



The Snatch

Why is the Snatch called the Snatch?

Originally it wasn't. It was simply called a "Two Hands Lift", and the term "snatch" was a rules descriptor. Note however that "two hands lifts" was a category of competitive lifts with numerous inclusions. The Cambridge Dictionary defines "snatch" as "the action of trying to take something quickly and forcefully". That proper definition was used in weightlifting regulation to describe the movement of the barbell from floor to overhead in a specific Two Hands Lift. Lifting lore suggests as consistency in lifts included in competition improved, this descriptive and broadly accepted usage evolved into a formal name, Snatch. That name and its implied description discriminated between it and the other two modern Olympic two hands lifts, the Press, and the Clean & Jerk; until the Press was eliminated from competition after 1972.

The basic premise of the Snatch is to lift a barbell from the ground to full extension overhead in one fluid motion. We can break this down according to IWF rules into overlapping steps done sequentially:

1. Approach the loaded barbell on the platform and take a position behind the bar.
2. The referees will be seated in front of you, off the platform to the left, right, and center.
3. The barbell is gripped, both hands palms down, and the knees are bent.
4. The barbell is then pulled, in a single movement, from the platform up to arm's length above the head.
5. You may squat or split (one leg forward, one leg back, as in a lunge) to move the body under the barbell to catch the weight on fully extended arms.

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6. The barbell should remain close to the body and may slide along the thighs during the pulling motion. The only part of the body that may be in contact with the platform is the feet.
7. After catching the barbell upon extended arms, you are required to recover to standing position, bar still supported overhead on fully extended arms.
8. The weight once overhead, and the body, must be motionless with both arms and legs fully extended with the feet on the same transverse line and parallel to the frontal plane of the trunk and the end-to-end line of the barbell.
9. Once the barbell is held motionless, the referee signals you to replace the barbell on the platform.

Well, that's it, the entire description of the Snatch derived from the International Weightlifting Federation's rule book (2020). Competition rules as written do not provide a viable picture of what appropriate technique looks like. No photo sequences or diagrams, no statements about what is good technique or bad, just a broadly stated word description. We can do better, we need to do better to be coaches and be able to effectively teach the Snatch.

The easiest place to start when learning to do and teach any exercise skill is to observe it done correctly, according to rule, and using technique that is correct according to basic physics and individual anatomical structure. What is meant by these caveats above is that while the overall Snatch movements will be roughly similar between diverse competitors and follow the basic tenants of physics, individual anatomical differences will create mild dissimilarities at various points throughout the lift. We can't, and shouldn't, force every trainee into the exact same angular positions and expect the best performance of which they are capable. Doing so would be disadvantageous to anyone who is built differently compared to the example used by the coach to derive their positional template. As we proceed with descriptions and visualizations here, we will point out common and important points of variance and how to address them.

Explaining Snatch Technique and the Rules

There are two legal techniques for Snatch competition, the Squat Snatch (figure 1) and the Split Snatch (figure 2).

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Figure 1. Squat style Snatch.

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Figure 2. Split style Snatch.

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The Squat Snatch is by far the most common technique used in competition, having supplanted the Split Snatch in usage in competition in the 1960s and 1970s. The Split Snatch was used primarily as a result of earlier rules that prohibited the bar from touching any part of the body except the hands that grasped it. This enforced a looping pulling technique where the anterior-posterior stability provided by splitting was of great utility. When the rules were change to allow the bar to touch and slide along the thigh, the squat style Snatch, with its lower bottom position and stronger two legged recovery to standing, quickly replaced the Split Snatch (Waldemar Baszanowski the deepest splitter of the 1950s and 60s was one of the last international elite proponents).

The Split Snatch remains relevant for anyone who has clinically diagnosed and significant orthopedic issues that preclude doing full squats (not a common thing). It is also a very viable technique in the older masters athletes (about 60 years old and beyond). Chronic knee and hip pain of significant magnitude are extremely common in these age groups. The split technique can be a range of motion limiter, keeping hip and knee flexion away from the extremely acute angles seen in the squat technique. This makes it more comfortable for older lifters.

Conceptually the Snatch is simple; pull, jump, drop, catch, and stand. However, the Snatch is in reality a bit of a difficult movement because it requires a modicum of gymnastic effort carried out over a long range of motion in a very short time. The Snatch requires the bar to be caught overhead on completely extended arms and this means a high critical bar velocity is needed to enable the transition from upward pulling into the drop and catch. This translates to less weight lifted compared to a maximal Clean & Jerk. As you learn often during a training and coaching career, less weight does not always translate to less hard.

Grip Width

The Snatch is done with a characteristic wide hand grip on the bar. Grip width is an important determinant of two things; (1) how effectively the bar gets pulled to the correct jumping position and (2) how much clearance over the head there is at the top of the exercise. A basic starting point is a wide grip intended to get the bar very high on the thighs at the jump and to provide about four inches of clearance of the bar over the head. The wider the grip, the shorter the pulling distance, compared to a narrow grip.

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Arm and torso lengths vary dramatically by person, so this is necessary information. To determine the grip width for an individual's unique anatomy, simply Deadlift the bar (or a dowel or PVC pipe with regulation IWF weightlifting bar markings) to the standing position, then methodically widen the grip until the bar has moved up and is resting across the inguinal fold (hip crease) (figure 3A & B). Now, without changing grip, carefully put the bar up over the head to ensure that it will clear the top of the head when the arms are fully extended overhead. If both conditions are satisfied, that's the correct grip for that beginning individual.

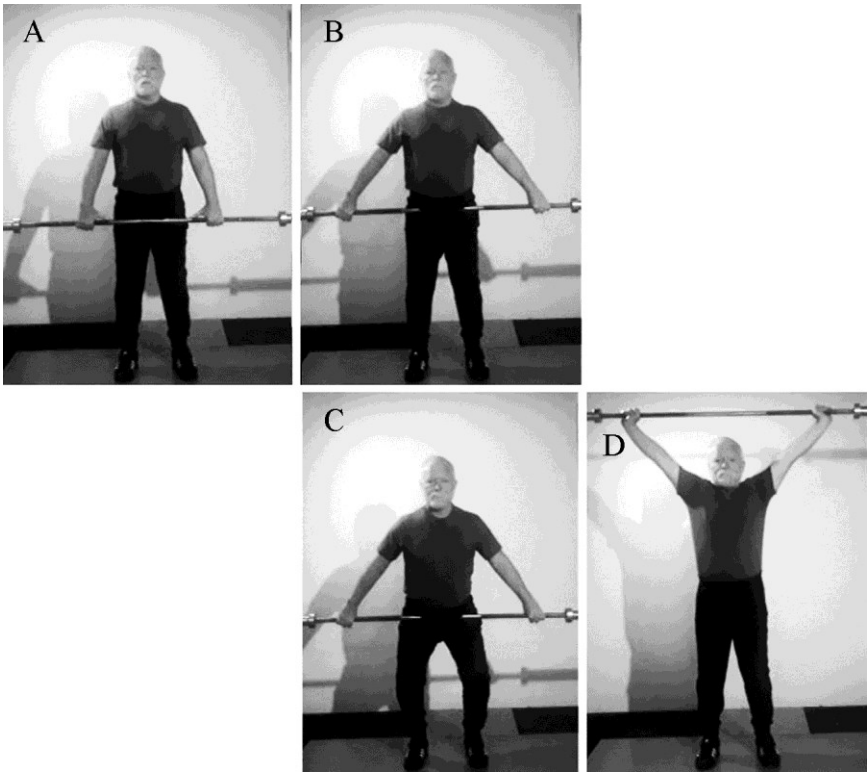


Figure 3. Selecting the correct grip width by moving the hands wider to bring the bar up to the top of the inguinal fold (A,B) and then verifying the bar can be seated in the pocket (C) and clears the head at the top (D).

If you look at international level Weightlifting competition videos, you will see some lifters with grip widths that place the bar within an inch or

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two (2.5 to 5 cm) of the top of the head. This is a strategy to reduce the distance the bar has to be pulled vertically in order to get under it and catch in at arm's length. This biggest shortcoming of using this wide of a grip is that it requires more shoulder musculature effort to hold the bar overhead. This is due to the very long lever arm (shoulder joint to hand) that makes resisting the vertical down-force of the barbell harder, compared to a narrower grip. Think about it in real world terms, when something is heavy and you need to carry it, which is easier, holding it close to the body or very far away?

Starting Stance

In competition it is the norm to see lifters set their foot position relative to the barbell very carefully. Why? Simply because how and where we stand relative to the loaded barbell is important as it imparts stability, creates the parameters for force transference, and sets the stage for every subsequent and component movement required during the execution of the Snatch. The stance must follow the physical realities required by individual anatomical structure and the nature of the load applied in order to create the best technical representation of the Snatch. We see many different stances used in competition mostly due to history and continuing acceptance of older convention within the coaching community. We would be better off if we understood the “why” of any hand-me-down convention.

There are elements of stance to consider when analyzing a lifter in competition and training. The angle of toe point can affect stability, so we need to select and teach an appropriate medio-lateral rotation of the foot. To do this we first observe our trainee. Most people will naturally stand with their toes pointed slightly outwards, providing standing stability. This is auto-selected and is a simple function of how the femoral head sits in the acetabulum. Depending on the orientation and depth of the acetabular bowl, the greater trochanter will be slightly rotated laterally to varying degrees. This places the anterior-posterior line of the femoral condyles (of the knee) pointing slightly outwards and this affects the position of the downstream tibia and foot. When setting the feet under the bar, we should attempt to duplicate the angle of this natural, slightly lateral toe point. This is our starting point for the Snatch, and many other basic exercises.

