

Regenerative Medicine: Helping The Body To Heal Itself

When injured or suffering from a disease, the body's natural response is to heal itself. However, sometimes this healing process fails and we get sicker or experience debilitating consequences. But what if we could help the body heal itself? Once thought unimaginable, regenerative medicine accelerates the body's natural healing process to help repair and restore damaged tissues.

Many people associate regenerative medicine with stem cells, but the field involves many more technologies than that. A multidisciplinary field involving biology, medicine and engineering, many regenerative medicine therapies are made up of three main elements: living cells, a matrix to support the living cells and cell communicators to stimulate the cells and their environment to develop new tissue. These therapies aim to restore function to diseased or damaged tissue by delivering living elements to the patient and providing the necessary environment for the body to heal itself.

Researchers have been working for more than 20 years to develop regenerative medicine therapies to treat a number of diseases and disabilities including cancers, spinal cord injury, macular degeneration and diabetes and its complications. Although still in its infancy, regenerative medicine has had its successes and one of them is in the treatment of diabetic foot ulcers (DFUs).

DFUs are chronic wounds that can develop on the foot or lower extremities of people with diabetes. Among people with diabetes, approximately 15 to 25 percent experience a DFU in their lifetime. DFUs are a challenging medical, economic and

social problem and despite dedicated care, many people develop ulcers that do not heal. The longer the ulcer persists, the greater the possibility that the patient will develop a serious infection that can lead to hospitalization and possibly amputation.

Among the most promising treatment options for DFUs are bioengineered living skin equivalents. In fact, Advanced BioHealing, a Shire company, which specializes in the development and commercialization



of life-altering regenerative medicine therapies, manufactures and markets Dermagraft®, a bioengineered skin substitute that is approved by the FDA for the treatment of DFUs. Dermagraft contains fibroblasts that secrete human dermal collagen, matrix proteins and growth factors, resulting in shorter healing times and fewer complications in treating DFUs compared to standard care.

As the number of people with diabetes continues to increase at epidemic rates, using regenerative medicine products—and fostering those in development—can be key to combating problems associated with this widespread and debilitating disease.

For additional information about regenerative medicine, visit www.alliancerm.org.