

## How to strength your quads when you are way too old for squats!

**By Paula Shingler, BSc, MCSP**

Every time I have to squat down for anything now there is this terrible complaining crackling noise from my knees. Attempting to do squats as an exercise would concern my neighbours and put a strain on my poor old knees. So what can I do to try to maintain rippling quads and keep neighbourly harmony?

### Why do we care about quads anyway?

The quadriceps muscle is the big thigh muscle that runs down the front of the thigh. It is in 4 parts hence the *QUAD* riceps and each section plays a role.

1. Rectus femoris- main bulky part running from the pelvis over the hip joint and attaches below the knee in the patellar tendon. Its action is to flex the hip and to extend or straighten the knee
2. Vastus lateralis- towards the outside of the thigh runs from the top of the thigh bone (femur) to the patellar tendon. It helps to stabilise the patella
3. Vastus medialis- on the inside of the thigh and it runs from the top of the femur to the inside of the patellar tendon and helps stabilise the patella too
4. Vastus intermedius- this lies underneath the rectus femoris and its main action is to help to straighten the knee in those last few degrees to ensure it gets fully straight.

Our quads are crucial for walking, running, jumping and squatting. Orienteers particularly need strong quads to help get through thick bush (even if you didn't quite intend that route), and also helps to stabilise hip, knee and ankle when the surface is uneven.

### Quad exercises without squats?

Squats are probably the best way to get power into those quads but it does put a lot of strain on the knees and ankles - not ideal. There are plenty of exercises you can do with less impact and here are my favoured few:

- Straight leg raise - sit on floor with back supported, pull toes up, tighten quads and lift leg off ground a few centimetres, hold for a count of 5 and gently

lower your leg to the ground, relax the quads completely. Make it harder by adding an ankle weight

- Inner range quads- same as above but put rolled up towel under your knee, push onto the towel with the back of your knee and lift heel off the ground, hold for 5 and relax. Add weights for more fun! This exercise works the vastus intermedius which can be neglected
- Leg extensions - sit on a dining room chair, knees bent, slowly straighten your knee up, hold for 5 then relax. Try with a weight or a resistance band looped over the chair leg
- Wall slides - a cheating squat that does work your quads but puts much less strain on the other joints. Stand with your back against the wall, gently slide down the wall until your knees are flexed about 45 degrees, hold for 5 and then slide back up. This can be made more challenging by holding a weight but be careful not to go down any lower or this will start to affect the knees
- Step ups- I love step ups as an exercise as they can be varied and done almost anywhere. Variations include changing the height of the step- start low and get higher, step up and over, hop up, jump up, go faster, go slower, hold a weight, fold your arms- all of these will build quads up and will also help calf strength, ankle stability, core stability, buttock strength- do you see why I like it?

### Take it easy and avoid tears, and tears!

As with any strengthening exercise you need to do lots of repetitions and use a low weight initially. Starting with a heavy weight is going to cause strain and muscle tears which will set you back rather than spring you forward. As always a professional assessment before you launch into an exercise programme is recommended.

If you are just not an exercise person then there are other good ways to ensure you keep your quads in good shape. Cycling, swimming (freestyle and backstroke and with a float to minimise arm assistance),

and sprinting all help with those quads. If you do try some sprinting then please remember to warm up and down and don't just sprint off. Maybe put a few sprint drills in at the end of your run when you are already warm?

So squats are not essential for those bulging quads. So try out a few alternatives and save those knees. I know my squats days are over but I think I can still keep my thighs in shape as I know I will need them when my map reading lets me down and I wander unintentionally into the thick green!

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