The width of the stances seen in Weightlifting is quite variable; heels together (Miyake or Frog style) to wider than shoulder width can be seen

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in competition and setting records. We frequently hear “hip width”, “shoulder width”, “narrow stance”, “wide stance”, and many more terms describing the starting stance for various exercises. In most instances no one bothers to actually understand and use those terms with any accuracy or consistency, they sort of eyeball it and call it good. But we can do much better. We can use easily accessible anatomical landmarks and very precisely get an individual into the correct width of stance. When we do this we are either optimizing levers, eliminating extraneous levers, or we are orienting the body to conform to movement demands without anatomical segmental interferences.

In relaxed standing position, and in some exercises, a narrow stance is common. The most relevant landmarks here are the heels (calcaneus) and the seat bones (ischial tuberosities). In this position, when viewed from the posterior, each heel will line up directly under the central and vertical line through each corresponding butt cheek. This position will also produce the longest displacement of the hip joint from the floor at full extension. Many weightlifters will set their starting stance with their feet at this width, or narrower, in order to facilitate moving the bar as high as possible during the pulling phase of their Snatch or Clean. Many powerlifters will set their Deadlift stance far outside wider-than-shoulder-width in order to reduce the height that they must pull the bar.

Hip width here does not refer to the width at the top of the pelvis, the antero-lateral crests of the right and left ilium, the actual wide points of the hip. The term refers to the position of the femur with its head sitting in the acetabulum. Visually, the most lateral aspect of the heel should line up directly beneath the most lateral point of the greater trochanter of the femur of the same side (this puts center heel under center trochanter). This orientation sets up a stable stance with the skeleton in a vertical alignment favoring efficient force transfer along the longitudinal axis. This stance reduces inclusion of extraneous lever inefficiencies that require added and extraneous muscular effort to maintain balance. It is the most energy efficient stance. Pulling from the floor, as in the Snatch, lends itself well to this alignment.

Shoulder width describes a foot position with the heel aligned under the point of the acromion process, the most lateral aspect of the joint where the scapular spine, clavicle, and head of the humerus come into close proximity. It is preferable to palpate the anatomical features for accuracy; however, a short cut is to visually align the lateral border of each heel to be directly under the most lateral external border of the deltoid of each

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respective side. This is a staple position for any exercise requiring full range of motion squatting. With the stance at this width, the lower pelvis can drop, unrestricted, between the right and left tibias and ankles. With narrower stances the hips will be prevented from reaching full range of motion when they are interfered with by the muscles along the medio-posterior femurs and tibias contacting each other.

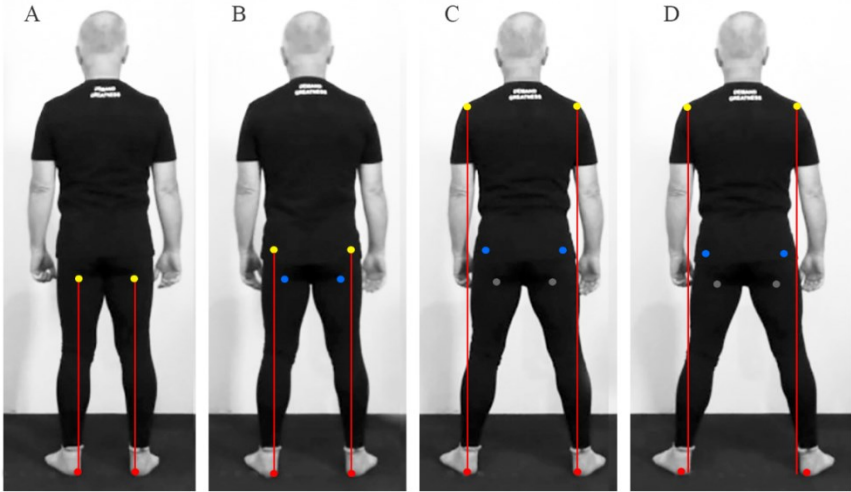


Figure 4. Landmarks of anatomical alignment in the basic stances. (A) In normal relaxed standing, the center of the heels are directly below the ischial tuberosities. (B) In hip width stance, the center of the heels are directly below the greater trochanter of the proximal femur. (C) In a shoulder width stance, the center of the heels are directly below the most lateral point of the acromion process of the shoulder skeleton (identify the bone, not the deltoid muscle). (D) For a wider-than-shoulder-width stance, the medial side of the heel is outside of the line of the acromion process to the floor.

For exercises where the highest elevation of the hips and torso is required, the normal relaxed stance works as it creates the greatest maximal distance between the floor and hip. Hip width is nearly as effective at hip and torso elevation.

For beginners, hip width is the most mechanically sensible and most easily assumed width. This is where the heels of the feet are directly under the hip joints (figure 6), or hip width. This alignment creates a

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virtually straight and vertical line of force transference at full extension, limiting the negative effects of including unintentional lever arms, and providing the greatest height of bar movement possible. Learning requires repetition and being able to consistently identify and implement the same position over and over is facilitated by understanding the spatial relationship of relevant anatomical markers.

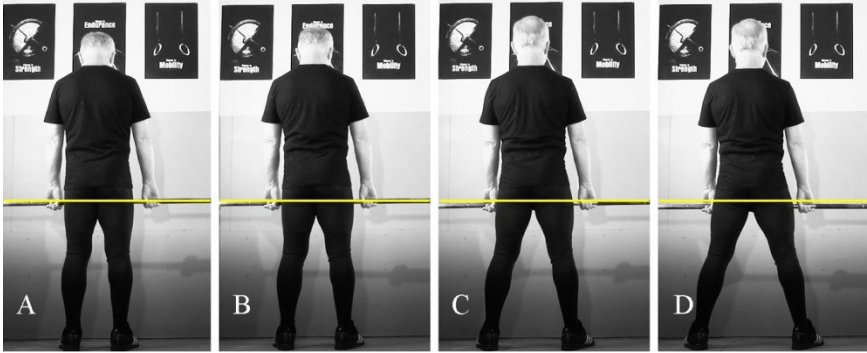


Figure 5. As the stance is widened the distance from the bar to the floor is shortened. The variance in bar height between relaxed standing foot stance (A), hip width stance (B), and shoulder width stance (C), and just wider than shoulder width (D) is minimal, amounting to approximately the diameter of the bar.

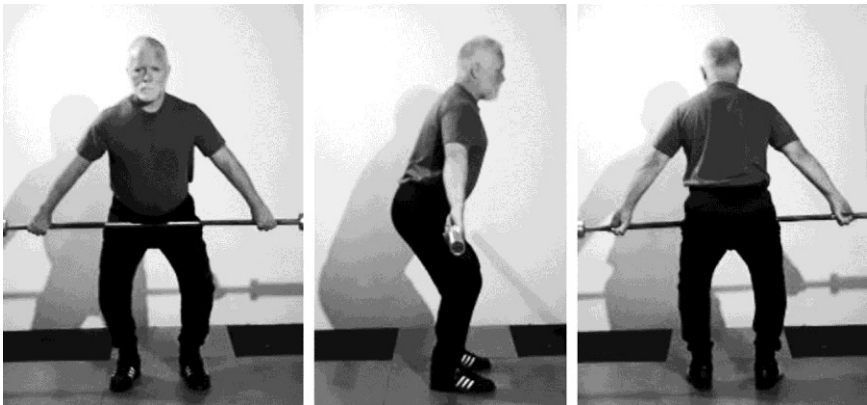


Figure 6. An example of an acceptable width foot stance combined with anatomically determined grip width.

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The next element of stance is how far under the bar the feet should be set. This varies tremendously by where and by whom the coach teaching the lifter was taught. It is common to see the bar ranging in placement from over the toes all the way back to touching the shins. The most consistent mechanics, vitally important for beginners, are found with the bar directly over the tarsal bones just forward of the joint line of the navicular and cuneiform bones. This is a hard thing to see with shoes on, but if we pick a point at exactly mid-shoe (as viewed from the side for the coach, or as viewed from above for the lifter) the position of the bar should be over a point just in front of that selected mid-point shoe landmark. When set, the bar should be no further than one bar diameter away from the fully upright shins. It should also not be in contact with the upright shins as the shins will kick the bar forward when the lifter squats down to grab the bar. We assume this standing position (stance) by moving the feet under the bar, not by moving the bar over the foot. When we do the former, we can consistently replicate foot stance. If we roll the bar to the foot we risk, and frequently experience, negative effects of variable foot position relative to the bar. That creates unpredictable and mechanically inefficient results.

After the stance is set under the bar, the lifter bends, reaches down, and assumes the pre-determined grip width from above. At that point they are now prepared to position the torso and set hip height.

Scapular Alignment

Again, where the hips are in space and relative to the bar is frequently dependent on where and from whom the teaching coach learned his methodology. It is common to see lifters assume a start position with the points of the shoulder (the acromioclavicular joint) just barely over the bar all the way back to the bottoms of the scapula over the bar. The explanation by coaches for this is “individual variation”, but when pressed to explain how the particular stance is specific to that individual, the explanation is thin and without support.

