



## Methods and Apparatus for Peripheral Nerve Repair

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**Patent Status:** Patent Issued

### Description of Technology

Injuries to peripheral nerves (PNs) can result from trauma, disease, and secondary injury from other procedures (such as radiotherapy, radical prostatectomy, etc.). Currently the use of peripheral nerve allografts require suppressing the patient's entire immune system and therefore are limited due to serious concerns over the risks of systemic immune deficiency. Researchers at the University of Wyoming are developing a new innovation for localized immunosuppression (LIS) surrounding PN allografts. With this new procedure, two paths will be pursued: localized release of immunosuppressive (ISV) agents and local application of ISV regulatory T-cells (Tregs).

### Applications

PN regeneration is often the limiting component of a healthy recovery and poor regeneration leads to functional motor impairment and alterations in sensory function, ranging from loss of sensation to allodynia (increased pain) and paresthesia (abnormal tingling or prickling). There are hundreds of thousands of injuries to PNs occurring each year in the US military and civilian population that require surgical intervention, therefore the significant physical, psychological and financial aspects of developing this technology to regenerate injured PNs cannot be overemphasized.

### Features & Benefits

- The technology may provide a more restorative therapeutic option for regenerating segmental PN defects than is currently available or in development, without requiring systematic suppression of a patient's entire immune system.
- Combined with the ability to more accurately match the size requirements and even complex branching structures of segmental PN defects, there is significant potential for LIS with PN allografts to dramatically improve functional patient outcomes over current clinical or in line options.

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