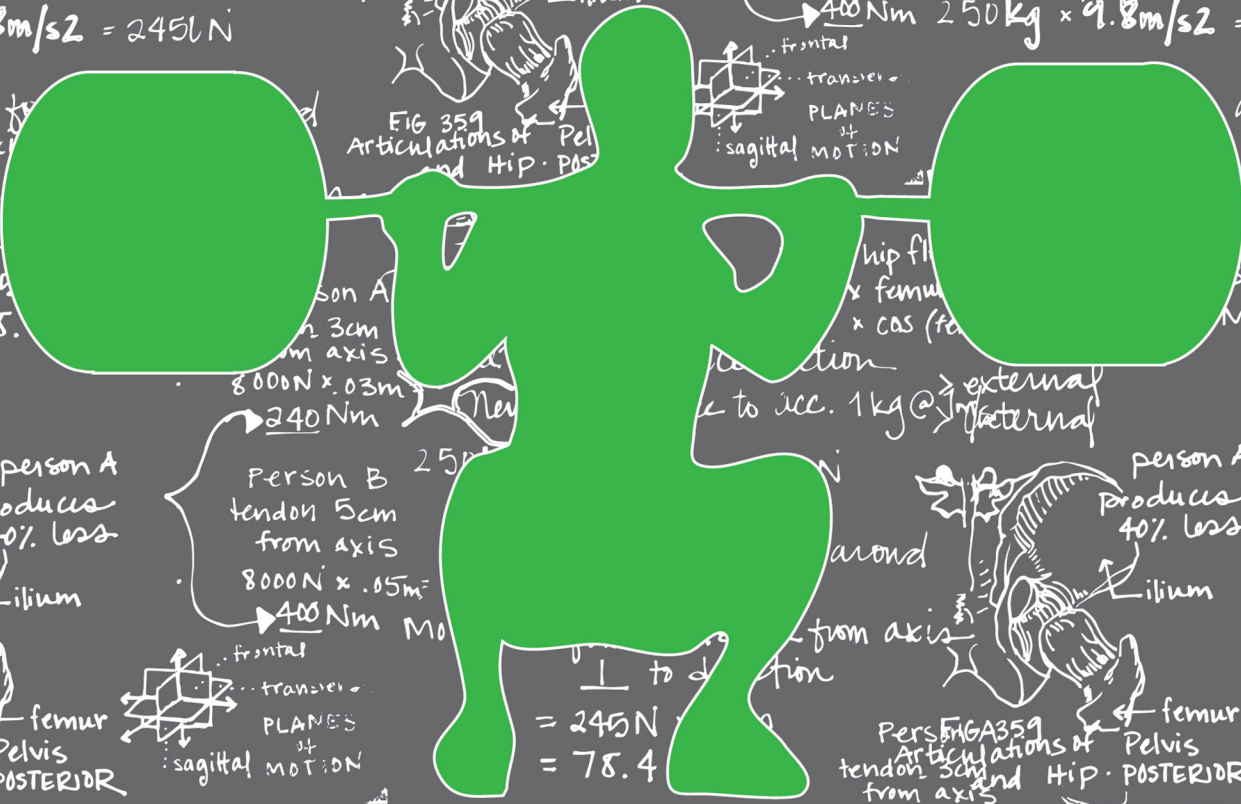
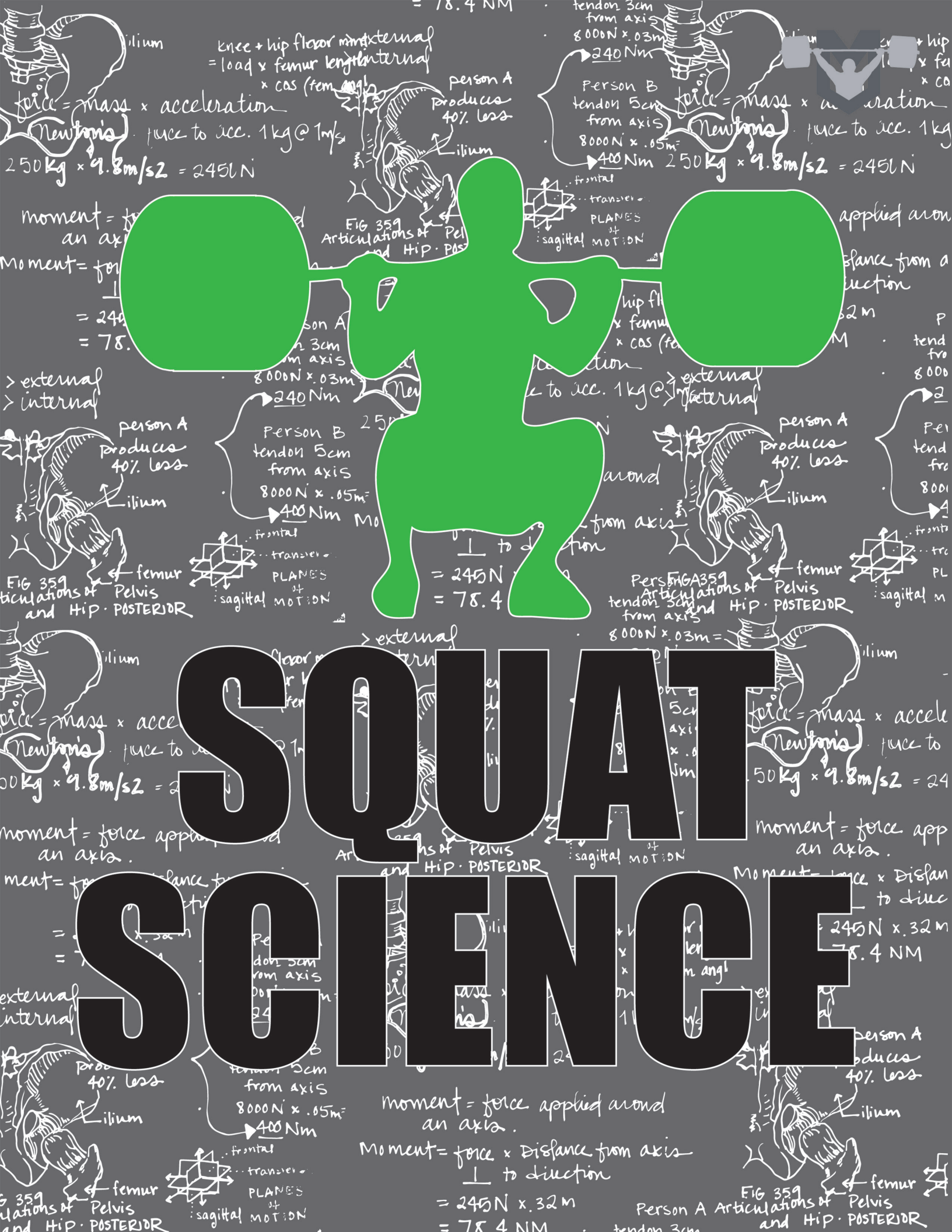




SQUAT

SCIENCE

force = mass x acceleration
(Newtons)
250 kg x 9.8 m/s² = 2450 N

moment = force applied around an axis
Moment = force x distance from axis
= 2450 N x 0.32 m
= 784 N·m

person A produces 40% less
tendon 3cm from axis
8000 N x 0.03 m = 240 N·m

Person B produces 40% less
tendon 5cm from axis
8000 N x 0.05 m = 400 N·m

FIG 359 Articular of Pelvis and Hip - POSTERIOR

frontal PLANE
sagittal MOTION

hip flexion
x femur
x CAS (femur angle)

applied around axis
distance from axis
0.32 m
P tend from 8000 N
2

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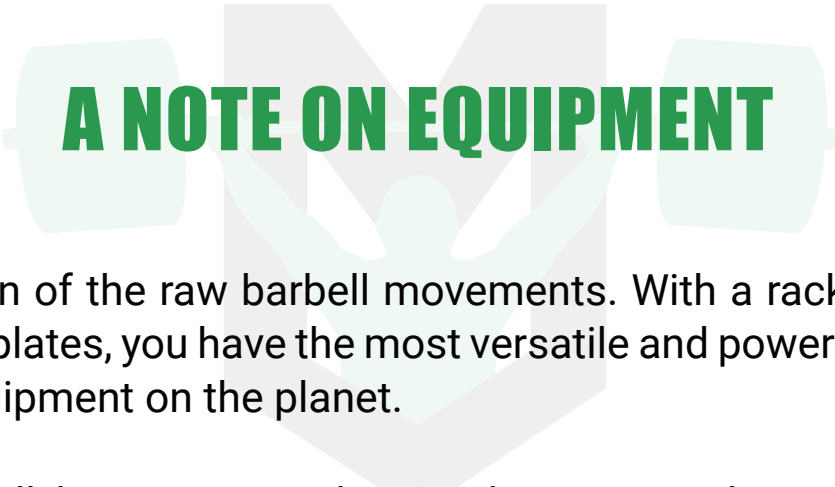
SQUAT SCIENCE



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If you're thinking about using these programs, please be smart. Don't participate in strenuous exercise unless cleared by a competent medical professional. Heavy weights can be dangerous, so only perform these exercises if you can do so safely. If you follow any of these programs or perform any of these exercises, you do so at your own risk.



A NOTE ON EQUIPMENT

I'm a fan of the raw barbell movements. With a rack, a barbell, and some plates, you have the most versatile and powerful piece of fitness equipment on the planet.

But I still love to use other implements such as dumbbells, kettlebells, bands, chains, belt squat machines, reverse hypers, med balls, and some specialty bars. I realize many athletes may not have access to all of the suggested equipment - and that's fine! The program will still work beautifully if you can get close.

For many exercises, I'll list substitutions. Feel free to swap out anything you think makes sense. Dumbbells can be used instead of kettlebells. A normal barbell can be used instead of a specialty bar. The program will still produce some amazing results.

If you have any specific questions about equipment needs, feel free to reach out to us at support@mashelite.com.



ATHLETE, COACH, SCIENTIST

The strength and conditioning world is filled with opinions. Some are based on research, but most are just opinions. Facebook and Twitter are full of endless debates about programming, exercise selection, and more. However, there is one thing most of us can agree on: the squat is king.

Most of you who follow me are here to get stronger, more jacked, and more athletic. The squat is the best tool to reach any of these goals. If you want to get better at CrossFit, Olympic weightlifting, strongman sports, bodybuilding, or (of course) powerlifting, you are going to want to crawl under a bar and perform some squats. No exercise on Earth recruits more fibers than the squat, so no other exercise gets you more jacked than squats.

When it comes to athletic performance, the squat has more correlation to vertical leap and sprint speed increases than the clean or snatch. That makes it a must for any good strength and conditioning program or any good CrossFit program. Basically, the squat makes everything better in athletics and strength.

There's another benefit of squats I haven't mentioned: pure aesthetics. We've all heard "strong is the new skinny." I love that because, let's face it, skin and bones isn't a pretty look. Whether you are a guy or a girl, muscular glutes and thighs are now in. Thank goodness! If you want to see strong glutes and thighs, go to any

national level powerlifting, Olympic weightlifting, or CrossFit event. It's a glorious thing!

If you're reading this, you probably already know the power of the squat. I am writing this book to help you choose the proper technique to maximize your results. I am also writing this to give you the information required to build the strongest squat possible. The ending of this book contains all the squat programs you could ever dream of – whether you're interested in powerlifting, weightlifting, CrossFit, athletic performance, or general strength. My goal is to complement whatever you are already doing.

SMASHING RECORDS

I remember squatting my first world record back in 2004. It was 970 pounds performed in one of the old school polyester squat suits. My training went perfectly leading up to the meet. At that point in my career, I had my individual technique dialed in. I knew the positions I had to maintain to make the lift. I approached the loaded bar with focused confidence. Something about a heavy barbell that could potentially kill me always heightened my senses and brought me to life. I was mentally alert. My body was prepared.

The meet was the WPO World Championships at the Arnold Classic, so the place was packed. People were standing on their chairs going crazy, and I was feeding off the energy. I had played this scenario in my brain a thousand times before. The judge gave me the squat command, and I began my controlled descent. I reached the bottom, drove into the bar, and pushed my hips through to completion. I stood up to three white lights and my first world record.

IMPRESSIVE SQUATS

At our gym right now, we have two former 365-kilogram (805-pound) raw squatters, Coach Chris “Ox” Mason and me. We have the strongest pound-for-pound squatter in American Olympic weightlifting, Nathan Damron. Nathan has squatted 318 kilograms (700 pounds) raw and high bar. We have our freak 14-year-old, Morgan McCullough. Morgan has high bar squatted 240 kilograms (528 pounds) raw, which is more than any 14-year-old ever in America and possibly the world.

We’ve also had more than ten girls squat over 300 pounds. One of them squatted 400 pounds, and all but three are Olympic weightlifters. One of our football players, Tommy Bohanon, is the starting fullback for the Jacksonville Jaguars. He squats a legit 700 pounds. Cade Carney is a 600-pound squatter and is the starting running back for Wake Forest University. My point is we are pretty good at getting people strong in the squat.

With that being said, I am not basing this book merely on what worked for my athletes or for me as a powerlifter. My goal is to bridge the gap between research and my 34 years of experience (21 years as a coach and 34 as a strength athlete). I want to take the best of what I’ve observed and what others have observed. Combining data in the research lab with data on the field of play forms something magical.

I am continuing to do just that and to refine my approach. Each year my programming and coaching continues to grow and improve. Individualism is where the real magic lies. A perfect technique for one person is terrible for someone else. The perfect program for one person yields zero gains for someone else. I want to teach

you the science of determining the perfect technique for you. I also want to teach you how to make small changes to programs based on your individual needs. If you want to maximize your progress, individuality is the key.

THE THREE PERSPECTIVES

I am telling you about these great squatters to let you know I am writing from the perspective of an athlete, coach, and exercise scientist. If you want to know the best advice, I recommend finding someone who comes from all three of these viewpoints.

An athlete is a good source, but they only know what works for them. A coach is a good source, but they can't tell you what it feels like to crawl under a spine-crushing weight. They only have the stories from their athletes. An exercise scientist only knows the information they've studied, which may refer to obese populations or college-aged boys. Do those translate to real athletes who want to push the boundaries a bit? Maybe... and then again, maybe not!

I have been under the bar since I was 11 years old. That means I have been training for over 34 years. I have back squatted over 800 pounds completely raw on several occasions. I have squatted 950 pounds in a single-ply squat suit and over 1000 pounds in a multi-ply suit. Does all of this make me the best person to teach the back squat? Nope, but it's a start.

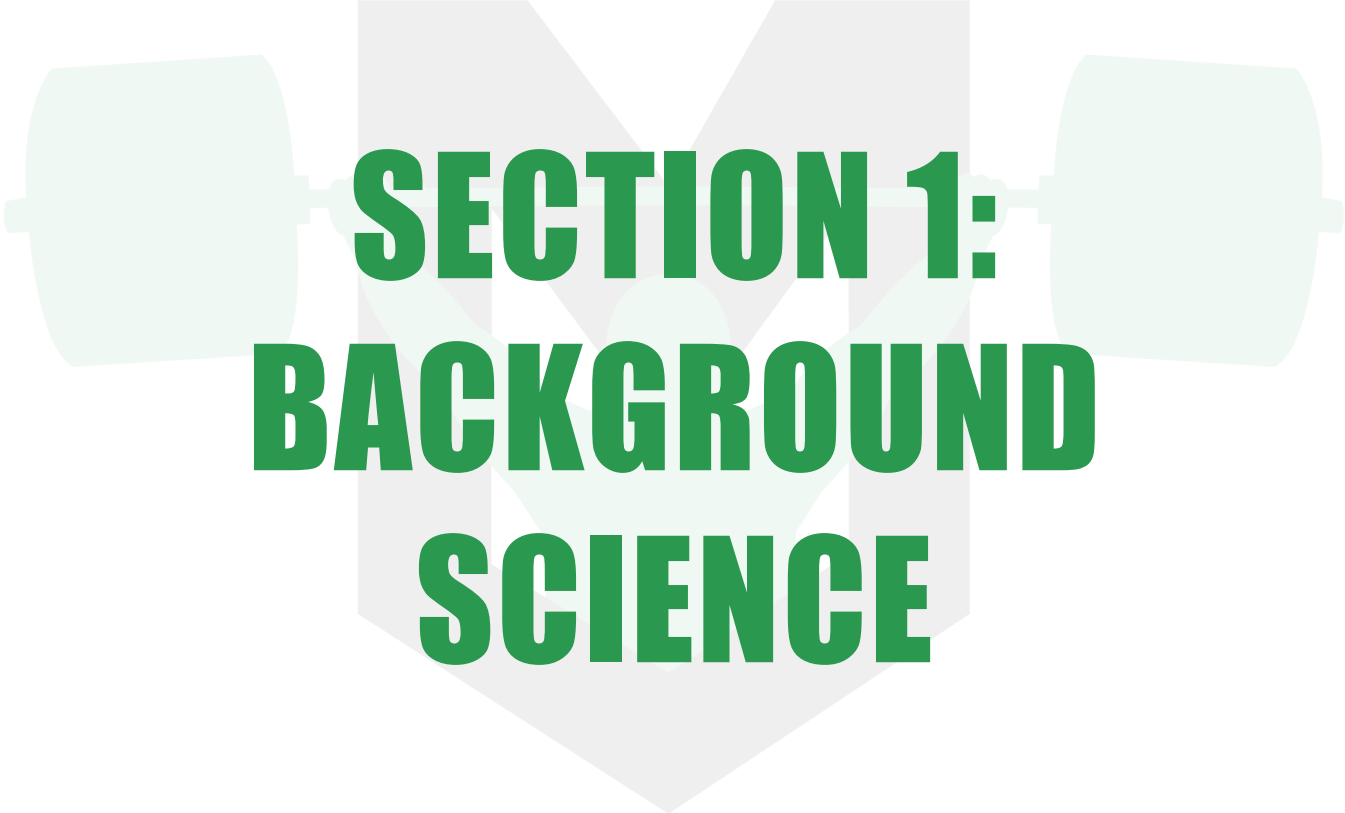
Over the last twenty-plus years, I have also coached thousands of athletes. I have more data than any ten research articles combined. I am a coach to some of the strongest Olympic weightlifters in the country. My athletes are always going to be the strongest back squatters because I understand the importance of the back squat.

However, if I had no knowledge of exercise science, my athletic accomplishments and coaching skills still wouldn't make me an expert. Understanding anatomy, physics, and biomechanics allows me to evaluate new theories and approaches. I can make sure my athletes are training in a safe and effective way.

This is the angle I am coming from in this book. I want you to understand all three of these perspectives.

THE BEST FEELING

The back squat is an exhilarating lift. Most people are capable of handling more weight in the squat than they can in any other lift. It's a powerful feeling to handle massive amounts of weight throughout a full range of motion with the most functional movement pattern on the planet. I hope this book gives you all the tools necessary for maximizing your body's potential.



SECTION 1: BACKGROUND SCIENCE

BASIC PHYSICS

When it comes to the background science of the back squat, I am going to give you guys the abbreviated version. If you want to dive deeper, I highly recommend [Greg Nuckols's "How to Squat" article](#). Greg is very good at breaking the science down in a way that is very understandable, and I am sure you will pick out some nuggets to increase your squat.

FORCE

Force is the first concept we need to deal with before moving on. Force is simply mass multiplied by acceleration, measured in newtons. A newton is the force needed to accelerate a one kilogram mass at a rate of one meter per second squared (m/s^2).

Force is linear. For example, let's say you were squatting 250 kilograms on your back. If you dropped it off your back, gravity would cause it to accelerate down at 9.8 m/s^2 . The equation would look like this:

$$250 \text{ kg} \times 9.8 \text{ m/s}^2 = 2450 \text{ N}$$

Gravity would pull the bar straight down, making this linear in nature. To lift this weight, our body has to produce more force than the 2450 newtons. That brings us to the next section, which gets a little more exciting.

MOMENT

While force is linear, moment is rotational in nature. Moment is force applied around an axis, typically calculated in newton-meters. It's the force applied multiplied by the distance from the axis perpendicular to the direction the force is being applied (the moment arm). Let me try and make this a bit simpler.

Let's pretend you are performing a bicep curl with a dumbbell. If your forearm is parallel to the floor and your upper arm is perpendicular to the floor, then the axis is your elbow. The moment arm is your forearm.



If you are holding a 20-kilogram dumbbell and your forearm is 32 centimeters in length, here's how you would calculate the moment at the elbow.

1. Calculate the force (force = mass x acceleration).

$$\text{Force} = 20 \text{ kg} \times 9.8 \text{ m/s}^2$$

$$\text{Force} = 196 \text{ N}$$

2. Calculate the moment the barbell is exerting at the elbow
(moment = force x moment arm).

$$\text{Moment} = 196 \text{ N} \times 0.32 \text{ m (length of forearm since it's parallel to floor)}$$

$$\text{Moment} = 62.72 \text{ N}\cdot\text{m}$$

You would have to produce an extensor moment greater than 62.72 newton-meters to move your forearm and successfully lift the 20-kilogram dumbbell.

These calculations are true if your forearm is parallel to the floor. In that case, the entire 32-centimeter length of your forearm is the moment arm (the distance from the axis perpendicular to the direction the force is being applied).

If you allowed your elbow to flex, the moment arm would decrease. Even though your forearm is obviously still 32 centimeters, the distance on the plane parallel with the floor would be less.

Trust me - once we get through all of the background science talk, I will make all of this sound much simpler and much more practical. If this stuff is boring you, feel free to skip down to the next section on "Real World Insight from the Experts." We will flesh out all of this jargon soon. I promise!

EXTERNAL AND INTERNAL MOMENTS

Moments imposed by a load on your body are called external moments. I am basically talking about the weight you are lifting. The way you overcome that load is by producing internal moments, which are created by your muscles pulling against bones using tendons.

We explored an example of an external moment with the bicep curl scenario above. Internal moments are calculated the same way as external moments.

Force in our calculation is the contractile force of the muscle. The moment arm is the distance a muscle attaches from the center (axis of rotation) of the joint it's moving. Whether it's the patellar tendon, biceps tendon, or triceps tendon, we are talking about where it attaches in relationship to the distance from the center axis or joint that is rotating.

ATTACHMENTS

This is where things get a little unfair.

One or two centimeters might not sound like much, but that can be the difference in an Olympian and someone watching the Olympics from home. Let's take any given muscle with the ability to contract with 8,000 newtons of force.

Person A has a tendon that attaches 3 centimeters from the axis. Person B has a tendon that attaches 5 centimeters from the axis.

Person A produces $8000 \text{ N} \times .03 \text{ m} = 240 \text{ N}\cdot\text{m}$

Person B produces $8000 \text{ N} \times .05 \text{ m} = 400 \text{ N}\cdot\text{m}$

Person A produces a moment 40% less than Person B simply because of attachment length. Great attachments are a genetic blessing to strength and power athletes. There is nothing you can do about your attachments, so you have to focus on either getting stronger or adding muscle.

MOMENT ARM IMPORTANCE

What does this have to do with squatting? Here's what you need to grasp. The weight on the bar and your own body weight are producing an external flexor moment at the joints of the knee and hip. You will have to produce an internal extensor moment greater than that to perform the squat.

The amount of the external flexor moment you have to overcome to lift a weight depends on two things:

1. The load (weight on the bar and body weight)
2. Length of the moment arm

All this really means is heavier weights take more of an effort to overcome. It also means people with shorter limbs have an advantage over people with longer limbs. However, we learned attachments could probably overcome that. I have personally watched people with long femurs squat some massive weights with good technique, great attachments, and a lot of force.

I remember getting beat at the Junior World Championships in Finland back in 1996. The guy who ended up beating me was the

last one I picked out of the crowd. Back in those days, we didn't have the Internet to access powerlifting results. We had to eye the other lifters to get an idea of the competition. A strong guy is normally a jacked guy - just look at Ed Cohn or Dan Green. But in this case, the tall and lanky guy whipped my butt. I tell you this to give all of you tall guys hope. Sometimes technique, force, and attachments can overcome limb length.

TECHNIQUE

Technique and force go hand in hand. If your technique gets better, you will recruit more fibers to produce more force. You are born with your attachments and limb lengths, but you can do a lot to improve technique. You can also add some muscle mass to improve your ability to create force.

Yury Belkin is another example of someone who uses technique to great effect. If you were to see Yury in a room with Dan Green or Kevin Oak, you would never assume he would easily beat the two hulks. If you didn't know him, you would never guess he is capable of totaling over 2300 pounds raw. His technique is superior to the other two men, and it slingshots him above all competitors. He might have superior attachments, but we won't be able to determine that until he dies. (That was a little morbid. Sorry!)

BASIC ANATOMY USED IN THE SQUAT

The goal for this section is to teach you all a bit about the anatomy that plays a role in the back squat. I want to describe the major joints, the bones that make them up, and the muscles that make them move. This is not going to be *Gray's Anatomy*, but you will at least have the basics down. Bear with me on all this anatomy. The later part of this book will make much more sense if you understand this section.

I didn't pay a lot of attention during anatomy class in college. I was more into football, working out, and other subjects I can't talk about in this book. Someday I will write about all of that under a fake name.

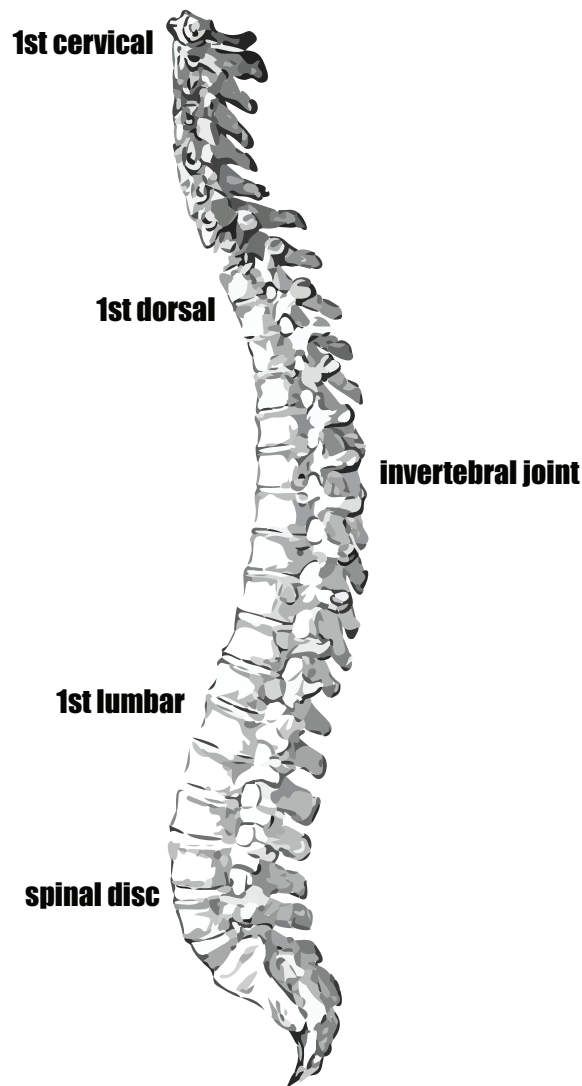
Later in my career, I was fortunate enough to work with my long-term chiropractor, Dr. Lawrence Gray. He taught me the importance of anatomy. To truly understand athletic movement, you first have to invest some time understanding the human body. If you want to correct imbalances or strengthen weaknesses, you have to understand anatomy. (Ok, I am off of my soapbox.)

SPINE

The spine is made up of 24 vertebrae. There are seven cervical vertebrae in the spine of the neck. There are twelve thoracic

vertebrae that start at the base of the neck and end below the rib cage. There are five lumbar vertebrae that begin below the rib cage and end at the top of the pelvis.

Lateral View of the Spine



Each intersection of vertebrae is called an intervertebral joint, and there is a spinal disc at each of these intersections. There isn't a lot of movement going on at each individual intersection, but all of them add up to produce a fair amount of flexion, extension, rotation, and lateral flexion.

Each section allows for different amounts of movement. Based on information from Dr. Stuart McGill, the lumbar spine should be very limited in the amount of motion allowed. The thoracic spine is where most movement is expressed, and a lack of movement in this area can cause a lot of problems in other parts of the spine.

There are three natural curves in a healthy spine. The lumbar spine should have a nice lordotic curve (rounded in). The thoracic spine should have a natural kyphotic curve (rounded out). The cervical spine should have another slight lordotic curve.

The spine is designed perfectly to withstand compression. That's why heavy lifting performed correctly is the safest thing on the planet. Shearing forces are the problem. We will talk more about this later, but I want to touch on it a bit right now. Everyone talks about the back rounding forward (flexion) as dangerous and weak, and they are right. It is dangerous, and it is a weak position. However, hyperextension is just as dangerous. It's probably not as weak of a position, but it will still create a shearing force that will be damaging to the spine over time. That's why keeping a neutral spine is the wisest choice.

Will a neutral spine create more fiber recruitment and greater strength? I haven't seen any evidence of that, but it will definitely keep you at less risk of injury. Normally, the body recruits more fibers in strong and safe positions, so it will probably be stronger in a neutral position. I just can't say for sure until someone studies it. I am waiting for Greg Nuckols to get out of school, so he can perform all of the research.

