Will the Court Order Future Cost of Care Damages for an Exoskeleton for a Plaintiff with a Spinal Cord Injury?

By Bill McNally, Aron Klein and Bottom Line Research

A powered robotic exoskeleton is a wearable orthotic brace that is used as an assistive device to enable some individuals with a spinal cord injury to stand, walk, ascend and descend stairs and generally augment their rehabilitation program. The benefits of an exoskeleton are significant – perhaps most important is that the user gains independence and autonomy. Worn around the torso, the exoskeleton works using a combination of motion sensors, electric actuation motors, sophisticated control algorithms and real-time software running on on-board computers.[i] The cost for the device alone ranges from $70,000 to $85,000 USD. The typical replacement cycle of the device is every 3-5 years.

The health benefits of an exoskeleton include less pain, less spasticity, improved bowel and bladder function, improved body mass index, better circulation, increased oxygen intake and better joint maintenance.[ii] The exoskeleton also allows for load to be redistributed. Articles extolling the virtues of an exoskeleton frequently also state that it is liberating just to be able to look the other person in the eye.

In an article entitled, *Exoskeletons for Personal Use After Spinal Cord Injury*, by Casey Kandilakis et al., the authors note:

> Over the years, robotic exoskeletons have become more widely available and now have the potential to be successfully used for personal use at home and in the community ... The features and capabilities of each robotic exoskeleton differ, and how exoskeletons are used may vary greatly between individuals. Robotic exoskeletons can allow individuals with SCI with varying levels of injury to safely and functionally walk for personal mobility or exercise.

Even though there is limited Canadian jurisprudence dealing with robotic exoskeletons, it is not without precedent that they be considered a permitted expense under a future cost of care award.

In ***University of Regina v. Biletski***, 2019 SKCA 44 the plaintiff, who was a competitive swimmer, suffered injuries that resulted in permanent quadriplegia upon diving into a pool owned by the defendant. The plaintiff brought an action against the defendant, alleging that her injuries were caused by its negligence. The plaintiff was successful at trial and was awarded $9,160,584; the defendant appealed on the grounds that the jury's verdict on damages and liability was unreasonable. Among the damages awarded was $5,710,000 in future cost of care. The University argued that this amount included costs that were not supportable or reasonably justifiable in the circumstances; one of these costs was the cost of an exoskeleton. Leurer JA held:

> **The University argues that "evidence by the competing experts with respect to the exoskeleton was that this equipment was a possible consideration but because the Plaintiff could not in fact make use of such a device (making it not even medically justifiable) ... it was unreasonable for the jury to contemplate awarding this cost".** The University bases this statement on the trial judge's charge to the jury. I read the jury charge differently than does the University.
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> The University relies on the report of Dr. Andrei Krassioukov, whose report was tendered without supporting testimony. The trial judge summarized his evidence to the jury, stating in connection with this issue that "Dr. Krassioukov did not actually recommend it [i.e., an exoskeleton]. Dr. Krassioukov simply referred to it as a *possible consideration* for Miranda Biletski" (emphasis added). It is only the University's expert who explicitly stated that the technology was inappropriate. Of course, perhaps the most important consideration is the accuracy of the summary of the evidence given in the trial judge's charge to the jury, to which there is no objection on appeal.
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> **The University also asserts that Ms. Biletski never contemplated the possibility of using an exoskeleton. What the University omits is that Ms. Biletski also testified that this was because it was "not really something in [her] operating budget". Later, Ms. Biletski also said she would use an exoskeleton if it was recommended and if she had the room and money** [emphasis added] (paras. 147-149).

Leurer JA held that the University was being selective in its reference to the evidence. Leurer JA concluded that the jury heard evidence from which it might have formed the conclusions that

they did. Every aspect of the verdict with respect to damages fell within a range that was given to the jury as a possible award; this aspect of the appeal was dismissed.

This appears to be the only Canadian case precedent that makes mention of an exoskeleton as an item to be awarded to a plaintiff for future cost of care; the jury awarded the cost of the device to the plaintiff.

