Medical Xpress

Pig bladder cells help regenerate an war veteran's leg muscle

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(Medical Xpress) -- As a result of a 70 million dollar investment from the U.S. military, researchers from the McGowan Institute for Regenerative Medicine at the University of Pittsburgh announced a successful technique using growth factors and proteins from a pig's bladder to regrow skeletal muscle.

J. Peter Rubin and Stephen F. Badylak worked with funding provided by the Defense Department to develop this implantable [extracellular matrix](#) that is designed to regrow skeletal muscles in those who would normally be facing an [amputation](#).

Cpl. Isaias Hernandez, a 19-year-old who lost 70 percent of his right thigh muscle in Afghanistan was the one who worked with the researchers to test this new technique. Hernandez was moving a television into a military vehicle when an enemy mortar exploded and showered him with shrapnel. Luckily the television protected his upper body and torso but the shrapnel hit his arms and legs, with the most damage occurring in the right upper leg.

An injury of this kind would have normally resulted in an amputation but Hernandez worked with the team of scientists in the trial. He was first required to go through an [exercise program](#) to strengthen the remaining muscle in his leg. Surgeons then inserted the extracellular matrix into his thigh. Within a few weeks, Hernandez's leg began to grow in bulk and increase strength.

This is a huge breakthrough in medical treatment as skeletal muscle is not normally able to regenerate after an injury or accident. This therapy is still a part of an ongoing study at the McGowan Institute and further testing is needed, but the success and recovery of Hernandez shows promise for many injured war veterans and potential amputee patients.

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