

Returning to Running After Meniscal Surgery: A Risk Analysis for OA Development.

In runners, 25% of injuries are related to the knee. Maintaining good knee health over the long term is a priority for those who wish to continue running.

The menisci serve key proprioceptive and stabilizing functions. They are responsible for transmitting up to 70% of the knee joint load. Partial meniscectomy may increase peak loads up to 65% whereas total meniscectomy may increase peak loads up to 235%. These loads can be manipulated by increasing the strength of the muscles around the joint, by decreasing body weight and by altering variables within the training program.

Can we quantify the risk of accelerated degenerative change post-meniscectomy?

Not yet. However, the first step in this direction has been done by Bob Baumgarten. His analysis of the literature focused on identifying the factors that contribute to further OA post-meniscectomy.

The studies used only looked at which factors increased risk, not why. In most cases, assumptions can be made fairly confidently as to the reason behind the increased risk. This allows the Physician to use evidence to decide why they advise a patient to return/not to return to running.



We hope that the research started here will continue so that we might use the number of positive risk factors to assign a post-meniscectomy probability for further OA development. At this point clinicians may assume that the risk of OA development increases with each additional positive factor.

Predictors of Further Degenerative Change in Post-Meniscectomy Runners:

- $\geq 1/3$ of Meniscus removed
- Age ≥ 40 years old
- Existing radiographic or arthroscopic evidence of OA
- Degenerative tears (traumatic tears not as significant a factor)
- Female
- BMI ≥ 30
- Lateral compartment tears are worse
- Lower extremity alignment when pairing genu valgum with lateral meniscectomy or genu varum with a medial meniscectomy

How soon can the athlete return to sport?

Considering menisci surgery will affect load transfer through the knee, rehabilitation should focus on aspects to improve the peak loads. Many factors must be assessed prior to providing a time line. These include:

- Stages of healing
- Stability and bracing if required
- Range of motion
- Strength
- Proprioception & balance
- State of concurrent injuries
- Body Mass Index (Force=Mass x Acceleration)
- Power and agility
- Athlete confidence in the injured part
- Training program

Once assessed, the patient may have a goal oriented, individualized program designed to help restore load transfer through the kinetic chain. Control of joint forces will minimize the chance of development of OA while improving running performance.

References:

Baumgarten, B. To Run or Not to Run: A Post-Meniscectomy Qualitative Risk Analysis Model For Osteoarthritis When Considering a Return to Recreational Running. JMMT. 15(1) 2007, E1-15.

Garrick, JG. Requa, R. Structured exercises to prevent lower limb injuries in young handball players. Clin J Sport Med. 2005;15(5):398.