

MEDICAL BREAKTHROUGHS RESEARCH SUMMARY

TOPIC: REPAIRING ROTATOR CUFFS WITH STEM CELLS!
REPORT: MB #4812

ROTATOR CUFF: The rotator cuff is a group of muscles and tendons that surround the shoulder joint. The rotator cuff keeps the head of your upper arm bone firmly within the shallow socket of the shoulder. A rotator cuff injury can cause a dull ache in the shoulder, which worsens when the arm is away from the body. Rotator cuff injuries are common, increase with age and may occur early in life in people who have jobs that require repeated overhead motions like painters and carpenters. The pain associated with a rotator cuff injury is described as a deep ache in the shoulder which may disturb your sleep, make it difficult to do some daily activities and create weakness in the arm.

(Source: <https://www.mayoclinic.org/diseases-conditions/rotator-cuff-injury/symptoms-causes/syc-20350225>)

TRADITIONAL ROTATOR CUFF REPAIR SURGERY: The type of rotator cuff repair depends on the size of your tear, anatomy, and quality of the tendon tissue and bone. The three techniques commonly used for rotator cuff repair include open repair, arthroscopic repair, and mini-open repair. In open repair the surgeon makes an incision over the shoulder and detaches the deltoid muscle to see and gain access to the torn tendon and then removes bone spurs from the underside of the acromion. With arthroscopic repair the surgeon inserts a small camera into your shoulder joint. The camera displays pictures on a television screen, and your surgeon uses the images to guide the mini surgical instruments. Mini-open repair uses newer technology and instruments to repair through a 3 to 5 cm long incision. Arthroscopy is used to assess and treat damage to other structures within the joint and it avoids the need to detach the deltoid muscle. The surgeon repairs the rotator cuff through the mini-open incision. During the procedure, the surgeon views the shoulder structures directly, rather than through the video monitor.

(Source: <https://orthoinfo.aaos.org/en/treatment/rotator-cuff-tears-surgical-treatment>)

NEW STEM CELL ROTATOR CUFF REPAIR: The use of stem cells is shown to improve healing outcomes following rotator cuff repairs. Studies show it decreases the re-tear and healing rates when stem cells are introduced into a damaged joint, and spontaneously changes the joint environment from diseased to healing by signaling the healing cells to get ready to rebuild. They also send signals to suppress inflammation and provide an anti-inflammatory effect. The stem cells express various growth factors and direct cell to cell contact between the remaining cartilage cells in the joint and have been observed to influence stem cells regenerating cartilage. Therefore, **researchers from around the world are now pointing towards stem cell therapy as the future of rotator cuff repair and even to repair failed surgery damage.** Dr. Nikhil Verma, professor and director of the Division of Sports Medicine at Rush University Medical Center offers stem cell rotator cuff repair so patients can use their own adult stem cells found throughout their body either at time of the repair or as a possible alternative to undergoing surgery and lengthy rehabilitation program. The procedure requires Dr. Verma to harvest a sample of the patient's bone marrow, usually from the hip region. The bone marrow sample is then spun in a centrifuge to separate the adult stem cells, platelets, and white blood cells from the red blood cells. The combined three healing agents are then injected into the damaged rotator cuff to promote tissue healing and regeneration. Also, donor stem cells harvested from discarded placental tissue may be used as an in-office procedure.

(Sources: <http://www.stemcellinstitute.com/rotator-cuff/>,
<https://www.sportssurgerychicago.com/regenerative-medicine/stem-cell-therapy-for-rotator-cuff-tears/>)

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If this story or any other Ivanhoe story has impacted your life or prompted you or someone you know to seek or change treatments, please let us know by contacting Marjorie Bekaert Thomas at mthomas@ivanhoe.com