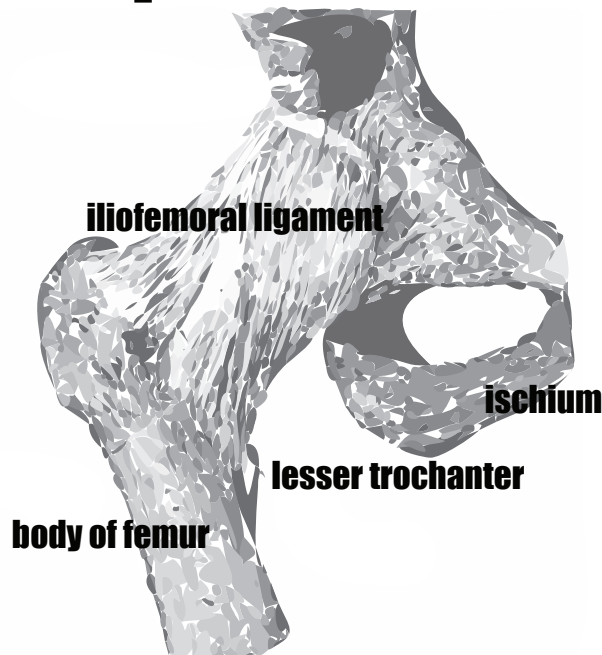
When I say *neutral spine*, I am referring to a spine with optimal extension and a lordotic cervical spine, kyphotic thoracic spine,

and a lordotic lumbar spine. Optimal extension along with intra-abdominal pressure (we will discuss this more a little later) causes the stiffness in the spine necessary to allow the legs and hips to transfer force onto the bar. “Proximal stiffness equals distal power.” That’s my favorite from Dr. Stuart McGill.

HIP JOINT

The hip is a ball and socket joint made up of the pelvis and the ball of the femur. It’s capable of abduction, adduction, flexion, extension, internal rotation, and external rotation. The hip joint is very important for athletes. First, it is the most powerful joint in the body. When you see someone jump really high, lift massive amounts of weight, hit a baseball 500 feet in the air, or knock someone out, they have amazing hip movement and strength.

Right Hip Joint from the Front



However, the hips are noteworthy for another reason. If movement in the hips ceases, somewhere else in the body has to move to compensate. Often it's the lumbar spine, which is unfortunate because the lumbar spine was designed to be stiff. Remember, you want very little movement in the lumbar spine. But the body will do whatever you ask it to do - even if it means doing something that will hurt it. That's the beautiful design of our body, but it's also the way we get injured.

All of this information comes from years of following Dr. Stuart McGill. I encourage you to check out his website at backfitpro.com.

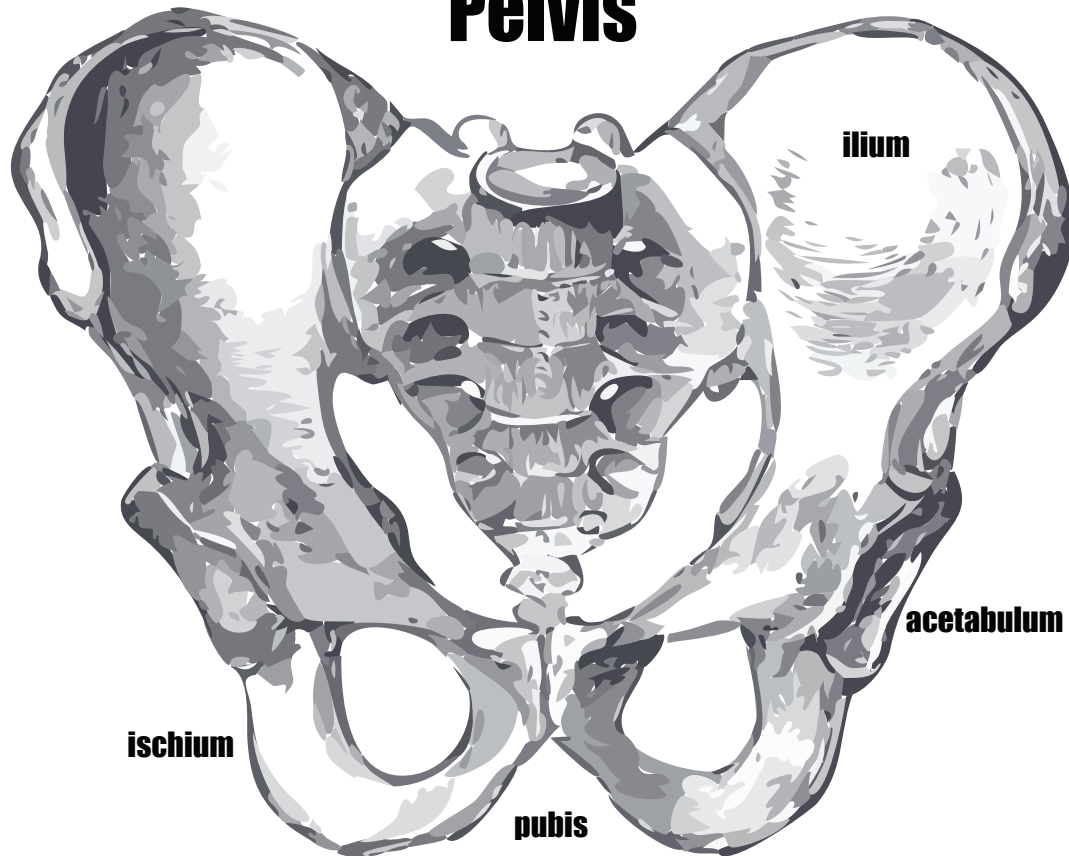
Let's now look at the pelvis and femur separately.

PELVIS

The pelvis consists of six bones fused together. First, there is a right side and left side of the pelvis with the ability to move separately to a very small degree. That's one reason why it's good to throw in some unilateral work, such as unilateral RDLs and lunges. You always want the body to perform the range of motion it was designed for. If you don't perform all the body's functional movements, asymmetries and imbalances are sure to follow.

Each side of the pelvis has an ilium, which is the top half of the pelvis. There is also an ischium on each side, which is the bottom posterior section of the pelvis. The pubis is the final section and makes up the bottom anterior section.

Pelvis



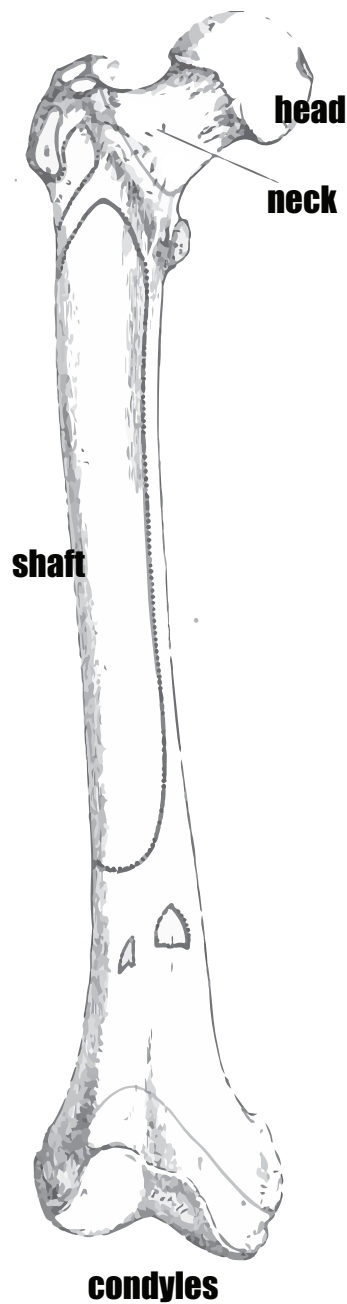
All three fuse together to form the acetabulum - better known as the hip socket. This is where the ball of the femur fits in, and it's the variations of the acetabulum and the insertion of the ball that determines a person's capabilities for range of motion. A shallow hip socket, very often found in Asian athletes, would allow for maximal range. This makes for a great weightlifter. On the other hand, the deep hip socket found in a lot of Gaelic countries is great for powerlifting and throwing.

FEMUR

There are four main sections of the femur: the head, the neck, the shaft, and the condyles. The head is better known as the ball

that fits into the acetabulum to form the ball and socket. The neck connects the ball to the shaft. Near this junction are the greater and lesser trochanters. A lot of the abductors and internal and external rotators attach at one of these two points.

Right Femur



All of the quadriceps muscles (minus the rectus femoris) originate on and slightly below the greater and lesser trochanter on the shaft. The mighty gluteus maximus attaches on the gluteal tuberosity of the femur or below the neck and shaft junction on the shaft's backside.

The length of the femur determines the moment arms at the knee and hip during the squat. It's the length of the femur that Russian sport scientists used to look at while recruiting weightlifters. A short femur normally means someone is going to squat a massive amount of weight. If you want to know why Nathan Damron squatted 700 pounds at twenty years old, just look at the length of his femur. I'm sure he has great attachments, fiber recruitment, and skill - but those short femurs really help. We will explain this a bit more in the next section.

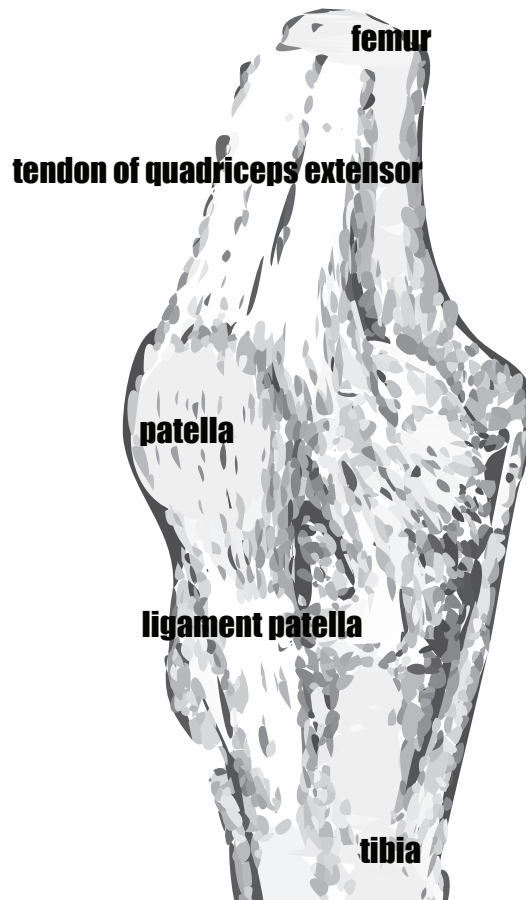
KNEE JOINT

This joint is a hinge joint where flexion and extension occur. The knee can allow for some abduction, adduction, and rotation, but too much of these movements places excessive strain on the meniscus and surrounding ligaments.

The goal of the knee joint is stability. Too much motion in this joint will inevitably lead to injury. We will talk a bit more about this in the programming section.

The patella is the bony section of the knee that we sometimes call the kneecap. The patella helps improve the leverage for the quadriceps when performing extension. As you will find out, knee extension is a very important part of squatting.

Right Knee Joint

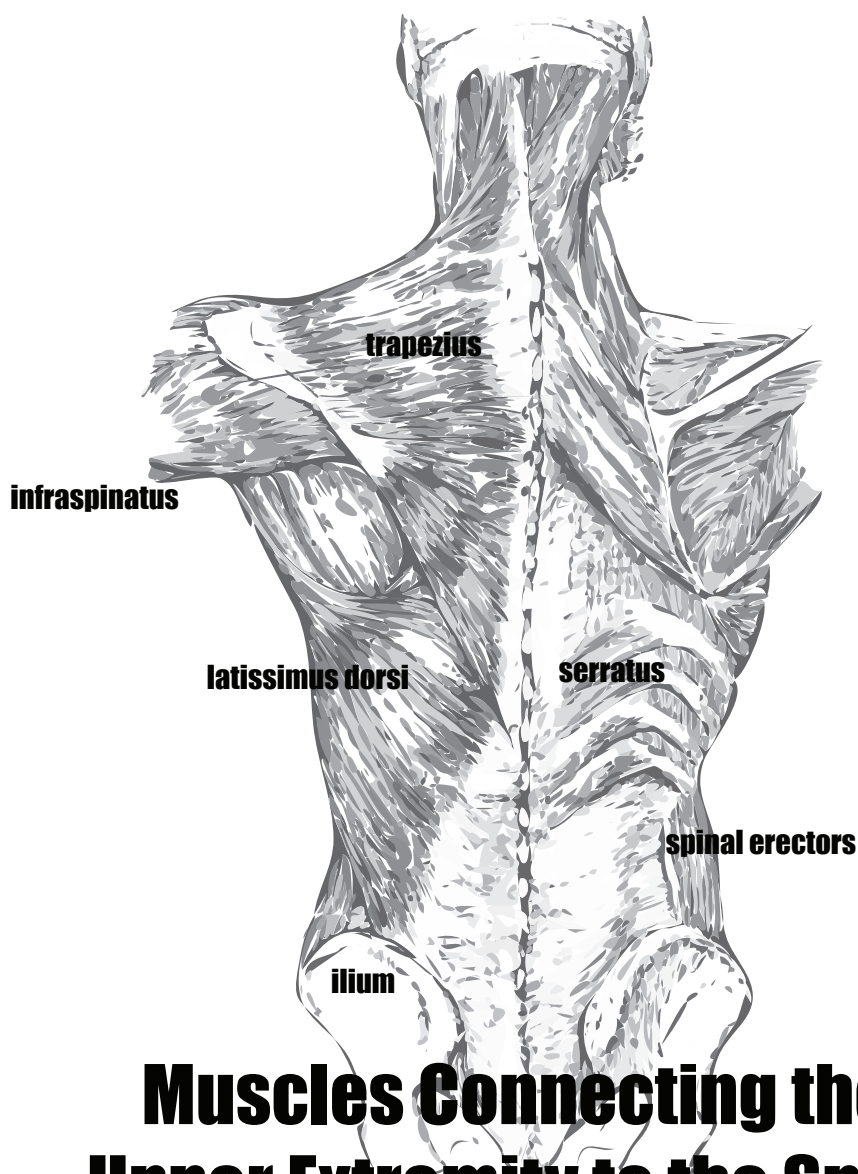


ANKLE JOINT

The ankle rotates and bends side to side. It's important to maintain this movement to assure the rest of the body stays healthy, especially the knees. However, when it comes to squatting, there are two crucial functions of the ankle. Plantar flexion is when you point your foot toward the floor, like a ballet dancer standing on their toes. Dorsiflexion is the opposite, which is pulling your toes toward your anterior shins. Dorsiflexion is especially important for athletes with immobile hips.

SPINAL ERECTORS

The spinal erectors attach to the top of the pelvis, the ribs, and the spine. The erectors consist of individual muscles that make up this group. Each set of erectors only crosses a few vertebrae, so each region needs to be addressed. A balanced group of erectors is a sign of massive strength. If you look at posters of Pyrros Dimas, you will see a perfectly proportioned back with zero weaknesses.



Muscles Connecting the Upper Extremity to the Spine

CORE

This is probably the most abused buzzword in strength and fitness. When most people use the term *core*, they are referring to the abdominals (transversus abdominis, rectus abdominis, and obliques). Most studies show very little activity from any of the three while squatting, so I wouldn't say they are major players at all. The core, as defined by Dr. Stuart McGill (yes, he's my go-to), is every muscle supporting the spine and pelvis.

When it comes to the spine and pelvis during the back squat, intra-abdominal pressure along with the spinal erectors are the spine's best friends. The key is teaching those muscle groups to work together to create maximal stiffness around the spine. There isn't a great powerlifter on the planet who doesn't know how to create massive amounts of proximal stiffness around the spine using intra-abdominal pressure.

GLUTEUS MAXIMUS

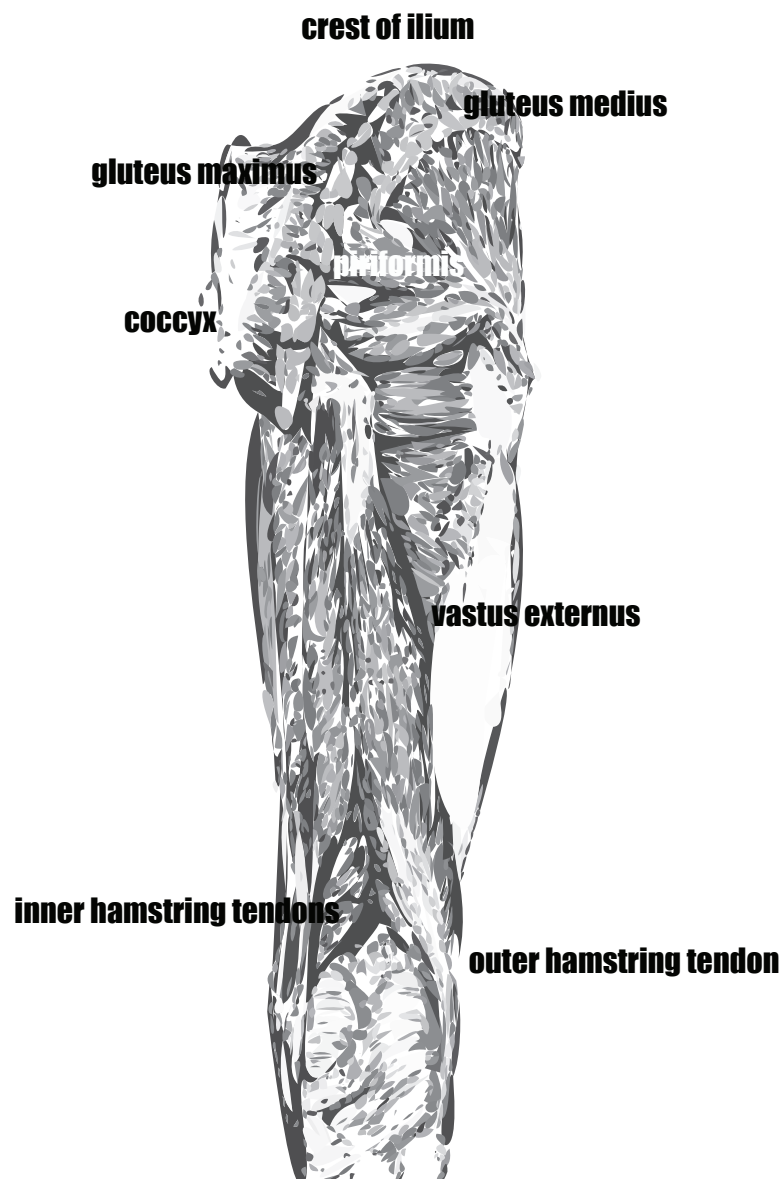
The gluteus maximus is a massive hip extender. It originates at the gluteal surface of the ilium, lumbar fascia, sacrum, and the sacrotuberous ligament. Basically, it originates at the base of the spine and ilium. It attaches to the gluteal tuberosity, or the back of the femur right below the greater and lesser trochanters.

HAMSTRINGS

We can treat the hamstrings as one muscle for our purposes. All three hamstrings (biceps femoris, semitendinosus, and semimembranosus) originate at the ischial tuberosity and attach

just below the knee on the tibia. The hamstrings have two main purposes: knee flexion and hip extension. Obviously, we don't want knee flexion during a back squat. But since these muscles attach further from the hip than the knee, they produce a greater hip extensor moment than a knee flexor moment. Luckily for us, the hip wins out, so we can stand up.

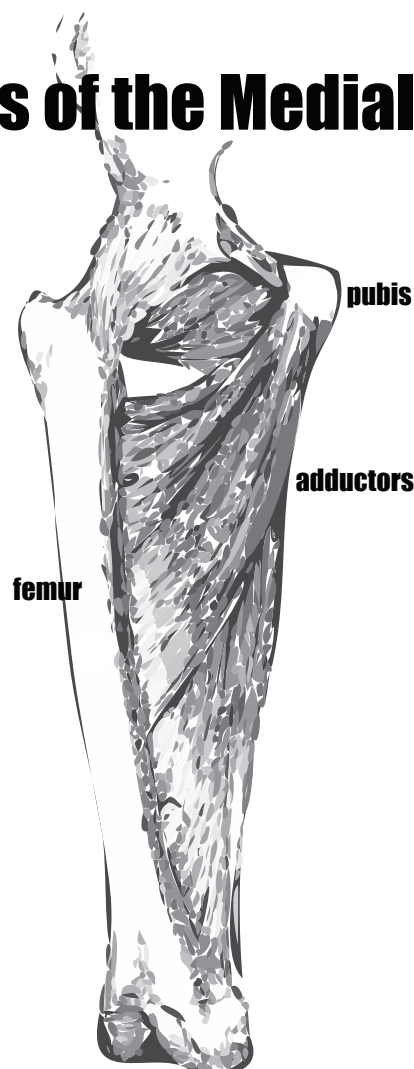
Muscles of the Hip and Thigh



ADDUCTOR MAGNUS

Greg Nuckols talks about this muscle in his "How to Squat" guide as it's the next big thing in hip extension. It originates at the tuberosity of the ischium just like the hamstrings, but it also originates at the pubis. It attaches at the back of the femur about halfway down the shaft and more medially along with the adductor tubercle right above the knee. It's obviously responsible for adduction, but it's also responsible for hip extension and hip flexion. Greg seems to think it wins big - especially out of the hole.

Deep Muscles of the Medial Femoral Region



QUADRICEPS

Let's look at these muscles one at a time.

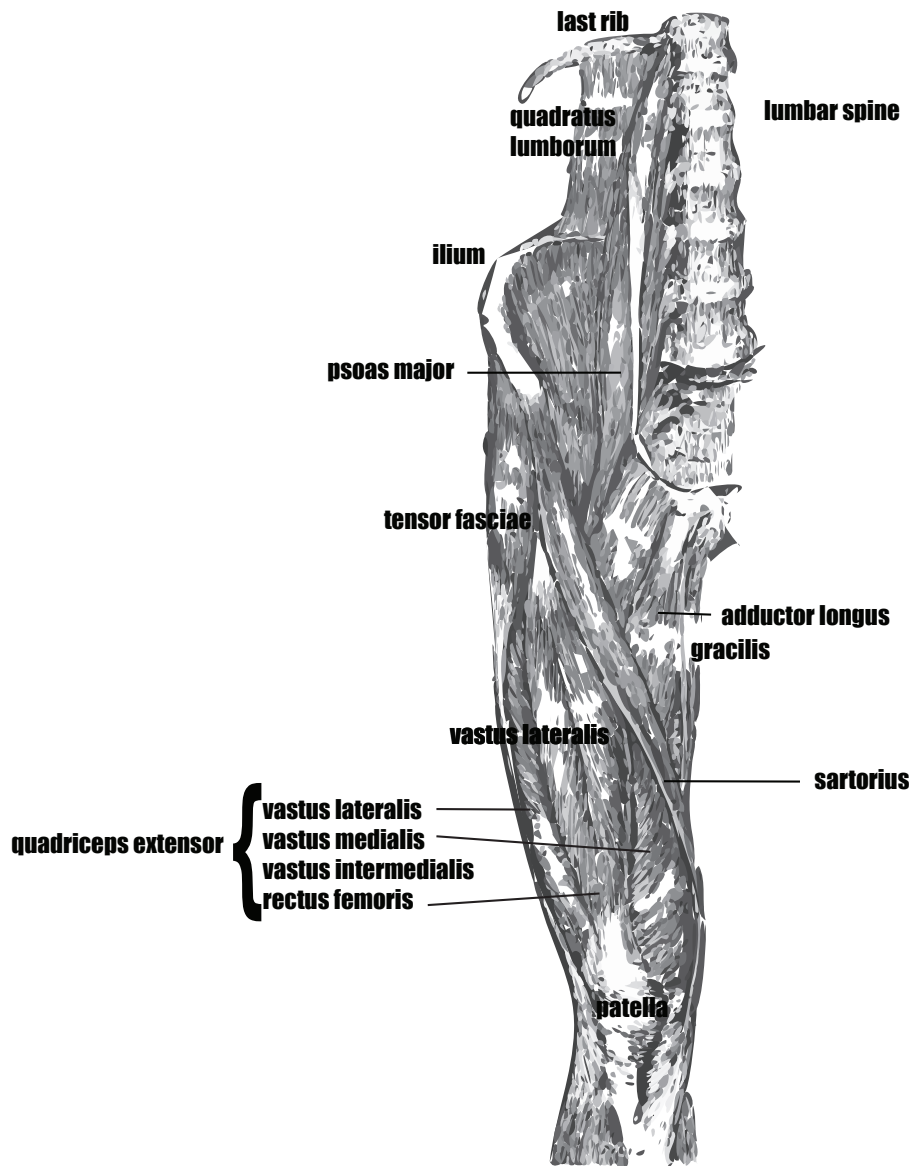
The vastus lateralis originates at the top of the femur near the greater and lesser trochanters, and it inserts at the patella via the quadriceps tendon and tibial tuberosity via the patellar ligament. This baby extends and stabilizes the knee.

The vastus medialis also originates at the intertrochanteric line of the femur (near the greater and lesser trochanters) and a little further down on the medial aspect of the linea aspera. It also attaches right below the knee at the tibial tuberosity via the patellar ligament. Its primary purpose is knee extension. However, you can trace a lot of injuries back to a weak vastus medialis.

The vastus intermedius originates more toward the middle top of the femur and also attaches below the knee at the patellar ligament. It also extends the knee.

The rectus femoris is where things get a bit funky again. The rectus femoris actually crosses the hip and attaches with its anterior head at the front bottom section (anterior inferior iliac spine if someone is trying to judge me) of the iliac spine and with its posterior head at the ilium just above the hip socket (acetabulum). It inserts along with the other quadriceps into the tibia via the patellar ligament. Since it crosses the hip and the knee, it's capable of hip flexion (which we don't want during a squat) and knee extension (which we definitely do want). Luckily, it has a longer internal moment arm at the knee than the hip, so there is a greater extension moment than flexor moment.

Muscles of the Iliac and Anterior Femoral Regions



CALVES

Luckily for me, calves don't have a lot to do with how much you can squat. I have tiny calves, and I believe I have a bit of a complex - so tread lightly. However, I will briefly describe my least favorite muscle group.

The soleus originates at the posterior upper half of the tibia and fibula. It inserts at the calcaneal tendon - or basically right in your heel. It's responsible solely (no pun intended) for plantar flexion, or pointing your toes like in ballet.

The gastrocnemius originates right above the condyle of the femur, and attaches to the calcaneus via the Achilles tendon. Since it crosses the ankle, it causes plantar flexion just like the soleus. However, it also crosses the knee making it responsible for knee flexion as well.

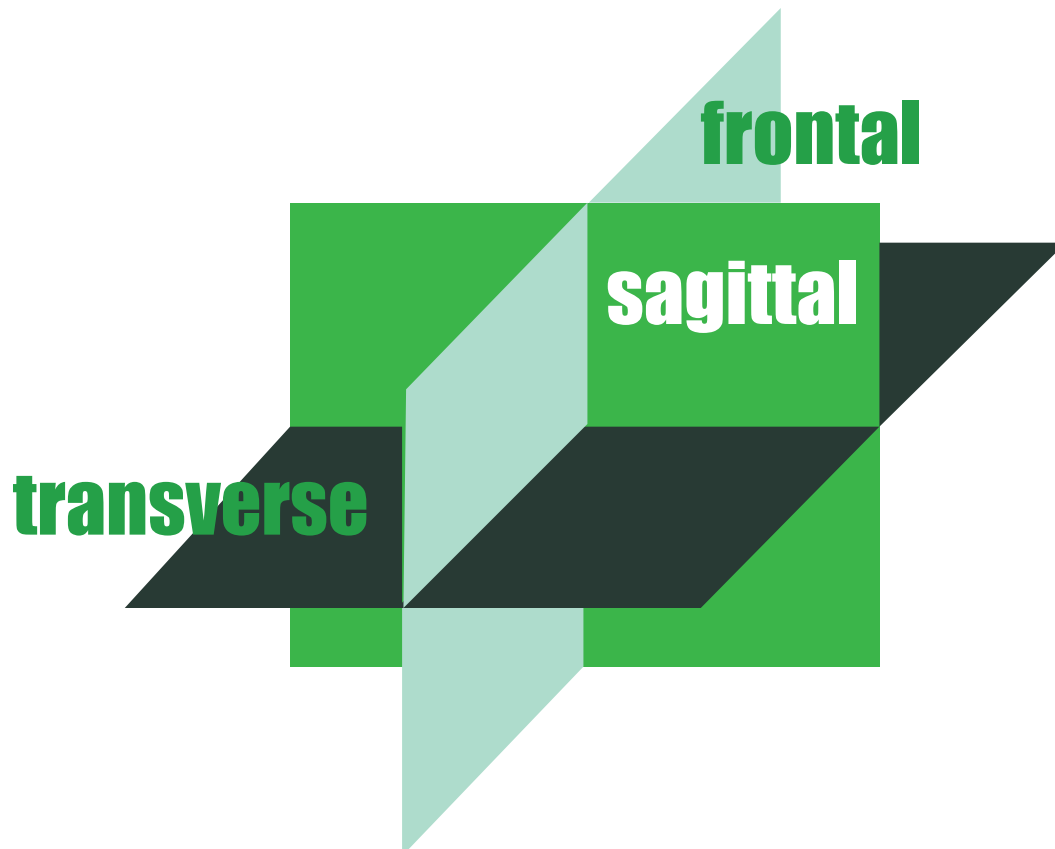
That wraps up the anatomy section. The goal of this section was simply to give a bit of background so the rest of the book is easier to understand. In the next section, I am going to hit on the biomechanics of the squat, and then we will get into real world application. I personally prefer the real world aspect, but I wanted to teach the back squat from all angles in this book. I want you soaking in all the information necessary to become a better coach or athlete.

BIOMECHANICS

In this section, we are going to put it all together for you. After this section, my recommendations later will make more sense.

THREE PLANES OF MOTION

Sagittal Plane - This plane cuts the body in half from top to bottom and front to back. This is where flexion and extension take place, like bicep curling (flexion) and tricep extension (extension). The sagittal plane is relative to the bones and joints where the movement is taking place.



Frontal Plane - this plane cuts the body in half from top to bottom and side to side. This is where abduction and adduction take place, like raising your right leg straight out to the side (abduction) or inward toward your left leg (adduction). The frontal plane is relative to the torso.

Transverse Plane - this plane cuts the body in half from front to back and side to side. This plane is where rotation takes place and is also relative to the torso.

FOUR DEMANDS OF THE SQUAT

There are four flexor demands that must be overcome while squatting: a spinal flexor moment, an ankle dorsiflexor moment, a hip flexor moment, and a knee flexor moment. A look at each will tell us more about why certain styles are better for overcoming higher loads and the benefits of each style of squat and bar placement.