Setting the hip height appropriate for any individual is a simple matter of geometry applied to skeletal anatomy and not an arbitrary, pre-determined, and one-size-fits-all height or set of angles. We can perfectly set individual hip height by creating a line between two anatomical landmarks and the bar (Hancock, 2012). The foot’s navicular-cuneiform joint creating the first point of identification, the bar is the second point of the line, and that line extends directly vertical. When we grip the bar

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and then lower our hips to the height that places the medial aspect of the scapular spine as the third point of that straight line, we have arrived at the correct position (figure 7). As the scapula is covered by clothing in training and in competition, a proxy landmark is required. The appropriate level of the scapular spine can be estimated by lining up the mid-foot, bar, and the point of where the bottom of the arm becomes the arm pit at the torso. When we use this convention, the shoulders will always be over, or “covering” the bar correctly.



Figure 7. Scapular alignment, identified by the back of the arm pit, over the bar and mid-foot identifies proper starting position for the Snatch.

Once the bar is over the area of the navicular-cuneiform joint, the armpit is over the bar, the vertebral column is in normal extension, and the lungs are fully inflated, the knees can begin their extension, pushing the body and bar system away from the floor. As in all pulling motions, it is important that the elbows remain straight as possible, as bending them will reduce force application and reduce the amount of weight that can be lifted. Yes, records are set by people pulling with bent arms. They are exceedingly strong – why they set records – and can overpower technical flaws. Beginning trainees are not and cannot.

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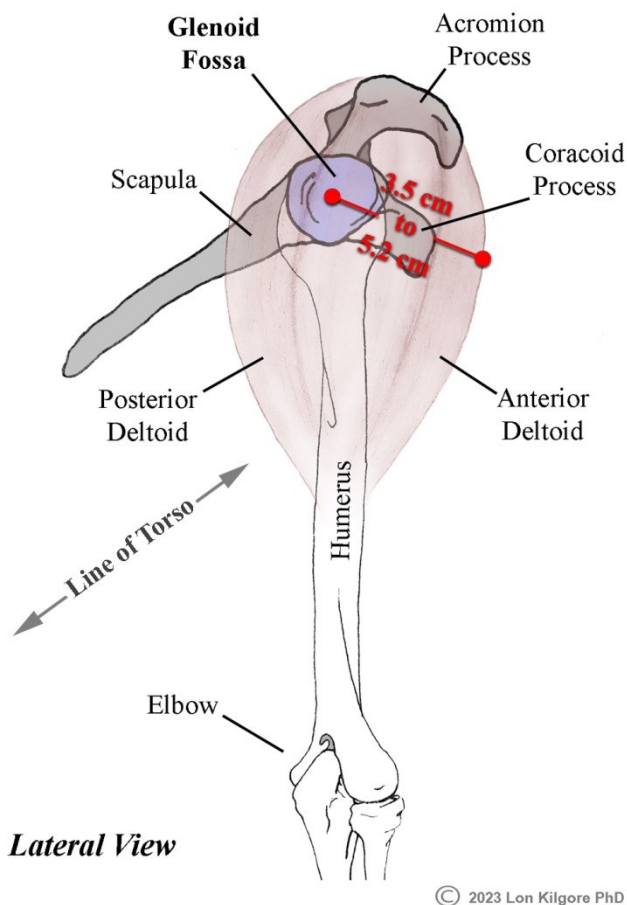


Figure 8. In a correct set up, the bar will appear well behind the top of the shoulder (acromion process). It must be so aligned, whether you set up that way or wait until gravity forces it into that alignment post push off the floor, because the humerus (upper arm bone) is joined to the scapula at the glenoid fossa. There is also about 1 to 2, or more, inches of muscle overlying the glenohumeral joint to the front. Physics dictates that the barbell will be suspended under this joint connection, not the top of the shoulder, unless acted upon by an external force. In the case of all pulling (Snatch, Clean & Jerk, Deadlift), the external force is the engagement of the latissimus dorsi which pulls the angle of the arm backwards from the perpendicular depiction here. This is why we use the mid-scapular spine as a landmark, not the glenohumeral joint.

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During this first push off the floor, as the knees extend, the back remains as close as possible to the same angle as it was at the floor (figure 9). This consistent back angle achieves two purposes, (1) initiates movement from the floor without creating excessive anterior-posterior bar displacement (swing backward or forward), and (2) prevents contact with and the dragging of the bar up the shins. Combined, this places the bar in prime position for the next crucial element of the Snatch pull. It is very common to hear the coaching cue, “squeeze the bar off the floor” in this segment of the Snatch pull, as this is the slowest part of the pull, but also in reference to the importance of keeping these preset alignments of stance and initial pull. Yanking the bar off the floor may improve initial bar velocity but it does so at the expense of technical control and consistency. When lifting, we want control and consistency. Further, it’s how the beginner learns and masters any movement. Only when the brain and the rest of the neuromuscular system has firmly entrenched the desired motor pattern of the Snatch, should the “dynamic starts” so often seen in competitors begin to be explored. Essentially this means that we do not mess about with the start position until the movement has been repeated to a point that it is as near a reflex as possible; once the lifter is set in start position, the entire movement should feel automatic and be positionally accurate with every repetition.

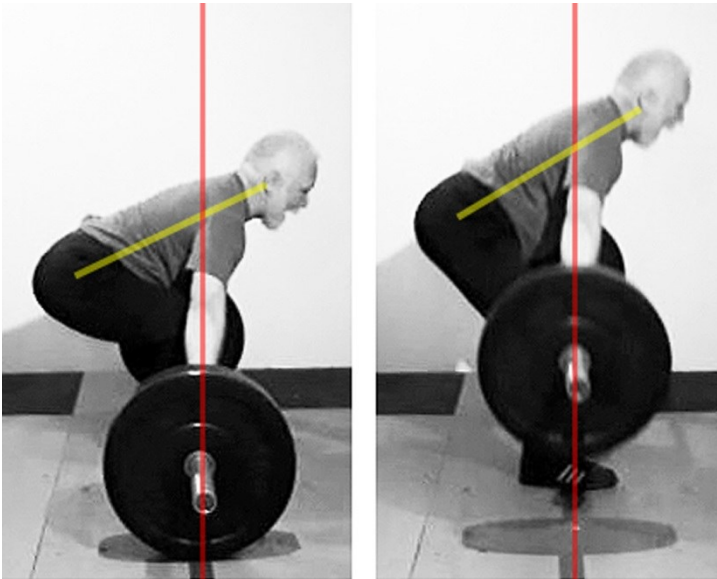


Figure 9. From the point that the barbell breaks contact with the floor (left) until the bar rises to the level of the knee (right), the back angle (relative to the floor) should stay extremely consistent.

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Once the bar clears the top of the patella, the knees will re-bend slightly as the back becomes more vertical. There are many different names used for this segment of the pull, use whichever one you like, they all are referent to the mild re-bending and forward displacement of the knees as hip angle opens (figure 10). The end of this body repositioning is complete when the bar has moved up the thigh to about a bar's diameter below the top height of the inguinal fold (hip crease). The bar should be in or very near the little pocket formed by the last bit of hip flexion. This is the very the last moment the shoulders will be over the bar.



Figure 10. The knee re-bend occurs as the hip angle opens and the bar continuously moves up the thigh to the height of the inguinal fold. The end of this section of the pull has the acromioclavicular joint directly over the bar and over mid-foot.

At this point, the shoulder still over the bar, the lifter jumps. This is a simple thing to describe to trainees. It is easy for them to understand. And that is good, because what happens in the couple hundred milliseconds from jump initiation until catching the barbell on extended arms is quite complex.

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At the jump point, the knees, hips, and ankles extend extremely forcefully and quickly. Most lifters will also automatically elevate the chest, via a small degree of lumbar and thoracic vertebral extension, as they extend the body upwards, pulling the barbell along as the torso rises (figure 10). There should not be significant or rapid head tilt to the rear (throwing the head back) as this, physics tells us so, will push the hips forward and induce a significant looping of the bar's trajectory, making it a necessity to add extraneous movements in order to chase down the bar and catch it. The bigger the loop in trajectory and the bigger the adjustment required to catch the barbell, the bigger the chance of a miss. One additional anatomical rationale to limit backward head tilt (cervical vertebral extension) is that a thrown back head limits the range of motion and force contribution of one of the largest muscles involved in pulling, the trapezius. We lose about two inches (5 cm) of shoulder shrug when the head is tilted far to the rear.