While case law from a tribunal, the use of an exoskeleton was extensively discussed in ***Decision No. 2509/18,*** 2018 ONWSIAT 3499 (Ontario Workplace Safety and Insurance Appeals Tribunal). A water operator/technologist was injured when she was descending a ladder inside a county water tower and fell 16 feet to the concrete surface below; the worker was severely injured in the fall. As part of her physiotherapy treatment, the worker underwent numerous sessions using a ReWalk device. The treatment plan of the Board weaned the worker from in-clinic physiotherapy treatments in favor of a home gym facility where she could continue to work on her rehabilitation. In September 2016, a nurse consultant assigned to the worker's case disallowed the continuation of treatments that included the use of the ReWalk device. An Appeals Resolution Officer denied ongoing treatment for the ReWalk device at a neurorehabilitation clinic and denied access to the use of the device at home or in the community. The worker appealed, seeking entitlement to treatment with the ReWalk device in an in-clinic treatment setting. All of the worker's physiotherapists and psychologists noted the benefits that the plaintiff was receiving from using the device. Hoare V, Chair of the Tribunal, allowed the worker's appeal. Hoare V, Chair concluded that the ReWalk device was determined to be health care; however, all parties determined that the ReWalk device was not suitable for use in the worker's home or community as there were safety concerns. It was determined that it was appropriate that the worker should have access to the device in a clinic. Hoare V, Chair, stated:

> In this instance, it is ongoing maintenance treatment with (and related funding for) the ReWalk device which is being sought for the worker as part of an ongoing physiotherapy regime. The worker had a long period of initial physiotherapy treatments (from approximately August 2014 to August 2016; with extended ongoing treatment ordered as a result of the ARO's decision of July 26, 2017 and referred to the WSIB operating area).

> This type of maintenance treatment is generally ordered under the "Administrative Practice Document" for WSIB adjudicators titled *Maintenance Treatment*. This maintenance treatment is ordered beyond the MMR date to prevent deterioration of the worker's condition, rather than for ongoing rehabilitation. Maintenance treatment is based on objective medical findings, and the treatment is meant to meet one or more of the following objectives:
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> • enables the worker to continue working;
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> • leads to reduction in the worker's pain and/or medication use;
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> • increases the worker's level of functioning or prevents a deterioration in the level of functioning; and
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> • teaches the worker independent management of the condition.
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> In this case, I am satisfied that several of the objectives under the Administrative Practice Document, *Maintenance Treatment*, have been met … (paras. 32-34).

The use of the device allowed the worker to strengthen various muscle groups, led to a decrease in her pain, and improved her strength. It also allowed her to focus on aspects of her rehabilitation that improved the secondary conditions caused by her paraplegia, such as urinary incontinence and hip muscle spasms. Hoare V, Chair, stated:

> I find this uncontradicted opinion of J. Wittig persuasive because I understand J. Wittig actually treated and assessed the worker using the ReWalk device, and opined on its specific benefit to this worker. In particular, I find this opinion of J. Wittig's persuasive in establishing that the ReWalk device, when used for the purposes of in-clinic physiotherapy treatment, allowed the worker to increase her level of functioning and prevented a deterioration in the worker's level of functioning.
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> Further, I am satisfied that J. Wittig's opinion establishes that use of the ReWalk device in an in-clinic treatment setting has been found to be necessary, appropriate and sufficient, as again it allows the worker to strengthen various muscle groups leading to a decrease in her pain and an improvement in her strength and ability.
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> Dr. Benn related how the intensive rehabilitation, such as sessions using the ReWalk device, helped to give the worker a feeling of greater psychological health and helped her to come to terms with the consequences of her workplace accident by developing greater psychological and physical coping skills (paras. 36-38).

The ReWalk device was considered to be an important part of the worker's treatment for the purpose of maintaining the rehabilitative gains she had made and prevented further

deterioration from both a physical and mental standpoint. Hoare V, Chair concluded that the worker was entitled to use the ReWalk device in an in-clinic setting on an ongoing basis.

ReWalk is a wearable robotic exoskeleton that provides powered hip and knee motion to enable individuals with spinal cord injury to stand upright, walk, and turn. ReWalk was the first exoskeleton to receive FDA clearance for personal use at home and in the community. There are ReWalk training centers and clinics in the United States. ReWalk Robotics, the corporation that manufactures the ReWalk device, announced that the global health services company and United States insurance provider Cigna had changed their policy with respect to the device. Cigna revised their policy on medical exoskeleton coverage for people with spinal cord injury from "non-coverage" to "case-by-case" consideration. The policy change was to be effective in the third quarter of 2019.[iii] An argument can thus be made that since insurance companies are coming around to the benefits of the technology, it is reasonable that an exoskeleton device could be included as a cost of future care.

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[i] Paul Fanning, "Bionic exoskeleton could transform lives of paraplegics", Eureka Magazine, October 11, 1992
[ii] Exoskeletons, << https://www.rimrehab.org/services/exoskeletons>>
[iii] "ReWalk Announces Cigna as First Private U.S. Insurer to Adopt National Policy Change for Coverage of Personal Exoskeleton Devices" << https://rewalk.com/rewalk-announces-cigna-as-first-private-us-insurer-to-adopt-national-policy-change-for-coverage-of-personal-exoskeleton-devices/>>