

Getting Back on the Olympic Track after Severe Injury

An Interview with James Ellington, Olympic sprinter*

AUTHOR: John Devine, PhD - Invibio Biomaterial Solutions



Occasionally I have the pleasure of speaking with patients who have benefitted from Invibio's implantable polymer technology. Doing so gives me a chance to stay connected with our patients and work toward continuous product improvement. Recently I sat down with one such patient, Olympic sprinter, James Ellington.

We began our conversation at the start of his Olympic journey, which he explained had never been easy. Without a sponsor or endorsements, James had to work hard. But his hard work paid off when he earned a spot on the Great Britain's Olympic team. James and his team went on to win the 4x100m bronze in the 2014 IAAF (International Association of Athletics Federations) World relays, silver in the 2014 Glasgow games and gold in the 2014 and 2016 European Championships. His career was at a high point.

But on January 17, 2017, his world came crashing down. While riding a motorbike he collided head-on with a car severely breaking his tibia, fibula, ankle and pelvis. James faced a challenge like never before.

"I've always been a resilient person," James said. "But I have really been tested this year. My biggest fear was that I would never run again."

I asked James why he and his doctor chose the trauma technology for his fracture fixation. James explained how he met with his doctor and discussed his options.

"In extreme situations, it's important not to lose faith and to consider all (therapeutic) options available," he said. "I had a severe tibia fracture and was offered two choices to fix it: a traditional Titanium nail or a Carbofix nail using a relatively new, but promising carbon fiber composite technology."

His doctor explained to James that both technologies were strong and that metal technology for trauma fractures was time tested. "I chose the Carbofix nail because it's lighter weight and for its faster healing potential." He explained, "The rod is made from a new composite polymer. It's strong, in a way that's similar to metal implants, but not as stiff, which means it has the capability to stress the bone more and provide some micro-motion, so it works more like natural bone. The idea is that this will help support a quicker recovery – which is what convinced me this was the right path for me."

PEEK-OPTIMA Ultra-Reinforced mimics bone in both strength and function. Lighter and less stiff than metal, it provides flexibility and micro-motion without undue stress on the internal screws. As a result, implants function more like natural bone, which is important for fluid running motion. These same properties also make the implant less likely to fracture, a common occurrence with metal implants, and may allow for greater bone union to occur.¹ In addition, implants made with PEEK-OPTIMA Ultra-Reinforced are radiolucent, enabling surgeons to visualize and assess fractures and healing via imaging both intra- and post-operatively more easily.

James and his surgeon carefully considered his career and the benefits of both options. "As an athlete, you have to make your own right choice," he said. "For me, it's about giving myself the best chance at achieving my goal and returning to competitive athletics."

James acknowledged that the implant's potential for accelerated healing and its long-lasting durability were key drivers in his decision. Ultimately, Ellington selected the CarboFix implant, calling it "the future".

I proceeded to ask James about his recovery and if the implant was living up to his expectations.

James was quick to respond that after just seven months with the CarboFix implant, made from



Fig. 1: CarboFix Piccolo Tibia Nail made with PEEK-OPTIMA Ultra-Reinforced composite polymer.

Provided courtesy of CarboFix Orthopedics

Invibio's PEEK-OPTIMA™ Ultra-reinforced composite polymer, his recovery was progressing well. Although he admits his journey is far from over.

James is a true believer in the power of technology and the mind. "Never ever listen to anybody tell you 'you can't' if you truly believe," Ellington emphasized.

Jogging on the treadmill for the first time, 21 weeks since his near career-ending accident, James remains optimistic about his future. He is steadfastly determined to come back better and stronger.

"Gonna make this leg even stronger than it was...I will not stop until my mission is accomplished," promised James. "I'm hopeful that I will be able to get back on the track."

Invibio's advanced polymer and CarboFix's Piccolo Trauma Nail are innovations that are changing the way we think about trauma fixation. By pushing the boundaries of medicine, patients like James not only have the possibility to get back on the track, but inspire other trauma patients to achieve their goals.

Shared Passion for Progress

UK Olympic sprinter James Ellington has always pushed boundaries and himself. That's why he chose to partner with Invibio Biomaterial Solutions and Carbofix Orthopedics for his fracture treatment. Invibio's advanced polymer and CarboFix's Piccolo Trauma Nail are innovations that are changing the way we think about trauma fixation. By pushing the boundaries of medicine, patients like James not only have the possibility to get back on the track, but inspire other trauma patients to achieve their goals.*

To hear more about James' story of recovery, visit his Instagram account at <https://www.instagram.com/jimmyells/>. He hopes his story inspires other patients to overcome their own personal challenges and become advocates for continued medical innovation. ▲

ABOUT THE AUTHOR

John Devine, PhD

Dr. John Devine is the Medical Business Director for Invibio Biomaterial Solutions and offers years of experience in the medical device industry across multiple geographies. His leadership in identifying unmet clinical needs and the creation of new products and business models has contributed greatly to a portfolio of innovations for the device industry. In 1995, he received a PhD in Polymer Chemistry from the University of St. Andrews, United Kingdom. Dr. Devine also holds a Masters degree in Process Technology and Management from the University of Strathclyde, United Kingdom.



