



Burns are one of the most devastating forms of injuries and the fourth most common cause of trauma world-wide. As recently as 1980, few serious burn victims survived their accidents. Although survival rates have increased, physical pain, change in appearance, immobilization, stiffness, scarring, and contracture are just some of the obstacles still faced by burn patients throughout their healing process.

Left: Dr. Vincent Gabriel.

Below: Dr. Gabriel working with Haley Derksen, an OT on the Burn Unit at the Foothills Medical Centre.



Advancing burn care through stem cell research

by Léora Rabatach

A physiatrist and Clinical Assistant Professor for the Department of Clinical Neurosciences (DCNS), Faculty of Medicine and Alberta Health Services, Dr. Vincent Gabriel's specialty lies in understanding and treating hypertrophic scars, a common complication of burn and other soft tissue injuries.

Alongside a specialized therapy team consisting of other physicians, nurses, Occupational Therapists (OTs), and Physical Therapists (PTs) at the Foothills Medical Centre Burn Treatment Unit, Dr. Gabriel works to enhance therapy outcomes, relieve pain, and increase functional ability for his patients.

Dr. Gabriel is part of a growing team of physiatrists recruited to the Division of Physical Medicine and Rehabilitation in DCNS, working in both a research and clinical capacity. With 50 per cent of his time protected for research, Gabriel is working to find a variety of different avenues to help his patients achieve a better quality of life, both now and in the future.

In collaboration with Dr. Jeff Biernaskie in the Faculty of Veterinary Medicine, University of Calgary, and Dr. Duncan Nickerson in the Division

of Plastic Surgery, AHS, Dr. Gabriel is trying to understand the role of endogenous stem cells in the process of tissue regeneration. Specifically, they are focusing on multiple stem cell populations present in the hair follicle, which has the unique ability to regenerate itself without the formation of scar tissue.

"We need to understand the biology of these specialized cells once we transplant them, where they go and what they do once they're in there," says Dr. Gabriel. "Eventually, an understanding of how resident stem cells become regulated in wounds could aid us in the development of new cell-based therapies to enhance the body's natural mechanisms for repair and regeneration following a traumatic injury."

Soon this type of therapy could become augment more traditional methods of burn treatment -- providing patients with the ability to feel again and move more easily and further improving their quality of life after injury.

"It's the future of wound healing."