



Ladies Technical Lifting Class



The Full Squat
by
Dave Brockway

The Squat

The full squat is one of the most neurally demanding of all the weight lifting exercises. Producing one of the largest calorie outputs as you work the full body during the exercise. It's called 'The King Of The Lifts' for a very good reason. During the full squat no single exercise requires the body to recruit as many muscles as physically possible. This has a large crossover to fat loss, athletic performance, posture and injury prevention.

Another of the benefits of the full squat better mobility due to the depth it pushes connective tissues to end range plus it exposes inflexibility in the shoulders, wrists, ankles and hips.

One of the worst myths of the full squat is that it damages the knee. Admittedly if the squat is performed incorrectly it could cause an injury. Nothing could be further from the truth. If you restrict range of motion through the squat you add shearing force to the knee caused by tightness and weaknesses through the strength curve. A lot of exercise Professionals due to misinformation through no fault of their own will advise clients and class participants to squat to 90 degrees. Unfortunately the greatest shearing point of the knee is at 90 degrees. If you have mobility issues and still feel the need to squat just 1/4 squat and during the same session work on mobility and neural signalling that will eventually enables full depth.

I'm going to contradict myself here and say don't try and force mobility if you haven't got it. Mobility is like training in the sense you have to train mobility with tiny improvements.

Mobility & Dynamic Warm Up

Lunge with Rotation

Step With Knee Hug

Inch Worm to Frog With Rotation

Full Squat with Elbow External Rotators

Frog Squat

Pigeon With Lateral Reach

Broom Handle Stretch Overhead Squat

Vertical Jump



There Is No Right Or Wrong Way To Squat

There are so many people that will tell you their way is best when learning to squat. Obviously there are several safety issues that must be obeyed if you want to stay injury free and I would never disagree with any of them as you can't get stronger if you are injured. Having said that there are no 2 humans that are built alike so the mechanics of the squat is going to change based on factors like limb length, mobility, torso length and imbalances.

One thing that should never change is as the bar goes up and down it should stay over mid-foot. Don't conform one style of squatting to change bar path.

Points of Torque & Cues

Upper Back / Scapular Retraction Cues (Hands Close on bar, try and pull bar apart and push elbows forward whilst squeezing towards lower spine)

Bar Sits on Meat of Traps Don't use a pad as it positions the bar in an incorrect position forcing the body forwards and adding pressure on to the lower back and weakening torque in the upper back whilst causing balance issues.

Flex Lats this is the back muscles and creates a more solid position in the upper body.

Engage Stomach & Glutes to keep your back tight and in correct mechanics.

Un Racking & Racking the Bar

Position rack 3 to 4 cm below where the bar sits on your back this is because when you are under fatigue or trying to re rack you do not want to be going up on tip-toes to have to re rack the bar back. Another reason is if the rack hooks are too high sometimes you are forced to alter the correct head position from facing forwards to look at individual sides of the hooks to re rack. This is a recipe for injury or losing balance which should be avoided at all costs.

Add Safety Pins even if you are with a spotter. If you do get into trouble with the weight it's better to have the safety pins in place to drop the bar on. Even if you have the best spotter in the world. They can do very little when the bar goes. Estimate the height during the warm up with the bar and adjust up and down before adding weight.

Come in close to the bar because if you try and put your head under the bar from too far back you tend to sit the bar too far left or right of the shoulders.

Stomach tight and de rack with a hip drive this not only is far safer I actually believe it acclimatises the nervous system a little to the weight you are about to lift.

Take two steps this should be safe distance from the rack plus the less steps you take you lower the risk of anything happening. Step with your dominant foot. Adjust your feet to optimal position before starting the initiating the squat.

When you are finished step back to the rack again using your dominant foot.

Keep your head facing forwards if you set the hooks below the height of the bar just wait until you feel both sides of the bar clink the supports before going down into the groove using the hips. Don't turn the head to look for the hooks as this is a recipe for disaster and this could twist your position and cause injury. As above.

Initiating the Squat Movement

Squeeze Shoulder Blades (Scapular) and Rip Bar Apart

Elbows in and Up

Breathe into Belly

Chest Up Eyes Down

Tighten Glutes & Unlock Hip

Push Knees Hard to Create Torque but not so hard you lose 3 point contact on foot.

Maintain 3 Point contact on Feet keep the big toe, little toe and heel in contact with the floor.

