



Strength Training

**Designed Specifically for
Novice/Junior/Senior
Skaters and Coaches**

Strength Training Instructor Guidelines

Instructor Qualifications

- A. Degree in exercise, physical education or sports science related field (preferably a masters degree).
- B. Certification and membership through a professional association related to sports training (i.e., National Strength and Conditioning Association, American College of Sports Medicine, etc).
- C. Membership through a professional association related to figure skating, (i.e., Professional Skaters Association or the United States Figure Skating Association),
- D. Maintenance of continuing education credits within the instructors specific professional association.
- E. Current working knowledge of the physiological and biomechanical characteristics skills and performances involved in various levels of skating. Able to perform an individual assessment of each skater.
- F. Knowledge of the concepts and principles involved in strength and conditioning training of the prepubescent athlete involving proper program design, exercise technique, safety and spotting.
- G. CPR certification (from the American Heart Association or the Red Cross).

How do I find a certified conditioning specialist? To contact a certified conditioning specialist in your area, you may want to contact a certifying agency such as:

- American College of Sports Medicine at (800) 486-5643
- American Council on Exercise at (800) 825-3636
- National Strength and Conditioning Association (NSCA) at (719) 632-6722

Be sure that the specialist that you choose is knowledgeable about working with young athletes and has an understanding of the requirements of skating.

STRENGTH TRAINING PROGRAM

Purpose: To provide the young skater with skill specific and age specific strength training program. The emphasis of the training is to include proper exercise techniques and safety (spotting technique).

Definition of Strength Training

- ✓ Use of resistance, i.e. free weights, own body weight, etc., to increase your ability to exert or resist force.
- ✓ Strength training for the skater should be safe, should help prevent injury and enhance skating performance.

Strength Training Benefits

Performance Factors:

- ✓ Increase *flexibility* (for spins, spirals, artistic movements, etc.)
- ✓ Increased *strength* (for holding positions, take-off, rotation and landing jumps).
- ✓ Increased *muscular endurance* (to resist fatigue).
- ✓ Increased *anaerobic power* for more forceful jump take-offs, jump combinations and increased stroking force and speed.
- ✓ *Positive psychological* and emotional benefits (the better physically prepared skater may yield a more positive self-esteem).

Goal: What the Skater Should Gain from Strength Training

Components of Skating

- ✓ Total Body Strengthening, i.e. shoulders, upper back, torso/abdominal, lower back, hips and legs.
- ✓ Physiology of Skating: predominately training the anaerobic energy system.
- ✓ Injury Prevention: Strengthening of the shoulder, hip and lower back, knee and ankle joint areas.

Strength training will not cause bulky muscles if done properly. Strength programs for skaters are designed specifically to avoid bulky muscles.

STRENGTH TRAINING PROTOCOL

Objective: To implement a skating-specific, off-ice strength training program for the purposes of sport injury prevention and enhancement of figure skating performances.

Introduction to Total-body, Sport-Specific Strength Training Variables

- ✓ *Frequency* – Strength training should be performed at least two to three times per week.
- ✓ *Duration* – Length of actual strength training exercises should be approximately 50-60 minutes.
- ✓ *Volume* (set multiplied by repetitions) – generally perform three to four sets of 8-15 repetitions per exercise. Note: Abdominal and torso exercises will have higher repetitions 15-20 per set, per exercise.
- ✓ *Intensity* (amount of weight lifter per exercise) – Skaters should perform in the 8-15 RM or repetition maximum. In other words, lift with an amount of weight that you can perform 8-15 repetitions maximum, with correct exercise technique.
- ✓ *Rest* – Rest approximately one to two minutes between sets and exercises. Recovery rests should be at least one day between strength workouts.
- ✓ *Exercise Type* - Perform total-body strengthening exercises, biomechanically specific to the muscles utilized in figure skating skill movements. Also, perform general exercises (isolated movements) for areas of possible muscular imbalance.

Example: Lower Body -quadriceps or thigh area
-hamstrings or back of thigh area
-buttocks/hip area
-lower leg/calf area and front of lower leg or shin area

Middle Body -abdominal
-lower back
-torso-/oblique area

Upper Body -all muscles of the shoulder area
-upper back or latissimus dorsi
-chest

- ✓ *Order of Exercise* – Perform multi-joint exercises first, then progress to less technical (isolated) exercises. Example: do not perform back squats before heel raises.

