# Article information:

Effects of Bone-Marrow-Derived MSC Transplantation on Functional Recovery in a Rat Model of Spinal Cord Injury: Comparisons of Transplant Locations and Cell Concentrations - PubMed  
<https://pubmed.ncbi.nlm.nih.gov/28901182/>

# Article summary:

1. Mesenchymal stem cells (MSCs) have been shown to reduce functional deficits in a variety of neurological disorders.

2. This study assessed the efficacy of transplanted bone marrow-derived MSCs at different concentrations and locations for promoting functional recovery following spinal cord injury (SCI).

3. Results showed that MSCs facilitated an increase in the base of support, as measured by increased distance between the plantar surface of the hind paws, following incomplete contusive SCI, and reduced the density of astroglial scarring.

# Article rating:

Appears well balanced: The article presents the information in a reliable and balanced way, without biases and prejudices. The claims made in the article are well supported and, where applicable, all sides of the argument are given opportunity to present their point of view. The article appears trustworthy and reliable.

# Article analysis:

The article “Effects of Bone-Marrow-Derived MSC Transplantation on Functional Recovery in a Rat Model of Spinal Cord Injury: Comparisons of Transplant Locations and Cell Concentrations” is a well-written and comprehensive study that provides evidence for the potential benefits of mesenchymal stem cell (MSC) transplantation for spinal cord injury (SCI). The authors provide detailed information on their methods, results, and conclusions, which makes it easy to evaluate the trustworthiness and reliability of their findings.

The study was conducted using a rat model with incomplete contusive SCI, which is an appropriate model for assessing the effects of MSC transplantation on functional recovery. The authors also used multiple measures to assess functional recovery such as footprint analysis variables including angle of paw rotation, base of support, and step length. Furthermore, they used histological techniques such as Hoechst fluorescent nuclear stain to assess cell survivability and Eriochrome Cyanine RC (ECRC) staining to measure mean densities of axonal fibers as well as glial fibrillary acidic protein (GFAP) immunolabeling to measure astrocytic scar densities. These measures are reliable indicators for assessing functional recovery after SCI.

The authors also discuss potential limitations in their study such as small sample size and lack of long-term follow up data. They also acknowledge that further studies are needed to determine if there are any long-term benefits associated with MSC transplantation for SCI patients.

In conclusion, this article is trustworthy and reliable due to its comprehensive methodology and discussion about potential limitations in the study design.

# Topics for further research:

* Mesenchymal stem cell transplantation
* Spinal cord injury recovery
* Footprint analysis variables
* Hoechst fluorescent nuclear stain
* Eriochrome Cyanine RC staining
* Glial fibrillary acidic protein immunolabeling

# Report location:

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