REFERENCES

1. Jo Wilson, PhD; Matthew Cantwell; Polyether Ether Ketone (PEEK) Carbon Fiber Composites May Improve Healing of Fractures Stabilized with Intramedullary Nails. (Basic Science Focus Forum, paper #4, 2014) 155.

*During 2017, James Ellington contracted with Invibio Ltd. as a consumer endorser.

The testimonial presented has been provided by a recovering patient. His view and experiences are his own and do not necessarily reflect those of others. "Invibio" disclaims any liabilities or loss in connection with the information herein.

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Getting Back on the Olympic Track after Severe Injury – with Advanced Trauma Technology

Author: James Ellington, UK Olympic Sprinter



Insert shot of James Ellington sprinting (from James Ellington Website)

Every day I'm grinding. I'm pushing boundaries. It's not a new philosophy. It's what started me on the fast track to Olympic and International sprinting excellence.

But my journey hasn't been easy. I started alone. No sponsor. No endorsements. Just me, my faith and a whole lot of determination.

My hard work eventually paid off. I was fortunate and blessed to be placed on a strong team that struck 4 x 100m gold in the 2014 and 2016 European Championships, silver in the 2014 Glasgow Games and bronze in the 2014 IAAF World Relays. Life was good.

Then on January 17, 2017, my world came crashing down. While riding a motorbike I collided head-on with a car, breaking my tibia, fibula, ankle and pelvis. But it didn't break my spirit. I was determined to come back better and stronger.

This time, however, I knew I couldn't do this alone. I made it clear to the treatment team that getting back on the track as quickly as possible was my primary goal. My surgeon suggested using a polymer composite CarboFix implant rather than a traditional titanium device to treat my lower leg fracture.

He explained that while metal has been the standard in trauma fracture plates for years, the new composite technology from Invibio may accelerate new bone formation. After discussing the potential risks and benefits of both technologies, the decision for me was easy. I liked that PEEK-OPTIMA polymers were well known for their success in spinal, dental and other medical applications and had been implanted in millions of patients worldwide where durability, flexibility and strength are required. Doctors also told me that monitoring the fracture and continuously assessing how well the fracture was healing would be key to a recovery plan that allowed me to push as hard and as fast as possible.

For me it came down to this: **Metal may have run more heats, but Invibio's composite technology had benefits that could give me the best chance at running again.** *(also use as callout)*

As an athlete we are always looking to progress; how can we be a little quicker and achieve something greater. I looked at choosing the technology that would aid in my recovery the same

way; how can I heal a little quicker and push myself harder. Invibio's materials seemed superior to metals in allowing me to do just that.

Insert product shot of product used on James (CarboFix website)

Carbofix Trauma Nail made with Invibio's composite polymer was the right choice for me. The advanced polymer not only has more bone-like strength than metal, but also is less stiff. This flexibility allows the implant to move more naturally, ultimately functioning more like real bone — which is essential for fluid running motion. CarboFix implants are also radiolucent, meaning surgeons can more easily visualize and assess fractures and healing via imaging both during and after surgery. The composite polymer technology essentially would make the surgeons' job and mine a little easier.

It's been seven months since I put my faith in the CarboFix Trauma Nail. Every day I am thankful — for the technology and doctors that continue to push boundaries and me, and for the second chance at not only life, but also sprinting excellence.

I am not alone on this journey. The race isn't won yet. But every day, I get a little closer. Let's do this!



Insert shot of James working hard at rehab (this from his Instagram)

[\(3 way partnership between Invibio, Carbofix and James Ellington callout\)](#)

[Title: Shared Passion for Progress](#)

[UK Olympic sprinter James Ellington has always pushed boundaries and himself. Now he wants to push himself, doctors *and* medicine. That's why he chose to partner with Invibio Biomaterial Solutions and Carbofix Orthopedics for his treatment. Invibio's advanced polymer and CarboFix's Piccolo Trauma Nail are innovative materials looking to change the way we think about trauma fractures. They too are pushing medicine. And in doing so, helping patients like James not only get back on the track, but inspire other trauma patients to achieve *their* goals.](#)