What cell sources are most commonly used in orthopedics?

- Bone marrow nucleated cells
- Adipose stromal vascular fraction (SVF)
- Amniotic fluid stem cells

Other cell sources include:
- Umbilical cord blood
- Synovial fluid
- Embryonic stem cells
- Mesenchymal stem cells
- Adipose mesenchymal stem cells

Marrow Stem Cell Processes

Two Different Types of Bone Marrow Stem Cell Processes

- Bone Marrow Nucleated Cells
- Adipose Fat

Your Own Stem Cells (Autologous)

- Bone Marrow
- Adipose Tissue

Someone Else’s Stem Cells (Allogeneic)

- Umbilical Cord Blood
- Synovial Fluid
- Amniotic Fluid

Three Different Types of Fat Stem Cell Processes

- Simple Adipose Graft
- Simple Adipose Fluid
- Adipose Mesenchymal Stem Cell Culture

Current FDA Regulatory Status of Above

- Needs FDA Approval
- No FDA Approval
- Under Current Court Challenge
- No FDA Approval

Stem Cell Risk

- All things being equal, the risk of a stem cell therapy increases as the source changes. The safest cells are your own. Stem cells from others can carry the good and bad of their genetic material. Embryonic cells can form tumors.

How do various stem cell sources compare on published animal models of cartilage repair?

- Bone Marrow Nucleated Cells vs. Adipose Nucleated Cells: No significant difference
- Bone Marrow Nucleated Cells vs. Adipose SVF: Significant difference

In the published research or published FDA trials, how many patients have been treated for arthritis or bone diseases?