BASIC GUIDELINES FOR OFF-ICE STRENGTH TRAINING

- ✓ Perform warm-up with total body flexibility stretches before doing strength exercises. Do more flexibility stretching after strength training sessions.
- ✓ Type and order of exercise should be specific. Utilize a combination of free-weight, elastic tubing and resistance using your body weight. Perform lower body, multi-joint exercises first, progressing to the more isolated movements.
- ✓ Rest periods are important for recovery and for maintaining proper exercise technique. Rests are typically one to two minutes, depending upon the strength training exercise difficulty level. Rests are taken between sets of exercises and between exercises.
- ✓ Appropriate loads or the total amount of weight lifted must be appropriate for your maturity and strength level. Example – a novice level skater who is not weight training should use considerably less resistance than a trained novice-level skater. Typically you should lift the weight that allows you to perform three to four sets of 8-15 repetitions.
- ✓ Use proper technique with
 - controlled moderate speed movement
 - good body form
 - proper alignment
 - a breath when lifting
- ✓ Always use spotters, especially for the technical total-body strength training exercises.
- ✓ Rest days (24-48 hours) are between strength training sessions for full muscular recovery.
- ✓ Pre-pubescent skaters (below the ages of 15 years old) should always have a supervisor, i.e. strength coach, parent or other knowledgeable person, present throughout the strength training session.
- ✓ Increase weight lifted by no more than five percent per week as long as correct technique is consistent. Depending on the individual progression of your strength training program, increases in resistance or weight can be as high as 10% of the total weight. Only increase the weight lifted when you can easily perform three to four sets of 8-15 repetitions.
- ✓ Proper conduct/behavior is crucial for a safe strength training environment. Skaters should be encouraged to assist or encourage each other throughout the off-ice strength training session. It is imperative that all athletes realize there is no room for foolish behavior in this and all training efforts.

**STRENGTH TRAINING PROGRAM DESIGN
FOR THE THREE DISCIPLINES OF FIGURE SKATING**

DISCIPLINE	EXERCISE	SPECIFIC MUSCLE GROUP(S) TRAINED	AREA TRAINED
Singles, Pairs	Back Squats*	Quadriceps, gluteals, hamstrings, erectors	Lower body
Dance	Lunges	Quadriceps, gluteals, hamstrings, erectors	Lower body
Singles, Pairs, Dance	Heel Raises**	Gastrocnemius, soleus	Lower body
Singles, Pairs, Dance	Bent-knee Deadlifts*	Hamstrings, erectors, gluteals, deltoids	Lower body Upper body
Singles, Pairs, Dance	Bench Press*	Pectoralis major, triceps, deltoid	Upper body
Pairs, Dance	Upright Rows	Trapezius, deltoids	Upper body
Singles	Behind the neck press & push press*	Quadriceps, gluteals, hamstrings, gastrocnemius, erectors, deltoids, triceps, trapezius	Total body
Pairs, Dance	Front Push Press***	Quadriceps, gluteals, hamstrings, gastrocnemius, erectors, deltoids, triceps, trapezius	Total body
Singles, Pairs, Dance	Bent Rows**	Latissimus dorsi, rhomboids, deltoids	Upper body
Singles, Pairs, Dance	Push-Ups***	Pectoralis major, triceps	Upper body
Singles, Pairs, Dance	Abdominal Crunches**	Abdominals	Middle body
Singles, Pairs, Dance	Cycle Crunches**	Obliques, abdominals	Middle body

- Perform each core* and assistive** exercise three sets of 8-12 repetitions.
- Perform abdominal and oblique exercises three sets of 15 and higher repetitions.
- Rest approximately one minute between sets and exercises.
- Skater should be warmed up and stretched prior to lifting.
- Skater should stretch after lifting/exercises.

***Front Push Press, push-ups associated with wrist strengthening.

SKATERS CHECKLIST FOR OFF-ICE STRENGTH TRAINING

Off-Ice Strength Training Performance Checklist

- Perform strength training at least two to three times per week (depending upon phase of training).
- Perform strength exercises for the following areas for total body fitness:

DISCIPLINE	AREA	EXERCISE
Dance	Hips	Lunges
Singles, Pairs, Dance	Upper leg	Back squats
Singles, Pairs, Dance	Lower back/upper leg	Dead lifts
Singles, Pairs, Dance	Lower leg	Heel raises
Singles, Pairs, Dance	Abdominal/Torso	Crunches, sit-ups
Singles, Pairs, Dance	Chest	Bench press
Singles, Pairs, Dance	Upper back	One-arm rows
Pairs, Dance	Shoulders	Front push press

- Emphasize proper technique, performing at least three to four sets of 8-15 repetitions of light to moderate weight.
- Always lift through a full range of motion (ROM).
- Emphasize safety when using free-weights and some machines, using spotter.

Note: If strength training equipment (such as free-weights and machines is not available, perform strength exercises using you own body weight as resistance and utilize the Sport Cord exercises.

Area:
Lower Body

Example Exercise:
Single-leg squat
Lunges
Heel raises

Area:
Upper Body

Example Exercise:
Pull-ups
Push-ups
Chair dips

Area:
Middle Body/Torso

Example Exercise:
Crunches
Sit-ups
Torso rotations