

Both gastrocnemius aponeurosis flaps and semitendinosus tendon grafts are effective in the treatment of chronic Achilles tendon ruptures – a systematic review, Nilsson et al. *BMC musculoskeletal disorders*, Volume 24, Article number 951. December 2023

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Level of Evidence: 4

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Achilles tendon ruptures are to be considered chronic when treatment has been delayed for more than 4 weeks. When the chronic stage is reached, surgical intervention is necessary to help with recovery. This delay in treatment has a higher probability of infection and complication with the wound properly healing. There are various surgical techniques when approaching a chronic Achilles tendon rupture, but this systematic review focused on the use of gastrocnemius aponeurosis flaps and semitendinosus tendon grafts.

36 filtered non-randomized and non-comparative studies were analyzed from three databases: PubMed, Scopus, and Cochrane Library. Thirteen studies out of the thirty-six used the semitendinosus tendon graft, twenty-one used gastrocnemius aponeurosis flaps, and then two of the studies used both as surgical treatments. A variety of patient reported outcome measures were used in the studies, with American Orthopaedic Foot and Ankle Score (AOFAS) and Achilles tendon Total Rupture Score (ATRS) being the most commonly used. The means were similar among both techniques. For the patients that were treated with the semitendinosus grafts the ATRS was 88 and the AOFAS was 92. For those that utilized the gastrocnemius aponeurosis flap, the ATRS was 83 and the AOFAS 96.

After further analysis, they found that the most common complication in 27 patients was a superficial wound infection. Out of these 27 patients, 22 of them used gastrocnemius aponeurosis flaps and 5 were with semitendinosus tendon grafts. The majority of wound healing complications came from those surgeries that utilized the gastrocnemius aponeurosis flaps because of the larger surgical wound that was made. They also concluded that those who were treated with semitendinosus grafts had a higher risk of sural nerve injury due to the smaller surgical incision. There was only one re-rupture that occurred and in that surgery a gastrocnemius flap was utilized.

Overall, both of these surgical techniques were found to be effective with favorable outcome scores. To further determine and compare the better treatment option, better qualitative studies or randomized control trials would be needed.



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