SPINAL FLEXOR MOMENT

As we move through this book, you will see this is the flexor moment most responsible for making or missing a lift.

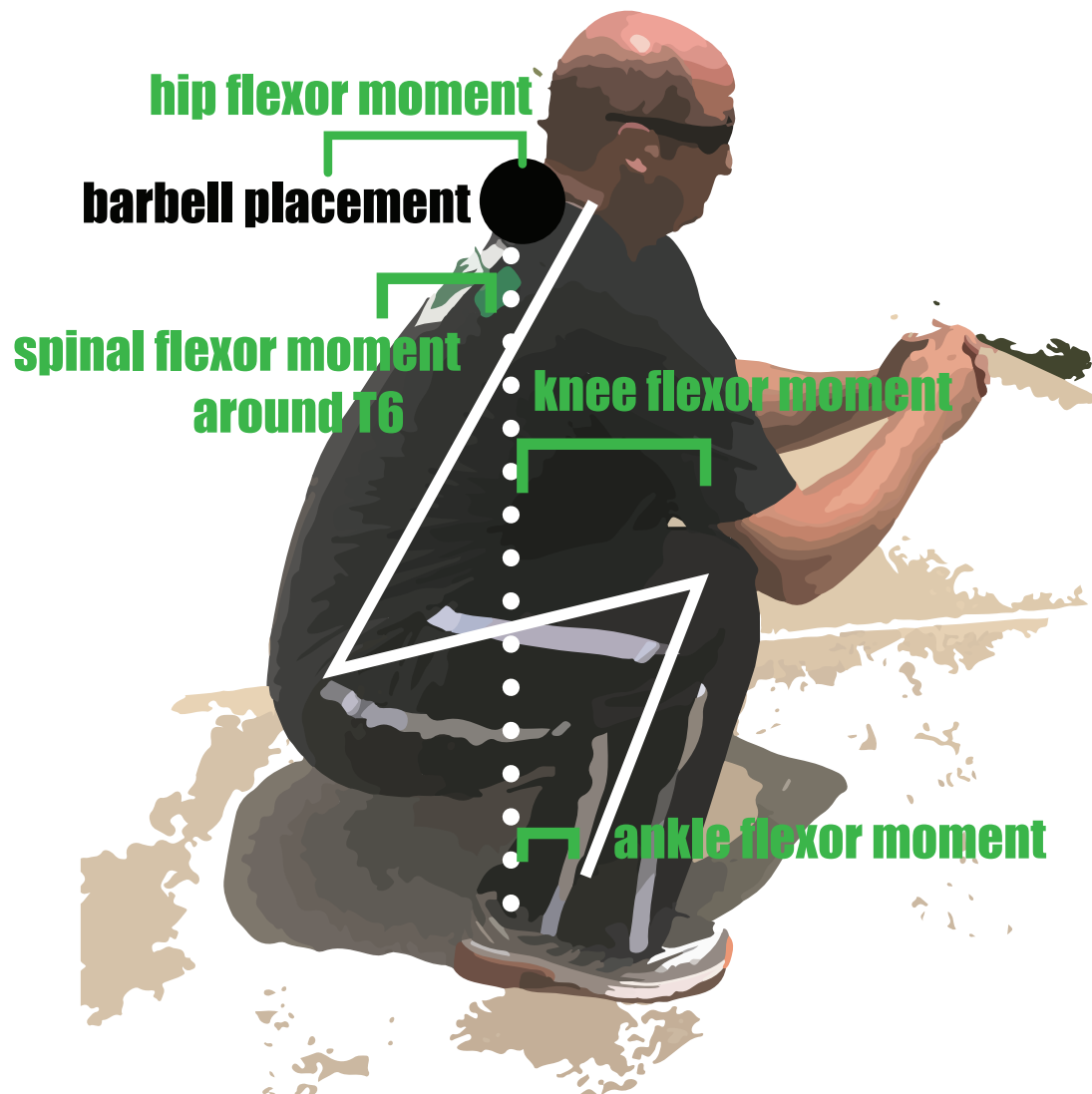
The spinal flexor moment depends on:

- Horizontal distance (perpendicular to gravity) in the sagittal plane relative to the torso (since we are looking at the spine) between the bar and any intervertebral joint
- Load on the bar

Ways to increase the spinal flexor moment:

- Move the bar higher on the back or in front of the body
- Increase the weight on the bar
- Incline the body more (increases the distance of the load horizontally perpendicular to the floor from any intervertebral joint)

Four Flexor Demands for Squatting



ANKLE DORSIFLEXOR MOMENT

The ankle dorsiflexor moment depends on:

- Horizontal distance in the sagittal plane (relative to tibia) between the center pressure on the foot and the center of the ankle
- Total load

Ways to increase ankle dorsiflexor moment:

- Move load toward toes
- Add weight

HIP FLEXOR MOMENT

The hip flexor moment depends on:

- Horizontal distance in the sagittal plane (relative to the femur) between the center of mass (load plus body weight above hip) and the hip
- Total load of the bar plus body weight above hip

Ways to increase the hip flexor moment:

- Shift the center of mass forward or hips backward
- Increase the weight on the bar
- Reach greater depth, increasing the length of the femur in the sagittal plane - so the hip flexor moment arm increases in length as well



KNEE FLEXOR MOMENT

The knee flexor moment depends on:

- Horizontal distance in the sagittal plane relative to the femur between the center of mass of the system (the bar plus the weight of the body above the knee) and the knee
- Total load above the knee

Ways to increase the knee flexor moment:

- Shift center of mass back or knees forward
- Increase load
- Reach greater depth, increasing the knee flexor moment arm

BRINGING IT TOGETHER

Here are a few nuggets you can take away from this crash course in biomechanics.

As the center of mass shifts forward, the demands on the knees decrease, and the demands on the hips increase. This is a major reason why people with weaker quads let their hips fly up and their center of mass shift forward when coming out of the hole. They are taking their knees out of the equation a bit on the way up and shifting the demands to the hips.

However, when your femur is parallel in the bottom of the squat, total knee and hip extensor demands are peaked. Those knee and hip extensor demands are the same regardless of any stance width with any given load.

BIARTICULAR MUSCLES

So now we've determined this biomechanical truth: from the waist down, it doesn't matter how wide we squat or where we hold the bar. However, there is one more factor we must examine. Remember talking in the anatomy section about those two muscles that cross the knees and the hips? Well, they help to distribute things equally as well.

The hamstrings cross the knee to aid in knee flexion, which is the last thing we want during the squat. They also cross at the hip to aid in hip extension, which is exactly what we do want. Luckily, they attach farther from the hip than the knee, forming a stronger extensor moment arm.

There was also the rectus femoris, which crosses at the knee to aid in knee extension and the hip to aid in hip flexion. In this case, we want the knee extension, but we don't want the hip flexion to perform a solid squat. Once again, this muscle fortunately inserts farther from the knee than the hip, giving it a stronger extensor moment arm.

These two muscles have an even more fascinating function. When the knees extend, the hamstrings are lengthened at the knee, distributing force upward through the hamstrings and aiding in hip extension. When the hips extend, the rectus femoris is lengthened at the hip, transmitting a force down the muscle to aid in knee extension.

All of this helps us to understand why muscle activation is similar in the squat regardless of whether a lifter is knee dominant or hip dominant. I have witnessed both styles of squatting performed in a very successful manner. I watched Shane Hamman squat 1,008

pounds back in 1996 in a very upright position. I watched Steve Goggins squat 1,100 pounds in a more bent-over, hip-dominant position. Evidently, one helps the other and vice-versa. And since the demands are the same when the femurs are parallel, it just doesn't matter all that much. Later, we will go over a few suggestions that will help you determine the best squat style for you.



SECTION 2: REAL WORLD INSIGHT FROM THE EXPERTS

WHAT DO GREAT ATHLETES AND COACHES DO?

Science is great, but let's talk about real data. It's insightful to learn the biomechanics and beneficial to look at the research. But if you want to know something, isn't it better to go straight to the champion athletes and coaches to get the real skinny? I mean, yes, it's awesome to know the outcome of a research project that involved twenty college kids trying to get paid or score a grade. However, if you want to learn about golf, wouldn't you rather talk to Tiger Woods and his coach? If you want to learn about basketball, wouldn't you want to hear from Michael Jordan and Phil Jackson? I know I would.

So I went to a variety of top strength athletes, coaches, and exercise scientists and performed my own informal survey. After combing through the research myself, I think the data I've collected from these experts will give you more answers than any of the studies will. Of course, both is best. This data will at least tell you the truth about what is really going on. All too often, an athlete will get with a coach and then believe whatever that coach says is gospel. Maybe... and then again, maybe not! After crunching the numbers, I don't think there are a lot of absolutes at all.

These guys provide so much insight into squatting. It's exciting to have so many experts in one place giving their answers. I definitely grew up powerlifting in a world where I thought there was one way to squat. In the last few years, I have opened my mind up to many possibilities, and that helps me serve my athletes much more.

THE SQUAT SURVEY

Here are some of the questions that I asked:

- Focal point: eyes up or eyes down?
- Sit back or sit down?
- Drive into the bar or drive feet through the floor during the ascent?
- Toes in or toes out on the set up?
- Close, medium, or wide stance?
- Spread the floor, screw the feet in the ground, or neither?

THE EXPERTS

So whom did I survey? I talked with some of the best athletes, coaches, and exercise scientists that I know.

- **Matt Vincent** - Highland Games world champion, coach, and owner of HVIII Brand Goods
- **Chad Smith** - World champion powerlifter, professional strongman, and owner of Juggernaut Training Systems
- **Jesse Burdick** - Professional powerlifter, strength coach, and owner of PowerWod

- **Dr. Andy Galpin** - Professor at Cal State Fullerton, weightlifter, coach, author, and host of the "Body of Knowledge Podcast"
- **Greg Nuckols** - Pretty much the smartest guy I know, world record holder in powerlifting, and owner of Stronger by Science
- **Jennifer Thompson** - Powerlifting world champion and world record holder, coach, and owner of Thompson's Gym
- **Jim Waldron** - Champion powerlifter and strength coach
- **Onn Basson** - Professional powerlifter
- **Todd Hamer** - Collegiate strength and conditioning coach
- **Scott Cartwright** - Professional powerlifter
- **Ellen Stein** - Professional powerlifter
- **Jeff Johnston** - Physical therapist, professional powerlifter, professional strongman, and coach
- **Chris Taylor** - Professional powerlifter and coach
- **Matt Ellis** - Thrower and strength coach
- **Emily Drew Mash** - Elite powerlifter and my wife (so she's smart)
- **Philippe Tremblay** - Creator of the "Stronger Experts" online platform, strength and conditioning coach, and Russian speed skating team strength coach
- **Jacky Bigger** - Nationally ranked weightlifter, head coach of Mash Elite Performance Online Team, Master of Exercise Science
- **Alex Maclin** - Former host of the "Barbell Shrugged Podcast" and "The Barbell Life Podcast," weightlifter, and coach
- **Rebecca Gerdon** - Nationally ranked weightlifter, Team USA weightlifter, strength and conditioning coach
- **Tim Higgins** - Champion powerlifter and coach
- **Eric Bowman** - Physical therapist and strength and conditioning coach
- **Brandon Lilly** - World champion powerlifter, coach, and creator of the "Cube Method"

- **Mike Tuchscherer** - World champion powerlifter, world record holder, powerlifting coach, and founder of Reactive Training Systems
- **Chris "Ox" Mason** - Professional powerlifter, champion bodybuilder, and owner of LEAN Fitness Systems

THE RESULTS

Focal point: eyes up or eyes down?

- Neutral/down: 8
- Straight/up: 14
- In between: 3

Sit back or sit down?

- Sit down: 10
- Sit back: 14
- Depends: 1

Drive into the bar or drive your feet through the floor during the ascent?

- Drive into the bar: 9
- Drive feet through the floor: 3
- Both: 8
- Neither: 2

Toes in or toes out on the setup?

- Toes in: 2
- Toes out: 17
- Depends: 3

Close, medium, or wide stance?

- Close: 0
- Medium: 17
- Wide: 2
- Depends: 3

Spread the floor, screw the feet into the ground, or neither?

- Spread the floor: 6
- Screw the feet into the ground: 7
- Neither: 3
- Either: 1

WHAT THE DATA SHOWS

So what do I make of all this? I'd say use all of these cues to help your athletes. If "spread the floor" doesn't work, then use "screw the feet." You might consider leaving both cues alone and just letting your athlete squat. Are you getting it now? If an athlete is progressing safely, then leave it alone. If you notice something that might injure the athlete, like major knee valgus, then use a cue like "spread the floor."

The squat, along with the deadlift, is the most functional movement on Earth. We all squat every day to go to the bathroom or sit at our desk. When babies squat, they are not thinking about "spread the floor." If you are squatting 900 pounds, you want to focus on staying tight and performing the task. Less is more when it comes to thinking. You just want to perform the movement.

OBSERVATION

Besides the experts I have already listed, I also observed on YouTube (yes, super scientific) a few other champion athletes.

Ed Coan is the greatest powerlifter of all-time. He looks straight ahead while squatting. He sits back and opens up, and his stance is medium-width with toes out.

World champion powerlifter and world record holder Yury Belkin squats with his eyes straight ahead. He sits back with his toes out in a medium-width stance.

Dan Green is another world champion powerlifter and world record holder. His focal point is slightly down. He sits back and down with a stance that is medium to wide, and his toes are out.

Shane Hamman is the greatest American weightlifter of all-time. In powerlifting, he's also a world champion and world record holder. He looks straight ahead while squatting, sits down, and his toes are almost straight in a medium-width stance. If you watch Shane squat on YouTube, it's easy to see why he was a great weightlifter. He sits straight down, has amazing mobility, and is the fastest squatter on Earth.

My amazing athlete, Nathan Damron, is a top-ranked weightlifter and multiple-time Team USA member. Looking straight ahead, he sits down with his toes out in a medium-width stance. Before you shrug off Nathan, he has high bar back squatted 700 pounds at twenty years old while weighing 207 pounds.

A DEEPER LOOK: BRANDON LILLY

I thought it would be helpful to take a closer look at some answers from a few of the experts surveyed. When we peek into the details behind their answers, we can find gold.

Brandon Lilly is world champion powerlifter and the creator of the "Cube Method." Check him out on Instagram ([@brandonlilly3](https://www.instagram.com/brandonlilly3)).

Brandon is one of the nicest guys in powerlifting. He always answers any questions I have for him. Brandon is an example of a big strong guy who has a lot of insight on life. I'd label him as a deep thinker who really wants to inspire and change lives.

According to him, his coaching expectations have changed greatly over the years. While he used to be a very black-and-white thinker on these issues, he says his mind is much more open now.

When talking about the focal point and the neutral spine, Brandon has some great wisdom:

I think most people lack true strength to keep a neutral spine. They have to contort themselves or configure magical hand placements and arches to accommodate the truth that their back just isn't on par with what they are asking it to do via the legs. I recall Evan Rutledge sharing this exact sentiment. His legs are incredibly strong - but the harder he pushed his squat, the less his clean and jerk moved. He could have easily said he over-specified, but truly the legs were never the weak link. It was his back.

After dedicating himself to heavier deadlifts and back work, the back muscles were able to catch up to the rest of his body - and the PRs were incoming. He's one prime example, of which I can give you many. I myself at Westside worked my goodmornings to death in an attempt to build my deadlift, but I trained too heavy. I didn't emphasize hypertrophy training until many failures later. Then my back grew, and everything clicked. Put it this way: if I ask you to pick up a 30-pound box from the floor, you don't stress about how your spine is. You lift it in the best plane you can. I believe if you build your back up to its potential, you will see that a neutral spine is a good, balanced position. But forcing a weak lifter there will only hold frustration. Sometimes what is ideal isn't best for everyone until they work themselves toward that ideal.

When discussing sitting down or sitting back:

Simple answer: wider squatters will need a more "back" approach because of the external rotation stress to the hip joint, and more narrow squatters can "sit" like a catcher in baseball. Again, some people will need to be the exception to the rule for strength for limb proportion reasons. But I start with the first two examples as a reference.

What does Brandon think about driving into the bar or driving feet through the floor as a cue?

For me the floor is the only stable factor in the equation. The bar is balancing on a moving body, the

body is counterbalanced to the bar, but the ground is stable. I would say an 80/20 ratio (floor to bar) emphasis is needed.

Toes in or toes out?

I tend to be turned out in a narrow stance, and a wider stance is more forward. It's truly too individual to the lifter's needs, build, and comfort.

Here are Brandon's ideas on stance width:

I start people in the position in which they would jump to touch the ceiling. A jump is the most explosive movement a human can do, so begin there. Based on muscular dominance/imbalance, I make changes. More dominance in the quads usually allows for a narrower squat, and a wider stance is favored for lifters with larger glutes and hamstrings. There are always exceptions, but my expectations by visual assessment revolve around those tendencies.

A DEEPER LOOK: ERIC BOWMAN

Eric Bowman is a physical therapist and strength and conditioning coach. Check him out at [his website](#).

Eric is someone I have come to respect in the world of rehab, prevention, and strength. You have to love physical therapists who also understand one has to go heavy and hard to get strong. I hate it when I talk to a PT or chiropractor, and they tell me to stop lifting

so heavy. Do they tell NASCAR drivers to slow it down? It's what we do, man. Eric simply gives the information, and then it's up to you to apply it or not.

When asked about focal point:

Head neutral or slightly up is best for most.

As far as stance width:

Depends on goals and injury history. For most people with knee pain, I get them to use a wide stance and sit back more. Conversely, with back issues I encourage more sitting straight down and a vertical trunk. It also depends a bit on limb and torso length. For most healthy people, I get them to sit back a few inches and then go straight down.

On cues for getting out of the hole:

I like the idea of driving the bar through the roof - a good external cue I learned from Chad Smith.

You would expect a physical therapist to have great thoughts on squat stances and toe positioning. Eric didn't disappoint:

People's optimal squat stance will be determined by hip anatomy. I will have people do an empty bar or broomstick squat with feet tight together and toes forward. Then I will have them do feet together with toes out, inside-shoulder-width with toes forward and then toes out, shoulder-width with toes forward and then toes

out, just-outside-shoulder-width with toes forward and then toes out, and wide stance (stereotypical geared lifter squat) with toes forward then toes out.

Whatever stance and toe position gives them the deepest squat before going into lumbar flexion is what I use. If people can't squat to depth without lumbar flexion and aren't strength athletes, I encourage either high box squats or pin/Anderson squats in a neutral range. If they are strength athletes and have to go through a lot of flexion to hit legal depth, you have to look at things from a risk/benefit perspective based on the goals and injury history to determine if it's worth the increased risk or not. If it is, progress slowly and minimize flexion during daily living. If not, I go to the pin squats and/or high box squats.

Does he teach lifters to spread the floor or screw in their feet?

Screw the feet into the floor. This gets glute med/max/min and helps most people I work with squat to depth. "Spread the floor" doesn't get glute max as much.

A DEEPER LOOK: GREG NUCKOLS

Greg Nuckols has crushed world records as a powerlifter. He's a great coach and is an all-around smart guy. Check him out at strongerbyscience.com.

Greg Nuckols is one of the most incredible young exercise scientists in the world right now. I watched him start his journey in

strength when he was 14 years old. We were at the same gym in Mocksville, NC. Greg took to the weights like a fish to water. We are all blessed to have someone with so much experience under the bar who is also looking at the research and performing some of his own. Guys like Greg are the ones who actually get it.

On focal point:

I just find a spot on the wall and focus on it. Honestly, I don't pay too much attention to exactly where it is. I just make sure it's something I can stay focused on. In my garage, it's a particular scuff in the drywall that's around chest height when I'm standing. So I guess I'm looking down slightly when I start the descent, but I'm looking up slightly in the hole. It varies based on where I'm training and what I can focus on, though.

Does Greg sit down or sit back?

From an outside point of view, it looks like I'm sitting back. I feel like I'm sitting straight down, though (at least, that's what I focus on doing).

On the ascent:

I just sort of "uncoil" all at once out of the hole. Through the sticking point, it's much more driving into the bar, though.

On toe positioning and stance:

Toes are turned way out. Stance is medium to wide. Slightly outside shoulder width is the narrowest I ever go.

A DEEPER LOOK: MATT VINCENT

Matt Vincent is a world champion Highland Games athlete and the owner of HVIII Brand Goods. Check him out at thehviii.com.

I have to say Matt is one of the few in the industry I have let into my inner circle. I have lots of acquaintances, but Matt is a friend. He's also a go-to source for strength training. He's a two-time world champion in the Highland Games, and he was a thrower at LSU. Not many people in the world possess his ability to produce power, so it's a good idea to listen to the man.

On focal point and the neutral spine:

Neutral - keep that chain tacked in and braced.

On sitting back or down:

If mobility or an irregular skeleton isn't an issue, down is better.

Cues when driving out of the hole:

Drive into the bar.

Should toes be straight ahead or turned out?

If not injured or impinged, toes straight ahead while torquing feet to get the glutes engaged.

What are Matt's thoughts on stance width?

It depends on the lifter and their goals. Sports performance should be from ready stance just outside of shoulders. But that can vary when chasing a bigger total. You want to shorten the range of motion and help build more torque in hole, which wide or medium stance can assist. Then add in bar placement. It's rare we see high bar and wide.

A DEEPER LOOK: CHAD WESLEY SMITH

Chad Wesley Smith is a world champion powerlifter and a professional strongman with a 970-pound squat. Check him out at JTSstrength.com. Also check out his [new squat book](#).

Chad is one of the people who inspired me to take my information online. This decision gives me more free time with my family and allows me to inspire and educate thousands of people. There is no way to do that if you only train individuals at a gym. I love my time with my on-site athletes, but my mission is to inspire and help as many people as possible.

My friendship with Chad also shows how the strength industry is different from all the rest. Juggernaut is one of my biggest competitors, but we are still buddies. Heck, I used to write for his company, and I would still do whatever he needs from me. Guys, the world is a big place. You will succeed in a much bigger way if you have a mindset of abundance.

Chad is also one of the most brilliant strength coaches in the business, so I'd read his answers closely if I were you.

His thoughts on focal point:

Neutral-ish, can look at the ground several feet in front of them or eyes slightly up, just not extreme either way.

Does he teach athletes to sit down or sit back?

Sit down. Break at knees and hips together.

Cueing with driving into the bar or driving feet into the floor?

Both. Create equal pressure with your back into the bar and feet into the floor.

How does he handle foot and toe positioning?

It's dependent on hip structure/mobility and internal/external rotation bias.

A DEEPER LOOK: DR. ANDY GALPIN

Dr. Galpin is a professor at Cal State Fullerton, a weightlifter, a coach, an author, and host of the "Body of Knowledge" podcast. Check him out at: andygalpin.com.

You are going to thank me for turning you on to Andy. He's the most brilliant mind in strength. I met Andy a few years ago in Memphis during the memorial service for Chris Moore. We started talking and right away formed a bromance. He's a researcher who loves weightlifting and strength. I am a weightlifting and strength coach who loves research and science. Basically, we're a match made in heaven.

Andy does a great job on his website of breaking down science and making it applicable for day-to-day training and life. This man is performing research that could revolutionize the sport of weightlifting in America. Thanks to Andy we don't have to always reference the Russian exercise scientists. We have our own now.

On focal point:

Stay neutral

On cueing the descent:

A little of both sitting back and sitting straight down - mostly straight down but starting with the hips. I'm really looking to start by getting my hips moving between femurs.

Does Andy think about driving into the bar or driving through the floor on the ascent?

Neither. Stand the heck up! Heck with everything else.

On toe positioning:

Toes are mostly straight but slightly open with an active big toe.

His thoughts on stance:

Medium, but I used to prefer close. Close stance doesn't play as nice with my knee anymore, so I go medium. I do wide stance when I'm just trying to loosen

up or specifically work my adductors. But if I want to try and lift more weight, it's medium.

A DEEPER LOOK: JESSE BURDICK

Jesse Burdick is a pro powerlifter, a strength coach, and the owner of PowerWod. Check him out at: powerwod.com.

Jesse is definitely the nicest guy in powerlifting. He has never left me hanging on an email or text. I get to see him at least once per year at the Arnold Classic, and I am always greeted with a huge smile and hug. This guy has taken powerlifting and gifted it to the masses with his website. It's incredible to see a powerlifter as well rounded as Jesse. That's what makes him the perfect coach.

Although Jesse does say cues change from person to person, here's how he would teach focal point in the ideal world:

I try and have people maintain a flat-ish back. Eyes should be on a horizon or at least moving up toward a horizon while coming up from a squat.

On sitting down or sitting back:

Sit back just enough to get tension in the hamstrings and then sit between the legs.

On cueing the drive out of the hole:

I try and teach people to push through the floor and into the bar. But I think this cue varies the greatest due

to weakness. People will usually understand pushing through the ground but won't get having an active upper body and pushing into the bar.

His ideas on toe positioning:

Toes should be turned out just enough to get tension through the hips.

On stance width:

Depends on strengths and weaknesses obviously, but in general I think a medium stance allows for the greatest recruitment of all muscles called upon to squat.

A DEEPER LOOK: JENNIFER THOMPSON

Jennifer Thompson is a world champion powerlifter, a world record holder, and an amazing coach. Check her out at: 132poundsofpower.com.

Jennifer is making enormous strides in strength, but she's also revolutionizing the way the world looks at women in strength. If you met Jennifer, you would simply think you met a brilliant lady and awesome mother. She's elegant, witty, and charming. But there's one more aspect: she's stronger than any other woman her size in the entire world. This is a book about the squat, but I have to mention she benches 320 pounds while weighing 132 pounds. Yeah, that's more than 99% of all guys. If you're wondering what a woman's perspective is on the squat, here's the short and sweet version of what she thinks.

On the focal point and a neutral spine:

Neutral spine

Does she sit straight back or straight down?

Straight down

How does she cue the ascent - drive into the bar or drive the feet through the floor?

Feet through the floor

On toe positioning:

Toes turned out

For stance width?

Medium-sized, around shoulder width

A DEEPER LOOK: CHRIS "OX" MASON

Coach Chris "Ox" Mason is a professional powerlifter, a martial artist, a champion bodybuilder, and a strength and conditioning coach. Check him out at: leanfitnesssystems.com.

Coach Chris has been my training partner for over twenty years. We started training together in college, and now we are partners in our gym, LEAN Fitness Systems. This guy was an incredible squatter, putting up over 800 pounds on multiple occasions raw.

Now he's our head powerlifting coach at LEAN, and his athletes are tearing it up.

Chris is also one jacked 46-year-old, so I'd say he's someone to listen to - especially for longevity's sake.

On his focal point:

Neutral spine, eyes straight ahead

On sitting down or sitting back:

Butt back 5 degrees or so (RDL-ish to load the glutes and hams) then straight down

Cues for the ascent:

Drive traps, head through the bar

How does Chris position his toes?

Feet slightly out open my hips

On stance width:

Medium stance

Does Chris think about spreading the floor or screwing his feet into the ground?

Spread the floor, knees out to the sides

ONE MORE SURVEY TO MENTION

Facebook is great for a lot of things. In this case, it's amazing for another informal survey. This is far from peer-reviewed scientific literature, but it does show you the wide variety of preferences out there. I simply posted the following questions on cueing the back squat:

1. Eyes up, down, or straight?
2. Sit down or back?
3. Spread the floor, screw in your feet, or neither?

45 answered that they kept their eyes straight, 4 looked down, and did neither.

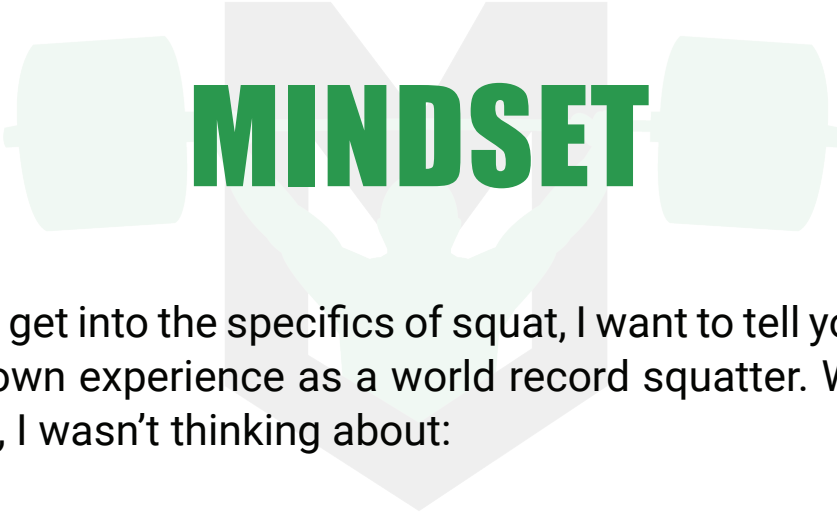
25 answered that they sat back, 22 sat down, 2 did both, and 1 did neither.

15 answered that they spread the floor, 14 screwed in their feet, and 21 did neither.

The good thing is most of my friends are strength athletes, coaches, exercise scientists, or a combination - so this Facebook survey is a little more valuable than some surveys I see floating around.

As you can see, most people prefer to look straight ahead - which I am not saying is 100% the best way. It's pretty even when it comes to sitting back or sitting down. It's also pretty even whether people spread the floor or screw their feet into the ground. However, there is one result that is pretty interesting. Most people, 21 to be exact, didn't think about either. I am going to talk more about that and all of these survey answers in the next chapter.

**SECTION 3:
PRINCIPLES OF
SQUAT TECHNIQUE
AND PROGRAMMING**



MINDSET

Before I get into the specifics of squat, I want to tell you the truth about my own experience as a world record squatter. When I was competing, I wasn't thinking about:

- Hand placement
- Bar placement on my back
- Walkout
- Bracing
- Focal point
- Descent
- Ascent
- Racking the bar

By the time I competed on an international level, I was simply focused on bracing and competing. As you can tell from the survey and answers in the previous section, the specifics of squat execution are very individual in nature. The key is to pick some specifics that work for you, practice the movement often, and learn to visualize.

