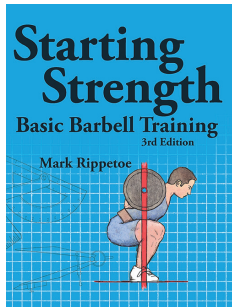


Starting Strength



This is an excerpt from the Press chapter of Starting Strength: Basic Barbell Training, 3rd Edition, available now directly [through us](#) or at [Amazon](#). The revamped version of teaching the press is covered here.

Learning to Press

The press starts at the rack with the empty bar. It should be set at the same height as for the squat, at about the middle of the sternum. If you are a female, a younger trainee, or an older or injured person, be aware that a 45-pound bar may be too heavy to start with on this exercise. Take steps to ensure that the proper equipment is available, or you will never have a chance to learn the exercise properly.

The grip for the press is determined by the simple mechanics we already know. The width is such that it places the forearms in a vertical position as seen from the back or front (Figure 3-8). This grip places your index fingers somewhere between the edge of the knurl and a half-inch out from the knurl. There are exceptionally large people who need a wider grip to keep the forearms vertical, but not many. Too wide a grip creates moment arms between the grip position on the bar and the elbows, between the elbows and the shoulders, and between the grip and the shoulders; and these moment arms are leverage you will have to overcome that need not be there at all (Figure 3-9). The choice of equipment may not be up to you here, and most people will need to work with what they have, so note that a standard Olympic weightlifting bar has about 16.5 inches (42 cm) of space between the knurls (there is no standard center marking for a powerlifting bar,

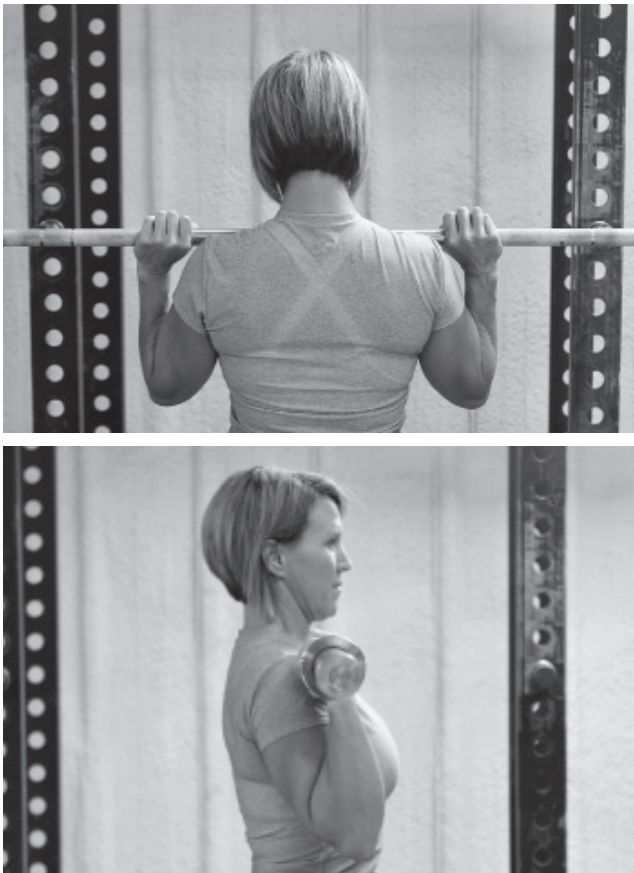


Figure 3-8. Grip width, just outside the shoulders, to produce vertical forearms.

but most are close to this). It might make things easier if you mark your oddball bar to this standard so that you can use the same grip width every time.

