Introduction

Less than 1% of people who sustain significant injury to their spinal cord recover complete neurological function and many of these injuries result in partial or complete paralysis. Thus, a need exists for the development of therapies for treatment to ease both the physical and financial burdens of people who are afflicted with Spinal cord injury. **(Wlierth et al 2008)**

In the past treatment of Spinal cord injury seemed frustrating and hopeless because of restricted therapeutic options, the traditional approach to Spinal cord injury has been to limit the secondary injury that follows trauma more than to repair damage which is more difficult . **(lee et al 2002)**

Many of the current strategies for treatment of spinal cord injury involve replacing the cells lost to injury with cells derived from an alternative source. The end goal of such treatments is to help restore function that was lost to the injury. Using stem cell therapy. **(Wlierth et al 2008)**

By definition, stem cells are capable of both self-renewal and differentiation into a mature cell type. Stem cells divide to form one daughter cell that goes on to differentiate and one daughter cell that retains its stem cell properties.**(Herzog et al 2003)**

There are two types of stem cells: adult and embryonic. Adult stem cells exist in the body. And have been isolated in numerous tissues in the

body including the brain, the bone marrow, the gastrointestinal tract, dental pulp, and the skin. **(Laura 2006)**

Bone marrow-derived stem cells include hematopoietic stem cells, **(**Kawada et al 2001) marrow stromal cells (mesenchymal stem cells) **(**Jiang et al 2002). Bone marrow represents the main source of mesenchymal stem cells. **(Zhang et al 2004)**

Rat and human Bone marrow stem cells can differentiate into cells that express markers for mature neuronal cells. **(**Sanchez et al 2000)

From a clinical perspective, Bone marrow stem cells are attractive for transplantation because they are easily obtained from bone marrow. **(** Hofstetter et al 2002)