

Interactive Metronome® helps Steven get back in gear

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Steven's an avid cyclist in the Bay Area, traveling over 100 miles a ride with his buddies every weekend and working out at his club on weekdays. He has been cycling since he was a teen; even at 40-something, he is still strong and active. After an accident, he wanted to get back in the saddle.

On one of his rides back from the beach, he was heading down a steep hill at 25 mph when he hit a pothole, was thrown down a cliff, and hit a tree. Unfortunately, his leg became stuck awkwardly in the tree and was dislocated. His ACL, PCL, and MCL were ruptured, and the medial and lateral meniscus also absorbed some damage. Steven was in a remote, wooded area and had to wait for assistance after someone finally heard his cries for help.

He was airlifted out by helicopter and had reconstructive surgery a couple days later. He slowly progressed through rehabilitation, starting with 6 weeks in a straight leg brace. After that, a second surgery, followed by up to 3 hours at a time in the gym and clinic. His doctor continued to require that a brace be worn, even during sleep. However, his physical therapist was concerned that his gait pattern would change while wearing his brace so they decided to use Interactive Metronome's (IM) In-Motion product.

Interactive Metronome® is an engaging therapeutic modality that improves cognitive and motor skills by working on your brain's natural timing and rhythm. Research shows that engaging whole body movements in combination with cognitive tasks leads to overall better outcomes. Incorporating IM into a client's therapy can more efficiently target this timing deficit, leading to more substantive gains in brain function. IM is a patented and unique training tool that challenges thinking and movement simultaneously, providing real-time millisecond feedback to help synchronize the body's "internal clock."

The In-Motion's heel strike-activated sensors give the patient positive feedback for a well-placed stride. IM's guide sounds, provided through wireless headphones, cue the patient to extend or shorten their swing phase to ensure rhythmic gait. The millisecond measurement helps to even asymmetry in gait, which reduces fall risk. As a patient adjusts their gait, it continues to reward and instruct them so that they are constantly improving and exercising.

The IM In-Motion was used to give Steven's Physical Therapist an objective, accurate measurement of gait pattern improvements after three months of physical therapy. He was evaluated with and without the brace, on both feet, and the results were compared. Steven went through Short Form and Long Form assessments. He did various gait tasks including straight line, circular patterns, and lateral movements.

His results were shocking! After giving Steven a couple of trials

to adapt to the InMotion, his Physical Therapist averaged Steven's first task, circular walking, on the left lower extremity with the brace on, which came to 70 milliseconds. With the brace off, he averaged 73 milliseconds for these same tests. The In-Motion had objectively shown that the brace did not, in fact, limit his extension and gait pattern as the Physical Therapist had originally thought would happen. The results kept getting better: comparing his right leg to the left with circular walking, the average was actually worse on the right uninvolved leg, at 89 milliseconds.

Steven finally admitted that he had been cheating a little at home without the brace, and being a very strong athlete, had progressed far more quickly - which the In-Motion objectively noted.

With In-Motion's objective insights and data, the Physical Therapist was able to present this information to the MD and adjust the physical therapy program to better match his client's progress. Despite the 2 reconstructive surgeries, the objective data In-Motion provided gave the Physical Therapist certainty that Steven could perform these new tasks with confidence and motor control, while also realizing that the brace would not limit him in any way.

Steven's comment was:

"I think I'm done with physical therapy now. I feel great! I could do these tests all day!"

