

The role of prosthetists and orthotists for patients with work-related injuries

As a primary care physician, you may be presented with patients who require prostheses (artificial limbs) or orthoses (braces)—including patients with work-related injuries. You may refer these patients to a prosthetist or orthotist, who will contact WorkSafeBC to initiate a treatment plan or notify the patient's claim owner at WorkSafeBC. WorkSafeBC does not directly refer to prosthetists or orthotists but will provide a list of certified prosthetists or orthotists close to the patient's home.

Conditions treated by prosthetists and orthotists

A certified prosthetist can manage your patients who have a limb loss. Referrals to a certified orthotist are made when patients are experiencing biomechanical or pathomechanical issues, including ligamentous instability and skeletal deformities caused by osteoarthritis or neuromuscular conditions.

Certified prosthetists and orthotists work with other health care providers to offer unique solutions to improve the mobility, functional abilities, and health of your patients. They are trained in anatomy, physiology, and pathology, as well as materials science, biomechanics, and engineering. Prosthetists and orthotists are certified by Orthotics Prosthetics Canada. Certification takes 8 years, including a 2-year residency, and 2 additional years are required to be certified as both a prosthetist and an orthotist.

This article is the opinion of WorkSafeBC and has not been peer reviewed by the BCMJ Editorial Board.

Treatment types

Prosthetic

Prosthetic treatments can be cosmetic, passive, body powered, microprocessor controlled, externally powered, or myoelectric. Microprocessor knees and feet can prevent stumbles and falls, help negotiate stairs and slopes, and provide real-time adjustments while walking. Externally powered feet and knees can propel the user like the sound limb.

Myoelectric prostheses are for the upper extremity and use sensors to detect and use nerve impulses to operate fingers, hands, wrists, elbows, and shoulders. Multiarticulate hands have individual motors in each finger to accomplish different kinds of grasps. Some prosthetic hands have gesture control, which interprets a specific motion. For example, a rapid extension of the arm automatically moves the prosthetic hand to grasp a door handle or shake a hand.

Targeted innervation, the surgical rerouting of severed nerves to muscles for myoelectric control, allows for more intuitive control of the prosthesis. Pattern-recognition myoelectric controls use advanced machine learning to create even more natural use of the prosthesis.

Orthotic

Orthotic treatments include custom or off-the-shelf orthotics for feet and knees and orthopaedic footwear. Other treatments include wrist, elbow, spine, and hip orthoses, as well as compression stockings. Custom foot orthoses are used to treat diabetic foot ulcers, and offloading footwear aids in healing these ulcers.

Advances include digital scanning and 3D printing of orthoses. Microprocessor-controlled knee-ankle-foot orthoses have sensors that lock the knee from heel strike through toe off, then allow for free motion

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Key terms

In British Columbia, PharmaCare and WorkSafeBC contract with certified prosthetists and orthotists.

- Certified prosthetists provide prostheses.
- Certified orthotists provide orthoses.
- Prostheses replace any segment of the upper or lower extremities, including fingers, toes, and all levels of the arms and legs. Prostheses are typically custom-made.
- Orthotics (also called orthoses) support, align, and prevent further injuries or promote healing to the upper and lower extremities and the spine. They may be used for patients with fractures and spinal cord, ligamentous, and musculoskeletal injuries. Orthoses are typically custom-made.

Additional resources

Orthotics Prosthetics Canada: <https://opcanada.ca>.

Prosthetic and Orthotics Association of British Columbia: <https://poabc.ca>.

Letters to the editor

We welcome original letters of less than 500 words; we may edit them for clarity and length. Letters may be emailed to journal@doctorsofbc.ca or submitted online at bcmj.org/submit-letter and must include your city or town of residence, telephone number, and email address. Please disclose any competing interests.

Specialists filling gaps in care

With the dearth of primary care providers, some specialists are filling the gap somewhat, taking on unrecognized tasks and extra work such as ordering “routine” tests (e.g., bloodwork, appropriate imaging). This unrecognized work, done because it is the right thing to do, not because it is part of specialists’ responsibilities, should be recognized and appropriately compensated. Kudos to these already overburdened practitioners for these extra time-consuming efforts, which are done because it is ethically the right thing to do with our massive gaps in care provision.

—Peter Meyer, MD
Victoria

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during the swing phase of gait, making them safe and efficient.

Considerations for work-related injuries

The goal is to return patients with work-related injuries to as close to their pre-injury condition as possible. To help achieve this, the patient’s WorkSafeBC claim owner may approve and arrange an additional referral to a physiatrist, the WorkSafeBC Visiting Specialist Clinic in Richmond, and/or, in the case of an amputation, the Amputee Multidisciplinary Program at Lifemark Health Centre in Langley. This referral depends on the complexity of the injury and where in the province the patient lives, and it is often made on the recommendation of a prosthetist or physician involved in the patient’s care.

Reach out to a medical advisor

To speak with a WorkSafeBC medical advisor about a patient with a work-related injury, including one who may require a prosthesis or orthosis, submit a RACE request (www.raceconnect.ca). ■

—David Broman, CPO(c)FCBC
Prosthetic and Orthotic Consultant,
WorkSafeBC
Member, Expert Advisory Committee on
Prosthetics and Orthotics, PharmaCare,
Ministry of Health, Province of British
Columbia
Chair, Prosthetics and Orthotics
Program Advisory Committee, British
Columbia Institute of Technology

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