The grip should position the bones of the forearm directly under the bar, to eliminate any leverage produced against the wrist from having

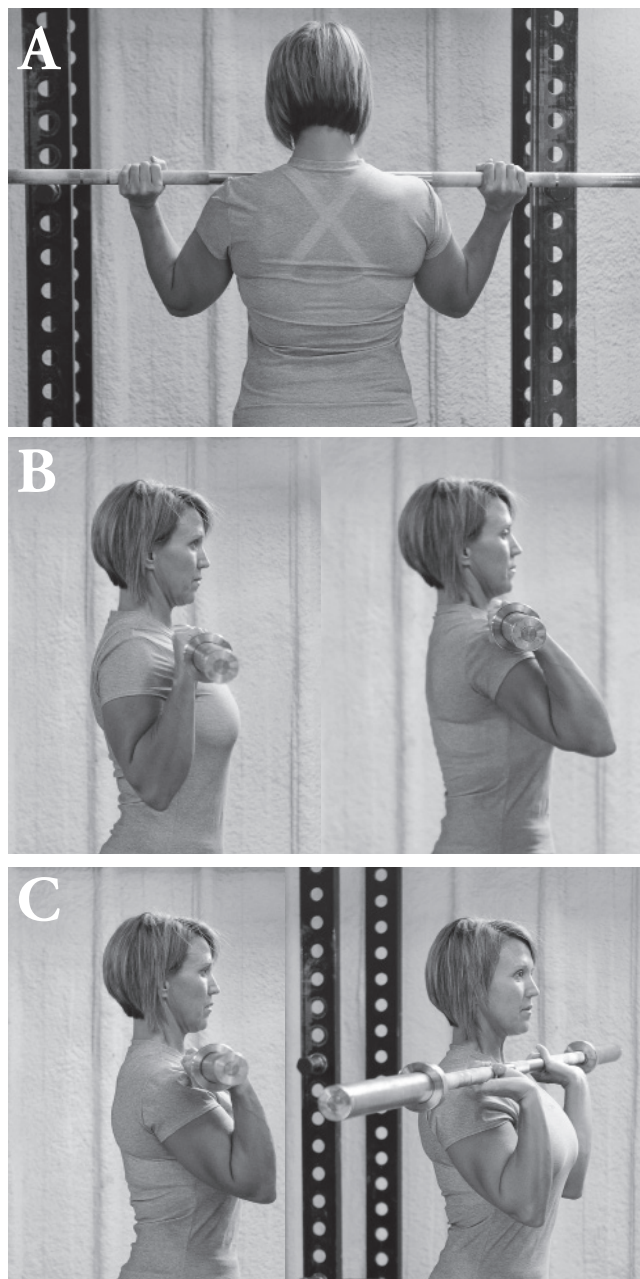


Figure 3-9. Moment arms that are created by an incorrect grip. (A) Between hand and shoulder, and between elbow and shoulder. (B) Between elbow and shoulder along the sagittal plane. (C) Between wrist and bar.

the bar too far back in the hand. The best way to position the grip efficiently is to set the grip width at your index fingers, and then rotate your hands into pronation by pointing your thumbs down toward your feet. This setup aligns the bar with the *radial longitudinal crease* and between the *thenar eminence* (the high spot adjacent to the thumb) and the medial palmar (*hypothenar*) eminence on the other side – parallel to your “life-line,” to use a more familiar term. Then, just lay your fingers down on the bar and squeeze the fingertips into the bar. When you take it out of the rack, the bar will be on the heel of your palm and directly over your forearm bones, as shown in Figure 3-10. The thumbless grip is never used when pressing, not because of the danger – which is obviously not there when the bar can be dropped to the floor. Rather, the thumbs-around grip permits the “squeeze” in the forearms that increases the tightness of the muscles, making the drive from the start position more efficient and increasing motor unit recruitment throughout the arms and upper body. Except for the squat, *there is no thumbless grip in barbell training.*

Take the bar out of the rack – the EMPTY BAR, at the correct weight for your ability. Your grip will have placed the bar on the heel of your palms, and your elbows should now move to a position just in front of the bar when viewed from the side. This placement creates a vertical position for the radius bone of the forearm. (Most people place the elbows under or behind the bar, positions that tend to make the bar drive away from the body when you press.) Shrug your shoulders up and forward just a little; the idea is to have the bar resting on top of your anterior deltoids, the meaty part of your shoulders, at the start of the movement.