GROWING UP WITH IMAGINATION

Visualization is something that is lacking from today's athlete all too often. I don't know of a study to prove my assumption, but I have to conclude it stems from an abundance of computers, cell phones, and the Internet. No one has to use his or her imagination anymore because the computer is your imagination. When I was a child, I had to invent something fun in my brain. I grew up on

500 acres in the middle of the Appalachian Mountains. My nearest neighbor was a mile or two down the road, and there were only a couple of them.

Every day during the summer, I would wake up early, go outside - and a new adventure would form in my brain. I would be a cowboy in the Wild West on one day, and I would be Daniel Boone conquering the American Frontier on the next day. I didn't have a video game that appeared more realistic than a television show. This imagination paid off as an athlete. I was able to visualize a competition – from the execution of the lift to the very room I would be competing in. This was a huge advantage.

I'm not some old man telling you how good my generation was and how bad this generation is. There are some amazing athletes today. I am just saying visualization is something that needs to be developed and practiced. The last thing you want to do when taking a personal record squat or (heaven forbid) a world record squat is to run through a twenty-item checklist in your brain. You want to pick two or three cues and then let the body take over as if on autopilot.

THE CHECKLIST

With that being said, I am going to give you a checklist to practice. Once you pick the squat variables that fit your body type, your sport, and your goals, I want you to practice the movement over and over. I want you to visualize the movement with the checklist in mind. I also want you to take the process one step further.

I want you to visualize performing the lift when it's most important. For some, I am talking about competition. For others, I

am talking about taking a one-rep to three-rep maximum. Testing, whether in competition or in the gym, can be very stressful for some people. The biggest mistake I see people make is changing the way they perform a particular lift when they are competing or testing.

I have watched athletes warm up, looking snappy and strong. During their warm ups, they approach the bar aggressively, take about 10 seconds to get the bar set into place, walk out with a three-step setup, find their focal point, and nail the lift. However, during their test set, they approach the bar tentatively, take 30 seconds to get setup, walk out with four steps, forget to find their focal point, and then proceed to miss their lift.

Competing or testing in the squat is the same as any other athletic event. Watch a major league baseball game and pay attention to the batters. They will go through the same routine each and every time at bat - whether it's the first inning or the bottom of the ninth. Here's the secret I've observed: if you change your pattern for a test set or a competition, the body perceives this as something different. Instead of taking over with efficient fiber recruitment, it's not sure what to do. Your motor patterns are interrupted, resulting in a missed lift. I am nothing close to a psychologist, but this is pretty basic.

When I competed at the highest level, I would rest in my bed at night visualizing a world record squat. I became so effective at visualization that my heart rate would increase and sometimes I would start perspiring.

I could picture the venue. I could hear the announcer. I could see the three old referees sitting in their seats with their blue suits on. I imagined the perfect bar placement set up. I saw the perfect

unrack with a steady two-step walk out. After picking my focal point, I could hear the head referee give me the squat command. In my mind, I sat back and then down, dipped out of the bottom, drove hard into the bar, and slid my hips under the bar to lock it out. Then I envisioned waiting for the rack command, carefully racking the weight, and then turning to see the lights on the board. Three white lights! Success!

I celebrated victory in my imagination each and every time. I never imagined a missed lift. When I broke my first world record squat, I had already broken it in my head hundreds of times. This is where you need to get for consistent progress in the squat or any other athletic endeavor. This is how you become a game time performer. You can read much more on this in our guide *Performance Zone*. We go into detail about getting into the zone. It's a real thing champion athletes have all experienced.

BAR PLACEMENT

In some ways, this is the most controversial section of the book – but not really. Let me explain. The three main ways to set the bar on the body are:

- High Bar Back Squat - the bar resting on the musculature of the traps
- Low Bar Back Squat - the bar resting a little lower on the back, secured by the rear deltoids
- Front Squat - the bar is resting in front of the body in between the anterior deltoids and the traps

HIGH BAR

The high bar back squat is a great movement for all sport athletes and strength athletes. When I refer to sport athletes, I am referring to those who compete in sports like football, basketball, softball, wrestling, or any other sport. Strength athletes are also sport athletes, but it's my way of differentiating them from sports that use strength to get better at their activities. For a strength athlete, strength is their sport. These would generally be weightlifters, powerlifters, and strongman competitors.

The high bar back squat sits on the thickest musculature of the traps. Some people have the bar resting closer to the neck, but I would avoid the C7 spinous process, which is that bony knob protruding at the bottom of your neck. I witnessed Tom Summa, one of my younger Team USA weightlifters, develop a very nasty

open sore from the bar rubbing against this bone. If you are going to squat with the bar this close to the neck, I suggest shrugging up or getting more jacked to avoid this. The easiest fix is to move the bar down an inch or two lower on the traps.

With the high bar squat, you are going to have a little less hip flexion, a little more knee flexion, and a more vertical torso as compared to the low bar squat. I use high bar for all of my Olympic weightlifters because it mimics the position they will be in during the snatch and clean. In weightlifting at the international level, the person who can catch the most weight in the lowest position with a vertical torso will normally win. Therefore, I use tools that will encourage the best positioning. I don't think low bar used occasionally for weightlifters would really hurt, but I don't think the extra load is necessary. The goal is to get the most out of the least so I can use most of their mileage for the competition lifts.

I normally use high bar squats for my sport athletes as well. Full range of motion is shown to develop athletic movements like the vertical leap more effectively than partial movements - especially during the first few years of training. After that, you might consider some partial squats to mimic the range of motion and joint angle of the vertical leap and sprinting. However, low bar squats would be fine as well.

LOW BAR

The difference in the low bar squat and the high bar squat is much more minimal than most people think. You are simply talking about moving the bar a few inches down the traps onto the posterior deltoids. Most people have a natural shelf there where

the bar sits securely. Placement depends on the flexibility of the athlete (especially in the shoulder region) and anatomically where the posterior deltoids and traps form their shelf. Some people experience pain where the bar rests on the spine or the scapula. I suggest simply moving the bar an inch or two in either direction to fix the problem. No matter the placement, you want to retract your shoulder blades as tightly as possible to produce the strongest shelf and position.

FRONT SQUAT

Most Olympic weightlifters use the front squat since it closely resembles the clean. The bar sits in between the anterior deltoids and traps resting right along the clavicle.

Some people rest the bar more on the anterior deltoid, which is fine unless you are an Olympic weightlifter. Resting the bar on the anterior deltoid will increase the demands of the spinal extensor moment (see the biomechanics section). The reason is you are moving the bar farther away from the spine and the intervertebral joints. A weightlifter is trying to handle the most weight possible in the most vertical position possible to strengthen the clean. Since the two most important factors of fiber recruitment are range of motion and load, you want to use the heaviest load possible to get stronger and to add more muscle size.

For a weightlifter, you want to hold the weight in the rack position - the position used to catch the clean (hands under the bar on either side with shoulders protracted and elbows up). The main key to holding weight in the front squat position is the athlete's ability to protract their shoulders or push their shoulders out in front of the

body. This is the opposite of the retraction that takes place during back squatting. You don't have to keep your elbows as high as most people think. That's simply for people who struggle to protract their shoulders. You definitely don't want the elbows pointed down toward the floor, but you don't have to point them outward toward the wall either. Find the position that allows you to keep your shoulders protracted, and that's the position to focus on. For some, that is keeping the elbows high. For others, it is somewhere in the middle.

If you struggle to get into the rack position, you can cross your arms in front by internally rotating the humerus, which is an easier way to reach shoulder protraction. Most people struggle with the rack position due to tight lats, tight wrists, or a combination. However, most people simply can't learn to relax in the rack position. The bar is resting by the throat, and that's a weird position for the body to be in. If you are a weightlifter, you have to get over it. For everyone else, arms crossed is a great alternative.

There is one more way to front squat that really worked for me. When I was done with professional powerlifting, my lats were tight, my biceps were too big, and my triceps were too tight for me to rack the bar. Now remember, I was a former high level Olympic weightlifter at this point, so it had nothing to do with comfort. I was just too big and tight to achieve the rack position. If this is you, you can wrap straps around the bar and hold on to them. You will be in the rack position, but the strap will limit the range of motion required of you. You will be able to secure the bar with shoulder protraction without actually holding onto the bar. Over time, I worked my way down the strap until once again I was able to hold the bar in the rack position. Once again proving that the best way to mobility in a movement is to perform the movement.

WHICH BAR PLACEMENT IS BEST?

Which bar placement is best? People have argued this forever. The answer is that it depends.

Low bar strengthens the hips a bit better because the hips travel throughout a greater range of motion. You can handle a bit more weight due to decreased demands on the spinal extensor moment. (I will explain this a bit more shortly.)

High bar strengthens the quads a bit better because the knees travel throughout a greater range of motion than in the low bar squat. You can handle more load than the front squat where the knee travels in a similar range of motion. So if you need to build the quads, you might consider this one.

The front squat strengthens the back more effectively because you will have to overcome a greater spinal flexor moment (the bar is in front of the body). That's why front squats are great for all athletes. You will build the quads - but more importantly, you will strengthen the back and torso in general. This is a big weak spot for many strength athletes.

STANCE WIDTH AND FOOT PLACEMENT

Squat width primarily depends on the individual. There are a lot of anatomical considerations that go into finding the perfect stance, like a shallow or deep acetabulum, femur length, the angle of the femur's neck, and so much more. But there is an easy way to figure all of this out. The goal is to sit in the deepest position with the most vertical torso. You can start with a shoulder width stance. Then move your feet a few inches in and a few inches out to find the best position for you. It's that simple.

Maximal range of motion trumps just about everything else when it comes to the benefits of the squat. When it comes to Olympic weightlifting, depth and position are certainly the most important aspects of the back squat. For sport athletes, squats performed in a greater range of motion seem to more effectively increase vertical leap and speed development - especially in the first few training years.

In powerlifting, however, you are judged on the most weight lifted to slightly below parallel. You don't get extra points for going lower. Therefore, I recommend a low bar squat in a stance wide enough to allow you to bottom out slightly below parallel.

We already know knee and hip extensor demands are the same regardless of bar placement and width of stance. However, shortening the overall range of motion will allow you to squat more weight. In particular, going wide enough to bottom out slightly below

parallel will help because you will take advantage of the stretch reflex and a shorter range of motion.

But if the low bar and high bar squat present the same knee and hip extensor demands, why does low bar allow you to squat more weight? For one, it allows you to bottom out sooner due to the increased hip flexion. But the main reason is it shortens the spinal flexor moment. Moving the bar down the back decreases the flexor moment between the intervertebral joints and the bar. Most great powerlifters know big squats are not lost in the legs but in the torso. That's where we fight the real battle.

THE FEET

One final factor to consider is feet placement. There is often a debate whether the toes should face straight ahead, but I haven't found a compelling argument yet. There are too many different hip sockets, ball shapes, and femur neck angles to pretend there is a one-size-fits-all solution. I would simply find my optimal foot placement the same way that I recommend finding the stance width. Go by comfort. Wherever you can squat the lowest with the most vertical torso is the perfect foot placement for you.

Just like stance width, powerlifters can use foot placement to create a bit more torque right below parallel. Turning your feet straight ahead creates maximal torque for most people. Play around with your stance width and foot placement to see what gives you the most torque right below parallel.

At the end of the day, all bar positions and stance widths are important. I suggest experimenting with all variations, but focus on what makes sense for your sport and goals.

OTHER SETUP ASPECTS

HAND PLACEMENT

In the back squat, the goal is to situate your hands as closely as possible to each other and still be somewhat comfortable. We want to generate as much proximal stiffness as possible, allowing you to generate maximal force distally. Close hands allow you to maximize tightness in the upper back region because you are squeezing your scapulae together. I also recommend trying to bend the bar over your back to take advantage of the lats for even more stiffness in the upper back.

Some people are limited with their range of motion. You can only put your hands as close as comfortably possible. Others are still able to squat massive amounts of weight with wide grips, but they are forced to cause stiffness with their musculature only.

We already went over hand placement in the front squat, so we don't have to repeat. You can refer back if you missed it. Remember the key to the front squat is shoulder protraction and not really hand placement.

ELBOW AND WRIST PLACEMENT

In the high bar and low bar squat, the wrists should be held in a neutral position with the elbows underneath the bar and wrists. Too many athletes allow their elbows to flare out, especially in the

low bar squat. This is a mistake I commonly see. Flaring the elbows out creates a bigger shelf for the bar to sit on, but this causes the shoulder blades to flare. This position compromises maximal stiffness. It also encourages the upper back to round, which is the last thing any great squatter wants. That's the battle (as we covered earlier). You want the elbows tucked underneath with the scapulae tucked together. The wrists should be in a neutral position or in alignment with the bar and elbow. I recommend using wrist wraps if the wrists begin to ache. Wrist wraps are great for extra support and comfort.

In the front squat, we've already said the elbows don't have to be extremely high. The goal is simply shoulder protraction. The wrists won't normally be completely neutral, but get as close as possible. This comes with time. As you learn to relax, you won't squeeze as much with the fingers or lats, allowing the elbows and wrists to stay in a more neutral position. The goal is to allow the bar to be completely held by the shoulder protraction.

UNRACKING THE BAR AND THE WALKOUT

Taking the bar out of the rack can be very individualized. When I teach the squat, I aim for a shoulder-width, staggered stance for the unrack. I make sure the bar is set at about chest height. This is important because you don't want to struggle taking the bar out of the rack. I see this mistake all too often, and I always wonder why people do it. Most of the time, it's some guy pretending he is taller than he really is.

To start with, I walk up to the bar and set my feet in their staggered stance under the bar. It should be at an angle that would have you falling backward if you let go of the bar. Then you set your hands exactly where you want them, dip under the bar, and get the bar set on your back. This style of setup will prevent you from having your feet too far back, causing a goodmorning-style unrack. You want your body directly under the bar.

At that point, you will take a deep breath to brace (more on bracing a bit later), drive the chest up, drive the elbows under the bar, and arch the bar out of the rack. Too many people make a mistake unracking that messes up the entire lift from the beginning: they will simply push their feet into the floor and unrack the bar. This can cause the scapula to wing, upper back to round, and the chest to drop. This type of posture puts you at a deficit right out of the gate. You want to unrack the bar with a tight back and big chest to set yourself up for a big lift.

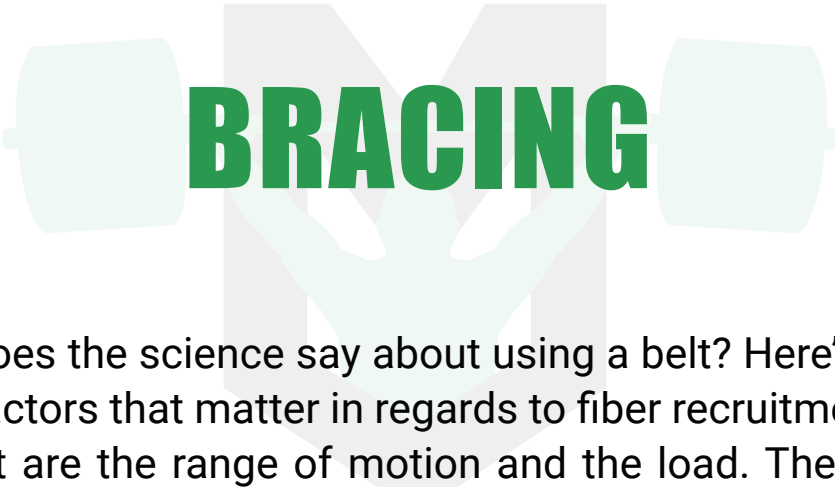
Once you arch the bar out of the rack, you allow the weight to stop moving and then start the walkout process. The first step is made by pushing off the back foot while sliding the front foot back and to the side. If you are a narrow squatter, you will simply bring the push-off foot in line with the back foot at around shoulder width. If you are a wider squatter, you will take one or two more little steps or slide steps to get your stance where you need it. I like the staggered stance because it is easy to make that first step. The man himself, Kirk Karwoski, is the one who taught me this walkout technique.

FOCAL POINT

The first thing I did as an athlete was to find my focal point. I performed best with a focal point that was straight ahead and slightly up. There are a lot of theories on this one, and I am fine with whatever you want to try. As you could see from the survey in the earlier section, a lot of people squat heavy weight while choosing various focal points.

Some people choose to look down. They tend to believe they are holding a more neutral spine by looking down. There is absolutely no research I know of to back this point up. There are a lot of big squats performed with several different focal points, so do whatever works for you.

With that being said, I want to explain why we teach a focal point that is straight out in front. In the biomechanics section, I explained the main battle being fought is at the spinal flexor moment. The demands of the knee and hip extensor moments are pretty much the same whether you sit back, sit down, look up, or look down. However, the spinal flexor demands increase when an athlete inclines the chest more and more. Keeping your eyes up gives you the best chance of keeping your chest and torso in a more upright position. This is strictly based on anecdotal evidence - so at the end of the day, do what works for you.



BRACING

What does the science say about using a belt? Here's the truth. The only factors that matter in regards to fiber recruitment and the back squat are the range of motion and the load. The research I looked at regarding the core (every muscle that supports the spine and pelvis) and muscle fiber recruitment shows little difference in core activity at any given load. Therefore, do whatever you want. If you can lift more weight with a belt, then you will recruit more fibers with a belt due to the increased load.

I can only think of one advantage to not using a belt: to limit the total load. This can come in handy when you are performing a higher frequency program. It keeps the joints from getting beat up with constant heavy loads. It's basically a way of forcing auto-regulation from your athletes.

I teach bracing by breathing into the diaphragm. More simply put, breath into the belly versus the shoulder and chest. I take a deep breath (about 75% of capacity) during the unrack, making sure to breath out against the belt front-to-back and side-to-side. The best way to get better at this is to practice.

After walking out and receiving the down command (in a competition) or deciding to descend in a practice situation, I take the final air in - completely filling my diaphragm/belly. To give you an idea of the amount of pressure I generate during the bracing process, I can almost break someone's finger if it's in between my belt and my stomach.

Once I've completely filled my body with air, I hold my breath by performing the Valsalva maneuver. This is simply the technique of holding your breath while trying to exhale with a closed-off throat to trap the air. You will see a lot of powerlifters and weightlifters use this technique squatting. You will notice their faces swell up like balloons from all the pressure. Sometimes I look at pictures from my competition squats, and I can't believe it's me. My head looks like it is about to explode from the pressure.

MAXIMIZING STIFFNESS

We have talked a lot about stiffness, but let me bring it home here. One small change in cueing stiffness may yield massive results, so it's worth repeating

To maximize stiffness, it all starts on the ground. I recommend planting your feet into the ground as if they were rooted in the earth. Some people talk about finding three points of contact (big toe, pinky toe, and heel). I will be honest and say I never focused on this. However, bracing from the feet up really seems to help a lot of people.

Then right before beginning the descent, I recommend the cue of “spreading the floor.” I teach the lifter to dig their feet into the ground and try to rip it apart by forcefully trying to abduct the legs. This will engage the glutes and begin the stiffening sequence right before the descent. As we examined earlier in the survey section, some people use the similar cue of “screw the feet in the ground.” This also activates the glutes by performing external rotation. Truthfully, most weightlifters don’t perform either because they are after maximal range of motion. However, if you are a weightlifter who displays excessive knee valgus, I recommend giving one or both of these cues a shot. You might also consider squatting with a band or strap around the knees to give a physical cue for the knees to abduct versus adduct.

To wrap things up regarding maximal stiffness:

- Hands as close as possible
- Elbows tucked under the bar

- "Spread the floor" or "screw your feet in"
- "Bend the bar"
- Use intra-abdominal pressure by applying the Valsalva maneuver



THE DESCENT

The big question is: do you sit back or sit down?

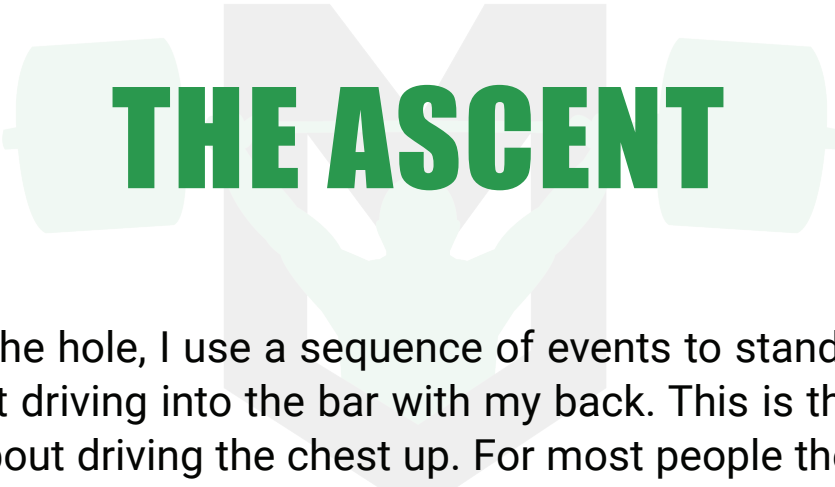
Unless you are a weightlifter, it really doesn't matter. If you are a weightlifter, you probably want to sit down because it will allow you to maintain a vertical spine and reach a maximal range of motion. For a weightlifter, position and depth always trump the amount of weight on the bar. However, if you want to "sit back" sometimes to play around with maximal weight, I am fine with that. You should be able to use a bit more weight because you are beginning hip flexion a bit sooner, which limits the range of motion.

Even for powerlifters, I teach them to sit back slightly and then to sit down. If you sit back too much, you will increase the spinal extensor demands. If you remember from earlier, this is where a lot of squats are made or lost. Unless your back is made of brick, you still want to limit the angle of torso incline as much as possible - even for low bar squatters.

The speed of the descent should be as fast as possible while maintaining control and stiffness. To my knowledge, no one mastered this feat like the legendary Shane Hamman. I was there in 1996 when he squatted 1,008 pounds as a junior powerlifter. He lifted in the original Inzer polyester squat suit, which was basically a tight singlet. The knee wraps were loose and barely fit around his gigantic knees. He walked the weight out as if it were an empty bar. After he received the squat command, he dive bombed the squat and stood up in what seemed like the blink of an eye. I have never seen anyone squat with such a descent. If you can go that quickly,

you should. You will take advantage of a massive stretch reflex and the oscillation of the bar.

The way I teach most to squat is the same way I squatted when I competed. I would have a controlled descent until the last three inches. Then I would release the parachute and dive bomb the final three inches. But even then you have to keep the torso tight. If you lose stiffness, especially in the thoracic spine area, you have a much lower chance of making the lift.



THE ASCENT

Out of the hole, I use a sequence of events to stand up. First, I think about driving into the bar with my back. This is the same as thinking about driving the chest up. For most people the tightness of the back determines whether a squat is made or missed. If the hips shoot backward or the chest falls forward, you will have increased the demands of the spinal flexor moment. When those loads exceed your capabilities, you will miss the lift.

Once you begin the ascent, there are two cues that will save you:

- “Hips through”
- “Accelerate through”

Too many people let the hips and knees push back, taking the quads out of the game early on and putting it all on the hips. By focusing on getting the hips under the bar, you assure equal distribution of the weight will remain for both the quads and the hips. Too many people panic and quit on the lift too early - when all they really had to do was push the hips forward.

ACCELERATION

Dr. Fred Hatfield taught the world about compensatory acceleration years ago. If you practice lifting a weight at maximal speed, you will recruit maximal fibers. You will also accelerate right through a lot of sticking points.

Most people simply don't understand how to push as fast as possible. They want to complete the lift with minimal effort. Louie Simmons has tried his best to spend at least one day per week committed to this method with his dynamic effort work. At Mash Elite we focus on this method daily in all of our sets. Sometimes when you are using a maximal load, the bar won't move that fast. However, it's not always about absolute bar speed. It's about maximal effort.



PROGRAMMING PROTOCOLS

We talk about these methods a lot in our articles. We cover them even more thoroughly in our book *Mash System*. All of the following principles are great to apply to any squat program. Yes, technique is important. But if you want to get really strong at squatting, you have to squat.

None of these programming protocols are new. The magic is in the application of these methods. That's where creativity and artistry come in as a programmer. I have been coaching for over twenty years. I have worked with thousands of athletes from all levels. The programs I have used on my athletes and myself serve as all the research one could want.

POST ACTIVATION POTENTIATION

I love and use post-activation potentiation so much that it's called the Mash Method. I've written about this a lot in many articles and books. I use it in many of my programs because it works so well. Post-activation potentiation (PAP) is the concept that the contractile history of a muscle influences the mechanical performance of subsequent muscle contractions. In other words, letting your body feel very heavy weight will make other weights seem lighter – and your nervous system will be ready to go heavy.

For instance, you could elicit PAP by doing a heavy walkout. Put 105% on the bar, walk it out, and hold it for 15-30 seconds. Then rack the bar and go for a PR.

Another great method is using bands or chains on a squat. This is how I experienced PAP when I was training without even knowing what I was doing. I would squat with bands as prescribed. But I'd keep going and work up heavy - with the load being about 105% at the top and 85-90% at the bottom of the squat. Then I'd remove the bands and go for a PR. It worked quite often, and the Mash Method was born.

MAXIMUM EFFORT METHOD

The Maximum Effort Method is lifting a maximal load against a maximal resistance. In other words, you go heavy. These maximum effort movements are complexes or closely related movements, such as paused squats. To prevent accommodation, we vary our max effort work with different rep-max schemes, different pause heights, different pause lengths, different bars, and different bar placement. So many variations are possible. As we start to peak, we will become more specific to our competition squat.

VELOCITY-BASED DAYS

Remember our earlier physics lesson? Force equals mass multiplied by acceleration. Well, velocity-based days address acceleration. Louie Simmons calls this dynamic effort. These days we measure bar speed and consciously go fast. To learn more about velocity, you can check out my guide *Bar Speed*.

REPETITION METHOD

This is simply just banging out a high number of reps and occasionally going to failure. The high reps create metabolic stress in your muscles, which leads to more hypertrophy. Blood fills the muscle, Type II fibers come into play more, and your body creates a muscle-building hormonal environment. To read more about the science behind hypertrophy, check out my guide *Mash Jacked*.

We will use the repetition method in the early parts of our cycle when we focus on hypertrophy. After that we will primarily use the repetition method in our accessory work. This is a great way to target weaknesses and build some quality muscle.

UNDULATING PERIODIZATION

Decades ago linear periodization was the prescription. A lifter would spend four weeks on hypertrophy, four weeks on strength, and four weeks on absolute strength. In my training as a young athlete, I found I was losing muscle size when I got around to working on absolute strength.

I was right. Research is now telling us undulating periodization is the better way to go. My protocol is to have each four-week block incorporate some aspect of each of the three components, although the emphasis changes.

For instance, the first four-week block might focus mainly on hypertrophy with a moderate emphasis on strength and a little bit of absolute strength. By the time we get to the third four-week block, we're focusing heavily on absolute strength, moderately on strength, and slightly on hypertrophy.

CONJUGATE METHOD

As you can tell, Louie Simmons of Westside Barbell has heavily influenced me. And, of course, Westside is synonymous with the Conjugate Method. This method uses movements that are similar yet different to the competition movement. For example, the goodmorning and the back squat certainly have their similarities and their differences.

The driving purpose of the Conjugate Method is to prevent accommodation. The body is challenged in slightly different ways, creating continued adaptation. Louie Simmons varies the movements a fair amount, but I don't use variance to the same degree. Specificity is still important, and often a small change is all that's needed to create progress.

MUSCULAR BALANCE AND ACCESSORY WORK

I'm a big proponent of accessory work. This is a great way to bring up weaknesses and to put on some muscle. But a huge focus of our accessory work is correcting muscular imbalances.

Asymmetries and other muscular imbalances are a massive cause of injury. A balanced musculature is not only strong but is also injury resistant. Strength is a marathon, not a sprint. The athlete who can train longer and harder without getting hurt is the one who will eventually dominate. I wrote more about this in my guide *No Weaknesses*, so I encourage you to check that out if you want to diagnose and address your own individual imbalances.

Some coaches believe in dropping the accessory work as they near a competition. We don't. We keep performing accessory

movements right up until competition time. But as you move closer to a meet, I recommend phasing out exercises that cause a lot of muscle damage – like goodmornings and RDLs.

To strengthen the squat, we use:

- Glute Ham Raises
- Goodmornings
- Kang Squats
- Lunges
- Unilateral RDLs
- Rear Leg Elevated Split Squats
- Reverse Hypers
- Belt Squats
- Belt Squat RDLs
- Belt Squat Deadlifts
- 60 Variations of Belt Squat Movements
- Hamstring Curls

COMPENSATORY ACCELERATION

Fred Hatfield was the man behind this method. Compensatory acceleration means an athlete continues accelerating throughout the entire range of motion of a lift. You apply as much force as you can during the entire lift.

You would be surprised how many athletes simply do not try to accelerate. They aren't lifting with intent. A velocity measurement tool is a great aid in this. The objective measurement of speed gives athletes something to shoot for – and another way to compete against their friends or their old records.

ACCOMMODATING RESISTANCE

Accommodating resistance is another method made popular by Louie Simmons. He uses bands and chains to accommodate the strength curve. Everyone knows the most difficult part of the squat is the bottom. When you use bands or chains, you increase the load for the easier parts of the squat, and the chains or bands deload during the harder parts of the lift. You quickly learn to accelerate throughout the lift.

ABSOLUTES IN THE SQUAT

There are many preferences in squatting, and I have shared with you my personal recommendations and how I teach the squat. Now that I have looked at the research and quizzed the experts, I realize there are not many absolutes in squatting at all. Here are the few absolutes I have found:

1. Avoid massive amounts of knee valgus. You may want to check out an [article I wrote](#) with more perspective on this.