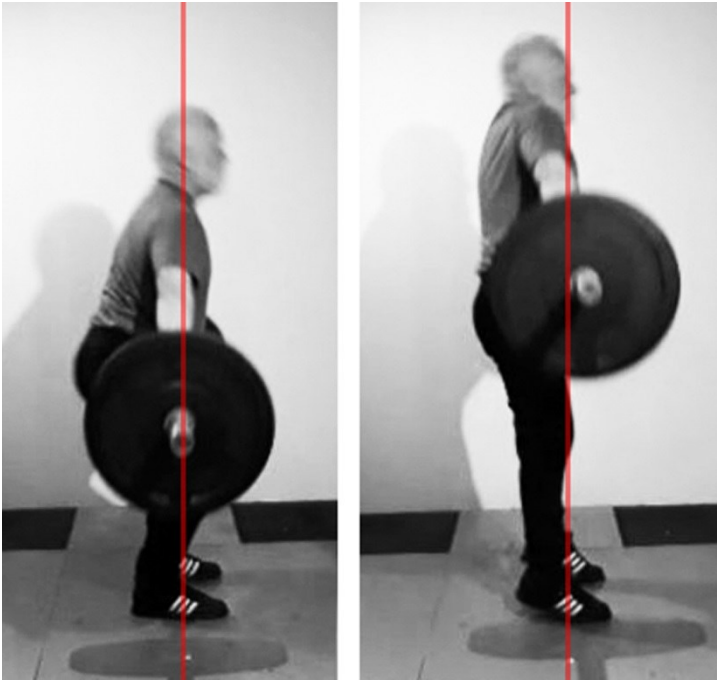


Figure 11. Initiation of the jump segment is marked by rapid extension of knees, hips, and ankles, taking the length of the body to full extension. This extension moves the hips and bar forward and the torso backwards and upwards. This latter relationship of equal and opposite reactions sets up a shallow backwards loop at the top of the Snatch.

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When the body has completely extended at the top, there must be an instantaneous change in body direction. Where the lifter was initially moving the bar up in the pull, there follows a rapid transition to moving the body down and under the bar, faster than the barbell drops, to a point where it can be caught on extended arms (figure 12). During this phase of the lift, the feet become slightly airborne and move to the side, thus allowing the squat position to be assumed (or move fore and aft in the split style). Moving them out like this makes it easier to lower the body into the catch position. The wider foot position also increases body-barbell stability in the squatting position. This is also the point where elbow bend is useful, it helps get the lifter under the bar. The faster this transition is made, upward body movement to downward body movement, the more “efficient” the lifter will be. This means that a faster lifter will not need to pull the bar as high as someone who is slower in the transition.

At some point along the squat movement downwards, the elbows will turn over and extend upwards into the catch position. It is important that the bar is caught on the completely extended arms – with the elbows completely locked – first because it is the rule, and second for skeletal support. The arms and shoulders are transitioning from being subject to high tension force during the pull into a near instantaneous application of compressional force. A solid, locked out, extension of the arms upwards aids the upper body musculature in accommodating that rapid onset loading.

After catching the weight overhead, the body and barbell will continue to drop deeper into the squat position. This happens as at the catch there is an impact. Squatting deeper after the catch is the body accepting and cushioning the impact through bending the knees, hips, and ankles. At the bottom of the squat is where there is a very short opportunity to adjust body position in order gain appropriate balance to finish the lift by standing up (figure 13).

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Figure 12. Dropping under the bar and catching it overhead is the most technically demanding aspect of the Snatch and Power Snatch.

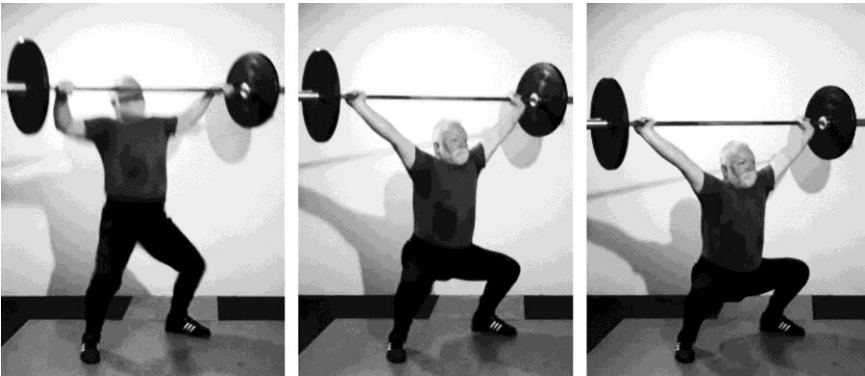


Figure 13. Post-catch downward descent cushions the impact and provides time and opportunity for body and balance adjustment to enable the final stand to finish position.

What the bottom position looks like will vary on individual anatomy. The basic concept that needs to be understood is that the more vertical the torso in the squat position, the more ability the lifter has to make adjustments to save an out-of-position overhead bar at the bottom. This is a function of shoulder mobility. You can only reach so far behind your head without hitting the anatomical limit. Leaning forward in the squat at

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the bottom of a Snatch, as part of normal technique, limits the ability to save bars caught slightly behind target. A more vertical torso provides a few extra centimeters of potential forward torso lean without hitting the limit of rearward overhead shoulder extension, and without losing balance. To create the most vertical torso, the knees need to be far forward of the toes (figure 14). This does not mean that forward lean is an absolute technical flaw, it's not. It simply represents an induced smaller target area for a successful catch. It also does not mean that a perfectly vertical torso is perfect technique, it only represents the largest potential margin of error in catch position, anterior to posterior, that can be successfully recovered.

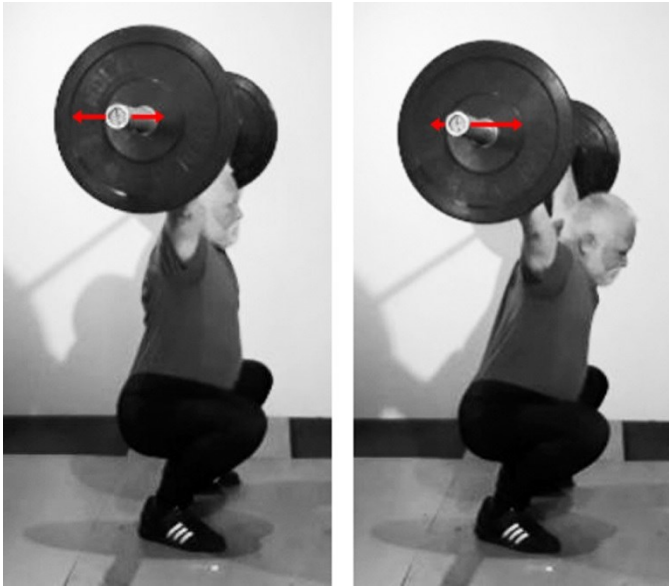


Figure 14. Variation in torso angle in the squat position affects the ability to control the barbell within the target area for a successful catch. A more upright torso allows a more uniform distribution of the controllable area; equal to the length of the foot (left). A torso forward lean reduces posterior control area in favor of a larger anterior control area (right).

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Technical Faults & Explanations

By rule, there are a number of specified faults that red light a lift:

During the Pull

Pulling from the hang – This means an observable, momentary pause in the upward movement of the barbell during the pull along the thighs. This most frequently happens with athletes new to the sport of Weightlifting but who have used the Hang Power Snatch and Hang Power Clean as a primary power developing exercises for another sport. This can be corrected over time with simply more repetitions from the floor and omission of exercises from the hang until the issue is satisfactorily solved. It is also common to see lifters taught to bang their hips into the bar, or the bar into their hips. This induces rapid horizontal displacement of the bar and creates the appearance of a hitch or slowing in vertical movement which is interpreted as a pause at the hang position, there is no duration specified by rule, thus a red light.

Pause during the lifting of the barbell – This refers to any stoppage of upward bar movement after lift-off through the catch at arm's length. This covers any stoppage for any reason not specified by the "Pulling from the hang" rule. Most commonly an infraction here is due to a mental error on the lifter's part.

During the Catch

Touching the platform with any part of the body other than the feet – This rule applies to two basic circumstances. The first, and probably the most common, is where the catch position is too far forward of where the feet landed after the jump to successfully support it. In this instance, the lifter may drop a knee forward onto the platform to increase and extend the area of base to be under the bar. Red light. If this is a consistent error in competition and training, it is likely because the trainee is not keeping the bar close enough, they are throwing their head back at the top of the pull, or they are jumping before the bar gets all the way to the top of the thigh. In these instances the bar will be launched too far forward and the athlete will need to jump forward to chase it. Poor position and barbell momentum do the rest.

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The second circumstance involves only the most flexible of us, those that can touch their butts to the floor at the bottom of a squat. The difficulty of achieving that range of motion is high, but the closer the butt can be to the floor, the lower the height of pull is required to get under it. A visible few millimeters is fine, but as soon as any portion of the gluteal region even brushes the floor, red light. The only solutions here are to cue “stay tight at the bottom” to try to invoke a more rapid rebound upwards to prevent touch or to slightly narrow foot width at the catch. A narrower foot placement at the catch makes the hips contact the calves sooner and will physically impede an excessive depth squat at the bottom.

Finishing with a press-out – This is described as extension of the arms after the athlete has reached the lowest point of their squat or split. The catch on extended arms should occur during the drop under the bar and be complete as the athlete is driven down by the weight. If the elbows extend and there is upward movement of the bar after the catch, that is press-out, red light. Quick or slow, if there is no further downward motion of the body and there is extension of the elbows and bar upward movement, the fault criteria is met. This is one of the most frequent faults seen in Weightlifting, at every level, local meet to Olympics. It is especially frequent in Master’s competition where older lifters tend to Power Snatch or Split Snatch to limit hip and knee range of motion for comfort. When weights reach near limit or are maximal, and hip and knee flexion limits depth of drop, the bar is caught on bent elbows because of inadequate pull height and then pressed-out. Red light.