Inflexible people may not be able to get the shoulders far enough forward and up to put the bar in this position at first; if flexibility is the problem, you will quickly stretch out. Some people have long forearms relative to the length of their upper arms, and this anthropometry makes getting the bar on the deltoids impossible with the elbows in the correct position and a narrow grip. Sitting on the delts is the ideal position for the bar, but the movement can be done from a less-than-perfect position without any

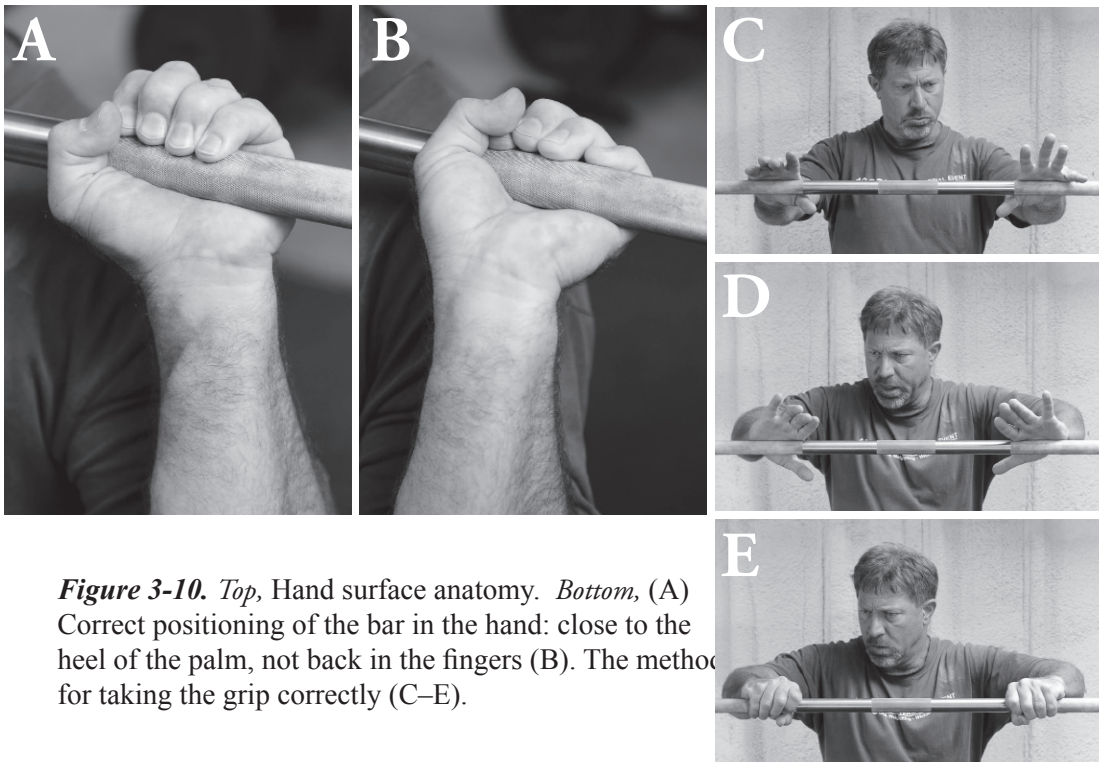
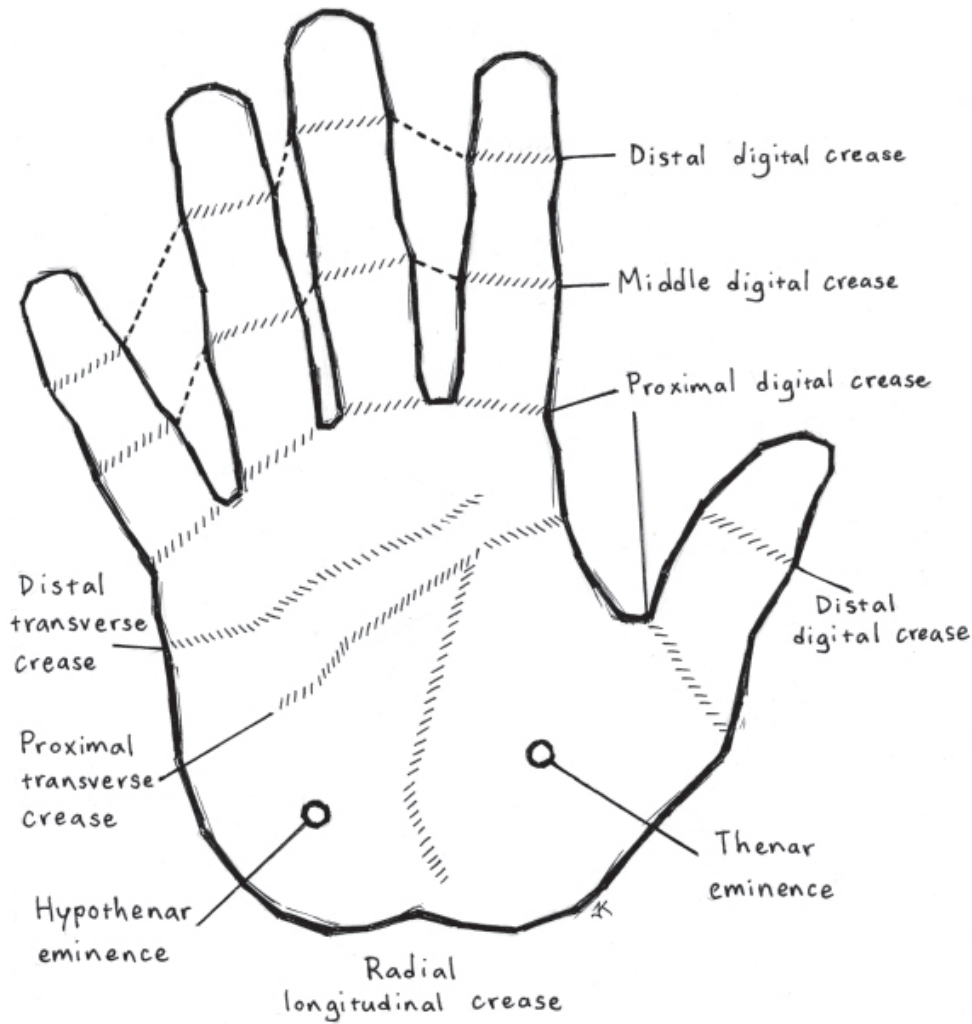