2. Avoid a rounded back while squatting. This could lead to injury, and it also relates to the next absolute I found.

3. Proximal stiffness equals distal power and performance. I discovered this phrase after hanging out with Dr. Stuart McGill.

4. Use the squat for your sport. If you powerlift, sitting back is great because hip flexion is a big part of determining how low you go. In powerlifting, the goal is to break parallel not to put your butt on the floor. You want to create as much tightness and torque as possible - so sit back, spread the floor, or do whatever you want to do to create the most stiffness and torque.

If you are a weightlifter, sit down and stay vertical because position is everything. Does that mean I only recommend high bar squats? After researching this, I don't care what you do. However, I

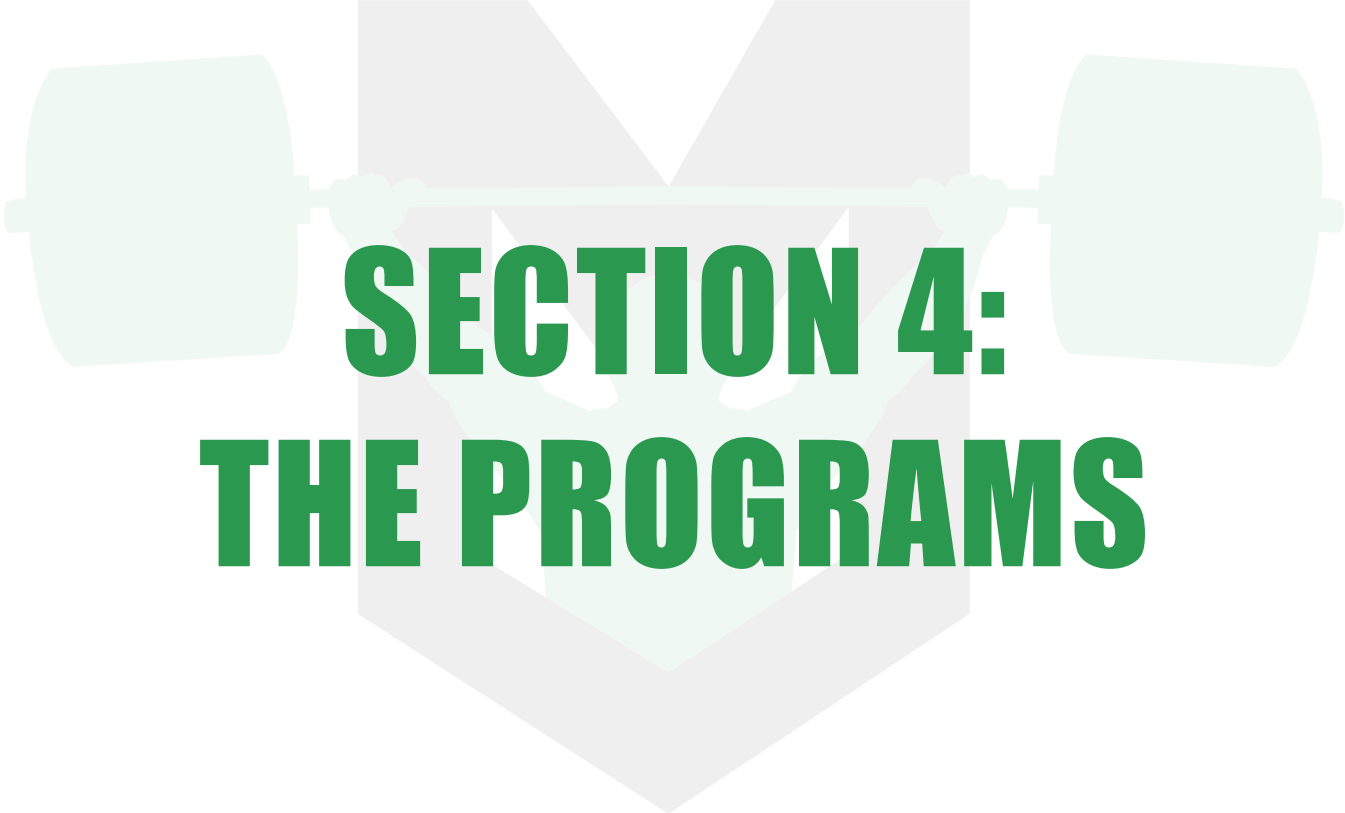
would limit low bar and sitting back because the last thing you want to do is cause mobility issues. Powerlifters are looking for optimal mobility only, which is barely breaking parallel. Weightlifters need maximal mobility in the low squat position while maintaining a vertical spine.

If you are squatting for sports performance or general fitness, you might consider squatting in a way to maximize mobility without compromising position (so nothing like pelvic tilt or knee valgus). The only two factors that seem to affect hypertrophy in the back squat are depth (range of motion) and total load. Other than that, I suggest having fun and staying safe.

OPEN MIND

I have definitely dropped some of my dogmatic thoughts about squatting while researching the squat more. I suggest none of you ever think you know everything about anything. I am a world record squatter, but I still learned an enormous amount while researching for this book.

Other than these absolutes, I have given you several ways to squat. You just have to find the best way that fits your needs and body type. The key is squatting with the stance and position that allows you to sit the lowest with the most vertical torso. Once you find the most optimal position, you can go from there based on your goals.

The background features a large, light gray stylized letter 'M' centered behind a light green dumbbell. The dumbbell has a central bar with two weights on either end. The text 'SECTION 4: THE PROGRAMS' is overlaid in the center in a bold green font.

SECTION 4: THE PROGRAMS

BASE PROGRAM

Now we are to the meat of this guide. I designed these programs just for this book. You can incorporate them into your own program to get your squat up and through the roof. I wrote these plans so you can apply them to your current program. It doesn't matter if you are a weightlifter, powerlifter, CrossFitter, football player, or baseball player, there is a program you can use. One in particular is for powerlifting only, since it's imperative to use low bar squats for powerlifting. The rest of the programs are universal.

It's exciting to release these programs to all of you. We have used these programs with a lot of success. Remember there are two ways to get stronger:

- Becoming more efficient at the movement
- Adding muscle size (hypertrophy)

If you want maximal results during this program, I don't recommend a caloric deficit. So I wouldn't recommend trying to cut weight while performing this program. For best results, I recommend adding a few calories during the accumulation and hypertrophy phases to guarantee the body has the calories it needs to grow.

These programs are 16 weeks in length. These are more like the ones I use for my high level athletes. We like to use both of the aforementioned ways of getting stronger with a big focus on adding muscle size for the first eight weeks.

Take a look at the first four-week block, and I will explain the details afterward.

WEEK 1 (ACCUMULATION PHASE)

DAY 1

Tempo Back Squat (5 sec eccentric, 2 sec pause in the bottom, 4 sec concentric)	5RM, then -10% for 2 x 5
Unilateral RDLs	3 x 10
DB Leg Curls	4 x 10
Unilateral Farmer's Walk	3 x 40 yd each arm

DAY 2

Off

DAY 3

Front Squat	80% for 10 x 3
Rear Leg Elevated Split Squats	3 x 15 each leg (7 RPE)
Hang Snatch Grip High Pulls	60% for 3 x 10

DAY 4

Off

DAY 5

Off

DAY 6

Back Squat with Belt	Set 1: 80% x 3, rest 2 minutes, then 60% x 10 Set 2: (add 5 kilos to each weight if possible) 80% x 3, rest 2 minutes, then 60% x 10 Set 3: (add 5 kilos to each weight if possible) 80% x 3, rest 2 minutes, then 60% x 10
Goodmornings	3 x 8 (start with 25% of squat at 7-8 RPE)
Bent-over Rows	60% for 5 x 10

WEEK 2 (ACCUMULATION PHASE)

DAY 1

Tempo Back Squat (5 sec eccentric, 2 sec pause in the bottom, 4 sec concentric)	5RM, then -10% for 2 x 5
Unilateral RDLs	3 x 10
DB Leg Curls	5 x 10
Unilateral Farmer's Walk	3 x 40 yd each arm

DAY 2

Off

DAY 3

Front Squat	80% for 10 x 4
Rear Leg Elevated Split Squats	3 x 15 each leg (7 RPE)
Hang Snatch Grip High Pulls	63% for 3 x 10

DAY 4

Off

DAY 5

Off

DAY 6

Back Squat with Belt	Set 1: 83% x 3, rest 2 minutes, then 63% x 10 Set 2: (add 5 kilos to each weight if possible) 83% x 3, rest 2 minutes, then 63% x 10 Set 3: (add 5 kilos to each weight if possible) 83% x 3, rest 2 minutes, then 63% x 10
Goodmornings	3 x 8 (add 5-10 Kilos from last week at 7-8 RPE)
Bent-over Rows	65% for 5 x 10

WEEK 3 (ACCUMULATION PHASE)

DAY 1

Tempo Back Squat (5 sec eccentric, 2 sec pause in the bottom, 4 sec concentric)	2 x 5 with 90% of last week
Unilateral RDLs	3 x 10
DB Leg Curls	3 x 10
Unilateral Farmer's Walk	3 x 50 yd each arm

DAY 2

Off

DAY 3

Front Squat	80% for 10 x 3
Rear Leg Elevated Split Squats	3 x 15 each leg (7 RPE)
Hang Snatch Grip High Pulls	58% for 3 x 10

DAY 4

Off

DAY 5

Off

DAY 6

Back Squat with Belt	Set 1: 80% x 3, rest 2 minutes, then 60% x 10, don't increase weight Set 2: 80% x 3, rest 2 minutes, then 60% x 10, don't increase weight Set 3: 80% x 3, rest 2 minutes, then 60% x 10, don't increase weight
Goodmornings	2 x 8 (using original weight at 7-8 RPE)
Bent-over Rows	60% for 3 x 10

WEEK 4 (ACCUMULATION PHASE)

DAY 1

Tempo Back Squat (5 sec eccentric, 2 sec pause in the bottom, 4 sec concentric)	5RM, then -10% for 2 x 5
Unilateral RDLs	3 x 10
DB Leg Curls	4 x 8
Unilateral Farmer's Walk	3 x 50 yd each arm

DAY 2

Off

DAY 3

Front Squat	80% for 10 x 5
Rear Leg Elevated Split Squats	3 x 15 each leg (7 RPE)
Hang Snatch Grip High Pulls	65% for 3 x 10

DAY 4

Off

DAY 5

Off

DAY 6

Back Squat with Belt	Set 1: 85% x 3, rest 2 minutes, then 65% x 10 Set 2: (add 5 kilos to each weight if possible) 85% x 3, rest 2 minutes, then 65% x 10 Set 3: (add 5 kilos to each weight if possible) 85% x 3, rest 2 minutes, then 65% x 10
Goodmornings	3 x 8 (add 5 kilos at 7-8 RPE)
Bent-over Rows	70% for 5 x 10

We are starting out with training three days per week. I have designed this cycle to fit nicely with any weightlifting, CrossFit, general fitness, or athletic performance plan you might already have programmed. The assistance work strengthens the back squat and also the deadlift, clean and jerk, snatch, and a host of other exercises dependent upon the legs and posterior chain. This program works great for athletic performance in regards to leg strength and the posterior chain.

I want to make a big point right out of the gate. I didn't really differentiate between high bar and low bar, but I do have recommendations. If you are a weightlifter, I suggest using high bar the entire time to solidify those positions for the snatch and clean and jerk. For the rest of you, I recommend high bar on day one and low bar on the final squat day to maximize quadriceps development along with hip development. However, as explained throughout this book, it doesn't matter all that much.

DAY 1

The tempo squats on day one are great for strengthening positions. That's why I recommend using high bar - especially for weightlifters, sport athletes, and CrossFitters. After finding your 5RM (five-rep maximum - the most weight you can use for five reps), you perform two sets with ten percent less load. If you have no idea what your 5RM is, I recommend starting with 80% of your 1RM. If that is easy, perform one more set or two to find your 5RM. Then you will have a starting place for the weeks to come.

Unilateral RDLs are great for healthy hips and a strong posterior chain. If you remember the anatomy section, you learned the pelvis has two sides. Even though the sides are somewhat fused together,

they are meant to move separately a bit from side to side. Only performing bilateral movements leads to the pelvis not moving properly, which can cause a lot of issues. If you buy a lot of my books, you already know I recommend multiple unilateral movements.

The DB leg curls (dumbbell leg curls) are great for knee health. Squatting requires lot of knee extension volume, so the added knee flexion volume is there to keep a healthy balance. The carries are great for assisting the front squat in developing a strong core. We'll need that later in the program when we're aiming for big back squats. I like using unilateral carries sometimes in my programs to recruit more of the obliques and quadratus lumborum. Those are the muscles that help stabilize the spine and pelvis when you are carrying unequal loads (like a suitcase through the airport).

DAY 3

Day three is a day designed to strengthen the core (all muscles that help support and stabilize the spine and pelvis). Front squats are great for strengthening the spinal erectors because putting the bar in front of the body maximizes the demand on the spinal extensor moment. We explained earlier that the spinal extensor moment is where a lot of the magic happens during PR lifts. The 10 x 3 repetition scheme is a great way to maximize muscle gains due to the high volume with a high load. This day will probably become your most dreaded day, but you will see a big return in the coming weeks. Each week, we add a repetition (except for the deload week). It's amazing what the body can learn to do.

The rear leg elevated split squats are great for strengthening the quads while lengthening the hip flexors. I have found that

encouraging optimal mobility under load is the best way to maximize mobility in general. A mobile hip flexor allows for better technique and a healthy back. "7 RPE" refers to the rate of perceived exertion scale. A ten would be an all out maximum, a nine would be stopping one set short of a maximum, and so forth. Therefore a "7 RPE" would have you stopping three sets before maximum. Simply put, don't even go close to a maximum set.

The snatch grip high pulls are a great way to strengthen the upper back and traps, which we learned earlier is important for big squats. Even if you are a powerlifter, add some of these into your program. All you have to do is look at photos of Pyrrhos Dimas and Lu Xiaojun to know some Olympic pulls are great for the back and traps. Those guys have the ultimate yokes.

DAY 6

On day six we are using my post-activation potentiation waves I love so much. If you are not good with volume, I recommend trimming those percentages by three to five percent. Most women and hard-gaining men can crush those percentages. However, if you fancy yourself more of a high intensity/low volume person, go ahead and trim it down a bit.

I'll explain the first week's percentages, and then you should understand how it works. On set one, you will squat 80% of your one-repetition maximum for three repetitions, rest a couple of minutes, and then crush 60% for ten. That is set one. You can rest two to four minutes (full recovery), and then it is time for set two. If you are able, you can add five kilograms or ten pounds on both the set of three and the set of ten. Adding weight isn't mandatory. If the

first set broke you down, stick with the same weights. The point is to become more and more efficient with the high repetition sets. The body remembers the heavy repetitions because you will have performed them right before the higher repetitions. Remember, one of the ways to get stronger is becoming more efficient.

Goodmornings are a great way to strengthen the posterior chain. Strengthening my goodmornings is one of the first ways I pushed my squat to those higher numbers. By strengthening your spinal erectors, you will be able to overcome the massive spinal flexor moment. You will also strengthen your glutes and hamstrings, allowing you to get your hips through on those maximum squat days. Bent-over rows should be a staple of any good program. They help to make some massive backs - just ask the GOAT, Eddie Coan.

You will notice in all of my programs the third week is a deload week. There will be a slight drop in volume and intensity to allow the body to recover. Then the fourth week is heavy and hard. I think it was Coach Joe Kenn of the Carolina Panthers who called this style of programming a deload to reload.

Specialty bars are a great way to change things up and take advantage of the Conjugate Method. I really enjoy using safety squat bars, buffalo bars, and cambered squat bars. Feel free to add them in once or twice per week during the first three blocks of any workout prescribed in this book. However, I would switch to a regular bar during the last block for specificity.

WEEK 5 (HYPERTROPHY PHASE)

DAY 1

Front Squat with Belt	75% for 2 x 4, 80% for 2 x 3, 85% for 2 x 2
Clean Grip Deadlift from 2 Inch Deficit Paused at Mid Shin	5RM (1st 2 reps paused 3 sec), then -10% for 2 x 5 (not paused)
Barbell Elevated Hip Thrusts with Band Around Knees	3 x 8

DAY 2

Front Squat with Belt	1RM paused 5 sec (7 RPE)
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DAY 3

Front Squat (8 sec eccentric, 2 sec pause in bottom, 5 sec concentric)	3RM, then -10% for 2 x 3 (all paused)
Snatch High Pulls	80% for 3 x 5

DAY 4

Overhead Squat Variation Max Effort	Work Up to 75% for 3 x 5 (last set is 5+)
Unilateral Farmer's Walk	3 x 40 yd each hand
Barbell Rollouts	3 x 10
Band Pull Throughs	3 x 15

DAY 5

	Off
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DAY 6

Back Squat with Belt	Set 1: 85% x 2, rest 2 minutes, then 70% x 6 Set 2: (add 5 kilos to each weight if possible) 85% x 2, rest 2 minutes, then 70% x 6 Set 3: (add 5 kilos to each weight if possible) 85% x 2, rest 2 minutes, then 70% x 6
2 Inch Deficit RDLs with Mini or Light Band	3 x 8 (progress ending with an 7-8 RPE)

WEEK 6 (HYPERTROPHY PHASE)

DAY 1

Front Squat with Belt	75% x 4, 80% for 2 x 3, 83% for 2 x 3, 85% for 2 x 2, 88% x 2
Clean Grip Deadlift from 2 Inch Deficit Paused at Mid Shin	5RM (1st 2 reps paused 3 sec), then -10% for 2 x 5 (not paused)
Barbell Elevated Hip Thrusts with Band Around Knees	3 x 8

DAY 2

Front Squat with Belt	1RM paused 5 sec (7 RPE)
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DAY 3

Front Squat (8 sec eccentric, 2 sec pause in bottom, 5 sec concentric)	3RM, then -10% for 2 x 3 (all paused)
Snatch High Pulls	83% for 4 x 5

DAY 4

Overhead Squat Variation Max Effort	Work Up to 78% for 3 x 5 (last set is 5+)
Unilateral Farmer's Walk	3 x 40 yd each hand
Barbell Rollouts	3 x 10
Band Pull Throughs	3 x 15

DAY 5

	Off
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DAY 6

Back Squat with Belt	Set 1: 88% x 2, rest 2 minutes, then 73% x 6 Set 2: (add 5 kilos to each weight if possible) 88% x 2, rest 2 minutes, then 73% x 6 Set 3: (add 5 kilos to each weight if possible) 88% x 2, rest 2 minutes, then 73% x 6+
2 Inch Deficit RDLs with Mini or Light Band	3 x 8 (progress ending with an 8-9 RPE)

WEEK 7 (HYPERTROPHY PHASE)

DAY 1

Front Squat with Belt	75% x 4, 80% for 2 x 3, 85% for 2 x 2
Clean Grip Deadlift from 2 Inch Deficit Paused at Mid Shin	5RM (1st 2 reps paused 1 sec), then -10% for 2 x 5 (not paused)
Barbell Elevated Hip Thrusts with Band Around Knees	3 x 8

DAY 2

Front Squat with Belt	1RM paused 5 sec (7 RPE)
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DAY 3

Front Squat (8 sec eccentric, 2 sec pause in bottom, 5 sec concentric)	90% of 3RM for 2 x 3
Snatch High Pulls	80% for 3 x 5

DAY 4

Overhead Squat Variation Max Effort	Work Up to 80% for 3 x 5 (last set is 5+)
Unilateral Farmer's Walk	3 x 40 yd each hand
Barbell Rollouts	3 x 10
Band Pull Throughs	3 x 15

DAY 5

	Off
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DAY 6

Back Squat with Belt	Set 1: 85% x 1, rest 2 minutes, then 70% x 5 Set 2: 85% x 1, rest 2 minutes, then 70% x 5 Set 3: 85% x 1, rest 2 minutes, then 70% x 5
2 Inch Deficit RDLs with Mini or Light Band	3 x 8 (progress ending with an 9-10 RPE)

WEEK 8 (HYPERTROPHY PHASE)

DAY 1

Front Squat with Belt	75% x 4, 80% x 3, 83% x 3, 85% x 2, 88% x 2, 90% x 1
Clean Grip Deadlift from 2 Inch Deficit Paused at Mid Shin	5RM (1st reps paused 1 sec), then -10% for 2 x 5 (not paused)
Barbell Elevated Hip Thrusts with Band Around Knees	3 x 8

DAY 2

Front Squat with Belt	1RM paused 5 sec (7 RPE)
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DAY 3

Front Squat (8 sec eccentric, 2 sec pause in bottom, 5 sec concentric)	1RM, then -20% for 2 x 3 (all paused)
Snatch High Pulls	85% for 3 x 5

DAY 4

Overhead Squat Variation Max Effort	5RM
Unilateral Farmer's Walk	3 x 40 yd each hand
Barbell Rollouts	3 x 10
Band Pull Throughs	3 x 15

DAY 5

	Off
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DAY 6

Back Squat with Belt	Set 1: 90% x 1, rest 2 minutes, then 75% x 5 Set 2: (add 5 kilos to each weight if possible) 90% x 1, rest 2 minutes, then 75% x 5 Set 3: (add 5 kilos to each weight if possible) 90% x 1, rest 2 minutes, then 75% x 5
2 Inch Deficit RDLs with Mini or Light Band	3 x 8 (progress ending with an 7-8 RPE)

I like using front squats during the hypertrophy phase because I am able to use a little higher frequency with an overall lesser load. However, feel free to substitute high bar squats on day one if you want more quad development or if you are a powerlifter. Later on, I am going to show you a program just for powerlifters. At the end of the day, all of these programs could be used for any strength sport, CrossFit, or athletic performance.

DAY 1

On the first day, I am using Prilepin's chart to prescribe optimal repetitions for strength and hypertrophy. There is nothing fancy here. This is just hard work and grinding.

Take a look at how I've written the first day's front squats:

Front Squat with Belt	75% for 2 x 4, 80% for 2 x 3, 85% for 2 x 2
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Here I am saying to use 75% of your one-rep maximum front squat for two sets of four repetitions. Then you will use 80% of your one-rep max for two sets of three repetitions, and finally 85% of your one-rep max for two sets of two repetitions.

After the squats, you will be performing some clean grip deadlifts from a two-inch deficit. If you are a powerlifter, feel free to just deadlift like normal. For the rest of you, I like the clean deadlift because I want you keeping a strong upper back, locking your shoulders back and tucked down to incorporate the rhomboids and the lats. A clean deadlift transfers better to the back squat because you are

strengthening the spinal erectors. In a typical powerlifting deadlift, the upper back can round, and the lift can still be successful and safe. However, that is not optimal for the back squat. The deficit simply lengthens the range of motion, building a little more muscle and getting you a bit stronger.

You will pause the first two repetitions of the clean grip deadlift for three seconds each at mid-shin. This is a great way to strengthen the position of your back. Isometric contractions are the best way to strengthen muscles at specific joint angles.

BB (barbell) elevated hip thrusts with a band around your knees are a great movement to strengthen your glutes. Activating the glutes and getting them under the bar during the squat is a technique aspect used by most great squatters. Weak glutes can be the culprit for many missed personal record squats. Using a band (or even a strap) around the knees gives you something to push out against while performing the hip extensions. The glutes also perform hip abduction, so the bands help to recruit more fibers. Strengthening the glutes in this manner can lead to healthy knee tracking, which is very important for athletes with major knee valgus (knee caving) during squats.

DAY 2

Day two is more of a recovery front squat, and is not meant to fatigue you at all. Again we use the rate of perceived exertion scale to ensure you don't go near a maximum. I just want you to practice perfect position and recover from the day before. Active recovery is a great way to recuperate from hard days.

DAY 3

We are using more tempo work to strengthen positions. Here I am asking you to control the weight for eight seconds on the way down (eccentric), two seconds in the bottom, and five seconds on the way up (concentric). This is not a lot of fun, but a similar style of programming has helped several of my lifters overcome movement dysfunction. We are doing more snatch high pulls, but this time from the floor. Some of you might not have a one-rep maximum snatch to go off of, so just use a challenging weight that allows you to go through a decent range of motion.

DAY 4

Day four is more of an active recovery day as well. Overhead squats are a great way to practice squatting with a lighter load. Overhead squats are great for improving posture in a functional way and can help assure anterior-posterior chain balance. Especially if you like to bench a lot, it's important to avoid the internal rotation of the humerus you will notice from a lot of powerlifters and football players.

One important prescription to point out is the "5+" on the last set of overhead squats. That means on the last set you are to perform as many repetitions past five as possible. I recommend stopping one repetition before failure.

The other movements are meant to strengthen the core. I really like the pull-throughs for hip extension and low back strength.

DAY 6

This day brings more waves at higher intensities. The same rules as before apply here as well. You can add weight each set, but you don't have to. Feel free to lower the percentages if these loads are too challenging. Once again, we are all very different.

The RDLs from a deficit with mini-bands are incredible at strengthening the posterior chain. The key is maintaining a proper hinge with a neutral spine. If you let your back round, you will not be optimizing the movement for the squat. Remember, strong spinal erectors are a huge key to massive squat increases.

WEEK 9 (STRENGTH PHASE)

DAY 1

Front Squat with Belt	80% for 3 x 3, 85% for 2 x 2, 88% x 2
Glute Ham Raises	3 x 8

DAY 2

Warm Up with Overhead Squat Variations	Heaving Snatch Balance Doubles (work up to 65% of Snatch)
Front Squat with Belt	1RM paused 5 sec (8 RPE)

DAY 3

Back Squats (Go Heavier on Last Two if Sets are Optimal Speed) Box is Optional	45% Bar Weight + 25% Bands or Chains for 6 x 3 (with 60 sec rest and > 0.75 m/s)
Reverse Hypers or Band Pull-Throughs	3 x 45 sec

DAY 4

Overhead Squat Variation Max Effort	Heaving Snatch Balance 1RM
Farmer's Walk	4 x 40 yd
Sled Bear Crawls	4 x 30 yd

DAY 5

Front Squat with 50lb of Chains	1RM (Paused 5 sec at 8 RPE)
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DAY 6

Back Squat with Belt	Set 1: 93% x 1, rest 2 minutes, then 78% x 4 Set 2: (add 5-10 kilos to the 1 rep set if possible) 93% x 1, rest 2 minutes, then 78% x 4 Set 3: (add 5-10 kilos to the one rep set if possible) 93% x 1, rest 2 minutes, then 78% x 4+
Clean Grip Deadlift from 2 Inch Deficit	3RM, then -10% for 2 x 3

WEEK 10 (STRENGTH PHASE)

DAY 1

Front Squat with Belt	80% x 4, 85% x 3, 88% x 2, 90% x 2, 80% x 3, 85% x 2, 88% x 1, 90% x 1, 80% x 2, 85% x 1, 88% x 1, 90% x 1+
Glute Ham Raises	3 x 8

DAY 2

Warm Up with Overhead Squat Variations	Heaving Snatch Balance Doubles (work up to 68% of Snatch)
Front Squat with Belt	1RM paused 5 sec (8 RPE)

DAY 3

Back Squats (Go Heavier on Last Two if Sets are Optimal Speed) Box is Optional	50% Bar Weight + 25% Bands or Chains for 7 x 3 (with 60 sec rest and > 0.75 m/s)
Reverse Hypers or Band Pull-Throughs	3 x 50 sec

DAY 4

Overhead Squat Variation Max Effort	Overhead Squat 1RM
Farmer's Walk	4 x 40 yd
Sled Bear Crawls	4 x 30 yd

DAY 5

Front Squat with 50lb of Chains	1RM (Paused 3 sec at 8 RPE)
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DAY 6

Back Squat with Belt	Set 1: 95% x 1, rest 2 minutes, then 80% x 4 Set 2: (add 5-10 kilos to the 1 rep set if possible) 95% x 1, rest 2 minutes, then 80% x 4 Set 3: (add 5-10 kilos to the 1 rep set if possible) 95% x 1, rest 2 minutes, then 80% x 4+
Clean Grip Deadlift from 2 Inch Deficit	2RM, then -10% for 2 x 2

WEEK 11 (STRENGTH PHASE)

DAY 1

Front Squat with Belt	80% for 2 x 3, 85% for 2 x 2, 88% x 2
Glute Ham Raises	3 x 8

DAY 2

Warm Up with Overhead Squat Variations	Heaving Snatch Balance Doubles (work up to 60% of Snatch)
Front Squat with Belt	1RM paused 5 sec (7 RPE)

DAY 3

Back Squats (Go Heavier on Last Two if Sets are Optimal Speed) Box is Optional	55% Bar Weight + 25% Bands or Chains for 8 x 2 (with 60 sec rest and > 0.75 m/s)
Reverse Hypers or Band Pull-Throughs	3 x 30 sec

DAY 4

Overhead Squat Variation Max Effort	Heaving Snatch Balance plus Overhead Squat Max
Farmer's Walk	4 x 40 yd
Sled Bear Crawls	4 x 30 yd

DAY 5

Front Squat with 50lb of Chains	1RM (Paused 3 sec at 9 RPE)
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DAY 6

Back Squat with Belt	Set 1: 95% x 1, rest 2 minutes, then 85% x 3 Set 2: (add 5-10 kilos to the 1 rep set if possible) 95% x 1, rest 2 minutes, then 85% x 3 Set 3: (add 5-10 kilos to the 1 rep set if possible) 95% x 1, rest 2 minutes, then 85% x 3
Clean Grip Deadlift from 2 Inch Deficit	90% of 3RM for 3 x 3

WEEK 12 (STRENGTH PHASE)

DAY 1

Front Squat with Belt	1RM, then -20% for 2 x 3
Glute Ham Raises	3 x 8

DAY 2

Warm Up with Overhead Squat Variations	Heaving Snatch Balance Doubles (work up to 50% of Snatch)
Front Squat with Belt	1RM paused 5 sec (9 RPE)

DAY 3

Back Squats (Go Heavier on Last Two if Sets are Optimal Speed) Box is Optional	45% Bar Weight + 25% Bands or Chains for 5 x 3 (with 60 sec rest and > 0.75 m/s)
Reverse Hypers or Band Pull-Throughs	3 x 60 sec

DAY 4

Overhead Squat Variation Max Effort	75% of Snatch for 3 x 3 on Snatch Balance
Farmer's Walk	4 x 40 yd
Sled Bear Crawls	4 x 30 yd

DAY 5

	Off
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DAY 6

Back Squat with Belt	1RM, then -20% for 3
Clean Grip Deadlift from 2 Inch Deficit	1RM (no deficit), then -20% for 3

In this block our focus shifts to movement efficiency and preparing the neural system for heavier weight. Prilepin said in 1974 the best way to get strong is with weights at or above 90%. We know we can't spend the majority of our time at that range without compromising the joints, but we will spend about 20% of this block at or around that 90% marker. We will also prime the body for a strong finish in the final block.

