leg = single-leg skip bounds)
- Torso rotations (crossed-leg position)
- Rotational jumps (double-leg to single-leg ¼ turns, single, double and triple rotations).
- Program walk-through on the floor.

Cool-Down - with flexibility stretching (post competition or practice program)

- Gradually decrease heart rate (five min.) by stroking, jumping rope or jogging in place.
- Total-body flexibility stretches