Figure 3-10. *Top*, Hand surface anatomy. *Bottom*, (A) Correct positioning of the bar in the hand: close to the heel of the palm, not back in the fingers (B). The method for taking the grip correctly (C–E).

real problem. Very flexible people should make sure not to raise the elbows too high; doing so pulls the scapulae forward and produces a lack of tightness and stability across the shoulder blades that is not conducive to an efficient press.

Your stance in the press is not as precisely critical as it is in the squat. Take a comfortable stance, and you will usually end up with something that will work. Your squat stance actually works well for the press. Too close a stance creates a balance problem, and much farther apart than the squat stance feels pretty weird. We will not be using a ground reaction in this lift (since it is not a push press), so don't worry about trying to simulate a vertical jump stance for this lift. In fact, when in doubt, go a little wider.

Many initial position problems can be prevented with a correct positioning of the eyes. Look straight ahead to a point on the wall that is level with your eyes. (This assumes that you are in a facility with walls. If the walls are too far away, a piece of equipment will do.) Stare at that point for the whole set. You might need to give yourself a point to look at. If you need to, draw a big dot on a sheet of paper and hang it up at the point that causes your eyes to hold the correct position.

Now lift your chest. This is actually accomplished by placing the upper part of the erector spinae in contraction. Think about lifting your sternum up to your chin or showing off your boobs. (Sorry for the coarse analogy, but you'll have to admit that it's useful.) Refer to Figure 3-13 for this position. "Chest up" is really a back contraction, and the press and the front squat are the two best exercises for strengthening and developing control of these muscles. Lifting your chest produces tightness in the upper back and in the entire kinetic chain, making your connection to the ground more stable and improving your pressing mechanics overall.

