London start-up raises the bar on spinal implants

Taking home-grown research to the international market

Bringing engineering expertise together with first-hand clinical insights, Lasswell and Rasoulinejad cofounded London-based start-up, A-Line Orthopaedics. Western University’s Bone and Joint Institute (BJI) is helping local startups take their musculoskeletal (MSK) innovations beyond the academic setting. For Tim Lasswell, MASc, and BJ member Dr. Parham Rasoulinejad, this support led to commercializing their revolutionary product with an international medical device company.

Upper cervical spine fractures are the number one spine injury in patients over the age of 70 and only a small percentage of patients with these fractures qualify for surgical intervention because of the risks associated with upper cervical spine fusion — the standard surgical treatment.

“It’s very controversial whether or not you even operate on these patients today based on the technical challenges of the spinal fusion surgery,” says Tim Lasswell. “If you opt for conservative treatment like a cervical brace, however, the fracture rarely heals, and the mortality rate is quite high.”

In addition to operative risks and challenges, according to Lasswell and Rasoulinejad, the anatomy that allows the rotation in your neck is unique and not well suited for the screw placement — a requirement for spinal fusion surgery.

Lower cervical spine fractures in patients over the age of 70 are the number one spine injury internationally, and research has shown that outcomes are improved using a minimally invasive technique, rather than open fusion.

Both Lasswell and Rasoulinejad noted the unique value of the MSK Innovation Competition was its ability to fund the less tangible costs associated with furthering commercialization efforts.

“In addition to the opportunity to secure the funding they needed for the commercialization stage, the competition could facilitate introductions to meaningful industry contacts. From the right lawyer and regulatory consultant to local mentors with shared experiences, the team says the competition is part of an evolving healthcare innovation hub in London.”

Rasoulinejad and Lasswell eventual, hard-earned win took their research well beyond the academic setting. “(Their) eventual, hard-earned win took their research well beyond the academic setting.”

The Edge Upper Cervical System by A-Line Orthopaedics uses a clam system for less invasive procedure.


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