

Strength Program for Figure Skating

To optimize strength and power, figure skaters need to supplement on ice training with land training in the gym. For best effect, skaters need to follow a program of exercises that replicate their actions in the water as closely as possible.

Strength and conditioning experts around the world all agree that, for time spent in the gym to have a positive impact on your sports performance, you must ensure the exercises you perform, and the way you perform them, are related to your sporting movements in competition.

For example, Barbell Squats involve ankle, knee and hip extensions in a vertical plane, which are directly related to the mechanics of a vertical jump; thus the squat is a useful exercise for developing jump performance.

If we perform a basic analysis of the mechanics of forward stroking, the main actions that produce forward propulsion over the ice are:

- ❖ The core body balance that resists the backward leg thrust and propels the skater forward
- ❖ The extension, which alternates hip flexion and extension of the legs.

In addition, skating involves: the controlled acceleration from a stationary position, which involves dynamic ankle, knee and hip extension.

When designing your strength program, you should focus mainly on exercises related to these movements. Other exercises may use the same muscles as those involved in skating, but only exercises, which use the correct muscles in a related mechanical movement, will provide optimum training benefit.

A limitation of land training can provide that the type of resistance you encounter when moving over the ice. Skating is not a sport of straight lines; the need to restrict movement to a confined area requires the skater to control the centrifugal force occurring from acceleration.

Hydraulic-type resistance equipment that mimics the resistance of ice-skating is expensive and not widely available. A compromise is to use regular equipment is to try to mimic the speed and nature of the skating stroke.

To this end, you should aim to perform the strength exercises with a smooth and constant force and select weights, which allow the movement to be performed at a skating - related speed.

For example, the leg motion during forward crossovers at full speed is quite fast, so it would be best to choose hip flexion and extension exercises that can be performed at a good speed.

The following exercises are related to the mechanics of stroking. For each component, the relevant exercises are described and their mechanical relationship to the stroke explained.

Stroking Exercises

1. Cable rotational back pulls and pushes

Back Pulls

This is the mechanical equivalent to the pulling the front skate across the back curve when performing back crossovers. as the hand comes diagonally across the body as it pulls backwards. For this exercise you need a high pulley machine with a simple handle grip.

Kneel down on one knee to the side of the machine. Take the hand nearest the pulley and grasp the handle with the hand high and slightly out to your side.

Before you start the exercise make sure your back is straight, your shoulders are wide and your chin is tucked in. Pull the handle down and lower your arm across your body in a rotational movement until your hand is next to the opposite hip.

Smoothly return the bar to the start position and continue performing sets of 5 to 8 repetitions for maximum strength or 12 to 15 repetitions for strength endurance.

Try to keep your posture solid throughout the movement. Maintain a slight bend in the elbow as you pull, but focus your effort on the shoulder muscles only.

Rear Pushes

This exercise involves the opposite movement to the back pull and is useful for promoting a balanced strength about the shoulder joint. Specifically, the back pull trains the internal rotator cuff muscles and the rear pull trains the external muscles.

To avoid shoulder injuries balanced rotator cuff strength is important. This exercise requires a low pulley machine with the simple handle grip.

Stand to the side of the machine and grasp the handle with the opposite hand. Make sure your back is straight, your shoulders wide and your chin tucked in. Start with your hand by the inside hip and fix a slight bend in the elbow.

Pull the handle up and away from your body, rotating the arm up and out. Finish with the handle high and out to the side, with the palm of the hand facing forwards.

Smoothly return the handle back and across to the opposite hip and continue. Again go for sets of 5 to 8 repetitions for maximum strength or 12 to 15 repetitions for strength endurance.

Keeping your posture solid during this exercise is quite difficult, as it is tempting to use your trunk muscles to help the rotation movement. However, you can train your core stability skills by keeping your navel pulled into your spine and relaxing your upper body so there are no additional movements apart from the arm raise and rotation.

In combination, the front and rear diagonal pulls train almost every muscle in the shoulder joint and shoulder girdle. This makes them very useful exercises for any sport.