When your elbows are up correctly and you have lifted your chest, you are ready to press the bar. The press is learned in two stages: First, you will put the bar where it is going to be in the finished position. This step consists of learning the lockout position and the anatomical and mechanical reasons for using it. Second, you will learn how to get the



Figure 3-11. The elbows are in front of the bar. This position places the radius in a vertical position and provides for the correct direction of upward drive.

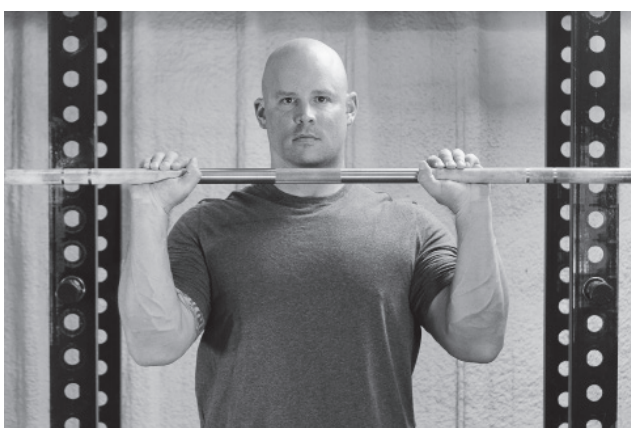
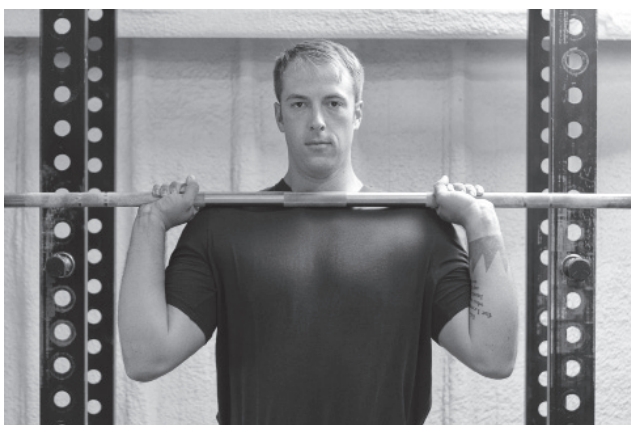


Figure 3-12. The bar rests on the meat of the shoulders – the anterior deltoids – if possible. *Top*, Normal forearm dimensions. *Bottom*, A long forearm relative to the humerus. This lifter will press from a bar position that “floats” over the delts. An attempt to set the bar down on the delts will adversely affect the mechanics of the start position.