During the Recovery to Standing

Bending and extending the elbows during the recovery – Even if the bar is legally caught at arm’s length overhead, if one or both elbows come unlocked and then are re-locked out, it is an infraction and a red light. This generally happens when a Snatch is received out of position and the lifter has to make large scale movements to save the lift. Sometimes it’s a simple one time error. But if it happens with any degree of frequency, it strongly suggests a technical review of critical positions to look for where the inconsistency in pulling exists.

Uneven or incomplete extension of the arms at the completion of the lift and bent arms overhead – These related rules are present to prevent a strong lifter, capable of holding the barbell lifted on bent elbows and yet capable of full elbow extension, from not locking out with one or both arms. Lifters are commonly taught that if they know they are short on

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elbow extension to not press out, just try and hold the elbows in the same degree of flexion as that when they caught the bar. Then to hope the referees don't pick up the deception. By making incomplete extension a fault and bent arms overhead faults, the argument that there was no press-out becomes moot.

Athletes can indicate that they have an inability to completely lock out the elbows by pointing at them when they step onto the platform. This indicates to the referees that the athlete is requesting an exemption to the bent arms overhead rule. Although a physician's examination and decision can be required by rule, this generally does not happen. Interestingly, the easiest way to determine authenticity of an athlete's claim that they cannot fully extend is to watch their pull. In a majority of instances, the athlete's elbows will fully extend during their pull, but that method of determination is not implemented at any level of judging.

Failing to finish with the feet and the barbell in line and parallel to the plane of the trunk – Simply put, the transverse line through the feet, the line of the barbell from end to end, and the frontal plane of the body should be roughly parallel to each other. Primarily present as a rule to ensure the athlete demonstrates control of the barbell at lift completion, referees do not get out protractors and goniometers to measure parallelism, so only obvious moderate to large deviations earn red lights.

Failing to fully extend the knees at the completion of the lift – Not a difficult concept nor explanation needed. Just stand all the way up.

Teaching Method

Once we have a technical explanation and a visual idea of what the Snatch looks like and we have that concept firmly implanted in our brains, we can start working on how to teach the lift. We do not ever want to teach technique to a trainee using explanations and terminology as we did in the “Explaining Snatch Technique” section. KIS. Keep it simple. Yeah, no second S, that level of simple. No one wants or needs an academic discourse using non-understandable niche or trendy terminology when they are learning a movement skill. Coaches need the academic discourse (but not the trendy terminology) to have the foundation to teach simply and effectively. Then later, as trainees gain skill, they may want or need more rigorous information to add to their understanding of the sport. We are here to teach skills and educate AT

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THE PACE THE TRAINEE REQUIRES and that produces the results they desire. We are not here to astound trainees with our mastery of minutia and obscure (to them) vocabulary.

Teaching someone an exercise skill is no different than teaching any other motor skill. There has been at least a century of research on the subject and in general, with few exceptions, data says we can lay out our teaching process into these steps:

1. Explanation
2. Demonstration
3. Let them do it without distraction

Minimal talking from you, rather watch and find the faults. Give hints when needed.

4. Correction
5. Repetition

How you structure each of these steps is up to you, but most people look at a successful method as a starting template, one that can be used initially as is, then adapted to their own style of coaching and the unique needs of individual trainees. The following series of steps implements the basic motor skill teaching pathway and applies it to the Snatch. It was derived from half of a century spent observing good and bad coaches, and the same number of years teaching lifters and non-lifters how to Snatch.

When we teach someone how to throw an object like a ball, Frisbee™, knife, or anything else, we provide them with a target. It can be a very specific physical target like that for a throwing knife, or it can be a conceptual target, like providing a crude direction of intended Frisbee™ flight. Knowing where our target is informs our downstream motor actions, and our body tries to create a movement plan to achieve hitting the target, even if we have no similar previous experience. Without a target, there can be a great deal of random neuromuscular noise that inhibits the trainee from finding and learning the appropriate motor pathway.

So, for the Snatch, and other competitive lifts, we teach our targets first. We start with the beginning and ending positions, the initial foot stance and then the overhead position of the barbell at the finish of the lift, our

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final target. Every subsequent teaching step intends to move down the body and establish the motor coordination needed to move the barbell stepwise upwards to that final target, a top down approach. In some instances every one of the steps elaborated here can be taught in a single session, but in most instances we break these steps up into groups of steps, with one session of teaching followed by one subsequent session of practice and refinement. Ordinarily we would teach steps 1 through 5 in a single session then, in the next scheduled session, we would practice those learned skills and provide feedback to the trainee, shaping and refining their movement to create consistency and reinforcement of the motor pathway used.

If per chance, the trainee could not properly go through the movements successfully in the second session, we would return to step 1, repeat the teaching sequence and retry the practice and refinement portion in a third session. But do remember, “The perfect is the enemy of the good”, and we are seeking movement competence with an unloaded bar, not textbook photo quality technique. The perfection of technique, which is never achieved, is chased AFTER “competence” in technique is created through your instruction. Absolutely set a definition and mental picture in YOUR mind of what Snatch technique competence is and what it looks like, compared to what you think perfect technique is. But do not frustrate your trainee by expecting a beginner to lift like an elite lifter with ten years of repetitions under their belt. The elite lifter started as a competent lifter first, not the efficient competitor you see on the national or international stage today.

Steps 6 and 7 below are complimentary and are easily included together in learning session 2 as they culminate in a complete Power Snatch. At this point in the teaching progression, where the trainee can perform a standard Power Snatch, we can follow up with a single practice and refinement session before moving on to the next teaching step, or we can extend our time at this step for a few sessions in order to more completely establish the motor pathway in operation, and to create fitness specific to Snatching.

The next three steps, 7 through 9, can be done singly in three learning sessions or sequentially in a single session. There is quite a bit of motor coordination being required in these progressions so the choice depends on the ease with which the trainee incorporates your instructions into actual movement. But in the end they should be able to proceed to step 10 and perform a decent approximation of a legal Snatch. With one or

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two more practice and refinement sessions afterwards, the trainee should then be capable of beginning the process of continued technical improvement through repetition and for an initial bout of progressive loading.

Step 1 – Set the foot stance.

We teach our first positional target here, at the very beginning. We want to establish a solid, mechanically efficient, and anatomically correct starting position at the floor. In order to do this we need to place the bar at the correct height. Depending on the physical capacity of the trainee, either appropriately sized blocks (7.86 inches or 20 centimeters high) or training or spacer plates 5 or 10lb (2.5 or 5kg) are required to raise the bar to the correct height. We are preparing for competition so we use regulation bar height and not an empty bar on the floor.

- PVC pipe or broomstick, with IWF bar markings, can be used if the trainee is not strong enough to use your gym's lightest bar.
- A 10lb or 5kg bar of approximate diameter of 1 inch (2.5cm) can be used if regulation knurling and markings are present.
- 22 to 25lb (10kg) weightlifting bar is the most preferable for smaller beginners.
- 33 to 35lb (15kg) or 44 to 45lb (20kg) weightlifting bars can be used for reasonably fit adults.

NOTE: Bars are preferable to pipes and sticks. Bars, even very light ones, provide the trainee a more tangible kinesthetic feedback, as they require a small degree of muscular involvement and gravitational force sensation not provided by no-weight options. This begins effective neuromuscular education from the very first moment the trainee touches a bar.

Observe the trainee's relaxed standing foot position, specifically the angle of lateral toe point.

- Distraction or subterfuge is useful here, you don't want them to know they are being observed.

Have the trainee stand behind the bar and stand with the bar over the middle of the foot. Their vertical shins should be about one diameter away from the bar with the feet flat on the floor.

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Set the trainee's heels directly under the hip joint when viewed from the rear.

- The lateral border of the heel should be vertically in line with lateral border of the hip at the acetabulum.

Have the trainee slide the ball of the foot and toes laterally, one at a time, keeping the heel planted on the floor, until they are at the same angle as you observed in their relaxed standing. You will need to demonstrate this for clarity prior to having them do this.

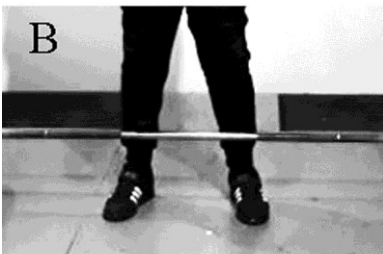
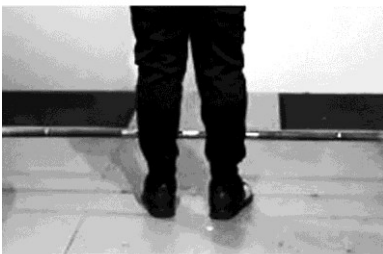
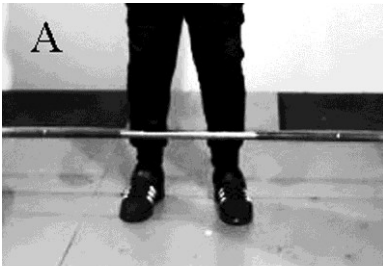


Figure 15. Foot position, front and rear view. Often the trainee will select their natural relaxed standing stance when approaching the bar (A). Have them widen the stance into the intended hip width stance (B). Ensure the foot angle remains the same as in relaxed standing.

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Step 2 – Set grip width relative to the trainee’s arm and trunk lengths and set end target position.

