

For Women Only



Olympic Legends: The Dufour-Lapointe Sisters

*The strength and conditioning
program that enabled three
remarkable young women to make
Olympic history*

An unprecedented highlight of the 2014 Olympics was seeing the three Dufour-Lapointe sisters, Justine, Chloé and Maxime, dominate in mogul skiing. Justine won gold, Chloé came away with silver, and Maxime, the oldest at age 25, rounded out the trio by finishing an impressive 12th. The photos of Justine and Chloé holding hands before receiving their medals captured the attention of the world.

Considering the superb caliber of Olympic athletes, being able to qualify for the Games, much less win a medal of any color, requires an outstanding support team. For the Dufour-Lapointe sisters, that team included strength coach and fellow Canadian Paul Gagné. Gagné has been featured in *BFS* magazine on several occasions, even appearing with Justine on the cover of our September/October 2010 issue.

Chloé, Maxime and Justine celebrate after their remarkable performances at the Sochi Games.

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This success story began 11 years ago when sports podiatrist Dr. Michel Joubert introduced Maxime to Gagné for training. Her rapid improvement translated into enhanced sports performance, which encouraged Justine and Chloé, who were preteens at that time, to join Maxime for training.

Because Gagné started training the sisters when they were so young, he was able to help them develop a wide base of general conditioning. Gradually, he began developing their conditioning to meet the highest criteria of sport-specific strength and power. As a result, the sisters can keep up with the NHL players they train alongside with, even in many tests of explosive strength.

Posture Makes Perfect

One aspect of Gagné's training is the performance of specific stretching exercises and strength training exercises to improve posture. Among these exercises are power balance drills, which BFS has been recommending for nearly two decades.

Power balance drills are variations of the overhead squat, which simulates the position achieved in a full snatch. Holding a barbell overhead in a low squat with the trunk upright and heels flat on the floor requires considerable flexibility.

For Gagné, power balance drills are valuable tools in assessing postural imbalances, and if they are performed regularly, they enable athletes to achieve the dynamic flexibility levels displayed by competitive weightlifters. The drills can also help develop the "core" muscles of the abdominals and lower back. Gagné elaborates, "A skier with weak core muscles will bend more from their waist and shoot their hips back when they jump, a technique that will affect jumping ability and how they are scored. This is one aspect of mogul skiing that many people don't understand – you're judged not just on what you do on the snow but how you look while doing it!"

In the base-of-strength training exercises Gagné prescribes to female athletes, he doesn't hold back on squats and deadlifts. In fact, in the November/December 2011 issue is a photo of Justine performing a hex bar deadlift, with Gagné supervising. He says it's especially important for female mogul skiers to perform exercises for the upper back to correct postural imbalances from sport-specific training and to help stabilize the shoulders, which receive considerable stress during falls.

In terms of auxiliary exercises, one of Gagné's favorites for mogul skiers is the glute-ham raise. He says that having high levels of hamstring strength helps control the landings during jumps, which in turn



The Dufour-Lapointe sisters finished with gold, silver and an impressive 12th in moguls skiing in Sochi. Such an achievement is unprecedented in Olympic history.

reduces the risk of injury. The glute-ham raise is especially valuable because it works the two primary functions of the hamstrings: knee flexion and hip extension.

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Strength coach Paul Gagné and Justine appeared on the cover of the Sept./Oct. 2010 issue of BFS magazine.

Gagné says that mogul skiing requires not just exceptional strength and power but also high endurance. Although the events only last about 30 seconds, Gagné says that mogul skiers have to perform numerous practice runs, and fatigue can adversely affect coordination, decision making and other aspects of performance. Because max V02 is a measure of aerobic endurance, Gagné wants his skiers to be at a level of 60, a level often displayed by professional hockey players.

Another unique aspect of Gagné's training is an emphasis on in-season training. While it's a challenge for his skiers to eat well and get in strength training workouts during the season, especially since their competitions often take them to different countries, he says that reaching the highest levels of sports performance requires year-round training and eating well.

To give his athletes an edge, Gagné invested in an OptoJump® to continually test their balance and athletic fitness. He uses the OptoJump to measure balance and the strength and power of each leg. He uses six testing protocols with his skiers, one being the drift protocol. The data furnished by OptoJump helps Gagné determine which aspects of conditioning he needs to address with each athlete; also, the

objective nature of this data reinforces the value of Gagné's program to an athlete's sport coach.

Further, because there is a high risk of concussion in mogul skiing, Gagné uses the OptoJump as an objective tool to monitor these athletes for brain trauma. If he finds asymmetries that developed after a practice or competition, he will refer these athletes to medical personnel for additional evaluation and any treatment that is necessary to return them to baseline. Gagné says that being able to establish baseline levels of an athlete's central nervous system with the OptoJump enables him and his medical staff to determine when an athlete who has suffered a concussion can safely return to training and competition.

When it comes to mogul skiing, extreme challenges are just part of the landscape. To win in this sport, athletes must have exceptional talent and masterful training. The Dufour-Lapointe sisters have it all. Their accomplishments at the Olympics have made them international celebrities, even outside the world of skiing. They fulfilled their Olympic dreams by training with the best coaches and working hard in the weightroom and on the slopes. We look forward to seeing what they will do next!

Free weights, energy system training with pulling sleds, and computer-aided testing equipment have contributed to the success of the Dufour-Lapointes.

