



## Stem Cells

Stem cells are precursor cells that can differentiate into other, more specialized cells. They are often used in the sports medicine field as well as in cardiology, gastroenterology and orthopedics.

Mesenchymal stem cells (MSCs) are utilized to help treat sports-related injuries because of their capacity to differentiate into chondrocytes (cells that produce new cartilage) and osteoblasts (cells that produce new bones). MSCs are found in blood, fat, and bone marrow. Dr. Robert uses all three, as well as platelets (PRP), to help the stem cells grow. For indications such as:

- 1) Osteoarthritis (OA): The goal of this procedure in OA treatment is to restore and regrow the new cartilage. This can decrease pain and inflammation, improve the quality of the patient's life (permits the return to activity), and postpone or even eliminate the need for surgery. However, this procedure is only one part of the recovery. If required, the patient may need to lose weight, obtain orthotics, and/or correct any patella mistracking pattern or abnormal gait. The patient will be asked to do physical therapy twice a week for the first month following the procedure, as well as take supplements (provided for the first month). Dr. Robert will measure the patient's body composition to make sure it is in an anabolic state (growing tissue) and not in a catabolic state (destroying tissue). The patient will be asked to refrain from activity while providing the body with all the nutrients needed to repair tissue. Therefore, it is not recommended to go on a diet for the first month following the procedure.
- 2) Other procedures: Stem cell injections can also be used for osteochondral defects (OCDs), AVN, stress fractures, and meniscus tears.

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