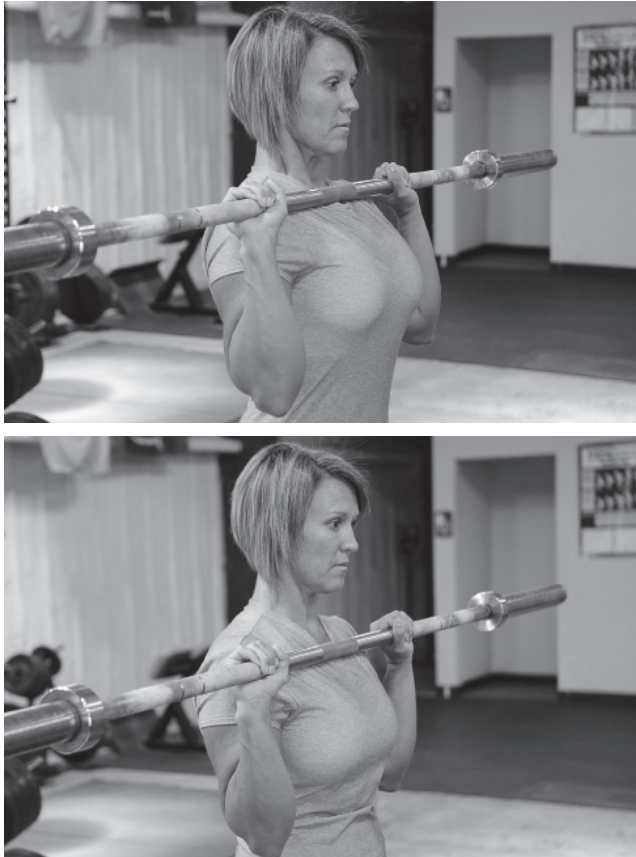


Figure 3-13. *Top*, The correct upper back position, providing a firm platform from which to drive the bar. *Bottom*, A relaxed upper back.

bar there correctly. This step consists of learning how to produce a mechanically efficient bar path and how to use your whole body to do it.

Step 1: Take a big breath, hold it (our friend the Valsalva maneuver), and drive the bar up over your head. The vast majority of people will press the bar up to lockout but in a position just in front of the forehead. Make sure that you have the bar directly above the back of your neck, a point that should have the bar, the glenohumeral joint, and the mid-foot in a straight vertical line (Figure 3-14). This is the position in which there is minimal leverage operating against the primary segments of the kinetic chain – the bar to the shoulder, and the shoulder down to the mid-foot. If the bar is directly plumb to the shoulder joints, the load applies no leverage to the shoulders. If the shoulders are



Figure 3-14. The skeletal landmarks of the press. The lockout position is correct when there is a perfectly vertical relationship between the bar, the glenohumeral joint, and the mid-foot.

plumb to the mid-foot, the back and legs apply no leverage to the balance point. If the bar is plumb to the mid-foot, the entire kinetic chain is in simple compression, with no leverage against the primary segments.

Once the bar is over your head correctly, lock your elbows and shrug up your shoulders to support the bar. The bones of the arm are lined up in a column by the triceps and deltoids; the shoulders are shrugged up with the trapezius; and the arms and the traps must work together to support heavy weights overhead. Imagine someone behind you gently pushing your elbows together and pulling them up at the same time, as illustrated in Figure 3-15. The combination of locking the elbows out and shrugging the traps up at lockout, with the bar directly over the ears, produces a very firm, stable

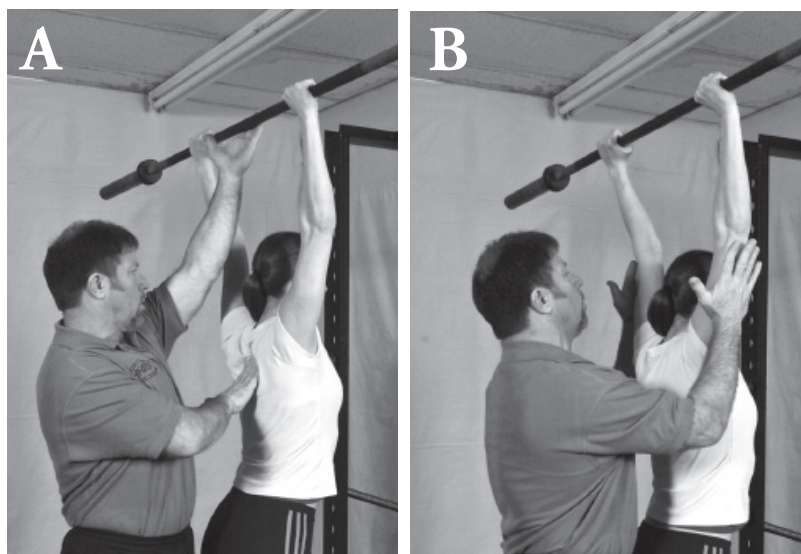


Figure 3-15. Cues for the lockout position. (A) The bar is back in a position over the shoulder joints, a point that will be well behind the forehead if the neck is in the normal anatomical position. You might find it helpful to think of the bar being pulled back into this position from behind. (B) The bar is then supported in this position with the triceps, deltoids, and traps. To learn this position, you might find it helpful to feel a gentle upward and inward squeeze on the humerus from either side, along with hearing a reminder to “shrug” the bar up.