DAY 1

Day one is similar to the previous block. The percentages are climbing. There will also be some waves in the coming weeks to take advantage of post-activation potentiation for improved efficiency. Once again, feel free to change out front squats with high bar back squats if quads are your main weakness or you are a powerlifter.

Glute ham raises are a favorite of mine. If you hold a weight or band, this movement is great for spinal erectors, glutes, and hamstrings. These are especially good for hamstrings because they strengthen the hamstring at the knee and hip. This exercise is particularly helpful for athletes required to sprint.

DAY 2

Day two is a recovery day. The heaving snatch balances are for weightlifters or CrossFitters mainly, and they are totally optional. The front squat is again for a longer pause, and I am using the RPE scale to regulate the intensity. We are letting the intensity creep up a bit on the last week of this block.

DAY 3

This is our velocity day. We are using 45% of bar weight and 25% in bands or chains for a total load of 70%. I prefer bands if velocity is my focus. The bands cause a faster descent, which leads to a faster ascent from more stored kinetic energy. There are some really good studies about to come out from a friend of mine at NYU, so stay tuned.

To calculate the added band tension, take a look at Appendix A at the end of this book. If you don't have bands or chains, you can use straight weight. If you use straight weight, take the total volume and subtract 5%. In this case: $45\% + 25\% = 70\%$, so $70\% - 5\% = 65\%$ for straight weight. The goal is to maintain 0.75 m/s or faster the entire time. If you drop below 0.7m/s, drop the weight or stop.

The assistance movement prescribed here is reverse hypers. For lower back spinal erector capacity, there is nothing better than the reverse hyper. I recommend maintaining a neutral spine that is packed and tight to strengthen the back in a functional way. If you don't have a reverse hyper machine, I recommend using banded or cable pull-throughs. You will still strengthen the posterior chain without a lot of muscular damage.

DAY 4

Day four is another recovery day. We are using another overhead squat movement to start things out. We are also now switching to bilateral carries. That means you should be able to handle heavier weights. You should strive to use more and more weight on these carries, forcing the body to adapt to the movement just like any

other exercise. I watch too many people slack on carries. If you aren't going to progress the movement, you should just skip it. Bear crawls pulling a sled is just about the most functional way to improve movement, strengthen the core, and improve work capacity at the same time.

DAY 5

Day five is a similar squat day to day two. We are using chains to deload the bottom of the squat, which will help limit muscular damage and keep you ready for the next day's higher volume. Feel free to change out the front squat for high bar back squat if that's your focus.

DAY 6

Day six brings more waves, but pay attention on this one. I am asking you to only increase weight on the one-repetition half of the sets. I am saving up for the final set where you are asked to perform as many repetitions as possible. The heavier weight should prime the body for maximal repetitions. We've added the clean grip deadlift from a deficit to this day, but we've also dropped the repetitions down to three for a heavier intensity.

WEEK 13 (STRENGTH PHASE)

DAY 1

Back Squat	3RM (1st rep paused 3 sec)
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DAY 2

Front Squat with Belt	75% x 4, 80% for 2 x 3, 85% for 2 x 2, 88% x 1
Reverse Hypers	3 x 45 sec

DAY 3

Overhead Squat Variation Max Effort	Overhead Squat 3RM
1a. Sled Bear Crawls	4 x 30 yd
1b. Med Ball Side to Side Abs	4 x 15 touches per side

DAY 4

Back Squats to Box (Go Heavier on Last Two if Sets are Optimal Speed)	40% Bar Weight + 30% Bands or Chains for 6 x 3 (60 sec rest at > 0.75 m/s)
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DAY 5

Front Squat	1RM (with 3 sec pause)
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DAY 6

Back Squat	5RM, then -15% for 2 x 5 (last set is 5+)
Clean Grip Deadlift	3RM (1st rep paused 3 sec at knee), then -10% for 2 x 3 (not paused)
TRX Leg Curls	3 x 10
Kettlebell High/Low Carries	4 x 20 yd each way

WEEK 14 (STRENGTH PHASE)

DAY 1

Back Squat	2RM
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DAY 2

Front Squat with Belt	78% for 2 x 3, 83% for 2 x 3, 88% for 2 x 2, 90% x 1
Reverse Hypers	4 x 45 sec

DAY 3

Overhead Squat Variation Max Effort	Snatch Balance 2RM
1a. Sled Bear Crawls	4 x 30 yd
1b. Med Ball Side to Side Abs	4 x 15 touches per side

DAY 4

Back Squats to Box (Go Heavier on Last Two if Sets are Optimal Speed)	45% Bar Weight + 30% Bands or Chains for 7 x 3 (60 sec rest at > 0.75 m/s)
---	--

DAY 5

Front Squat	1RM (with 1 sec pause)
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DAY 6

Back Squat	5RM, then -15% for 3 x 5 (last set is 5+)
Clean Grip Deadlift	3RM, then -10% for 2 x 3
TRX Leg Curls	3 x 10
Kettlebell High/Low Carries	4 x 20 yd each way

WEEK 15 (STRENGTH PHASE)

DAY 1

Back Squat	1RM
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DAY 2

Front Squat with Belt	80% x 3, 85% for 2 x 3, 90% x 2, 93% x 1
Reverse Hypers	3 x 50 sec

DAY 3

Overhead Squat Variation Max Effort	75% of Snatch for 3 x 3 on Snatch Balance
1a. Sled Bear Crawls	3 x 30 yd
1b. Med Ball Side to Side Abs	3 x 15 touches per side

DAY 4

Back Squats to Box (Go Heavier on Last Two if Sets are Optimal Speed)	50% Bar Weight + 30% Bands or Chains for 8 x 2 (60 sec rest at > 0.75 m/s)
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DAY 5

Front Squat	1RM
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DAY 6

Back Squat	3RM, then -15% for 3+
Clean Grip Deadlift	1RM, then -20% for 2 x 3
TRX Leg Curls	3 x 10
Kettlebell High/Low Carries	3 x 25 yd each way

WEEK 16 (STRENGTH PHASE)

DAY 1

Back Squat	80% for 2 x 1
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DAY 2

Front Squat with Belt	75% x 3, 80% x 3, 85% x 1
Reverse Hypers	3 x 40 sec

DAY 3

Overhead Squat Variation Max Effort	Overhead Squat 1RM (paused 5 Sec)
1a. Sled Bear Crawls	4 x 30 yd
1b. Med Ball Side to Side Abs	4 x 15 touches per side

DAY 4

Back Squats to Box (Go Heavier on Last Two if Sets are Optimal Speed)	40% Bar Weight + 30% Bands or Chains for 5 x 2 (60 sec rest at > 0.75 m/s)
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DAY 5

	Off
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DAY 6

Back Squat	1RM
Clean Grip Deadlift	90% of last week 3RM for 2 x 3
TRX Leg Curls	3 x 10
Kettlebell High/Low Carries	3 x 20 yd each way

This final block brings a good mix of front squats and back squats. Once again, feel free to use a mix of low bar and high bar. This block is set up to peak your strength.

These four weeks are similar to the first strength block, but now we are higher in frequency and intensity. Specificity is at its highest during this phase because the main goal is a massive one-repetition squat. The waves on day six are now gone, and we are just plowing away at heavier weights. Now it's time to reap the rewards of all the hard work.

You will notice on day three, we have a superset. "1a" and "1b" indicate that you will perform those movements back to back - so a set of bear crawls, a set of med ball side-to-sides, a brief rest, and then start with the bear crawls again.



LOWER VOLUME BASE PROGRAM

This is for people who perform better with a little less volume or who have busy and stressful lives. If the Base Program tends to beat you down too much, then this one is a great workout to try.

WEEK 1 (ACCUMULATION PHASE)

DAY 1

Tempo Back Squat (5 sec eccentric, 2 sec pause bottom, 4 sec concentric)	5RM, then -10% for 2 x 5
Unilateral RDLs	3 x 10
Unilateral Farmer's Walk	3 x 40yd each arm

DAY 2

Off

DAY 3

Front Squat	80% for 10 x 3
Hang Snatch Grip High Pulls	60% for 3 x 10

DAY 4

Off

DAY 5

Off

DAY 6

Back Squat with Belt	Set 1: 80% x 3, rest 2 minutes, then 60% x 10 Set 2: (add 5 kilos to each weight if possible) 80% x 3, rest 2 minutes, then 60% x 10 Set 3: (add 5 kilos to each weight if possible) 80% x 3, rest 2 minutes, then 60% x 10
DB Leg Curls	4 x 10
Bent-over Rows	60% for 5 x 10

WEEK 2 (ACCUMULATION PHASE)

DAY 1

Tempo Back Squat (5 sec eccentric, 2 sec pause bottom, 4 sec concentric)	5RM, then -10% for 2 x 5
Unilateral RDLs	3 x 10
Unilateral Farmer's Walk	3 x 40yd each arm

DAY 2

Off

DAY 3

Front Squat	80% for 10 x 4
Hang Snatch Grip High Pulls	63% for 3 x 10

DAY 4

Off

DAY 5

Off

DAY 6

Back Squat with Belt	Set 1: 83% x 3, rest 2 minutes, then 63% x 10 Set 2: (add 5 kilos to each weight if possible) 83% x 3, rest 2 minutes, then 63% x 10 Set 3: (add 5 kilos to each weight if possible) 83% x 3, rest 2 minutes, then 63% x 10
DB Leg Curls	5 x 10
Bent-over Rows	65% for 5 x 10

WEEK 3 (ACCUMULATION PHASE)

DAY 1

Tempo Back Squat (5 sec eccentric, 2 sec pause bottom, 4 sec concentric)	Take 90% of last week and do 2 x 5
Unilateral RDLs	3 x 10
Unilateral Farmer's Walk	3 x 50yd each arm

DAY 2

Off

DAY 3

Front Squat	80% for 10 x 3
Hang Snatch Grip High Pulls	58% for 3 x 10

DAY 4

Off

DAY 5

Off

DAY 6

Back Squat with Belt	Set 1: 80% x 3, rest 2 minutes, then 60% x 10 Set 2: 80% x 3, rest 2 minutes, then 60% x 10 Set 3: 80% x 3, rest 2 minutes, then 60% x 10
DB Leg Curls	3 x 10
Bent-over Rows	60% for 3 x 10

WEEK 4 (ACCUMULATION PHASE)

DAY 1

Tempo Back Squat (5 sec eccentric, 2 sec pause bottom, 4 sec concentric)	5RM, then -10% for 2 x 5
Unilateral RDLs	3 x 10
Unilateral Farmer's Walk	3 x 50yd each arm

DAY 2

Off

DAY 3

Front Squat	80% for 10 x 5
Hang Snatch Grip High Pulls	65% for 3 x 10

DAY 4

Off

DAY 5

Off

DAY 6

Back Squat with Belt	Set 1: 85% x 3, rest 2 minutes, then 65% x 10 Set 2: (add 5 kilos to each weight if possible) 85% x 3, rest 2 minutes, then 65% x 10 Set 3: (add 5 kilos to each weight if possible) 85% x 3, rest 2 minutes, then 65% x 10
DB Leg Curls	4 x 8
Bent-over Rows	70% for 5 x 10

WEEK 5 (HYPERTROPHY PHASE)

DAY 1

Front Squat with Belt	75% for 2 x 3, 80% for 2 x 3, 85% x 2
Clean Grip Deadlift from 2 Inch Deficit (Paused at Mid Shin)	5RM (1st 2 reps paused 3 sec), then -10% for 2 x 5 (not paused)
BB Elevated Hip Thrusts with Band Around Knees	3 x 8

DAY 2

Off

DAY 3

Front Squat (8 sec eccentric, 2 sec pause in bottom, 5 sec concentric)	3RM
Snatch High Pulls	80% for 3 x 5

DAY 4

Overhead Squat Variation Max Effort	Work Up to 75% for 3 x 5 (last set is 5+)
Unilateral Farmer's Walk	3 x 40 yd ea hand
BB Rollouts	3 x 10
Band Pull Throughs	3 x 15

DAY 5

Off

DAY 6

Back Squat with Belt	Set 1: 85% x 2, rest 2 minutes, then 70% x 6 Set 2: (add 5 kilos to each weight if possible) 85% x 2, rest 2 minutes, then 70% x 6 Set 3: (add 5 kilos to each weight if possible) 85% x 2, rest 2 minutes, then 70% x 6
2 Inch Deficit RDLs with Mini or Light Band	3 x 8 (progress ending with an 7-8 RPE)

WEEK 6 (HYPERTROPHY PHASE)

DAY 1

Front Squat with Belt	75% x 4, 80% for 2 x 3, 83% for 2 x 2, 85% x 2, 88% x 2
Clean Grip Deadlift from 2 Inch Deficit (Paused at Mid Shin)	5RM (1st 2 reps paused 3 sec), then -10% for 2 x 5 (not paused)
BB Elevated Hip Thrusts with Band Around Knees	3 x 8

DAY 2

Off

DAY 3

Front Squat (8 sec eccentric, 2 sec pause in bottom, 5 sec concentric)	3RM
Snatch High Pulls	83% for 4 x 5

DAY 4

Overhead Squat Variation Max Effort	Work Up to 78% for 3 x 5 (last set is 5+)
Unilateral Farmer's Walk	3 x 40 yd ea hand
BB Rollouts	3 x 10
Band Pull Throughs	3 x 15

DAY 5

Off

DAY 6

Back Squat with Belt	Set 1: 88% x 2, rest 2 minutes, then 73% x 6 Set 2: (add 5 kilos to each weight if possible) 88% x 2, rest 2 minutes, then 73% x 6 Set 3: (add 5 kilos to each weight if possible) 88% x 2, rest 2 minutes, then 73% x 6+
2 Inch Deficit RDLs with Mini or Light Band	3 x 8 (progress ending with an 8-9 RPE)

WEEK 7 (HYPERTROPHY PHASE)

DAY 1

Front Squat with Belt	75% x 4, 80% for 2 x 3, 85% x 2
Clean Grip Deadlift from 2 Inch Deficit (Paused at Mid Shin)	5RM (1st 2 reps paused 1 sec), then -10% for 2 x 5 (not paused)
BB Elevated Hip Thrusts with Band Around Knees	3 x 8

DAY 2

Off

DAY 3

Front Squat (8 sec eccentric, 2 sec pause in bottom, 5 sec concentric)	90% of 3RM for 3
Snatch High Pulls	80% for 3 x 5

DAY 4

Overhead Squat Variation Max Effort	Work Up to 80% for 3 x 5
Unilateral Farmer's Walk	3 x 40 yd ea hand
BB Rollouts	3 x 10
Band Pull Throughs	3 x 15

DAY 5

Off

DAY 6

Back Squat with Belt	Set 1: 85% x 1, rest 2 minutes, then 70% x 5 Set 2: 85% x 1, rest 2 minutes, then 70% x 5 Set 3: 85% x 1, rest 2 minutes, then 70% x 5
2 Inch Deficit RDLs with Mini or Light Band	3 x 8 (progress ending with an 9-10 RPE)

WEEK 8 (HYPERTROPHY PHASE)

DAY 1

Front Squat with Belt	75% x 3, 80% x 3, 83% x 2, 85% x 2, 88% x 2, 90% x 1
Clean Grip Deadlift from 2 Inch Deficit (Paused at Mid Shin)	5RM (1st rep paused 1 sec), then -10% for 2 x 5 (not paused)
BB Elevated Hip Thrusts with Band Around Knees	3 x 8

DAY 2

Off

DAY 3

Front Squat (8 sec eccentric, 2 sec pause in bottom, 5 sec concentric)	1RM
Snatch High Pulls	85% for 3 x 5

DAY 4

Overhead Squat Variation Max Effort	5RM
Unilateral Farmer's Walk	3 x 40 yd ea hand
BB Rollouts	3 x 10
Band Pull Throughs	3 x 15

DAY 5

Off

DAY 6

Back Squat with Belt	Set 1: 90% x 1, rest 2 minutes, then 75% x 5 Set 2: (add 5 kilos to each weight if possible) 90% x 1, rest 2 minutes, then 75% x 5 Set 3: (add 5 kilos to each weight if possible) 90% x 1, rest 2 minutes, then 75% x 5
2 Inch Deficit RDLs with Mini or Light Band	3 x 8 (progress ending with an 7-8 RPE)

WEEK 9 (STRENGTH PHASE)

DAY 1

Front Squat with Belt	80% for 2 x 3, 85% for 2 x 2, 88% x 2
Glute Ham Raises	3 x 8

DAY 2

Warm Up with Overhead Squat Variations	Heaving Snatch Balance Doubles (work up to 65% of Snatch)
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DAY 3

Back Squats (Go Heavier on Last Two if Sets are Optimal Speed) Box is Optional	45% Bar Weight + 25% Bands or Chains for 6 x 3 (with 60 sec rest at >0.75 m/s)
Reverse Hypers or Band Pull-Throughs	3 x 45 sec

DAY 4

Overhead Squat Variation Max Effort	Heaving Snatch Balance 1RM
Farmer's Walk	4 x 40 yd
Sled Bear Crawls	4 x 30 yd

DAY 5

	Off
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DAY 6

Back Squat with Belt	Set 1: 93% x 1, rest 2 minutes, then 78% x 4 Set 2: (add 5-10 kilos to the 1 rep set if possible) 93% x 1, rest 2 minutes, then 78% x 4 Set 3: (add 5-10 kilos to the 1 rep set if possible) 93% x 1, rest 2 minutes, then 78% x 4+
Clean Grip Deadlift from 2 Inch Deficit	3RM, then -10% for 2 x 3

WEEK 10 (STRENGTH PHASE)

DAY 1

Front Squat with Belt	80% x 3, 85% x 2, 88% x 2, 90% x 1, 80% x 2, 85% x 2, 88% x 1, 90% x 1, 80% x 1, 85% x 1, 88% x 1, 90% x 1+
Glute Ham Raises	3 x 8

DAY 2

Warm Up with Overhead Squat Variations	Heaving Snatch Balance Doubles (work up to 68% of Snatch)
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DAY 3

Back Squats (Go Heavier on Last Two if Sets are Optimal Speed) Box is Optional	50% Bar Weight + 25% Bands or Chains for 7 x 3 (with 60 sec rest at >0.75 m/s)
Reverse Hypers or Band Pull-Throughs	3 x 50 sec

DAY 4

Overhead Squat Variation Max Effort	Overhead Squat 1RM
Farmer's Walk	4 x 40 yd
Sled Bear Crawls	4 x 30 yd

DAY 5

	Off
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DAY 6

Back Squat with Belt	Set 1: 95% x 1, rest 2 minutes, then 80% x 4 Set 2: (add 5-10 kilos to the 1 rep set if possible) 95% x 1, rest 2 minutes, then 80% x 4 Set 3: (add 5-10 kilos to the 1 rep set if possible) 95% x 1, rest 2 minutes, then 80% x 4+
Clean Grip Deadlift from 2 Inch Deficit	2RM, then -10% for 2 x 2

WEEK 11 (STRENGTH PHASE)

DAY 1

Front Squat with Belt	80% for 2 x 3, 85% for 2 x 2, 88% x 2
Glute Ham Raises	3 x 8

DAY 2

Warm Up with Overhead Squat Variations	Heaving Snatch Balance Doubles (work up to 60% of Snatch)
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DAY 3

Back Squats (Go Heavier on Last Two if Sets are Optimal Speed) Box is Optional	55% Bar Weight + 25% Bands or Chains for 8 x 2 (with 60 sec rest at >0.75 m/s)
Reverse Hypers or Band Pull-Throughs	3 x 30 sec

DAY 4

Overhead Squat Variation Max Effort	Heaving Snatch Balance plus Overhead Squat Max
Farmer's Walk	4 x 40 yd
Sled Bear Crawls	4 x 30 yd

DAY 5

	Off
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DAY 6

Back Squat with Belt	Set 1: 95% x 1, rest 2 minutes, then 80% x 3 Set 2: (add 5-10 kilos to the 1 rep set if possible) 95% x 1, rest 2 minutes, then 80% x 3 Set 3: (add 5-10 kilos to the 1 rep set if possible) 95% x 1, rest 2 minutes, then 80% x 3
Clean Grip Deadlift from 2 Inch Deficit	90% of 3RM for 3 x 3

WEEK 12 (STRENGTH PHASE)

DAY 1

Front Squat with Belt	1RM, then -20% 3
Glute Ham Raises	3 x 8

DAY 2

Warm Up with Overhead Squat Variations	Heaving Snatch Balance Doubles (work up to 50% of Snatch)
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DAY 3

Back Squats (Go Heavier on Last Two if Sets are Optimal Speed) Box is Optional	45% Bar Weight + 25% Bands or Chains for 5 x 3 (with 60 sec rest at >0.75 m/s)
Reverse Hypers or Band Pull-Throughs	3 x 60 sec

DAY 4

Overhead Squat Variation Max Effort	75% of Snatch for 3 x 3 on Snatch Balance
Farmer's Walk	4 x 40 yd
Sled Bear Crawls	3 x 30 yd

DAY 5

	Off
--	-----

DAY 6

Back Squat with Belt	Max Back Squat, and then -20% for 3
Clean Grip Deadlift from 2 Inch Deficit	1RM (no deficit), then -20% for 3

WEEK 13 (STRENGTH PHASE)

DAY 1

Front Squat with Belt	75% x 4, 80% for 2 x 3, 85% for 2 x 2, 88% x 1
Reverse Hypers	3 x 45 sec

DAY 2

Off

DAY 3

Back Squats to Box (Go Heavier on Last Two if Sets are Optimal Speed)	40% Bar Weight + 30% Bands or Chains 6 x 3 (with 60 sec rest at >0.75 m/s)
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DAY 4

Overhead Squat Variation Max Effort	Overhead Squat 3RM
1a. Sled Bear Crawls	4 x 30 yd
1b. Med Ball Side to Side Abs	4 x 15 touches per side

DAY 5

Back Squat	5RM, then -15% for 2 x 5
Clean Grip Deadlift	3RM (1st rep paused 3 sec at knee), then -10% for 2 x 3 (not paused)
TRX Leg Curls	3 x 10
Kettlebell High/Low Carries	4 x 20 yd each way

DAY 6

Off

WEEK 14 (STRENGTH PHASE)

DAY 1

Front Squat with Belt	78% for 2 x 3, 83% for 2 x 3, 88% for 2 x 2, 90% x 1
Reverse Hypers	4 x 45 sec

DAY 2

Off

DAY 3

Back Squats to Box (Go Heavier on Last Two if Sets are Optimal Speed)	45% Bar Weight + 30% Bands or Chains 7 x 3 (with 60 sec rest at >0.75 m/s)
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DAY 4

Overhead Squat Variation Max Effort	Snatch Balance 2RM
1a. Sled Bear Crawls	4 x 30 yd
1b. Med Ball Side to Side Abs	4 x 15 touches per side

DAY 5

Back Squat	5RM, then -15% for 5
Clean Grip Deadlift	3RM, then -10% for 2 x 3
TRX Leg Curls	3 x 10
Kettlebell High/Low Carries	4 x 20 yd each way

DAY 6

Off

WEEK 15 (STRENGTH PHASE)

DAY 1

Front Squat with Belt	80% x 3, 85% for 2 x 3, 90% x 2, 93% x 1
Reverse Hypers	3 x 50 sec

DAY 2

Off

DAY 3

Back Squats to Box (Go Heavier on Last Two if Sets are Optimal Speed)	50% Bar Weight + 30% Bands or Chains 8 x 2 (with 60-90 sec rest at >0.75 m/s)
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DAY 4

Overhead Squat Variation Max Effort	75% of Snatch for 3 x 3 on Snatch Balance
1a. Sled Bear Crawls	3 x 30 yd
1b. Med Ball Side to Side Abs	3 x 15 touches per side

DAY 5

Back Squat	3RM, then -15% for 3
Clean Grip Deadlift	1RM, then -20% for 2 x 3
TRX Leg Curls	3 x 10
Kettlebell High/Low Carries	3 x 25 yd each way

DAY 6

Off

WEEK 16 (STRENGTH PHASE)

DAY 1

Front Squat with Belt	75% x 3, 80% x 3, 85% x 1
Reverse Hypers	3 x 40 sec

DAY 2

Off

DAY 3

Back Squats to Box (Go Heavier on Last Two if Sets are Optimal Speed)	40% Bar Weight + 30% Bands or Chains 5 x 2 (with 60 sec rest at >0.75 m/s)
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DAY 4

Overhead Squat Variation Max Effort	Overhead Squat 1RM (paused 5 sec)
1a. Sled Bear Crawls	4 x 30 yd
1b. Med Ball Side to Side Abs	4 x 15 touches per side

DAY 5

Back Squat	1RM
Clean Grip Deadlift	90% of last week 3RM for 2 x 3
TRX Leg Curls	3 x 10
Kettlebell High/Low Carries	3 x 20 yd each way

DAY 6

Off

HIGH FREQUENCY AND HIGH INTENSITY PROGRAM

The number one way to get athletes stronger is to figure them out. Everyone is different, but I find athletes fall into one of three categories:

- The typical athlete who would benefit from the base program
- The hard gainer who needs massive amounts of volume to get strong
- The athlete who responds better to a little less volume but need to go heavy and often

This program focuses on that third category – the ones who like to go heavy and often. I am one of those athletes. Our weightlifter Nathan Damron is one of the strongest weightlifters in the country. He has a personal best back squat of 700 pounds, and he did that at 20 years old. Nathan performs best with a program like this.

A few years ago, I wrote our popular book *Squat Every Day*. I used that program to high bar back squat 650 pounds at 43 years old. I have made a few adjustments to our high frequency programs in the last two years. For starters, we noticed even high frequency athletes perform better if their program begins with a block of high volume. Three to four weeks normally does the trick.

WEEK 1 (ACCUMULATION PHASE)

DAY 1

Back Squat	5RM (1st rep paused 3 sec), then -15% for 2 x 5
Unilateral RDLs	3 x 10
DB Leg Curls	4 x 10
Unilateral Farmer's Walk	3 x 40yd each arm

DAY 2

Off

DAY 3

Front Squat	3RM
Rear Leg Elevated Split Squats	3 x 15 each leg (7 RPE)
Hang Snatch Grip High Pulls	60% for 3 x 10

DAY 4

Off

DAY 5

Off

DAY 6

Back Squat with Belt	10RM, then -10% for 2 x 5
Goodmornings	3 x 8 (start with 25% of squat at 7-8 RPE)
Bent-over Rows	60% for 5 x 10

WEEK 2 (ACCUMULATION PHASE)

DAY 1

Back Squat	5RM (1st rep paused 3 sec), then -15% for 2 x 5
Unilateral RDLs	3 x 10
DB Leg Curls	5 x 10
Unilateral Farmer's Walk	3 x 40yd each arm

DAY 2

Off

DAY 3

Front Squat	3RM
Rear Leg Elevated Split Squats	3 x 15 each leg (7 RPE)
Hang Snatch Grip High Pulls	63% for 3 x 10

DAY 4

Off

DAY 5

Off

DAY 6

Back Squat with Belt	10RM, then -10% for 2 x 10
Goodmornings	3 x 8 (add 5-10 kilos from last week at 7-8 RPE)
Bent-over Rows	65% for 5 x 10

WEEK 3 (ACCUMULATION PHASE)

DAY 1

Back Squat	90% of 5RM for 3 x 5
Unilateral RDLs	3 x 10
DB Leg Curls	3 x 10
Unilateral Farmer's Walk	3 x 50yd each arm

DAY 2

Off

DAY 3

Front Squat	90% of 3RM for 3
Rear Leg Elevated Split Squats	3 x 15 each leg (7 RPE)
Hang Snatch Grip High Pulls	58% for 3 x 10

DAY 4

Off

DAY 5

Off

DAY 6

Back Squat with Belt	90% of 10RM for 3x10
Goodmornings	Take original weight for 2 x 8 (7-8 RPE)
Bent-over Rows	60% for 3 x 10

WEEK 4 (ACCUMULATION PHASE)

DAY 1

Back Squat	5RM, then -10% for 2 x 5
Unilateral RDLs	3 x 10
DB Leg Curls	4 x 8
Unilateral Farmer's Walk	3 x 50yd each arm

DAY 2

Off

DAY 3

Front Squat	2RM
Rear Leg Elevated Split Squats	3 x 15 each leg (7 RPE)
Hang Snatch Grip High Pulls	65% for 3 x 10

DAY 4

Off

DAY 5

Off

DAY 6

Back Squat with Belt	8RM, then -15% for 8+
Goodmornings	3 x 8 (add 5 kilos at 7-8 RPE)
Bent-over Rows	70% for 5 x 10

I have found athletes like Nathan and me perform the best with a simple approach to the accumulation phase. We use undulated periodization in its simplest form (sets of tens, fives, and threes).

On day one we throw in a bit of the Conjugate Method with a bit of a pause. You will be pausing only the first rep of a set of five. By the final week, we drop the pause and hit a straight five-rep max.

One difference from this program and the original *Squat Every Day* program is I am prescribing anywhere from one-rep to ten-rep maxes with a focus between one-rep and five-rep maxes. In *Squat Every Day* there was mainly a focus on one-rep maxes. Yes, those one-rep maxes are the best way to increase absolute strength - but it's hard to maintain one-rep maxes day in and day out.