2. Medicine ball single arm overhead throw

This exercise develops the power of the latissimus and pectoral muscles in a functional manner for skaters, involving movements similar used by skaters to define personal/private space.

The aim of the throw is to improve the rate of force development in the shoulder by accelerating the arm hard to throw the ball. For this exercise you need a partner and 2 to 4kg ball. The small rubber ones is best as they can be held in one hand.

Because the ball is quite heavy for one hand you will not be able to throw it far or move the arm very fast.

The training effect comes from your attempts to accelerate the arm movement as fast as you can, thereby improving the power of the pull.

Lie on your back on the floor, with knees bent slightly so your lower back is comfortable.

Grasp the ball in one hand with your arm up and behind your head, slightly bent at the elbow.

Vigorously pull the arm up and down across your body, throwing the ball over the opposite knee. Get your partner to return the ball, and perform sets of 8 to 12 repetitions with each arm in turn.

Do not lift your head or pull up from the stomach as you throw. Focus on producing the power from the shoulder and pulling across the body as you do in front crawl.

3. Swiss ball body pulls

This is a 'closed kinetic chain' movement, where the moving limbs remain in contact with a fixed object – in this case the hands with the floor. Such movements are thought to be particularly functional for sports performance, so offering greater training benefits.

This exercise is performed in a horizontal prone position, with the arms stretched out from the body, matching the position and action of a skater performing the layout position of a flying camel spin.

Position yourself face down, with your lower legs on the Swiss ball and your hands on the floor supporting your weight, body parallel to the floor. This is the equivalent of a press-up position with your feet up.

Slowly roll the ball up your legs while your arms extend out to your side until you achieve a stretched position, with a straight line through your arms, shoulders, back, hips and legs.

At this point your body will make a shallow angle with the floor and the ball will be positioned on your thighs. Then, keeping this perfect alignment of your body, push down through your hands into the floor and pull yourself back to the up position.

The ball should roll back down your legs as you do this. Perform sets of 8 to 12 repetitions.

The difficult part of the exercise is the pull back up. At this point you must use your stomach muscles to support your spine and focus on using a strong pull of the shoulder muscles to raise your body back to the parallel position.

This exercise is not easy, but it is very beneficial for many sports, helping to develop core and shoulder strength.

Leg Extension exercises

Hip Extension and Flexion Kick

These exercises mimic the upward and downwards phases of a skaters stroking action, where the glutes and hamstrings extend and the hip flexors flex the leg at the hip.

For these exercises you need a low pulley machine with an ankle strap attachment. Each leg is worked independently and the weights used should be relatively light so you can kick with good speed.

Hip Extension

Stand facing the low pulley machine, with the ankle strap attached to one leg. Lift this leg off the floor, taking up the slack of the cable, and place your balance solidly on the other leg.

Hold onto the machine's frame with your hands to stabilize your upper body and check that your back is straight, with shoulders relaxed.

Pull the cable back dynamically by extending the leg backwards until you feel you need to lean forwards, then bring it back in a controlled manner to the start position, retaining good posture.

Continue pulling the leg back, focusing on the gluteals and hamstrings to kick back powerfully.

Hip Flexion

Stand with your back to the low pulley machine, with the ankle strap attached to one leg. Lift this leg off the floor, taking up the slack of the cable, and place your balance solidly on the other leg.

Use a stick to support yourself, and check that your back is straight with your shoulders relaxed.

Pull the cable dynamically by kicking the leg forwards. Pull the weight, using your hip flexor muscles at the top and front of the thigh, until your leg reaches an angle of about 30° or you start to lean back.

Smoothly return your leg to the start position, retaining good posture, and continue.

Perform sets of 10 repetitions at a fast speed and build up to sets of 20 or 30 repetitions for power endurance of this movement.

'Jump push-off' exercise **Barbell squat jumps**

This exercise involves dynamic extension of the ankle, knee and hip joints and trains the

calf, quadriceps and gluteal muscles to improve vertical jump performance.

