

**IMPROVING THE HEALTH
OF PARALYZED MUSCLE
USING
AN IMPLANTED ELECTRICAL
STIMULATION SYSTEM**



The problem:

After spinal cord injury (SCI) the muscles below the level of the injury become paralyzed and lose bulk (atrophy). These changes, together with other effects of SCI, such as loss of feeling and reduced mobility, mean that paralyzed muscles are less healthy.

This increases the risk of complications such as pressure sores or skin breakdown. These risks remain high for the whole lifetime of a person with a spinal cord injury.

Many people with SCI never develop a pressure sore but for those that do it is often a major problem. Prevention can be achieved through the use of special cushions and mattresses but healing once a sore occurs can take many months of bedrest

Our research goals:

We are trying to see if the use of neuromuscular electrical stimulation (NMES) can improve the health of paralyzed muscles and so decrease the number of pressure sores.

In particular we are using a surgically implanted system to stimulate the buttock muscles. We have found that using this system for several weeks will increase the size of the muscle and improve the pressures under the buttocks when seated.

The system is also used to provide side-to-side weight-shifting through muscle contractions when sitting. This gives an effective method of pressure relief.

What is involved?

- Participation in the study is for one to two years.
- Understand the purpose and procedures of the research study and then sign the consent forms.
- Attend pre-implantation assessments.
- No cost for implantable NMES system or implantation procedure and evaluations.
- Undergo implantation procedure (1/2 day procedure, no hospital admission generally required).
- One week bedrest at home following implantation.
- Follow stimulation regimes as specified by research team
- Attend regular follow-up assessments (at 1-3 month intervals)

For more information, please contact:

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