Push back then Down

Lower the Eccentric Portion with Control some take advantage of the stretch shortening cycle and 'bounce out the hole'. Until you've mastered it I would go slow. 3-5 seconds lowering.

Drive Up Pushing Knees Out And Maintaining 3 Points of contact.

Force Chest up & Elbows Forward this prevents a 'strippers squat' an expression that describes a squat where the hips come up ahead of the chest forcing weight onto lower back and can unbalance your stability.



Troubleshooting the Squat

Please go away and put into practice the things you have learned today before loading the bar up. Squatting is a skill like dancing or ice skating and should be practiced again and again. Most of the cues today will make the movement feel alien at first but the more you practice the more automatic the movement will become.

As much as I pride myself on my knowledge in the squat which derives from nearly 30 years of doing it plus several years of instructing the squat during 1000 of hours PT experience. Plus thousands of pounds worth of mentoring and education from the best in the world I simply want to point out some trouble spots to be aware of when squatting.

Very often its something simple like altering foot position tightening muscles or working on a structural re-balance program for a few weeks will improve technique. If you feel pain or discomfort stop immediately and consult a **Physio or Doctor**. I would be very suspicious of anyone who claims to be an expert and can rectify your issue with a run through or hour session.

Please consult a Physio or talk to your GP before embarking on a new exercise regime.

Coming Up On the Toes

Knees Caving Inwards (Valgus Fault)

Leaning Too Far Forwards

Lower Back Tightness

Hips Driving Up First from Bottom Position

Hip Tightness or Discomfort

Joint pain of any description

Pulling to the left or right either during decent or driving up.

Only being able to squat to parallel

Hips (Pelvic Girdle) twisting.

Postural or Spine deviations.

Everyone is designed differently. On the day I'll help improve the quality of the squat but its up to you to experiment and adjust you bodies mechanics to create the most efficient and safe movement. Popular sayings like '**No Pain, No Game**' should be avoided. If the full squat ever causes you pain stop immediately and get assessed by an expert.

Squat Variations

Anyone who thinks they are getting bored of the squat or are just not making progress with the conventional full squat. Here are a few squat variations to look up. I know there are probably more variations lurking around in ex Soviet Union or Chinese Vaults not known to the western world yet and I'm pretty sure I've forgotten more than just a couple. It's a good idea to mix it up now and again.

High Bar Back Squat

Low Bar Back Squat

Front Squat

Cyclist Squat

Heel Elevated Squat

Front Squat Wide Stance

Front Squat Narrow Stance

Pause Squats

Box Squats
Inertia Squats
Myotactic Squat
KloKov Squat
Hackenschmidt (Hack) Squat
Hip Dominant Zercher Squat
Quad Dominant Zercher Squat
Anderson Squat
Inertia Squat
Split Squat
Bulgarian Split Squat
Pistol Squats
Overhead Squats
Squat Jumps
Frog Squats
Kosak Squats
Goblet Squat
Squat Press
Prisoner Squats
Sumo Squats
Speed Squats
Smith Machine
Kettlebell Double Front Squats
Belt Squats
Lying Machine Squats
Machine Hack Squats
Pendulum Squats
Jefferson Squat
Sissy Squats
Frankenstein Squats
Zombie Squats
Dead Squats
Banded Squats
Chain Squats
Dead Stop Zombie Squats
Dead Stop Frankenstein Squats

Long Term Progression & Safety

If you fail to plan you plan to fail. This is such a good analogy of how strength progressions never progresses. When looking at long term progression look at what you want to achieve, assess where you are now and work backwards. For example if your **4 Repetition Maximum (4RM)** is say for argument sake say is 80kg and in six month your goal is getting to 100kg. If you **increase your weight each week by 2% you would reach your goal within 12 weeks which is half the time you planned.** I still think **2% increase week to week** is still the best way to progress. This is **the S.M.A.R.T. principle of goal setting** which is a an acronym that every goal should be

Specific
Measurable
Achievable
Realistic
Time-Framed.

The reason I say this is because not every week you are going to be 100% due to maybe poor

sleep, external stress (Yes, that makes a big difference to strength as strength comes from the nervous system), being unwell, busy at work or just off.

When you are pushing heavy I work off the **Rate Of Perceived Recovery(RPR)**. This is scale that estimates how many reps you have left if you need to push. For example, if you are going for a maximum for a **4 RM** you should **never push to absolute failure** as you are setting yourself up for injury, overtraining and a stimulus you are unable to recover from any time soon. I always say leave between **1-3 reps** in the tank.