The vertical jump off ice is essentially the same mechanical movement of on ice jump takeoffs - the ankle, knee, hip, and leg extension propels you upwards with the core body in a vertical plane allow the rotation to occur around the central axis of the landing foot.

The point of using a barbell to add weight to the squat is to help you to generate peak power. If you perform the jump squat with body weight only, the jump will be very fast and high.

With the addition of a moderate weight (about 30 to 40% of the 1 repetition max weight for the squat exercise), the jump will not be as high or fast, but the muscular power required to leave the ground will be maximal.

This is based on the knowledge that peak power is achieved when the force used is about one third of the maximum force for that movement.

Your goal is to attempt to achieve the fastest extension of the legs to maximize power production and training benefit. If you use 30 to 40% of 1RM weight, 3 to 5 sets of 5 repetitions is recommend.

Stand with the barbell across the back of your shoulders. Squat down, bending at the hips and knee, making sure the weight goes down through the back half of your foot.

When you reach the half squat position, drive up dynamically rapidly extending your legs so that you leave the floor briefly. Absorb the landing with soft knees and then go smoothly into the squat again.

Continue for 5 repetitions.

Summary

Strength and power training is essential for an accomplished figure skating performance. To optimize the benefit of land-based training, you must select exercises with mechanical relevance to the skating action, particularly those movements which propel the skater over the ice while stroking and performing deep, controlled edges and turns.

As the resistance provided by the ice is different from the resistance provided by weight equipment on land, you must also focus on mimicking the speed and smooth movement of the skating stroke when performing land-based exercises

Various exercises for the arms, leg extension, and turn movements are suggested, all with a good functional relationship to the skating action.

This is not a definitive or exhaustive selection of exercises designed to focus on highly specific skating movements in terms of mechanics, positions and speed.

When you design strength programs for a skating performance, be sure to think about each exercise in terms of its relevance to performance.

Reference

<http://www.sportsworkout.com/e-Training-for-Skating-p-3420.html>

e-Training for Skating

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Exercise	Sets	Reps	Weight/Resistance
<p>Seated Bike Starting Position: Adjust the seat so that your legs have just a slight knee bend when your foot is at the bottom position. Increase the resistance until you are challenged yet can keep good cycling form.</p> <p>Trainer's comments: General warm up.</p>	1	10 Min.	
	2		
	3		
	4		
	5		
<p>High Knee Drill 1. Stand in place with feet hip width apart. 2. Drive knee up towards chest and quickly place the foot back on the ground. 3. Drive other knee up in a moderate to fast jog with minimal ground contact time.</p> <p>Trainer's comments: Bring Knees as high as possible. Either perform standing still, walking or jogging.</p>	1	20	Body
	2	20	Body
	3		
	4		
	5		
<p>Butt Kick Start with a light jog. Pull the heel of the lower leg up to and bounce off the butt. Your knee should come forward and up during the movement.</p> <p>Trainer's comments: Either perform standing still, walking or jogging.</p>	1	20	Body
	2	20	Body
	3		
	4		
	5		