After we familiarize the trainee with where the bar is starting we need to set a second positional target, the overhead finish position. By doing so, the trainee can fill in the blanks between the two targets – start and finish – as they learn the intermediary positions and movements from the top down.

Demonstrate what you want them to do in total as you explain what you want them to do.

Have them pick up the bar using a double overhand grip and with any method they choose (pulling technique is irrelevant for the moment).

Once they are standing, have them slide their hands out in order to place the bar or PVC pipe/wooden dowel at approximately inguinal fold height.

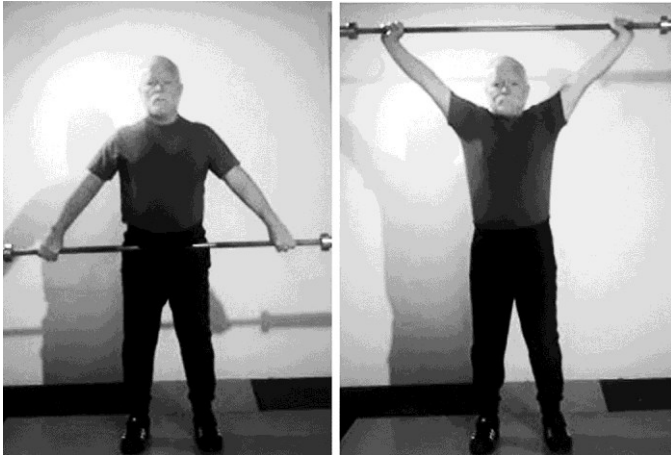


Figure 16. Setting grip width at the top of the inguinal fold and checking clearance.

Have them raise the bar or substitute overhead to determine if the grip places the bar overhead with adequate clearance.

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Inform the trainee this overhead position is the target.

- Elbows fully extended.
- Shoulder shrugging up.
- Bar held over the crown of the head.

If the trainee does not assume the target overhead position, gently push or pull the bar to the correct overhead position, and have them “feel” where the bar is at relative to the skull. You can have them slowly lower the bar and touch the head at the top of the occipital bone so they get a tangible sensation for reference.



Figure 17. Overhead position should be checked from front, back, and points in between to ensure the bar is supported in the correct position. The bar should be supported on stacked bones and fully extended joints with no detracting levers. There should not be a large need for muscular effort with the bar only overhead.

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Have them put the bar down.

Step 3 – Establish spatial awareness of the bar to the body.

Have the trainee assume the starting stance, grip, and then lift the bar as in Step 2.

Once the grip is firmly set and they are standing, instruct them to put the bar up overhead to target position any way they want.

When the target support position is correctly assumed, tell them to drop the bar down in front of them, keeping the bar as close to the body as possible but without touching it.

- Demonstrate this movement before this instruction is given. You want them to have a visual image of not hitting their nose and how close to the body “close” is.
- Repeat this as sets of threes until they are consistent in distance between repetitions.

Have them replace the bar on the floor or blocks.



Figure 18. Keeping the bar close from profile.

Step 4 – Teach the “jump” position.

Have the trainee stand up with appropriate sized bar while they are in the correct stance and have them set their grip.

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From fully erect standing, have them bend the knees forward towards the toes until the front of the knee cap (patella) is past the ball of the foot but behind the tips of the toes.

- They should feel like they are slightly sitting back, vertebral column still completely vertical.

Next, while cuing them to keep their chest up and the lumbar vertebrae in normal extension (normal arch), have them slide bar down to along the top of the thighs until the front top of the deltoids (anterior shoulder muscle) is just over and in front of the vertical line of bar.

- This is accomplished by keeping the knees flexed and motionless, the torso should rotate forward around the hip joint (acetabulum) a small amount to achieve the desired position.
- The butt will move back a small distance as the torso leans forward. This is facilitated by rotation of the ankle joint.
- The vertical line of identity for the body-barbell complex will be: mid-foot, bar, and the most superior and anterior aspect of the shoulder joint, the acromion process (point of the shoulder at its most anterior eminence). Observe from the side to verify position.

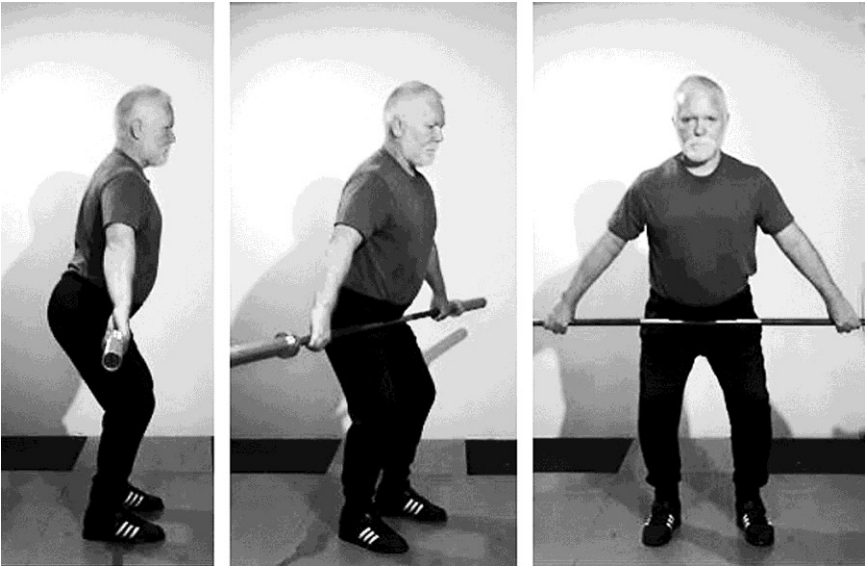


Figure 19. Jump position; lateral, oblique, and frontal view.

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At this point have the trainee stand up, then re-acquire the jump position several times. Ensure that at least three consecutive assumptions of the jump position are achieved before moving on to the next step.

Step 5 – Teach the jump and catch.

This is a coordination heavy step so it is crucial to provide simple explanation of and demonstrate each phase of this teaching progression before having the trainee attempt it.

Have the trainee assume the Jump position with the bar. Ensure that their chest is up and the lumbar vertebral column is in normal extension (normal arch).

Have them do a small jump, with their arms hanging down. They should fully extend their body and get about one inch (2.5cm) into the air and touch back down. Three consecutive correct repetitions is the landmark for moving on in the progression.

Have them do a jump with arm pull to about rib cage height. After the first success, instruct them to do a set of three as similar as they can make them.

- Cue them to keep the bar close to the body
- Have them set the bar down.

Review target position overhead and explain that a jump with the hips will quickly propel the bar up to the target overhead position, not biceps bending the elbows and pressing the bar overhead.

Have the trainer re-assume jump position with the bar, then have them jump forcefully enough to propel the bar overhead to be caught on extended arms, a High Hang Power Snatch.

- Cue bar close to body.
- Cue hip drive not elbow pull.
- If their feet do not skip to the side slightly, demonstrate and cue this on the subsequent repetitions.
- Cue stand up after the catch, if they bend their knees in the catch.
- After three successes have them replace the bar on the floor.

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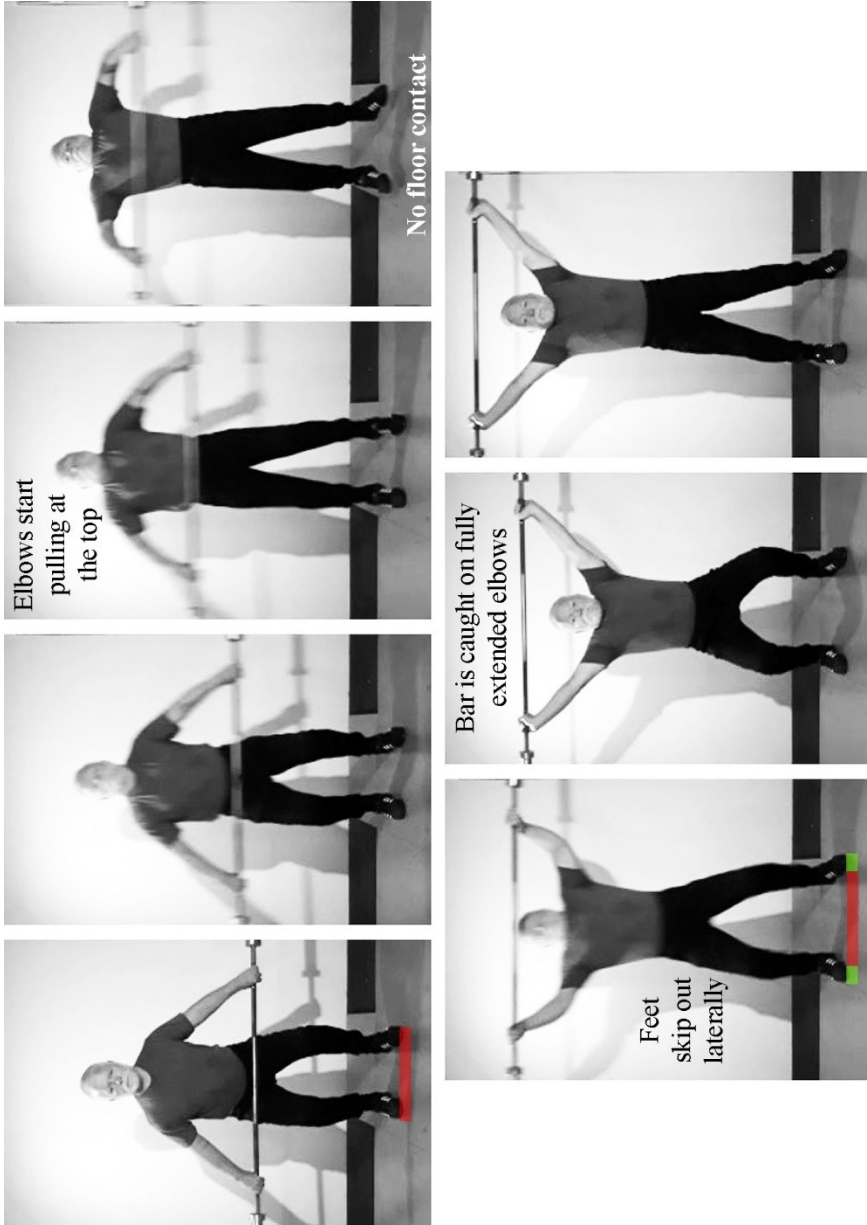


Figure 20. The jump and catch sequence

The Snatch

Have the trainee get into jump position and perform three High Hang Power Snatches with extremely limited distraction.

