Off-Ice Strength & Conditioning for Figure Skating:
What the Parent Should Know

Off-ice training for figure skating is booming with more skaters getting involved in training off-ice. With the emphasis of skaters performing more technical jumps, spins, pairs and dance lifts and other elements on-ice, the need for off-ice strength & conditioning training has definitely increased. Also, skaters are performing more programs and competing more throughout the year, thus the need for that skater to be physically strong and well conditioned. Finally, a majority of these skaters are attempting these technical skills on-ice, with many repetitions, and these skaters are very young with immature bodies. Therefore, there is a risk of serious musculoskeletal injuries, if not early in their skating career, than later in their skating careers.

As parents, it is very important for you to know what off-ice training is, and how important your role is in finding appropriate off-ice training for your skater. A lot of times the technical on-ice coach does not have the necessary time to research and search out a trainer for their skaters. Also, it is the parent who has the responsibility to get that skater not only to the rink, but also to the gym or health club for their off-ice training. The following is an outline of some of the guidelines for off-ice training and figure skating.

I. Why should skaters perform off-ice training?

For enhancing skating skills and performance and to reduce and/or prevent skating related injuries.

II. What are the Components of Off-Ice/On-Ice Training?

a. Warm-up/Cool-down with Flexibility Training
b. Strength Training
c. Jump/Plyometric Training
d. Aerobic and Anaerobic Endurance Conditioning
e. Periodization of all components

III. Enhancing Skating Skills and Performance through Strength, Power, Flexibility and Endurance Conditioning Training May Allow for the Following:

a. Enhanced posture or body positioning on the ice
b. Increased stroking speed or power
c. Increased jump height
d. Increased rotation speed of jumps
e. Increased speed of jump check-outs
f. Improved strength of jumping landing
g. Improved positioning or strength of holding spin position
h. Improved upper-body strength for choreography movements
i. Enhanced cardiovascular condition to complete short and long program with more efficiency

IV. Recommendations for Successful and Safe Off-Ice Strength & Conditioning Training: Strength and Power Guidelines

1. **Instructor Qualifications:**

   A. Degree in Exercise, Physical Education or Sport Science related field (preferably Masters Degree).

   B. Certification and membership through a Professional Association related to sports training (i.e. National Strength & Conditioning Association, American College of Sports Medicine).

   C. Membership through a professional association related to figure skating (i.e. Professional Skaters Association, 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. Actual work experience hours (3-5 hours) per week, training figure skaters off-ice.

   H. CPR certification (American Heart Association or Red Cross).

2. Strength training program design and implementation must follow the guidelines of the Position Statement: Youth Resistance Training, National Strength & Conditioning Association, December 1996 (2)

3. Personnel or the off-ice coach must be proficient or knowledgeable of the sport of figure skating. Should have actual experience or work hours with off-ice strength training of skaters.

4. Program design and implementation should be individualized in many cases.

5. There needs to be open communication between the On-Ice Technical Coach, Physician, Strength & Conditioning Coach, Athletic Trainer and/or Physical Therapist and Parent.

6. Strength and Conditioning Training Facility requirements should include:

A. Adequate lighting and cleanliness.

B. Adequate workout space, flooring with good traction, cushioning and support.

C. Proper equipment in good repair, including free weights and machines.

7. Strength Training Program design should be specific to the individual athlete's age and abilities and to the specific sport of figure skating. Some general features include:

   A. Technique emphasized first, then progression to increased resistance.

   B. Low intensity with high volume to establish a base strength level, then variation with volume and intensity can occur (3-4 sets of 6 -15 repetitions).

   C. Multi-joint as well as some isolated or single joint exercises for the following areas: hip/lower back, legs (upper and lower), torso/abdominal areas, shoulders and upper back.

   D. Variation in program design, incorporating rest days, different exercises, changes in sets, repetitions and resistances, to prevent plateauing, monotony of training, symptoms of overtraining and to allow for peaking of performance. It is recommended that program design be modified or "totally" change in 4 – 6 week periods.

   E. Allow the body time to recover prior to progressing to another technical or intense training session.

8. Consult with a physician prior to beginning any sport and physical training. A complete health, risk, orthopedic screening should be taken prior to starting skill and resistance training.

9. Appropriate warm-up and cool-down with flexibility stretching should be done pre and post training (see Warm-up/cool-down and flexibility section).

10. Appropriate clothing including adequate footwear is very important for safety and comfort. Athletic shoes with adequate ankle/heel support, clothing should not interfere with actual lifting technique or movement (i.e. clothing that is too long or baggy is not recommended).

V. Recommendations on Finding Qualified Off-Ice Training Instructors: Parents can try to locate trainers by doing the following:

A. Call local Fitness Centers, health clubs, gyms, YMCA's, Athletic Departments at local Colleges and Universities and High Schools, and Sports Medicine Clinics.

B. Contact the National Strength & Conditioning Association or visit their web site at www.NSCA-Lift.org, or call: 719.632.6722

C. Contact USFSA (they are trying to establish a data base of trainers)

For further questions concerning off-ice strength & conditioning training and figure skating, and for clubs wanting to develop off-ice training programs, feel free to contact me at:

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Carl M. Poe, M.S., CSCS has designed strength & conditioning programs and has trained skaters for the previous ten years. Poe has assisted at the U.S. Figure Skating elite sports science camps, Team 2010, National Training Camp, and the Regional Training camps. He has also presented at the PEP seminars for the Professional Skaters Association (PSA).

Poe was the off-ice strength & conditioning coach for National & International level skaters at the Colorado Springs World Arena, 1995-1997, and is currently director of off-ice strength & conditioning training for skaters throughout the Chicago, Illinois area.

Poe is also strength coach of national and international skaters. He serves as a member of the U.S. Figure Skating Sports Sciences and Medicine Committee, PSA, PSA Sports Science Committee, the National Strength & Conditioning Association, and Wagon Wheel Figure Skating Club.

Poe conducts seminars and off-ice strength & conditioning program development for skating programs throughout the U.S. He is also an author of many publications (book, journals, magazines) involving off-ice and on-ice strength and conditioning training and figure skating.