<p>Chest (wall) Place an outstretched arm against a wall or doorway and lean forward with that shoulder. You should feel a stretch in your chest when you lean forward. Hold for the recommended number of seconds. Repeat with the other arm.</p> <p>Trainer's comments: Hold for at least 30 seconds on each side.</p>	1	30 sec.	
	2		
	3		
	4		
	5		
<p>One Leg Box Step Up 1. Stand to the right of the box. Place left foot on top of box. 2. Raise body using the left foot only until leg is extended. 3. Lower to start position keeping the foot on top of box. Repeat with other leg according to exercise prescription.</p> <p>Trainer's comments:</p>	1	10	Body
	2	10	Body
	3	10	Body
	4		
	5		
<p>Pushup (both hands on ball) 1) Get on your knees and place hands 6-8 inches apart onto the flexball. 2) Start position: Align hands at nipple line, place feet hip width apart on toes, and extend the arms to raise body up. Trunk and hips should be in a straight line. 3) Lower your entire body (legs, hips, trunk, and head) 4-8 inches from the flexball. 4) Return to the start position by extending at the elbows and pushing the body up. 5) Remember to keep the head and trunk stabilized in a neutral position by isometrically contracting the abdominal and back muscles. Never fully lock out the elbows at the start position and avoid hyperextension of the low back.</p> <p>Trainer's comments:</p>	1	10	Body
	2	10	Body
	3	10	Body
	4		
	5		
<p>Front Pulldown 1) Adjust seat or knee pad height so that knees are secured while seated. 2) Grasp bar with a overhand grip wider than shoulder width apart and sit with knees secured in pads. 3) Start position: Fully extend arms with elbows facing out with back straight (you may lean back at hips approximately 5°-10°). 4) Pull bar down to upper chest area and squeeze shoulder blades together at end of movement. 5) Return to start position. 6) Remember to keep torso stationary throughout movement.</p> <p>Trainer's comments:</p>	1	10	40
	2	10	40
	3	10	40
	4		
	5		
<p>Dumbbell Curl (two arms) 1) Stand with feet shoulder width apart and knees slightly bent or sit in upright position. 2) Start position: Grasp DB's with underhand grip (palms facing forward) and allow arms to hang down at sides. Elbows should be close to sides. 3) Flex at the elbows and curl DB's up to approximately shoulder level. Keep elbows close to sides throughout movement. This exercise may be done one arm at a time. 4) Return to start position. 5) Remember to keep back and head straight in a neutral position throughout movement. Shoulders should be stabilized by squeezing shoulder blades together slightly - only the elbow joint should be moving.</p> <p>Trainer's comments:</p>	1	10	15
	2	10	15
	3	10	15
	4		
	5		
<p>Two Leg Pike Roll out on the ball until your shins are on the ball and you are forming a bridge. Keeping this position, roll your knees in towards your chest. Return to the starting position and repeat.</p> <p>Trainer's comments:</p>	1	10	Body
	2	10	Body
	3	10	Body
	4		
	5		

Two Leg Pike
 Rollout on the ball until your shins are on the ball and you are forming a bridge. Keeping this position roll your knees in towards your chest. Return to the starting position and repeat.



1	10		Body	
2	10		Body	
3	10		Body	

Trainer Comments:
 Enter your comments:

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Serving Sizes
 Hi, your
 Maintenance Calories = 3223.9
 Energy Calories = 690
 Add 800 Kcal
 Total Calories = 4713.9

Food Choices
 Milk, Vegetables, Fruits
 Carbohydrates, Meat, Fat
 Combination Foods
 Free Foods

7-Day Meal Plan
 day 1, day 2, day 3
 day 4, day 5, day 6
 day 7, All days, print

Milk, Yogurt, & Cheese Group: (90-150kcal/serving)
 1 cup of milk (skim, 1%, 2%)
 1.5 oz (42.45 grams) of natural cheese
 1 cup of plain yogurt
 1/2 cup of evaporated
 2 ounces (56.6 grams) of mozzarella cheese
 skim milk
 1 cup frozen yogurt

Meal plan of Day 1 for 4713.9 Calories
Breakfast
 3 slices toast
 1.5c oatmeal
 3 sausage links
 2 tsp jelly
 1.5c orange juice
 2c skim milk
Snack
 2 Tbsp peanut butter
 2 slices bread
 10 crackers
Lunch
 1 cheeseburger
 4oz (113.2 grams) ground beef
 11 fig newtons

Keys for Text Copy
 Ctrl+C = Copy
 Ctrl+V = Paste
 Ctrl+X = Cut

food sizes

Create Meal Plan

Date	Breakfast	Snack	Lunch	Snack	Dinner	Snack

Add New

As you can see after you fill out your nutrition profile a meal plan will be created for you and you can edit this meal plan to substitute foods in and out based on your preferences. Or you can create your own meal plan using the suggested servings the program determines for you.

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