

50+ Strength @ Range

Originally published 15 January 2020 · fatchfitness.com



Welcome to 2020.

This year I will be focusing on a new series of articles with an emphasis on the development of functional conditioning for the older trainer.

I have targeted the areas of greatest concern for the majority of older trainers and have bundled them into a package I have called the:

4-PILLARS OF FITNESS

These 4-Pillars are:

1. **Functional Core** (I covered off on a lot of the theory in 2019).
2. **Balance/Proprioception** – Why we lose it as we age and what can we do about it?
3. **Strength@Range** – Also known as End Range Strength.
4. **Flexibility** – Flexibility links to many of the other Pillar factors.

In today's article, I will touch on the 3rd Pillar - **Strength@Range** and why we lose this capacity as we age and what we can do about it.

1. Physiology/Biomechanics behind reduced Strength@Range

From articles I posted in 2019, I highlighted that [strength decreases with age](#) and combined with the [reduction in flexibility](#) you have a double whammy that will dramatically reduce your capacity to express any decent level of strength at even moderate ranges of motion.

If we combine the above decrements with an under developed core, then these three factors make it largely impossible to have any functional strength beyond a limited range in any direction.



If we take a typical lunge for example, there are several deficits occurring resulting in an older trainer not being able to complete the activity with range and control:

1. They most likely have some general degeneration in the knee joint.
2. Due to the lack of regular ROM, they also have reduced strength in the main lunging muscles (quads, hamstrings, adductors, gluteals) as well as all supporting muscles (external rotators, abductors/adductors, etc).
3. As they are not regularly moving into this range their flexibility will have also likely reduced through their hips and lower back making getting into this position very difficult.
4. If they have poor core control, they will quickly overload their lower back trying to get into this position which will further inhibit any strength expression through the pelvic/femur muscle complex.

2. Progressions to redevelop strength@range

There are several steps that need to be taken to work your way back into a decent **Strength@Range** situation.

1. You must address any joint issues that are immediately limiting your ROM. See my article on improving [ROM with knee issues](#) with the following rehabilitation tips for you to review:
 - a. Check for instability in ankle (Pronation, tibial torsion), Femur (Internal rotation, femoral torsion), quad strength & external hip rotator strength (Gluteus maximus, Gluteus medius, Piriformis, Quadratus femoris).
 - b. Put together a program that deals with the strength issues with all the above muscle groups. (eg bands with squats – focus on external rotation, hip thrusts with bands, etc).
 - c. Train with as much ROM as possible (max 3/10 pain).
 - d. Repeat only when pain reduces to below 4/10 on any given day.

By following the above steps, you will not only hopefully reduce your knee pain but you will also start improving your basic strength in all pelvis/leg muscles.

2. In conjunction with your improvement in ROM, I would suggest that you begin with isometric holds (move into a position and hold) – these can be for any joint that you are having issues with. Typically for the lower body the following are excellent exercises to improve your **Strength@Range**.



a. Sumo Squat

- Feet wide, lower yourself as low as you can get your butt.
- Place your hands on your thighs for support in the early stages as it will help you get your butt lower.
- Once as low as you can go, hold this position for as long as you can, stand, shake out the fatigue and repeat.
- Over time you then remove your hand support and maintain this position using only your pelvis/thigh muscles.



b. Lunge Squat

- Take an elongated step, and lower yourself as far down as your knees/back/flexibility will allow you.
- Use your hands on your thighs for support, the goal is to go down as far as you can keeping your back leg as straight as possible.
- Hold the position for as long as you can, step out of the position and repeat with the other leg.
- Ensure your knee isn't forward of your front toe (if it is move your body backwards or shift your foot forwards).

- Over time reduce/remove the use of your arms to support your upper body.



c. Side Lunge

- Your start position is similar to that of the sumo squat but with wider legs.
- This time you step/lean to one side, focusing on keeping your bent knee in a straight line (pointing forward) and you try to lower yourself as far down as you can (again if you need to place a hand on your thigh that is OK).
- Again hold the position for as long as you can, return to your start position and repeat.
- Over time you try to increase the step distance & reduce the need for your arms to assist.

With all the above exercises the progression should include:

1. Increasing total depth of your hips over time.
2. Decreasing the use of your arms for support.
3. increasing the distance b/w your legs (either sideways or forward/backward).
4. Improving your upper body position (typically early on you will likely be bent over (a combination of lack of strength and flexibility through your hips and thighs)).



5. Once you are able to attain good end of range positions isometrically (holding), then start to work on slowly moving into and out of these positions with limited use of your hands or any swinging/momentum type movement.
6. Once you have progressed to this stage, you can then add in the use of your upper body by reaching forward/sideways whilst maintaining a strong lower body.

Dynamic movements with reach are quite an advanced version of each of the above exercises and should only be attempted once you are confident in your ability to perform these exercises smoothly and strongly into and out of the extended range.

As an additional comment, almost all exercises are dependent upon having a strong core (the above exercises are no different). The stronger your core, the easier it is to hold your upper body in the correct position as well as keep your pelvis in the correct alignment as you pull on it in multiple directions as you bend and stretch muscles and ligaments during these exercises.

SUMMARY:

1. Loss of **Strength@Range** isn't an overnight issue, it is typically many years of reducing your strength, flexibility and movement in these ranges that result in the old "Use it or Lose it" principle causing the issue.
2. Joint pain is a major limitation and needs to be address before you can effectively work on improving your **Strength@Range** issues.
3. Once you have hopefully improved your joint issue(s), then you can begin working isometrically to begin reloading muscles/tendons/ligaments through the range of motion that you have lost.
4. Progression includes increased range moving from isometric to concentric/eccentric contractions.
5. Add the load of your upper body into the movements to make them truly functional (bending over) and with time you will improve this key pillar of fitness – **Strength@Range**.

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