- If successful, have them replace the bar on the floor, rest, then do another similar set. If it too is successful, they are ready to move on to the next step.
- If obvious flaws are seen, return to the point in the teaching progression where the flawed motion is introduced and repeat the teaching sequence from that point.

Step 6 – Teach pull position from the top of the knee

If this is the second teaching session (Steps 1 through 5 taught in session one), it is important to quickly review each of the previous step's key positions and movements. This can be considered part of the workout's specific warm-up. Ensure that the trainee does three sequential correct High Hang Power Snatches with the bar to conclude the review and specific warm-up.

- Cue rather than lecture wherever possible.

Have the trainee get into jump position, stand in profile to them and demonstrate the movement before you have them do it. If needed, you can re-demonstrate as they attempt the movement.

Instruct the trainee to slide the bar down the thigh to the top of knee by bending only at the hips. This will be accomplished by pushing hips back and shoulders forward.

- Once in the correct position, rear of armpit over bar, bar over mid-foot, have them hold it for a count of three.
- During the count, cue them to “feel” where the weight is on their feet (should be felt mid-foot or just behind mid-foot).

Have them reverse direction and slide the bar back to jump position. Have them repeat this and obtain three consecutive correct repetitions.

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Figure 21. Bar position at the knee maintains the relationship of scapula, bar and mid-foot.

Have them replace the bar on the floor.

Have the trainee get back into jump position, lower the bar to the top of the knee and return to the jump position three times. On the third repetition instruct them to not to stop in the jump position, but continue to one repetition of the jump and catch.

- If the single repetition is correct, have them do two more similar repetitions then put the bar down.
- If the single repetition is not adequate, repeat the teaching sequence.

Once the trainee can repeat a successful Power Snatch from the top of the knee three times, they can proceed to the next step.

Step 7 – Teach the pull from the floor

This is the segment of teaching that re-introduces the start position at the floor, so either appropriately sized blocks (7.86 inches or 20 centimeters high) or training or spacer plates 5 or 10lb (2.5 or 5kg) are required.

- Explain and demonstrate each stage.

The Snatch

Walk the trainee through setting the stance width and foot position under the bar as described and illustrated above (figures 6 and 7).

Once stance is set, have them simply pick the bar up and assume jump position – without changing stance.

Have the trainee slide the bar down to the knees three times and on the third have them hold the position and then have them flex the knees and hips to lower the bar to the block or floor (if plates are used).

- The back should keep the same angle relative to the floor as the bar moves from knee height to the block/floor.
- The rear armpit–bar–mid-foot vertical linear relationship should be maintained throughout the movement, knee to floor.



Figure 22. Start position from lateral and oblique rear views. It is important to assess the trainee from multiple views in order to detect positional errors.

When the trainee does three correct consecutive repetitions, have them replace the bar on the blocks or floor.

Repeat the process a second time, without the pause at the knees.

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Repeat the process a third time, but on the third touch of the bar to the block/floor have them do a high pull with a target height at the rib cage.

Have the trainee replace the bar on the blocks or floor.

The last task given the trainee in this session is to approach the bar on the blocks or loaded with light training/spacer plates, set their stance, grip the bar, set their body position in the proper alignment and perform a high pull to rib cage height. Have them set the bar down, reset their position, and attempt a Power Snatch. Have them set the bar down, reset their position, and attempt a second Power Snatch.

- If satisfactory technique is demonstrated, have them do a second set of three repetitions, resetting stance, grip, and body position between each repetition. They should be prepared to advance to the next step.
- If a significant fault is identified, return to the point where that particular item is introduced and re-teach the progression from there.

Step 8 – Teach the Overhead Squat

We interject learning a squat exercise variant in this step, as we want the trainee to have a familiarity with the second movement pattern we will be using in the next step. By teaching the Overhead Squat singly, we are enabling the trainee to focus and establish a semblance of balance throughout the complete range of motion (both a technical benefit and attending to a safety issue). We will also make stance adjustments as necessary to enable proper posture throughout the squat.

Demonstrate and explain the movement to the trainee.

- Demonstrate and cue to keep the chest up (normal lumbar arch) and shoulders pushing up.
- Explain that they should “feel” and keep the center of pressure on the feet as close to mid-foot as possible.
- Stand directly in front of the trainee, so they see your profile, and have them mirror your movements during a short set of un-weighted Overhead Squats.

Have the trainee pick up the bar to jump position then do a High Hang Snatch to overhead.

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Have them descend down into the full squat position, torso as erect as possible, knees forward of the toes, the bar over the crown of the head or slightly behind it, and held on fully extended elbows.

- Hold for five seconds and cue them to “feel” for the balance at mid-foot.
- Have them stand up fully then repeat two more times.

Replace the bar on the floor and take a short rest.

Repeat this for sets of three Overhead Squat repetitions.

- If correctly performed, they should be ready to progress to the next step.
- If they incorrectly perform the Overhead Squat or have inconsistent balance, repeat the teaching sequence.

Step 9 – Connect the Power Snatch with an Overhead Squat

This is another motor coordination heavy step, as we are introducing the concept of instantaneously changing direction of movement, from propelling the body and barbell upwards to pulling the body under the barbell. To accomplish this we initially join two exercises, the Power Snatch and the Overhead Squat into a sequence.

Have the trainee approach the bar on the blocks or loaded with light training/spacer plates, set their stance, grip the bar, set their body position in the proper alignment and perform a set of three Power Snatches to reinforce the motor pathway.

- Reinforce the skip of the feet laterally during the jump to set the stage for the catch and coming Overhead Squat.

Have them set the bar down, rest about two minutes, then reset their position, and perform a Power Snatch and stand, holding the bar overhead.

- During this short period of time, observe their foot position from behind. If the heels are not directly under the shoulders (lateral border of the heel aligned with the outer border of the deltoid muscle) then have them move the feet into that position.

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Figure 23. Overhead Squat sequence.

The Snatch

- Do not spend a long period of time having them hold the bar overhead. Perform your observations, instructions, and corrections quickly in order to avoid unnecessary trainee fatigue and discomfort.

Have them lower the bar to the floor and rest about two minutes.

- Explain and demonstrate the sequence of the Power Snatch to Overhead Squat.
- Have them reset their start position with the bar then perform a Power Snatch, steady their overhead position, then perform an Overhead Squat.
- When they return to standing, have them lower the bar to the floor and rest.
- Have the trainee perform three sets of three repetitions, cuing them to “catch it and ride it down” rather than catch-stand up-squat.

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Figure 24. Linking the Power Snatch with an Overhead Squat.

The Snatch



Figure 25. Omitting the Stand and the Overhead Squat to create an intermediate approximation of the full Snatch movement pattern.

Step 10 – Snatch

In the next training session it is time to put everything together and have the trainee start with the bar on a box or using light training plates or spacers and do a complete Snatch.

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Start with a demonstration with short precise descriptive wording, likely reflecting the cuing words that you will use during their practice. Demonstrate directly facing them and demonstrate in profile to them so they can get a three dimensional visual refresher.

Have the trainee set their stance, grip the bar, set their body position in the proper alignment and perform a Snatch, from floor to squatting catch (rock bottom is not a necessity) and recovery to standing.

Have them replace the bar on the floor or block and reset their stance.

While the trainee is still standing, briefly explain, and demonstrate, any correction you wish them to implement.

- Stand in front of the trainee to explain and demonstrate.
- Correct one thing at a time.
- Correct major flaw to minor.

Have them repeat a complete Snatch.

Repeat the feedback and correction process in groupings of three single repetitions with a break between.

By the time the trainee has completed all of these steps, they will be able to perform a rudimentary and legal Snatch. This is their starting point, not their end point ability. Continued practice by them and continued observation and feedback by the coach is imperative to hone and shape their skills and physical abilities. Over time the trainee will become more efficient through elimination of erroneous movements. They will become faster as the movement pattern comes to approximate a reflex rather than a movement that has to be intentionally thought about to perform correctly. And their balance and stability will improve through experience and improved strength through the complete range motion.

