

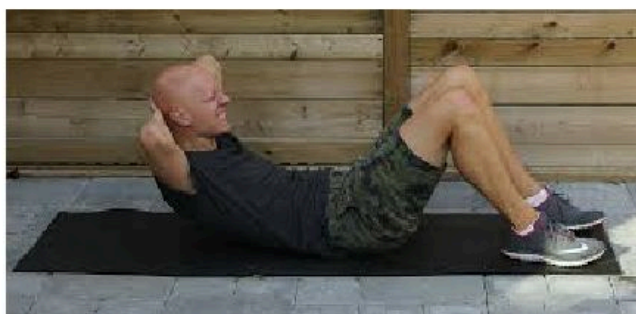
The Situp and why you can't sit all the way up?

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A very common question asked by gym clients is why they can't complete a full situp when on the floor?

The ability to perform a situp (full ROM) has very little to do with your abdominal strength.

In fact, depending on your body shape, you could have the best abdominals in the gym and still not be able to sit all the way up whilst an absolute newbie may be able to complete full range situps in their first session!!



Even before you consider if your abdominals are strong enough, you should consider your body shape and leg versus upper body length. These two factors are crucial in determining if you will ever be able to perform a full situp (later on we will review the question "Is it important to be able to sit all the way up?")

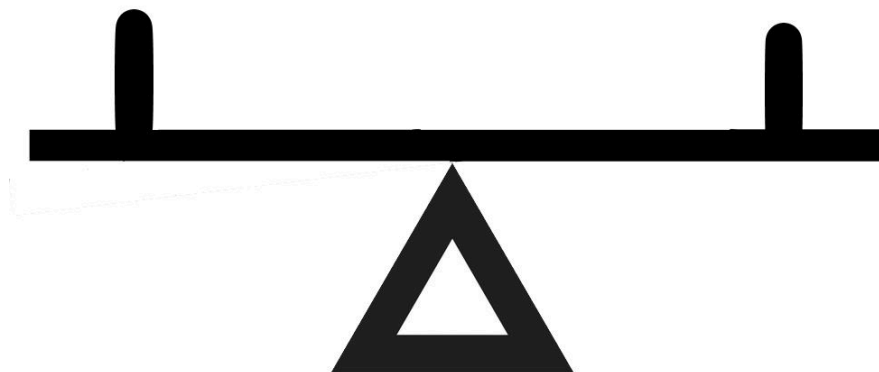
The ability to perform this activity without having your feet held down (more on this fault later) has to do with your centre of gravity/pivot point which will be where your backside sits on the floor relative to the length/size/weight of your upper body v's your lower body.

In this first example:

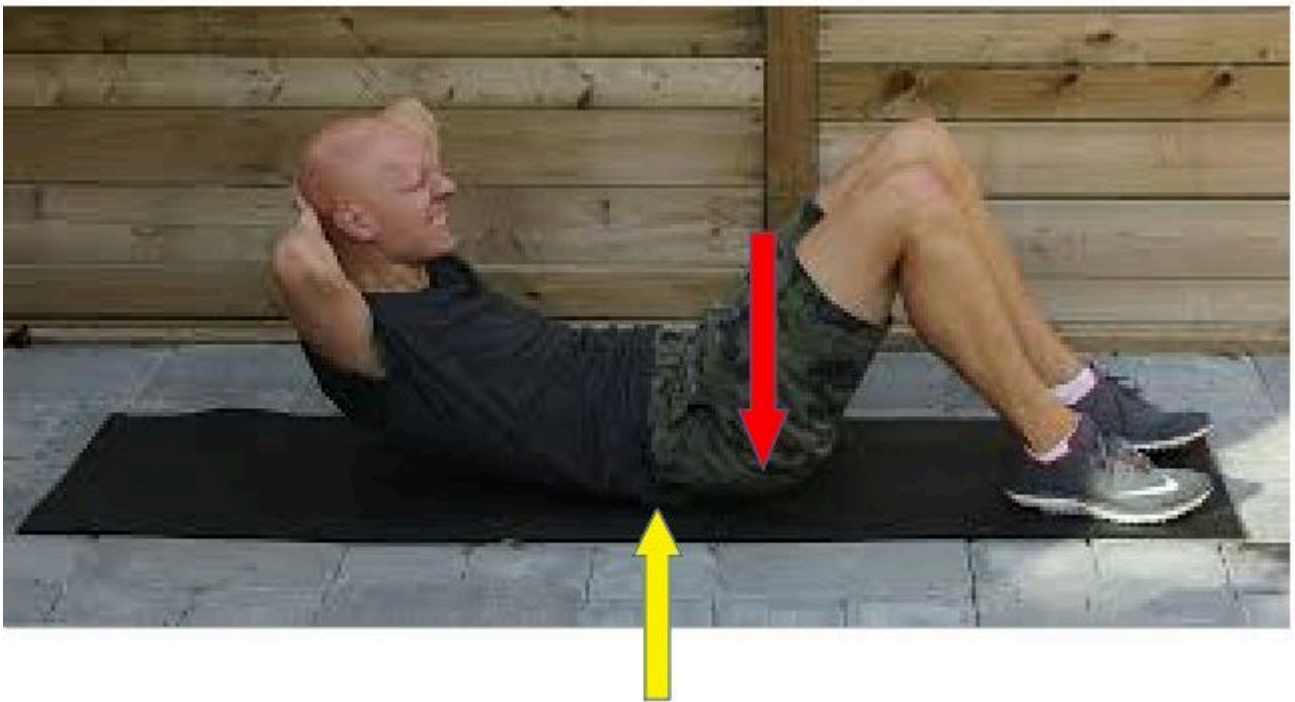


*The client's pivot point is marked by a red arrow.
The client's COG is marked by the yellow arrow.*

In this instance, the client has a long leg to upper body ratio and also is quite slight in the upper body with strong legs. The situation that this creates is for her Centre of Gravity (Yellow Arrow) to be about where her pivot point is allowing the weight of her legs to offset the weight of her upper body allowing her to sit all the way up (like a seesaw with the pivot point positioned perfectly b/w the two ends).



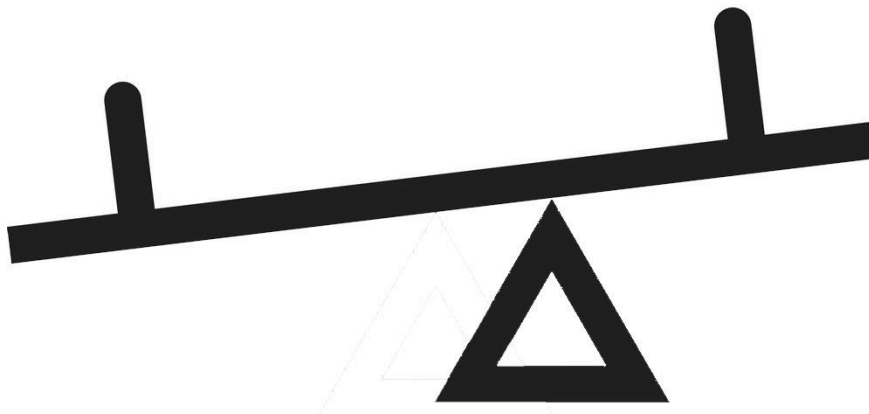
In the second example



The client's pivot point is also marked by a red arrow and COG by the yellow arrow.

You can see that this client has a long upper body compared to his leg length resulting in his COG being a long way away from his pivot point.

This results in a physical impossibility to sit up regardless of how strong his abdominals (or hip flexors) are and is analogous to a seesaw with the pivot point off centre.



A question I am regularly asked (and view clients in the gym performing this modification) is:

"What happens if you put a weight on your feet or have someone hold your feet down whilst you perform the exercise"?



Feet Supported Situps

Firstly, this modification **DOES NOT IMPROVE YOUR CORE'S ABILITY TO COMPLETE THIS EXERCISE.**

All this modification does it to allow your hip flexors (attached from your femur to your lumbar vertebra) to exert force (effectively performing a reverse leg raise).

There are several problems with this modification:

1. You are not increasing your core strength by making this change, you are just cheating your mechanics to allow you to sit all the way up.
2. By changing your COG/Pivot point you are allowing your hip flexors to complete the task that you want your abdominals to do!
3. You are increasing the load/strain on your lumbar vertebra because your hip flexors are now attempting to lift your entire upper body off the floor all from small attachments to your lumbar vertebra (particularly dangerous if you have a large upper body).
4. Shearing forces on your lumbar vertebra were high before the modification, they are now through the roof (with shearing forces 200%+ that of the load on your lumbar vertebra when just standing).

By modifying this exercise, you are not improving the strength of your core, you are just utilising biomechanics to make the exercise easier to complete (sitting all the way up) by using different muscle groups at the potential risk of increasing the load being placed on the lower back.

Please see this [blog article](#) for a more indepth discussion around the use of the hip flexors during core training and this [Youtube clip](#) on the role of the hip flexors during situps.

SUMMARY:

The key take-away is that it is not important to achieve full RANGE OF MOTION during this exercise.



Reach for the Sky Situps

If you want to isolate your core (Rectus abdominis, Internal & External Obliques) then contracting and lifting your chest off the ground as far as you can with a focus on taking your chest up towards the ceiling, not towards your knees is the best, most effective and safe method of performing this exercise.

If you want to train your abdominal region isometrically (one of it's main functions), then there are better, safer & more effective exercises that you can do to train this muscle group in this manner (For a future post).

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