Day six is the high repetition maximum day to maximize hypertrophy. This is the only block in this program where you perform repetitions higher than five. After the accumulation phase, the high intensity and high frequency start to kick in.

WEEK 5 (HYPERTROPHY PHASE)

DAY 1

Back Squat	3RM (1st rep paused 3 sec), then -10% for 3
Clean Grip Deadlift from 2 Inch Deficit Paused at Mid Shin	5RM (1st 2 reps paused 3 sec), then -10% for 2 x 5 (not paused)
Barbell Elevated Hip Thrusts with Band Around Knees	3 x 8

DAY 2

Front Squat with Belt	1RM (paused 5 sec at 8 RPE)
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DAY 3

Front Squat (5 sec Eccentric, 2 sec Pause in Bottom, Explosive Concentric)	3RM, then -15% for 3
Snatch High Pulls	80% for 3 x 5

DAY 4

Overhead Squat	5RM
Unilateral Farmer's Walk	3 x 40 yd each hand
Barbell Rollouts	3 x 10
Band Pull Throughs	3 x 15

DAY 5

Back Squats with Bands (Mini Bands if Max Under 300lb, Purple if Max Under 400lb, Green if Max Under 500lb, Blue if Max is Over 500lb)	2RM
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DAY 6

Back Squat with Belt	5RM, then -15% for 5
2 Inch Deficit RDLs with Mini or Light Band	3 x 8 (progress ending with a 7-8 RPE)

WEEK 6 (HYPERTROPHY PHASE)

DAY 1

Back Squat	3RM (1st rep paused 3 sec), then -10% for 3
Clean Grip Deadlift from 2 Inch Deficit Paused at Mid Shin	5RM (1st 2 reps paused 3 sec), then -10% for 2 x 5 (not paused)
Barbell Elevated Hip Thrusts with Band Around Knees	3 x 8

DAY 2

Front Squat with Belt	1RM paused (5 sec at 9 RPE)
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DAY 3

Front Squat (5 sec Eccentric, 2 sec Pause in Bottom, Explosive Concentric)	3RM
Snatch High Pulls	83% for 4 x 5

DAY 4

Overhead Squat	5RM
Unilateral Farmer's Walk	3 x 40 yd each hand
Barbell Rollouts	3 x 10
Band Pull Throughs	3 x 15

DAY 5

Back Squats with Bands (Mini Bands if Max Under 300lb, Purple if Max Under 400lb, Green if Max Under 500lb, Blue if Max is Over 500lb)	2RM
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DAY 6

Back Squat with Belt	5RM, then -15% for 5
2 Inch Deficit RDLs with Mini or Light Band	3 x 8 (progress ending with a 8-9 RPE)

WEEK 7 (HYPERTROPHY PHASE)

DAY 1

Back Squat	3RM
Clean Grip Deadlift from 2 Inch Deficit Paused at Mid Shin	5RM (1st 2 reps paused 1 sec), then -10% for 2 x 5 (not paused)
Barbell Elevated Hip Thrusts with Band Around Knees	3 x 8

DAY 2

Front Squat with Belt	1RM (paused 5 sec)
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DAY 3

Front Squat (5 sec Eccentric, 2 sec Pause in Bottom, Explosive Concentric)	90% of 3RM for 3
Snatch High Pulls	80% for 3 x 5

DAY 4

Overhead Squat	3RM
Unilateral Farmer's Walk	3 x 40 yd each hand
Barbell Rollouts	3 x 10
Band Pull Throughs	3 x 15

DAY 5

Back Squats with Bands (Mini Bands if Max Under 300lb, Purple if Max Under 400lb, Green if Max Under 500lb, Blue if Max is Over 500lb)	1RM
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DAY 6

Back Squat with Belt	90% of 5RM for 2 x 5
2 Inch Deficit RDLs with Mini or Light Band	3 x 8 (progress ending with a 9-10 RPE)

WEEK 8 (HYPERTROPHY PHASE)

DAY 1

Back Squat	2RM
Clean Grip Deadlift from 2 Inch Deficit Paused at Mid Shin	5RM (1st rep paused 1 sec), then -10% for 2 x 5 (not paused)
Barbell Elevated Hip Thrusts with Band Around Knees	3 x 8

DAY 2

Front Squat with Belt	1RM (paused 3 sec)
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DAY 3

Front Squat (5 sec Eccentric, 2 sec Pause in Bottom, Explosive Concentric)	2RM
Snatch High Pulls	85% for 3 x 5

DAY 4

Overhead Squat	1RM
Unilateral Farmer's Walk	3 x 40 yd each hand
Barbell Rollouts	3 x 10
Band Pull Throughs	3 x 15

DAY 5

Back Squats with Bands (Mini Bands if Max Under 300lb, Purple if Max Under 400lb, Green if Max Under 500lb, Blue if Max is Over 500lb)	1RM
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DAY 6

Back Squat with Belt	5RM, then 15% for 5+
2 Inch Deficit RDLs with Mini or Light Band	3 x 8 (progress ending with a 7-8 RPE)

Day one is similar to the first block with a repetition maximum and a pause on the first rep. However, the overall volume starts to decrease with a reduction in the down sets.

Day two is similar to the base program with the recovery front squat. But day three shows another difference. Yes, you still maintain a tempo - but not as extreme. Therefore, you are able to use a higher intensity/load.

Day five gets a little crazy. We are going heavy, starting with a two-rep max and ending with a one-rep max. However, there is one cool addition. We are using bands to expose the body to higher than normal loads at the top. For example, let's say your max squat is 525 pounds. If you use 400 pounds of straight bar weight and attach blue bands, you will have 600 total pounds at the top. (See Appendix A for more information on calculating band tension.) Blue bands deload to an average of 40 pounds of tension, so at the bottom you are handling 440 pounds. This is still a weight you are capable of, and the body is now adjusting to a 600-pound load. Here are my suggestions for band usage:

- If your maximum is under 300 pounds, use mini-bands.
- If your maximum is less than 400 pounds, use purple bands (light bands).
- If your maximum is less than 500 pounds, use green bands (average bands).
- If your maximum is above 500 pounds, use blue bands (strong bands).

The final day is a simple five-repetition maximum with only one down set. On the final week, you will perform as many reps as possible on the final set. As you can see, we are keeping it simple, short, and heavy.

You can also include low bar squats on day six to keep a balanced approach with the hips, quads, and core. If you are a powerlifter, you might consider two days per week of low bar to perfect the movement.

WEEK 9 (STRENGTH PHASE)

DAY 1

Back Squat	1RM (paused 3 sec), then -20% for 2 x 3 (no pauses)
Glute Ham Raises	3 x 8

DAY 2

Warm Up with Overhead Squat Variations	Heaving Snatch Balance Doubles (work up to 65% of Snatch)
Front Squat with Belt	1RM (paused 3 sec at 8 RPE)

DAY 3

Back Squats to Box with Bands (Mini Bands if Max Under 300lb, Purple if Max Under 400lb, Green if Max Under 500lb, Blue if Max is Over 500lb)	3RM, then 3RM (no bands)
Reverse Hypers or Band Pull-Throughs	3 x 45 sec

DAY 4

Overhead Squat Variation Max Effort	Heaving Snatch Balance 1RM
Farmer's Walk	4 x 40 yd
Sled Bear Crawls	4 x 30 yd

DAY 5

Front Squat	1RM (with 50lb of chains paused 5 sec at 8 RPE)
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DAY 6

Back Squat with Belt	Set 1: 93% x 1, rest 2 minutes, then 78% x 4 Set 2: (add 5-10 kilos to the 1 rep set if possible) 93% x 1, rest 2 minutes, then 78% x 4 Set 3: (add 5-10 kilos to the 1 rep set if possible) 93% x 1, rest 2 minutes, then 78% x 4+
Clean Grip Deadlift from 2 Inch Deficit	3RM, then -10% for 2 x 3

WEEK 10 (STRENGTH PHASE)

DAY 1

Back Squat	1RM (paused 3 sec), then -20% for 2 x 3 (no pauses)
Glute Ham Raises	3 x 8

DAY 2

Warm Up with Overhead Squat Variations	Heaving Snatch Balance Doubles (work up to 68% of Snatch)
Front Squat with Belt	1RM (paused 3 sec at 9 RPE)

DAY 3

Back Squats to Box with Bands (Mini Bands if Max Under 300lb, Purple if Max Under 400lb, Green if Max Under 500lb, Blue if Max is Over 500lb)	3RM, then 3RM (no bands)
Reverse Hypers or Band Pull-Throughs	3 x 50 sec

DAY 4

Overhead Squat Variation Max Effort	Overhead Squat 1RM (with 50lb of Chain)
Farmer's Walk	4 x 40 yd
Sled Bear Crawls	4 x 30 yd

DAY 5

Front Squat	1RM (with 50lb of chains paused 5 sec at 9 RPE)
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DAY 6

Back Squat with Belt	Set 1: 95% x 1, rest 2 minutes, then 80% x 4 Set 2: (add 5-10 kilos to the 1 rep set if possible) 95% x 1, rest 2 minutes, then 80% x 4 Set 3: (add 5-10 kilos to the 1 rep set if possible) 95% x 1, rest 2 minutes, then 80% x 4+
Clean Grip Deadlift from 2 Inch Deficit	2RM, then -10% for 2 x 2

WEEK 11 (STRENGTH PHASE)

DAY 1

Back Squat	1RM (paused 3 sec)
Glute Ham Raises	3 x 8

DAY 2

Warm Up with Overhead Squat Variations	Heaving Snatch Balance Doubles (work up to 60% of Snatch)
Front Squat with Belt	1RM (paused 3 sec)

DAY 3

Back Squats to Box with Bands (Mini Bands if Max Under 300lb, Purple if Max Under 400lb, Green if Max Under 500lb, Blue if Max is Over 500lb)	3RM
Reverse Hypers or Band Pull-Throughs	3 x 30 sec

DAY 4

Overhead Squat Variation Max Effort	Heaving Snatch Balance plus Overhead Squat Max
Farmer's Walk	4 x 40 yd
Sled Bear Crawls	4 x 30 yd

DAY 5

Front Squat	1RM (with 50lb of chains paused 3 sec)
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DAY 6

Back Squat with Belt	Set 1: 95% x 1, rest 2 minutes, then 85% x 3 Set 2: (add 5-10 kilos to the 1 rep set if possible) 95% x 1, rest 2 minutes, then 85% x 3 Set 3: (add 5-10 kilos to the 1 rep set if possible) 95% x 1, rest 2 minutes, then 85% x 3
Clean Grip Deadlift from 2 Inch Deficit	90% of 3RM for 3 x 3

WEEK 12 (STRENGTH PHASE)

DAY 1

Back Squat	1RM (paused 1 sec)
Glute Ham Raises	3 x 8

DAY 2

Warm Up with Overhead Squat Variations	Heaving Snatch Balance Doubles (work up to 50% of Snatch)
Front Squat with Belt	1RM (paused 3 sec)

DAY 3

Back Squats to Box with Bands (Mini Bands if Max Under 300lb, Purple if Max Under 400lb, Green if Max Under 500lb, Blue if Max is Over 500lb)	1RM, then 1RM (without bands)
Reverse Hypers or Band Pull-Throughs	3 x 60 sec

DAY 4

Overhead Squat Variation Max Effort	75% of Snatch for 3 x 3 on Snatch Balance
Farmer's Walk	4 x 40 yd
Sled Bear Crawls	4 x 30 yd

DAY 5

	Off
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DAY 6

Back Squat with Belt	Max Back Squat, and then -20% for 3
Clean Grip Deadlift from 2 Inch Deficit	1RM (no deficit), then -20% for 3

Now we are going heavy but still keeping a bit of volume (unlike the original *Squat Every Day*). We are throwing in all of the methods and tools to get you as strong as possible: bands, chains, post-activation potentiation, Conjugate Method, accommodating resistance, and undulating periodization.

Day one is a simple one-rep max back squat with a pause. Unlike *Squat Every Day*, there are a couple of drop sets to add volume. So why add volume? First, we are creating more hypertrophy through mechanical loading. Second, we are improving efficiency. Practice makes perfect! Performing the movement more often gets you better at the movement.

Day three gets fun with some bands. You will perform a three-rep max with bands with the same kind of recommendations as in the last block. However, you will take the bands off and perform a straight weight three-rep max after working up this time. This post-activation potentiation was one of my favorite methods when I was still competing. This technique produced more personal records for me than any other method I used. The key is to make sure the bands almost deload at the bottom of the squat without completely deloading. I would also recommend not surpassing a total load of 110-115% of your one-rep max at the top.

WEEK 13 (STRENGTH PHASE)

DAY 1

Back Squat with 50-100lb of Chain	1RM
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DAY 2

Front Squat	1RM (paused 3 sec with 50lb of chain at 8 RPE)
Reverse Hypers	3 x 45 sec

DAY 3

Overhead Squat Variation Max Effort	Overhead Squat 3RM (with 50lb of Chain at 9 RPE)
1a. Sled Bear Crawls	4 x 30 yd
1b. Med Ball Side to Side Abs	4 x 15 touches per side

DAY 4

Back Squats with Bands (Mini Bands if Max Under 300lb, Purple if Max Under 400lb, Green if Max Under 500lb, Blue if Max is Over 500lb)	1RM, then 3RM (without bands)
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DAY 5

Front Squat	2RM (1st rep paused 2 sec at 9 RPE)
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DAY 6

Back Squat	5RM, then -15% for 5+
Clean Grip Deadlift	3RM (1st rep paused 3 sec at knee), then -10% for 3 (not paused)
TRX Leg Curls	3 x 10
Kettlebell High/Low Carries	4 x 20 yd each way

WEEK 14 (STRENGTH PHASE)

DAY 1

Back Squat with 50-100lb of Chain	1RM
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DAY 2

Front Squat	1RM (paused 1 sec with 50lb of chain at 9 RPE)
Reverse Hypers	4 x 45 sec

DAY 3

Overhead Squat Variation Max Effort	Snatch Balance 2RM
1a. Sled Bear Crawls	4 x 30 yd
1b. Med Ball Side to Side Abs	4 x 15 touches per side

DAY 4

Back Squats with Bands (Mini Bands if Max Under 300lb, Purple if Max Under 400lb, Green if Max Under 500lb, Blue if Max is Over 500lb)	1RM, then 1RM (without bands)
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DAY 5

Front Squat	1RM (with 1 sec pause)
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DAY 6

Back Squat	3RM, then -15% for 3+
Clean Grip Deadlift	3RM, then -15% for 3
TRX Leg Curls	3 x 10
Kettlebell High/Low Carries	4 x 20 yd each way

WEEK 15 (STRENGTH PHASE)

DAY 1

Back Squat with 50-100lb of Chain	1RM
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DAY 2

Front Squat	1RM
Reverse Hypers	3 x 50 sec

DAY 3

Overhead Squat Variation Max Effort	Drop Snatch 1RM
1a. Sled Bear Crawls	3 x 30 yd
1b. Med Ball Side to Side Abs	3 x 15 touches per side

DAY 4

Back Squats with Bands (Mini Bands if Max Under 300lb, Purple if Max Under 400lb, Green if Max Under 500lb, Blue if Max is Over 500lb)	1RM
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DAY 5

Front Squat	1RM
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DAY 6

Back Squat	1RM
Clean Grip Deadlift	1RM
TRX Leg Curls	3 x 10
Kettlebell High/Low Carries	3 x 25 yd each way

WEEK 16 (STRENGTH PHASE)

DAY 1

Back Squat	80% for 2 x 1
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DAY 2

Reverse Hypers	3 x 40 sec
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DAY 3

Overhead Squat Variation Max Effort	Overhead Squat 1RM (paused 5 Sec at 8 RPE)
1a. Sled Bear Crawls	4 x 30 yd
1b. Med Ball Side to Side Abs	4 x 15 touches per side

DAY 4

Back Squats	75% for 3 x 2
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DAY 5

	Off
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DAY 6

Back Squat	1RM
Clean Grip Deadlift	90% of last week 3RM for 2 x 3
TRX Leg Curls	3 x 10
Kettlebell High/Low Carries	3 x 20 yd each way

Now we move on to the second strength block where we will finish with a peak phase. Now it's time to go heavy, and the volume will be dropping. This part of the phase is my personal favorite. You will be going heavy with very few down sets.

Day one is a one-repetition maximum back squat with 50-100 pounds of chains. This is a great way to prepare the body for heavy weights because you will be handling supramaximal weights at the top. Day two is a similar one-rep max front squat paused with chains. This one is more of a recovery squat, which is why I used the RPE system to help regulate effort.

Day three is a version of the overhead squat that changes each week. The main goal here is to perform a squat with a lighter load. Overhead squats are great for functional movement and muscular symmetry. On day four we are using PAP to crush through some barriers. You will be performing back squats with bands - but only a one-rep max. Again, I recommend not exceeding 110-115% of your one-rep max in total load at the top of your banded squats. That's enough to prepare the nervous system for bigger weights without bands.

Here's an example of how you might work up to this. If your current maximum was 525 pounds, you would use blue bands (200 pounds at the top).

- Set 1 - 135 lb straight weight with no bands for 2 x 5 as a warm up
- Set 2 - 225 lb straight weight for 1 x 5
- Set 3 - 135 lb + blue bands (335 lb at the top) for 1 x 3
- Set 4 - 225 lb + blue bands (425 lb at the top) for 1 x 2
- Set 5 - 315 lb + blue bands (515 lb at the top) for 1 x 1

- Set 6 - 405 lb + blue bands (605 lb at the top) for 1 x 1
- Set 7 - 475 lb straight weight for 1 x 1
- Set 8 - 535 lb straight weight for 1 x 1

This type of workout is similar to many of my early training days. Just writing it out brings back so many memories. If strength athletes are completely honest, they will tell you 85% of the time a squat is made or missed the second they pick the weight up out of the rack. This technique is a great way to make maximum weights feel light.

Day five is a simple front squat repetition maximum. Week 15 is the peak week for the front squat. We drop the day five front squat on week 16 to deload for the big max out session for the back squat.

Day six starts with a five-rep max on week 13. The only down sets during this block take place on this day, and it is only one down set. Week 13 and 14 have some max-rep sets. Week 15 is a one-rep max preparing you for maximal weights. Week 16 is one big deload week leading up to the big max out session for the back squat on the final day. That's where all of the magic happens.



HARD GAINER PROGRAM

The biggest difference in this program is the volume. You could say this program is high volume, high frequency, and moderate intensity. I used a program like this to pack some major kilograms onto the squat of Tom Summa. Tom is one of the hardest gainers I have encountered. The advantage Tom has over other weightlifters is that every kilo he adds to his squat goes right into his snatch and clean and jerk.

Out of frustration, I decided to design the toughest squat program ever to force him to get stronger. Guess what? It worked. This style of program has made several of our hard gainers much stronger. If you are a hard gainer, this program is the one for you.

WEEK 1 (ACCUMULATION PHASE)

DAY 1

Tempo Back Squat (5 sec eccentric, 2 sec pause bottom, 4 sec concentric)	5RM, then -10% for 2 x 5
Unilateral RDLs	3 x 10
DB Leg Curls	4 x 10
Unilateral Farmer's Walk	3 x 40yd each arm

DAY 2

Off

DAY 3

Front Squat	80% for 10 x 3
Rear Leg Elevated Split Squats	3 x 15 each leg (7 RPE)
Hang Snatch Grip High Pulls	60% for 3 x 10

DAY 4

Off

DAY 5

Off

DAY 6

Back Squat with Belt	Set 1: 80% x 3, rest 2 minutes, then 60% x 10 Set 2: (add 5 kilos to each weight if possible) 80% x 3, rest 2 minutes, then 60% x 10 Set 3: (add 5 kilos to each weight if possible) 80% x 3, rest 2 minutes, then 60% x 10
Goodmornings	3 x 8 (start with 25% of squat at 7-8 RPE)
Bent-over Rows	60% for 5 x 10

WEEK 2 (ACCUMULATION PHASE)

DAY 1

Tempo Back Squat (5 sec eccentric, 2 sec pause bottom, 4 sec concentric)	5RM, then -10% for 2 x 5
Unilateral RDLs	3 x 10
DB Leg Curls	5 x 10
Unilateral Farmer's Walk	3 x 40yd each arm

DAY 2

Off

DAY 3

Front Squat	80% for 10 x 4
Rear Leg Elevated Split Squats	3 x 15 each leg (7 RPE)
Hang Snatch Grip High Pulls	63% for 3 x 10

DAY 4

Off

DAY 5

Off

DAY 6

Back Squat with Belt	Set 1: 83% x 3, rest 2 minutes, then 63% x 10 Set 2: (add 5 kilos to each weight if possible) 83% x 3, rest 2 minutes, then 63% x 10 Set 3: (add 5 kilos to each weight if possible) 83% x 3, rest 2 minutes, then 63% x 10
Goodmornings	3 x 8 (add 5-10 kilos from last week at 7-8 RPE)
Bent-over Rows	65% for 5 x 10

WEEK 3 (ACCUMULATION PHASE)

DAY 1

Tempo Back Squat (5 sec eccentric, 2 sec pause bottom, 4 sec concentric)	Take 90% of last week and do 2 x 5
Unilateral RDLs	3 x 10
DB Leg Curls	3 x 10
Unilateral Farmer's Walk	3 x 50yd each arm

DAY 2

Off

DAY 3

Front Squat	80% for 10 x 3
Rear Leg Elevated Split Squats	3 x 15 each leg (7 RPE)
Hang Snatch Grip High Pulls	58% for 3 x 10

DAY 4

Off

DAY 5

Off

DAY 6

Back Squat with Belt	Set 1: 80% x 3, rest 2 minutes, then 60% x 10 Set 2: 80% x 3, rest 2 minutes, then 60% x 10 Set 3: 80% x 3, rest 2 minutes, then 60% x 10
Goodmornings	Take original weight for 2 x 8 (7-8 RPE)
Bent-over Rows	60% for 3 x 10

WEEK 4 (ACCUMULATION PHASE)

DAY 1

Tempo Back Squat (5 sec eccentric, 2 sec pause bottom, 4 sec concentric)	5RM, then -10% for 2 x 5
Unilateral RDLs	3 x 10
DB Leg Curls	4 x 8
Unilateral Farmer's Walk	3 x 50yd each arm

DAY 2

Off

DAY 3

Front Squat	80% for 10 x 5
Rear Leg Elevated Split Squats	3 x 15 each leg (7 RPE)
Hang Snatch Grip High Pulls	65% for 3 x 10

DAY 4

Off

DAY 5

Off

DAY 6

Back Squat with Belt	Set 1: 85% x 3, rest 2 minutes, then 65% x 10 Set 2: (add 5 kilos to each weight if possible) 85% x 3, rest 2 minutes, then 65% x 10 Set 3: (add 5 kilos to each weight if possible) 85% x 3, rest 2 minutes, then 65% x 10
Goodmornings	3 x 8 (add 5 kilos at 7-8 RPE)
Bent-over Rows	70% for 5 x 10

WEEK 5 (HYPERTROPHY PHASE)

DAY 1

Front Squat	5RM, then -10% for 5 and then -15% for 5+
Clean Grip Deadlift from 2 inch Deficit (Paused at Mid Shin)	5RM (1st 2 reps paused 3 sec), then -10% for 2 x 5 (not paused)
BB Elevated Hip Thrusts with Band Around Knees	3 x 8

DAY 2

Back Squats	5 x 5 with last set max reps (start with 80% of 1RM and then progress)
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DAY 3

Front Squat (8 sec eccentric, 2 sec pause in bottom, 5 sec concentric)	3RM, then -10% for 2 x 3 (all paused)
Snatch High Pulls	80% for 3 x 5

DAY 4

Overhead Squat Variation Max Effort	Work Up to 75% for 3 x 5 (last set is 5+)
Back Squat	3 x 5 (using 95% of weight from Day 2)
Unilateral Farmer's Walk	3 x 40 yd ea hand
BB Rollouts	3 x 10
Band Pull Throughs	3 x 15

DAY 5

Front Squats	1RM (with 5 second pause), then -15% for max reps
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DAY 6

Back Squat with Belt	10RM, then -10% for 10 and then -15% for 10+
2 Inch Deficit RDLs with Mini or Light Band	3 x 8 Progress ending (7-8 RPE)

WEEK 6 (HYPERTROPHY PHASE)

DAY 1

Front Squat	5RM, then -10% for 5 and then -15% for 5+
Clean Grip Deadlift from 2 inch Deficit (Paused at Mid Shin)	5RM (1st 2 reps paused 3 sec), then -10% for 2 x 5 (not paused)
BB Elevated Hip Thrusts with Band Around Knees	3 x 8

DAY 2

Back Squats	5 x 5 with last set max reps (if completed all reps week 1, add 5-10lb)
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DAY 3

Front Squat (8 sec eccentric, 2 sec pause in bottom, 5 sec concentric)	3RM, then -10% for 2 x 3 (all paused)
Snatch High Pulls	83% for 4 x 5

DAY 4

Overhead Squat Variation Max Effort	Work Up to 78% for 3 x 5 (last set is 5+)
Back Squat	3 x 5 (using 95% of weight from Day 2)
Unilateral Farmer's Walk	3 x 40 yd ea hand
BB Rollouts	3 x 10
Band Pull Throughs	3 x 15

DAY 5

Front Squats	1RM (with 5 second pause), then -15% for max reps
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DAY 6

Back Squat with Belt	10RM, then -10% for 10 and then -15% for 10+
2 Inch Deficit RDLs with Mini or Light Band	3 x 8 Progress ending (8-9 RPE)

WEEK 7 (HYPERTROPHY PHASE)

DAY 1

Front Squat	5RM, then -10% for 5 and then -15% for 5+
Clean Grip Deadlift from 2 inch Deficit (Paused at Mid Shin)	5RM (1st 2 reps paused 1 sec), then -10% for 2 x 5 (not paused)
BB Elevated Hip Thrusts with Band Around Knees	3 x 8

DAY 2

Back Squats	5 x 5 with last set max reps (if completed all reps week 2, add 5-10lb)
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DAY 3

Front Squat (8 sec eccentric, 2 sec pause in bottom, 5 sec concentric)	90% of 3RM for 2 x 3
Snatch High Pulls	80% for 3 x 5

DAY 4

Overhead Squat Variation Max Effort	Work Up to 80% for 3 x 5
Back Squat	3 x 5 (using 95% of weight from Day 2)
Unilateral Farmer's Walk	3 x 40 yd ea hand
BB Rollouts	3 x 10
Band Pull Throughs	3 x 15

DAY 5

Front Squats	1RM (with 3 second pause), then -15% for max reps
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DAY 6

Back Squat with Belt	10RM, then -10% for 10 and then -15% for 10+
2 Inch Deficit RDLs with Mini or Light Band	3 x 8 Progress ending (9-10 RPE)

WEEK 8 (HYPERTROPHY PHASE)

DAY 1

Front Squat	3RM, then -10% for 3 and then -15% for 3+
Clean Grip Deadlift from 2 inch Deficit (Paused at Mid Shin)	5RM (1st rep paused 1 sec), then -10% for 2 x 5 (not paused)
BB Elevated Hip Thrusts with Band Around Knees	3 x 8

DAY 2

Back Squats	3RM with 1st rep paused 3 sec & then -10% for 2x3 no pauses and last set 3+
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DAY 3

Front Squat (8 sec eccentric, 2 sec pause in bottom, 5 sec concentric)	1RM, then -20% for 2 x 3 (all paused)
Snatch High Pulls	85% for 3 x 5

DAY 4

Overhead Squat Variation Max Effort	5RM
Back Squat	3 x 3 (using 95% of 3RM from day 2 with no pauses)
Unilateral Farmer's Walk	3 x 40 yd ea hand
BB Rollouts	3 x 10
Band Pull Throughs	3 x 15

DAY 5

Front Squats	1RM (with 1 second pause), then -15% for 3
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DAY 6

Back Squat with Belt	8RM, then -10% for 8 and then -15% for 8+
2 Inch Deficit RDLs with Mini or Light Band	3 x 8 Progress ending (7-8 RPE)

WEEK 9 (STRENGTH PHASE)

DAY 1

Front Squat with Belt	80% x 5, 85% x 3, 88% x 2, 80% x 4, 85% x 2, 88% x 2+
Glute Ham Raises	3 x 8

DAY 2

Warm Up with Overhead Squat Variations	Heaving Snatch Balance Doubles (work up to 65% of Snatch)
Back Squat	3RM (1st rep paused 3 sec), then -10% for 2 x 3 (no pauses and last set 3+)

DAY 3

Back Squats (Go Heavier on Last Two if Sets are Optimal Speed) Box is Optional	45% Bar Weight + 25% Bands or Chains for 6 x 3 (with 60 sec rest at >0.75 m/s)
Reverse Hypers or Band Pull-Throughs	3 x 45 sec

DAY 4

Overhead Squat Variation Max Effort	Heaving Snatch Balance 1RM
Farmer's Walk	4 x 40 yd
Sled Bear Crawls	4 x 30 yd

DAY 5

Front Squat	1RM (with 50lb of chains paused 5 sec at 8 RPE)
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DAY 6

Back Squat with Belt	65% x 8, 75% x 5, 85% x 3, 90% x 1, 88% x 3, 78% x 5+
Clean Grip Deadlift from 2 Inch Deficit	3RM, then -10% for 2 x 3

WEEK 10 (STRENGTH PHASE)

DAY 1

Front Squat with Belt	80% x 4, 85% x 3, 88% x 2, 90% x 2, 80% x 3, 85% x 2, 88% x 1, 90% x 1, 80% x 2, 85% x 1, 88% x 1, 90% x 1+
Glute Ham Raises	3 x 8

DAY 2

Warm Up with Overhead Squat Variations	Heaving Snatch Balance Doubles (work up to 68% of Snatch)
Back Squat	3RM (1st rep paused 3 sec), then -10% for 2 x 3 (no pauses and last set 3+)