The Snatch

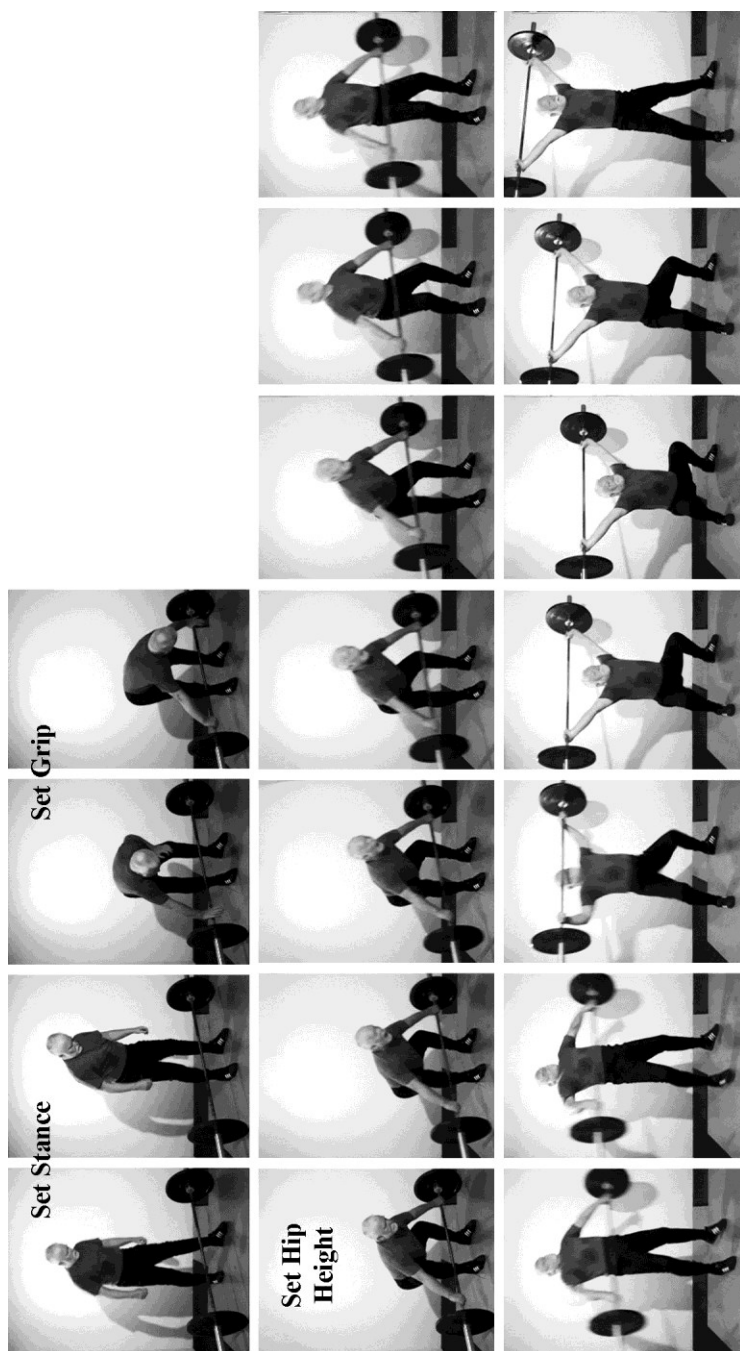


Figure 26. Complete Snatch in sequence.

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Simplified Overview

Keep in mind our discussion of basic criteria for the starting position of the Snatch, those derived from the geometry of human skeletal and muscular anatomy. The bar is in its best position to leave the ground when:

1. The bar is near the shins with the feet flat on the floor and in a position that places the bar over the middle of the foot.
2. The back is in good lumbar and thoracic extension (normal arches).
3. The mid-point of the scapula is directly over the bar (rear of armpit).
4. The arms are straight.
5. The chest is full of air (big breath in and hold before lift off).

Once the bar leaves the ground:

1. The bar moves vertically. There should be no more than about an inch (2.5 cm) reward displacement occurring after lift-off, generally within the first six inches (15 cm) of vertical movement.
2. The shins remain near vertical as the knee joint opens.
3. The back angle relative to the floor should remain constant from lift-off until the bar reaches and clears the top of the knee.

The bar is then pulled up to a position where the jumping phase occurs. The best position for the jump is when:

1. The bar is touching the thighs with the feet flat on the floor in a position that places the bar over the middle of the foot after it has slid up the thigh to the height of the inguinal fold.
2. The back is in good lumbar and thoracic extension (normal arching).
3. The spine of the scapula (at the point of shoulder) is *still, but barely*, over the bar.
4. The arms remain straight.

Note that after the jump is initiated:

1. The shoulder (point of the acromioclavicular joint) moves behind the bar due to the hip extension.
2. The bar and body will separate to a small degree, the body slightly leaning back slightly at the top of the jump.

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3. The head should not whip backward to a chin up, top of head pointing to the posterior, position (rapid cervical vertebral extension).
4. The elbows remain straight until the body breaks contact with the floor.

The bar must be kept close to the body all the way from the floor up until it is caught overhead:

1. A bar placed too far away the shins and near the toes in the start position will induce a significant rearward swing immediately after lift-off that will be compensated for by a significant looping of the bar trajectory in the jump to catch portion of the lift. This adds additional and performance dampening horizontal movement to the jump phase. More than 4 inches (10 cm) of backward jump has been shown to cause, nearly always, failure in the Snatch.
2. A bar that is forward of the surface of the thighs as the bar passes inguinal height (leaves the thighs too early) will induce a forward throw of the bar necessitating a forward jump to catch the bar (chasing the bar). More than 4 inches (10 cm) of forward jump has been shown to cause, nearly always, failure in the Snatch.

The Snatch requires a high degree of power production and movement velocity:

1. As the trainee progresses in technical competence begin to focus on cuing the explosive nature of the jump.
2. As the trainee develops transitional skill in change from upward jumping to pulling under the bar, begin cuing rapid elbow “turnover”. Turnover is going rapidly from an elbows-up position, under tension pulling the bar up, to an elbows-down position, under compression and pushing the body down.

Spotting

Spotting the Snatch is pretty simple, DON'T. This is a ballistic movement and any interference between lifter, coach, and or barbell can be catastrophic to both humans in the equation. After the trainee has learned the movement and is ready to progress in loading, it is time to teach them “how to miss”. Demonstrate to them that if the barbell is too forward to catch or save, simply push the bar away forward, let go, and

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step, or sit, back and away from the barbell falling in front of them. If the barbell is too far backward to catch or save, simply let go and step forward or go forward onto the knees as the barbell falls behind (figure 27).

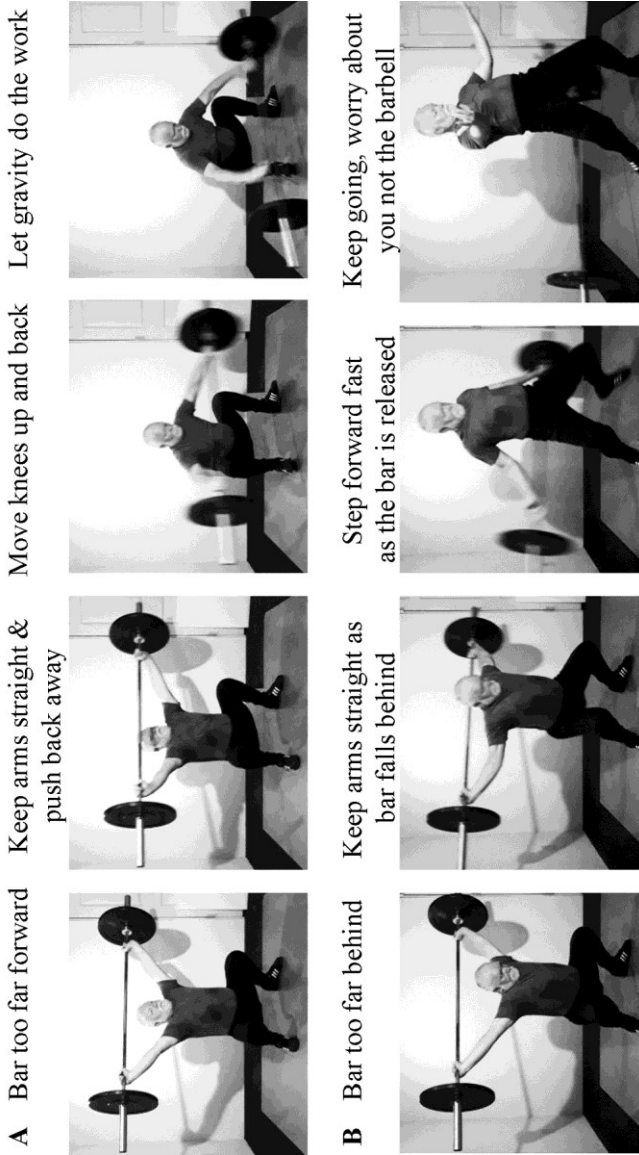


Figure 27. Missing the Snatch: (A) in front, (B) behind.

The Snatch

An interesting, potentially, historical note is that spotters were originally called “catchers” and they were in place not to safeguard the lifter but to prevent damage to the floor where the competition was held. They assisted on replacing the barbell onto the floor and attempted to stop out of control barbells from falling and damaging the venue. Rules requiring platforms for competition protected the venue floor and eliminated the need for catchers. Bumper plates, a rather late innovation, further safeguarded floors.

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