

Photo: Malcolm Carmichael/Alpine Canada



Alice McKennis rips to 8th in her first World Cup race since breaking her knee in December 2010.

## *Upper-Level Testing and Training with* **Optojump**

How technology is improving the way we train Olympic athletes

BY **ERNIE RIMER, BS, MED**

**O**ptojump Next is a timing and measurement system that uses infrared light-emitting-diodes (LEDs) to assess a variety of gait and jump actions. At the Center of Excellence (COE) in Park City, Utah, we use our 10-meter-long Optojump system for three main purposes:

1. Daily field testing
2. Off-season training monitoring
3. Rehabilitation

We use the Optojump to assess the performance of our athletes on a daily basis. Every day an athlete intends to perform a resistance training session, they will stand in the Optojump and perform a triple broad jump. The triple broad jump is a

common test used to assess power. We instruct the athlete to perform three consecutive jumps while minimizing ground contact time and jumping as far as possible. To encourage safe jumping movements, we disqualify the effort if the athlete lands the third jump with their hips below the knees. The athlete gives the best effort they can give, and we use the result to determine how hard the athlete will train that day.

Interestingly, we see significant day-to-day fluctuations in each athlete's triple jump performance. If the athlete's jump distance is below their average, we prescribe a light day. If the athlete jumps within their average

ability, we prescribe a medium day. If the athlete jumps beyond their usual ability, perhaps achieving a personal best, then they can expect a heavy training day that may lead to further personal records.

By tracking day-to-day fluctuations in the triple broad jump, we can also monitor an athlete's progress throughout the year. It's easy to track progress with the lifts with tools like the BFS Set-Rep Log Book, but what about monitoring other explosive movements like jumping? Unfortunately, most laboratory and field testing devices do not allow coaches to quickly assess large numbers of athletes. The Optojump is the first