DAY 3

Back Squats (Go Heavier on Last Two if Sets are Optimal Speed) Box is Optional	50% Bar Weight + 25% Bands or Chains for 7 x 3 (with 60 sec rest at >0.75 m/s)
Reverse Hypers or Band Pull-Throughs	3 x 50 sec

DAY 4

Overhead Squat Variation Max Effort	Overhead Squat 1RM
Farmer's Walk	4 x 40 yd
Sled Bear Crawls	4 x 30 yd

DAY 5

Front Squat	1RM (with 50lb of chains paused 3 sec at 8 RPE)
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DAY 6

Back Squat with Belt	65% x 8, 75% x 5, 85% x 3, 90% x 1, 88% x 3, 78% x 5+ (each week add 5-10lbs if all reps and sets are completed the week before)
Clean Grip Deadlift from 2 Inch Deficit	2RM, then -10% for 2 x 2

WEEK 11 (STRENGTH PHASE)

DAY 1

Front Squat with Belt	80% for 2 x 3, 85% for 2 x 2, 88% x 2
Glute Ham Raises	3 x 8

DAY 2

Warm Up with Overhead Squat Variations	Heaving Snatch Balance Doubles (work up to 60% of Snatch)
Back Squat	3RM, then -15% for 2 x 3 and last set is 3+

DAY 3

Back Squats (Go Heavier on Last Two if Sets are Optimal Speed) Box is Optional	55% Bar Weight + 25% Bands or Chains for 8 x 2 (with 60 sec rest at >0.75 m/s)
Reverse Hypers or Band Pull-Throughs	3 x 30 sec

DAY 4

Overhead Squat Variation Max Effort	Heaving Snatch Balance plus Overhead Squat Max
Farmer's Walk	4 x 40 yd
Sled Bear Crawls	4 x 30 yd

DAY 5

Front Squat	1RM (with 50lb of chains paused 3 sec at 9 RPE)
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DAY 6

Back Squat with Belt	65% x 8, 75% x 5, 85% x 3, 90% x 1, 88% x 3, 78% x 5+ (each week add 5-10lbs if all reps and sets are completed the week before)
Clean Grip Deadlift from 2 Inch Deficit	90% of 3RM for 3 x 3

WEEK 12 (STRENGTH PHASE)

DAY 1

Front Squat with Belt	1RM, then -20% for 2 x 3
Glute Ham Raises	3 x 8

DAY 2

Warm Up with Overhead Squat Variations	Heaving Snatch Balance Doubles (work up to 50% of Snatch)
Back Squat	3RM, then -15% for 2 x 3 and last set is 3+

DAY 3

Back Squats (Go Heavier on Last Two if Sets are Optimal Speed) Box is Optional	45% Bar Weight + 25% Bands or Chains for 5 x 3 (with 60 sec rest at >0.75 m/s)
Reverse Hypers or Band Pull-Throughs	3 x 60 sec

DAY 4

Overhead Squat Variation Max Effort	75% of Snatch for 3 x 3 on Snatch Balance
Farmer's Walk	4 x 40 yd
Sled Bear Crawls	3 x 30 yd

DAY 5

	Off
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DAY 6

Back Squat with Belt	65% x 8, 75% x 5, 85% x 3, 90% x 1, 88% x 3, 78% x 5+ (each week add 5-10lbs if all reps and sets are completed the week before)
Clean Grip Deadlift	1RM, then -20% for 3

WEEK 13 (STRENGTH PHASE)

DAY 1

Back Squat	3RM (1st rep paused 3 sec)
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DAY 2

Front Squat with Belt	75% x 4, 80% for 2 x 3, 85% for 2 x 2, 88% x 1
Walking Barbell Lunges	3 x 10
Reverse Hypers	3 x 45 sec

DAY 3

Overhead Squat Variation Max Effort	Overhead Squat 3RM
1a. Sled Bear Crawls	4 x 30 yd
1b. Med Ball Side to Side Abs	4 x 15 touches per side

DAY 4

Back Squats to Box (Go Heavier on Last Two if Sets are Optimal Speed)	40% Bar Weight + 30% Bands or Chains for 6 x 3 (with 60 sec rest at >0.75m/s)
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DAY 5

Front Squat	1RM (with 3 sec pause)
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DAY 6

Back Squat	5RM, then -15% for 2 x 5 (last set is 5+)
Clean Grip Deadlift	3RM (1st rep paused 3 sec at knee), then -10% for 2 x 3 (not paused)
TRX Leg Curls	3 x 10
Kettlebell High/Low Carries	4 x 20 yd each way

WEEK 14 (STRENGTH PHASE)

DAY 1

Back Squat	2RM
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DAY 2

Front Squat with Belt	78% for 2 x 3, 83% for 2 x 3, 88% for 2 x 2, 90% x 1
Walking Barbell Lunges	3 x 10
Reverse Hypers	4 x 45 sec

DAY 3

Overhead Squat Variation Max Effort	Snatch Balance 2RM
1a. Sled Bear Crawls	4 x 30 yd
1b. Med Ball Side to Side Abs	4 x 15 touches per side

DAY 4

Back Squats to Box (Go Heavier on Last Two if Sets are Optimal Speed)	45% Bar Weight + 30% Bands or Chains for 7 x 3 (with 60 sec rest at >0.75m/s)
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DAY 5

Front Squat	1RM (with 1 sec pause)
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DAY 6

Back Squat	5RM, then -15% for 3 x 5 (last set is 5+)
Clean Grip Deadlift	3RM, then -10% for 2 x 3
TRX Leg Curls	3 x 10
Kettlebell High/Low Carries	4 x 20 yd each way

WEEK 15 (STRENGTH PHASE)

DAY 1

Back Squat	1RM
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DAY 2

Front Squat with Belt	80% x 3, 85% for 2 x 3, 90% x 2, 93% x 1
Walking Barbell Lunges	3 x 10
Reverse Hypers	3 x 50 sec

DAY 3

Overhead Squat Variation Max Effort	75% of Snatch for 3 x 3 on Snatch Balance
1a. Sled Bear Crawls	3 x 30 yd
1b. Med Ball Side to Side Abs	3 x 15 touches per side

DAY 4

Back Squats to Box (Go Heavier on Last Two if Sets are Optimal Speed)	50% Bar Weight + 30% Bands or Chains for 8 x 2 (with 60 sec rest at >0.75m/s)
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DAY 5

Front Squat	1RM (with 1 sec pause)
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DAY 6

Back Squat	3RM, then -15% for 3+
Clean Grip Deadlift	1RM, then -20% for 2 x 3
TRX Leg Curls	3 x 10
Kettlebell High/Low Carries	3 x 25 yd each way

WEEK 16 (STRENGTH PHASE)

DAY 1

Back Squat	80% for 2 x 1
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DAY 2

Front Squat with Belt	75% x 3, 80% x 3, 85% x 1
Reverse Hypers	3 x 40 sec

DAY 3

Overhead Squat Variation Max Effort	Overhead squat 1RM (paused 5 sec)
1a. Sled Bear Crawls	4 x 30 yd
1b. Med Ball Side to Side Abs	4 x 15 touches per side

DAY 4

Back Squats to Box (Go Heavier on Last Two if Sets are Optimal Speed)	40% Bar Weight + 30% Bands or Chains for 5 x 2 (with 60 sec rest at >0.75m/s)
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DAY 5

	Off
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DAY 6

Back Squat	1RM
Clean Grip Deadlift	90% of last week 3RM for 2 x 3
TRX Leg Curls	3 x 10
Kettlebell High/Low Carries	3 x 20 yd each way

POWERLIFTING SPECIFIC PROGRAM

The powerlifting workout is very similar to the base program but with much more specificity. The focus is on the back squat - specifically the low bar back squat. I've also included some specialty bars.

In the first strength block on day three, I've prescribed the safety squat bar. This bar is fantastic for strengthening the spinal erectors. The weight distributes forward, forcing the spinal erectors to work harder than normal to overcome the increased spinal flexor moment. In the second strength block on day four, I am prescribing a Buffalo Bar. The Buffalo Bar is great for two reasons. My favorite part is that the natural curve of the bar is a bit easier on the shoulders and elbows. The curve encourages you to stay vertical because if you incline your torso, the weight shifts forward and the movement gets tougher.

Other than that, this workout is very similar to the base program. With powerlifting, the goal is to strengthen the low bar back squat. Specificity is what makes this workout different from all of the rest.

WEEK 1 (ACCUMULATION PHASE)

DAY 1

Tempo High Bar Back Squat (5 sec eccentric, 2 sec pause in the bottom, 4 sec concentric)	5RM, then -10% for 2 x 5
Unilateral RDLs	3 x 10
DB Leg Curls	4 x 10
Unilateral Farmer's Walk	3 x 40 yd each arm

DAY 2

Off

DAY 3

Front Squat	80% for 10 x 3
Rear Leg Elevated Split Squats	3 x 15 each leg (7 RPE)
Hang Snatch Grip High Pulls	60% for 3 x 10

DAY 4

Off

DAY 5

Off

DAY 6

Low Bar Back Squat with Belt	Set 1: 80% x 3, rest 2 minutes, then 60% x 10 Set 2: (add 5 kilos to each weight if possible) 80% x 3, rest 2 minutes, then 60% x 10 Set 3: (add 5 kilos to each weight if possible) 80% x 3, rest 2 minutes, then 60% x 10
Goodmornings	3 x 8 (start with 25% of squat at 7-8 RPE)
Bent-over Rows	60% for 5 x 10

WEEK 2 (ACCUMULATION PHASE)

DAY 1

Tempo High Bar Back Squat (5 sec eccentric, 2 sec pause in the bottom, 4 sec concentric)	5RM, then -10% for 2 x 5
Unilateral RDLs	3 x 10
DB Leg Curls	5 x 10
Unilateral Farmer's Walk	3 x 40 yd each arm

DAY 2

Off

DAY 3

Front Squat	80% for 10 x 4
Rear Leg Elevated Split Squats	3 x 15 each leg (7 RPE)
Hang Snatch Grip High Pulls	63% for 3 x 10

DAY 4

Off

DAY 5

Off

DAY 6

Low Bar Back Squat with Belt	Set 1: 83% x 3, rest 2 minutes, then 63% x 10 Set 2: (add 5 kilos to each weight if possible) 83% x 3, rest 2 minutes, then 63% x 10 Set 3: (add 5 kilos to each weight if possible) 83% x 3, rest 2 minutes, then 63% x 10
Goodmornings	3 x 8 (add 5-10 Kilos from last week at 7-8 RPE)
Bent-over Rows	65% for 5 x 10

WEEK 3 (ACCUMULATION PHASE)

DAY 1

Tempo High Bar Back Squat (5 sec eccentric, 2 sec pause in the bottom, 4 sec concentric)	2 x 5 with 90% of last week
Unilateral RDLs	3 x 10
DB Leg Curls	3 x 10
Unilateral Farmer's Walk	3 x 50 yd each arm

DAY 2

Off

DAY 3

Front Squat	80% for 10 x 3
Rear Leg Elevated Split Squats	3 x 15 each leg (7 RPE)
Hang Snatch Grip High Pulls	58% for 3 x 10

DAY 4

Off

DAY 5

Off

DAY 6

Low Bar Back Squat with Belt	Set 1: 80% x 3, rest 2 minutes, then 60% x 10, don't increase weight Set 2: 80% x 3, rest 2 minutes, then 60% x 10, don't increase weight Set 3: 80% x 3, rest 2 minutes, then 60% x 10, don't increase weight
Goodmornings	2 x 8 (using original weight at 7-8 RPE)
Bent-over Rows	60% for 3 x 10

WEEK 4 (ACCUMULATION PHASE)

DAY 1

Tempo High Bar Back Squat (5 sec eccentric, 2 sec pause in the bottom, 4 sec concentric)	5RM, then -10% for 2 x 5
Unilateral RDLs	3 x 10
DB Leg Curls	4 x 8
Unilateral Farmer's Walk	3 x 50 yd each arm

DAY 2

Off

DAY 3

Front Squat	80% for 10 x 5
Rear Leg Elevated Split Squats	3 x 15 each leg (7 RPE)
Hang Snatch Grip High Pulls	65% for 3 x 10

DAY 4

Off

DAY 5

Off

DAY 6

Low Bar Back Squat with Belt	Set 1: 85% x 3, rest 2 minutes, then 65% x 10 Set 2: (add 5 kilos to each weight if possible) 85% x 3, rest 2 minutes, then 65% x 10 Set 3: (add 5 kilos to each weight if possible) 85% x 3, rest 2 minutes, then 65% x 10
Goodmornings	3 x 8 (add 5 kilos at 7-8 RPE)
Bent-over Rows	70% for 5 x 10

WEEK 5 (HYPERTROPHY PHASE)

DAY 1

High Bar Back Squat with Belt	75% for 2 x 4, 80% for 2 x 3, 85% for 2 x 2
Clean Grip Deadlift from 2 Inch Deficit Paused at Mid Shin	5RM (1st 2 reps paused 3 sec), then -10% for 2 x 5 (not paused)
Barbell Elevated Hip Thrusts with Band Around Knees	3 x 8

DAY 2

Front Squat with Belt	1RM paused 5 sec (7 RPE)
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DAY 3

Front Squat (8 sec eccentric, 2 sec pause in bottom, 5 sec concentric)	3RM, then -10% for 2 x 3 (all paused)
Suitcase Deadlifts	4 x 6 each side (8 RPE)
Snatch High Pulls	80% for 3 x 5

DAY 4

Overhead Squat Variation Max Effort	Work Up to 75% for 3 x 5 (last set is 5+)
Unilateral Farmer's Walk	3 x 40 yd each hand
Barbell Rollouts	3 x 10
Band Pull Throughs	3 x 15

DAY 5

	Off
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DAY 6

Low Bar Back Squat with Belt	Set 1: 85% x 2, rest 2 minutes, then 70% x 6 Set 2: (add 5 kilos to each weight if possible) 85% x 2, rest 2 minutes, then 70% x 6 Set 3: (add 5 kilos to each weight if possible) 85% x 2, rest 2 minutes, then 70% x 6
2 Inch Deficit RDLs with Mini or Light Band	3 x 8 (progress ending with an 7-8 RPE)

WEEK 6 (HYPERTROPHY PHASE)

DAY 1

High Bar Back Squat with Belt	75% x 4, 80% for 2 x 3, 83% for 2 x 3, 85% for 2 x 2, 88% x 2
Clean Grip Deadlift from 2 Inch Deficit Paused at Mid Shin	5RM (1st 2 reps paused 3 sec), then -10% for 2 x 5 (not paused)
Barbell Elevated Hip Thrusts with Band Around Knees	3 x 8

DAY 2

Front Squat with Belt	1RM paused 5 sec (7 RPE)
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DAY 3

Front Squat (8 sec eccentric, 2 sec pause in bottom, 5 sec concentric)	3RM, then -10% for 2 x 3 (all paused)
Suitcase Deadlifts	4 x 6 each side (8 RPE)
Snatch High Pulls	83% for 4 x 5

DAY 4

Overhead Squat Variation Max Effort	Work Up to 78% for 3 x 5 (last set is 5+)
Unilateral Farmer's Walk	3 x 40 yd each hand
Barbell Rollouts	3 x 10
Band Pull Throughs	3 x 15

DAY 5

	Off
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DAY 6

Low Bar Back Squat with Belt	Set 1: 88% x 2, rest 2 minutes, then 73% x 6 Set 2: (add 5 kilos to each weight if possible) 88% x 2, rest 2 minutes, then 73% x 6 Set 3: (add 5 kilos to each weight if possible) 88% x 2, rest 2 minutes, then 73% x 6+
2 Inch Deficit RDLs with Mini or Light Band	3 x 8 (progress ending with an 8-9 RPE)

WEEK 7 (HYPERTROPHY PHASE)

DAY 1

High Bar Back Squat with Belt	75% x 4, 80% for 2 x 3, 85% for 2 x 2
Clean Grip Deadlift from 2 Inch Deficit Paused at Mid Shin	5RM (1st 2 reps paused 1 sec), then -10% for 2 x 5 (not paused)
Barbell Elevated Hip Thrusts with Band Around Knees	3 x 8

DAY 2

Front Squat with Belt	1RM paused 5 sec (7 RPE)
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DAY 3

Front Squat (8 sec eccentric, 2 sec pause in bottom, 5 sec concentric)	90% of 3RM for 2 x 3
Suitcase Deadlifts	3 x 6 each side (8 RPE)
Snatch High Pulls	80% for 3 x 5

DAY 4

Overhead Squat Variation Max Effort	Work Up to 80% for 3 x 5 (last set is 5+)
Unilateral Farmer's Walk	3 x 40 yd each hand
Barbell Rollouts	3 x 10
Band Pull Throughs	3 x 15

DAY 5

	Off
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DAY 6

Low Bar Back Squat with Belt	Set 1: 85% x 1, rest 2 minutes, then 70% x 5, don't increase weight Set 2: 85% x 1, rest 2 minutes, then 70% x 5, don't increase weight Set 3: 85% x 1, rest 2 minutes, then 70% x 5, don't increase weight
2 Inch Deficit RDLs with Mini or Light Band	3 x 8 (progress ending with an 9-10 RPE)

WEEK 8 (HYPERTROPHY PHASE)

DAY 1

High Bar Back Squat with Belt	75% x 4, 80% x 3, 83% x 3, 85% x 2, 88% x 2, 90% x 1
Clean Grip Deadlift from 2 Inch Deficit Paused at Mid Shin	5RM (1st reps paused 1 sec), then -10% for 2 x 5 (not paused)
Barbell Elevated Hip Thrusts with Band Around Knees	3 x 8

DAY 2

Front Squat with Belt	1RM paused 5 sec (7 RPE)
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DAY 3

Front Squat (8 sec eccentric, 2 sec pause in bottom, 5 sec concentric)	1RM, then -20% for 2 x 3 (all paused)
Suitcase Deadlifts	4 x 5 each side
Snatch High Pulls	85% for 3 x 5

DAY 4

Overhead Squat Variation Max Effort	5RM
Unilateral Farmer's Walk	3 x 40 yd each hand
Barbell Rollouts	3 x 10
Band Pull Throughs	3 x 15

DAY 5

	Off
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DAY 6

Low Bar Back Squat with Belt	Set 1: 90% x 1, rest 2 minutes, then 75% x 5 Set 2: (add 5 kilos to each weight if possible) 90% x 1, rest 2 minutes, then 75% x 5 Set 3: (add 5 kilos to each weight if possible) 90% x 1, rest 2 minutes, then 75% x 5
2 Inch Deficit RDLs with Mini or Light Band	3 x 8 (progress ending with an 7-8 RPE)

WEEK 9 (STRENGTH PHASE)

DAY 1

High Bar Back Squat with Belt	80% for 3 x 3, 85% for 2 x 2, 88% x 2
Glute Ham Raises	3 x 8
Walking Lunges	3 x 10 each side

DAY 2

Warm Up with Overhead Squat Variations	Heaving Snatch Balance Doubles (work up to 65% of Snatch)
Front Squat with Belt	1RM paused 5 sec (8 RPE)

DAY 3

Safety Squat Bar Back Squats (Go Heavier on Last Two if Sets are Optimal Speed) Box is Optional	45% Bar Weight + 25% Bands or Chains for 6 x 3 (with 60 sec rest and > 0.75 m/s)
Reverse Hypers or Band Pull-Throughs	3 x 45 sec

DAY 4

Overhead Squat Variation Max Effort	Heaving Snatch Balance 1RM
Farmer's Walk	4 x 40 yd
Sled Bear Crawls	4 x 30 yd

DAY 5

High Bar Back Squat with 50lb of Chains	1RM (Paused 5 sec at 8 RPE)
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DAY 6

Low Bar Back Squat with Belt	Set 1: 93% x 1, rest 2 minutes, then 78% x 4 Set 2: (add 5-10 kilos to the 1 rep set if possible) 93% x 1, rest 2 minutes, then 78% x 4 Set 3: (add 5-10 kilos to the one rep set if possible) 93% x 1, rest 2 minutes, then 78% x 4+
Deadlift from 2 Inch Deficit	3RM, then -10% for 2 x 3
Belt Squat Kettlebell Deadlifts	4 x 40 seconds

WEEK 10 (STRENGTH PHASE)

DAY 1

High Bar Back Squat with Belt	80% x 4, 85% x 3, 88% x 2, 90% x 2, 80% x 3, 85% x 2, 88% x 1, 90% x 1, 80% x 2, 85% x 1, 88% x 1, 90% x 1+
Glute Ham Raises	3 x 8
Walking Lunges	3 x 10 each side

DAY 2

Warm Up with Overhead Squat Variations	Heaving Snatch Balance Doubles (work up to 68% of Snatch)
Front Squat with Belt	1RM paused 5 sec (8 RPE)

DAY 3

Safety Squat Bar Back Squats (Go Heavier on Last Two if Sets are Optimal Speed) Box is Optional	50% Bar Weight + 25% Bands or Chains for 7 x 3 (with 60 sec rest and > 0.75 m/s)
Reverse Hypers or Band Pull-Throughs	3 x 50 sec

DAY 4

Overhead Squat Variation Max Effort	Overhead Squat 1RM
Farmer's Walk	4 x 40 yd
Sled Bear Crawls	4 x 30 yd

DAY 5

High Bar Back Squat with 50lb of Chains	1RM (Paused 3 sec at 8 RPE)
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DAY 6

Low Bar Back Squat with Belt	Set 1: 95% x 1, rest 2 minutes, then 80% x 4 Set 2: (add 5-10 kilos to the 1 rep set if possible) 95% x 1, rest 2 minutes, then 80% x 4 Set 3: (add 5-10 kilos to the 1 rep set if possible) 95% x 1, rest 2 minutes, then 80% x 4+
Deadlift from 2 Inch Deficit	2RM, then -10% for 2 x 2
Belt Squat Kettlebell Deadlifts	4 x 45 seconds

WEEK 11 (STRENGTH PHASE)

DAY 1

High Bar Back Squat with Belt	80% for 2 x 3, 85% for 2 x 2, 88% x 2
Glute Ham Raises	3 x 8
Walking Lunges	3 x 10 each side

DAY 2

Warm Up with Overhead Squat Variations	Heaving Snatch Balance Doubles (work up to 60% of Snatch)
Front Squat with Belt	1RM paused 5 sec (7 RPE)

DAY 3

Safety Squat Bar Back Squats (Go Heavier on Last Two if Sets are Optimal Speed) Box is Optional	55% Bar Weight + 25% Bands or Chains for 8 x 2 (with 60 sec rest and > 0.75 m/s)
Reverse Hypers or Band Pull-Throughs	3 x 30 sec

DAY 4

Overhead Squat Variation Max Effort	Heaving Snatch Balance plus Overhead Squat Max
Farmer's Walk	4 x 40 yd
Sled Bear Crawls	4 x 30 yd

DAY 5

High Bar Back Squat with 50lb of Chains	1RM (Paused 3 sec at 9 RPE)
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DAY 6

Low Bar Back Squat with Belt	Set 1: 95% x 1, rest 2 minutes, then 85% x 3 Set 2: (add 5-10 kilos to the 1 rep set if possible) 95% x 1, rest 2 minutes, then 85% x 3 Set 3: (add 5-10 kilos to the 1 rep set if possible) 95% x 1, rest 2 minutes, then 85% x 3
Deadlift from 2 Inch Deficit	90% of 3RM for 3 x 3
Belt Squat Kettlebell Deadlifts	3 x 35 seconds

WEEK 12 (STRENGTH PHASE)

DAY 1

High Bar Back Squat with Belt	1RM, then -20% for 2 x 3
Glute Ham Raises	3 x 8
Walking Lunges	3 x 10 each side

DAY 2

Warm Up with Overhead Squat Variations	Heaving Snatch Balance Doubles (work up to 50% of Snatch)
Front Squat with Belt	1RM paused 5 sec (9 RPE)

DAY 3

Safety Squat Bar Back Squats (Go Heavier on Last Two if Sets are Optimal Speed) Box is Optional	45% Bar Weight + 25% Bands or Chains for 5 x 3 (with 60 sec rest and > 0.75 m/s)
Reverse Hypers or Band Pull-Throughs	3 x 60 sec

DAY 4

Overhead Squat Variation Max Effort	75% of Snatch for 3 x 3 on Snatch Balance
Farmer's Walk	4 x 40 yd
Sled Bear Crawls	4 x 30 yd

DAY 5

	Off
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DAY 6

Low Bar Back Squat with Belt	1RM, then -20% for 3
Deadlift	1RM (no deficit), then -20% for 3
Belt Squat Kettlebell Deadlifts	4 x 50 seconds

WEEK 13 (STRENGTH PHASE)

DAY 1

Low Bar Back Squat	3RM (1st rep paused 3 sec)
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DAY 2

High Bar Back Squat with Belt	75% x 4, 80% for 2 x 3, 85% for 2 x 2, 88% x 1
Reverse Hypers	3 x 45 sec

DAY 3

Overhead Squat Variation Max Effort	Overhead Squat 3RM
1a. Sled Bear Crawls	4 x 30 yd
1b. Med Ball Side to Side Abs	4 x 15 touches per side

DAY 4

Buffalo Bar Back Squats to Box (Go Heavier on Last Two if Sets are Optimal Speed)	40% Bar Weight + 30% Bands or Chains for 6 x 3 (60 sec rest at > 0.75 m/s)
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DAY 5

Front Squat	1RM (with 3 sec pause)
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DAY 6

Low Bar Back Squat	5RM, then -15% for 2 x 5 (last set is 5+)
Deadlift	3RM (1st rep paused 3 sec at knee), then -10% for 2 x 3 (not paused)
TRX Leg Curls	3 x 10
Kettlebell High/Low Carries	4 x 20 yd each way

WEEK 14 (STRENGTH PHASE)

DAY 1

Low Bar Back Squat	2RM
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DAY 2

High Bar Back Squat with Belt	78% for 2 x 3, 83% for 2 x 3, 88% for 2 x 2, 90% x 1
Reverse Hypers	4 x 45 sec

DAY 3

Overhead Squat Variation Max Effort	Snatch Balance 2RM
1a. Sled Bear Crawls	4 x 30 yd
1b. Med Ball Side to Side Abs	4 x 15 touches per side

DAY 4

Buffalo Bar Back Squats to Box (Go Heavier on Last Two if Sets are Optimal Speed)	45% Bar Weight + 30% Bands or Chains for 7 x 3 (60 sec rest at > 0.75 m/s)
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DAY 5

Front Squat	1RM (with 1 sec pause)
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DAY 6

Low Bar Back Squat	5RM, then -15% for 3 x 5 (last set is 5+)
Deadlift	3RM, then -10% for 2 x 3
TRX Leg Curls	3 x 10
Kettlebell High/Low Carries	4 x 20 yd each way

WEEK 15 (STRENGTH PHASE)

DAY 1

Low Bar Back Squat	1RM
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DAY 2

High Bar Back Squat with Belt	80% x 3, 85% for 2 x 3, 90% x 2, 93% x 1
Reverse Hypers	3 x 50 sec

DAY 3

Overhead Squat Variation Max Effort	75% of Snatch for 3 x 3 on Snatch Balance
1a. Sled Bear Crawls	3 x 30 yd
1b. Med Ball Side to Side Abs	3 x 15 touches per side

DAY 4

Buffalo Bar Back Squats to Box (Go Heavier on Last Two if Sets are Optimal Speed)	50% Bar Weight + 30% Bands or Chains for 8 x 2 (60 sec rest at > 0.75 m/s)
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DAY 5

Front Squat	1RM
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DAY 6

Low Bar Back Squat	3RM, then -15% for 3+
Deadlift	1RM, then -20% for 2 x 3
TRX Leg Curls	3 x 10
Kettlebell High/Low Carries	3 x 25 yd each way

WEEK 16 (STRENGTH PHASE)

DAY 1

Low Bar Back Squat	80% for 2 x 1
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DAY 2

High Bar Back Squat with Belt	75% x 3, 80% x 3, 85% x 1
Reverse Hypers	3 x 40 sec

DAY 3

Overhead Squat Variation Max Effort	1RM (with 5 sec pause)
1a. Sled Bear Crawls	3 x 30 yd
1b. Med Ball Side to Side Abs	3 x 15 touches per side

DAY 4

Buffalo Bar Back Squats to Box (Go Heavier on Last Two if Sets are Optimal Speed)	40% Bar Weight + 30% Bands or Chains for 5 x 2 (60 sec rest at > 0.75 m/s)
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DAY 5

	Off
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DAY 6

Low Bar Back Squat	1RM
Deadlift	90% of last week 3RM for 2 x 3
TRX Leg Curls	3 x 10
Kettlebell High/Low Carries	3 x 20 yd each way

CONCLUSION

This book was an absolute beast to write. Most people have been surprised when I told them this book took three months out of my life. I'm a world record squatter and coach to some of the strongest people on earth. Everyone thinks this book should have taken me a couple of weeks.

Yeah, I could have done that - but my readers deserve more. I talk to too many coaches who talk about their ten-year-old way of programming and coaching the squat. I am always sad for their athletes because I try to improve my programs each and every year for my athletes and readers. I am constantly learning, and my programming is always evolving.

I didn't want to write a book filled with my own personal bias as a coach. I wanted to deliver a book based on research and facts.

Thanks to all of my friends who answered my survey online. It was intriguing to see the variations in squat technique. Thanks to Greg Nuckols for writing an incredible paper that helped guide me, especially in research articles.

You can now take all of this information, use the programs, and squat more weight than you ever dreamed. Good luck and have fun getting jacked!

APPENDIX A: BAND TENSIONS

For some reason, information on the different band tensions are always hard to find. Remember, these are just averages. If you are tall, it's going to add a little more at the top. If you are short, the bands will add a little less at the top.

Here's the thing: I recommend just coming close and rounding down. You can always start just a little lighter and add some weight after the first two sets.

Squatting:

Blue per side - 200 lb total extra at the top

Green per side - 150 lb total extra at the top

Purple per side -120 lb total extra at the top

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