

Introduction to Figure Skating

Figure Skating is a winter olympic sport requiring continuous muscle activation utilising both aerobic and anaerobic energy systems throughout a 200sec routine for a short program and up to 240sec for the free skate program. Devin (2002) states that Shelly Provost-Craig, a sports physiologist and an associate professor in exercise physiology at the University of Delaware often quotes that a skater requires the “balance of a tightrope walker, the endurance of a marathon runner, the aggressiveness of a football player, the agility of a wrestler, the nerves of a golfer, the flexibility of a gymnast, and the grace of a ballet dancer”.

Health Related Fitness Components in Figure Skating

Cardiovascular Endurance	Continuous muscle activation is required throughout a skater’s program for movement and posture. While gliding on ice may require less effort than jumps and spins, sustained muscle activation is still required to maintain balance calling for both aerobic and anaerobic energy systems.
	Fitness Assessment: 2.4km run test
Muscular Strength	A jump element requires a skater to generate enough force to propel its own mass during take-off. Fitness Assessment: One Rep Max (1RM) Leg press <i>*however, it is the explosive nature of the force generated that is required by a figure skater hence an assessment of power would be a better option.</i>
Muscular Endurance	A well balanced free skate program includes seven (7) jump elements and three (3) spin elements together with step sequence in accordance to a music piece. Repeated and/or sustained muscular effort is required to execute all required elements within a 240sec time frame. Fitness Assessment: Plank hold for rectus abdominis, erector spinae, hip flexors; Squat test for ilioasps, hamstrings, quadriceps;
Flexibility	A figure skater requires an increased range of motion to be able to get into technical positions such as the Biellmann and the Bow&Arrow. Fitness Assessment: Sit and reach for hip and low back, Shoulder stretch

Body Composition	Part of a figure skater's score is the artistic element where aesthetics is a core indicator. Routines are skated in tightly fitted clothing promoting leanness amongst skaters.
	Fitness Assessment: Bioelectrical impedance analysis

Sport Skill Related Fitness Components in Figure Skating

Balance	Contact between ice and a figure skater is through a blade that is only 1/8 of an inch thick and about 8 inches in length, often on only one leg.
	Fitness Assessment: Y balance test
Power	A jump element requires a skater to generate enough explosive force to propel its own mass during take-off
	Fitness Assessment: Standing vertical jump test, Timed tuck jumps
Agility	Depending on musical components and choreography, a figure skater will have within his/her routine abrupt stops and changes in directions including but not limited to jumps and step sequence.
	Fitness Assessment: Shuttle run, Hexagon test
Speed	<ul style="list-style-type: none"> A figure skater has to skate up to speed to generate enough momentum and force for take off.
Reaction Time	<ul style="list-style-type: none"> At lift / take off, skater has to quickly snap into rotational position by pulling his/her hands in.
Coordination	<ul style="list-style-type: none"> A jump is completed once the skater lands and finds balance on one foot with hands outstretched. The above sequence is a coordinated fluid motion involving axial & appendicular movements.
	<p><i>Fitness Assessment: Assessment for Speed, Reaction Time and Coordination as a separate test is unwarranted as top speed is not needed for a skater to be able to generate the force required, whilst reaction time and coordination are components that requires proprioceptive inputs involving the whole body.</i></p>

