

# Argus Orthopaedic Zone

## Regenerative Medicine - Stem Cells

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### *Transforming patient information into patient understanding.*

Last week I closed by saying that in the laboratory there have been great strides in inducing embryonic stem cells to differentiate into particular cell types.

However, it has not been solved how to control the behavior of implanted stem cells in the body.

### **In The Body**

- They might not survive.
- Could form a tumor.
- They might travel away from the intended area of healing.
- Could become an unintended type of cell.
- Might be rejected by the host body's immune system.

### **Adult Stem Cells**

If the adult stem cells are your own, the problem of rejection disappears.

Unfortunately adult stem cells are scarce in many tissues and only produce a limited number of cell types.

Adult stem cells are still being found in tissues where they weren't known to be present.

Bone marrow and fat stem cells are demonstrating that they are more versatile than previously thought.

### **Reprogramming Cells**

Ready for this?

Adult stem cells can be reprogrammed.

Since they are your own it solves the problem of organ and tissue rejection.

The problem: it may be easier to herd cats than getting adult reprogrammed stem cells to act predictably!

### **Where Are Adult Stem Cells Found?**

Aside from the bone marrow they have been found in -

- the brain
- hair follicles
- dental pulp
- skin
- liver
- skeletal muscle
- blood vessels

- pancreas
- intestines

### **To Summarize**

Stem cells are simple or undifferentiated cells that have the potential to give rise to many different body cell types.

Their job is to create new cells in existing healthy tissues and help to repair tissues that are injured or damaged. They are the basis for specific cells that make up each organ in the body.

Orthopaedic Surgeons focus their attention on **mesenchymal stem cells**. These are adult stem cells, not embryonic stem cells.

Tune in next week for the whole article devoted to stem cells and Orthopaedics.

### **Office Website and Argus Orthopaedic Zone Archive**

Wow! Your window to the Orthopaedic and musculoskeletal world opens at [www.orthopodsurgeon.com](http://www.orthopodsurgeon.com). It contains the Website Library of information, Your Orthopaedic Connection and Argus archive of all previous articles.

You will be amazed at all the helpful information it contains.

All of the information pertains to everything I treat in the office and hospital.

Be well.

Dr. Haverbush