Figure 3-16. The lateral distance between the initial position of the bar on the shoulders and the final position overhead. This distance is covered by the movement of the torso as it drives forward after the bar crosses the level of the forehead on its way up.

position at the top that involves all of the shoulder-girdle muscles and prevents shoulder impingement.

It is helpful to think about the lockout as a continuation of the upward drive, as though you are never finished pressing the bar upward. When the load is heavy, this cue provides the last little push necessary to get the bar into the lockout position. Think about pressing the bar up to the ceiling.

Step 2: After this lockout position is correct, it is time to learn how to best drive the bar to this position. This step involves making the bar path correct and establishing the proper movement of your body in relation to the bar. Since the bar is sitting on your deltoids, in front of the neck, and it must move up to a position above the shoulder joints, several inches behind the starting position, there must be a relative lateral movement of several inches on the way up (Figure 3-16). But barbells like to travel in straight vertical lines up and down, especially when they're heavy. Our vertical bar path must therefore be produced in a way that takes the load from a position in front of the shoulders to the lockout position plumb to the shoulder joints. We do this with motion of the torso.

Lean back slightly by pushing your hips forward. This slight movement must not be produced by bending the knees or the lumbar spine. Rather, the movement is a function of only the hips. Without the bar and with your hands on

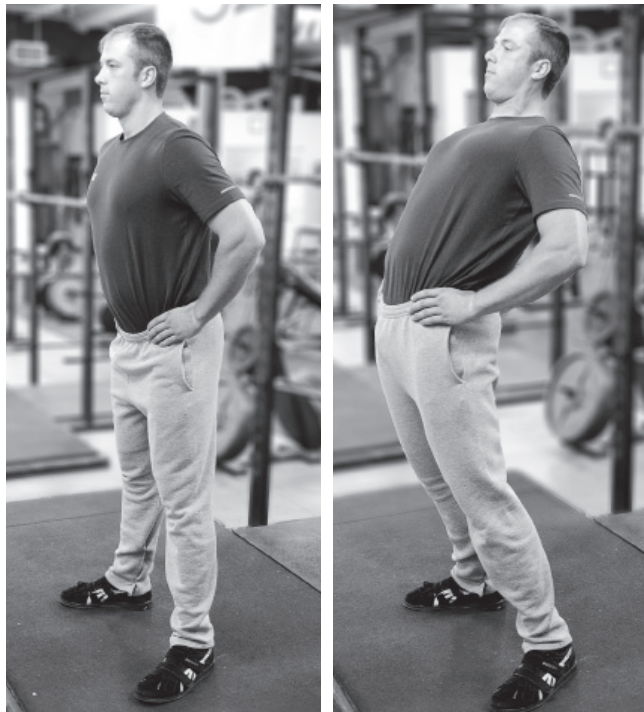


Figure 3-17. The hip movement used in the press. With hands on the hips, shove your pelvis forward and backward to simulate the torso movement used in the press. Do not unlock your knees or your lower back.

your hips, push your pelvis forward and back a few times, keeping your knees and your low back locked in position. Try to do this rocking motion with just your hip joints. When the weight gets heavy, your abs will lock your low back and your quads will lock your knees, involving both of these muscle masses in the exercise isometrically. It's easy unweighted, but later it becomes a huge part of this challenging exercise (Figure 3-17).

When you understand this motion, take the bar out of the rack, making sure that your grip and elbow position are correct, and then push your hips forward and drive the bar up straight. As soon as it crosses the top of your forehead, *get under the bar*. Move your body forward under the bar and drive it to lockout. Don't move the bar back – slam yourself forward under the bar (Figure 3-18). When you do this correctly, you will find that the forward torso movement contributes to lockout at the top: as the shoulder drives forward, the contracting deltoid and tricep bring the upper arm and the forearm into alignment, thus driving up the bar.

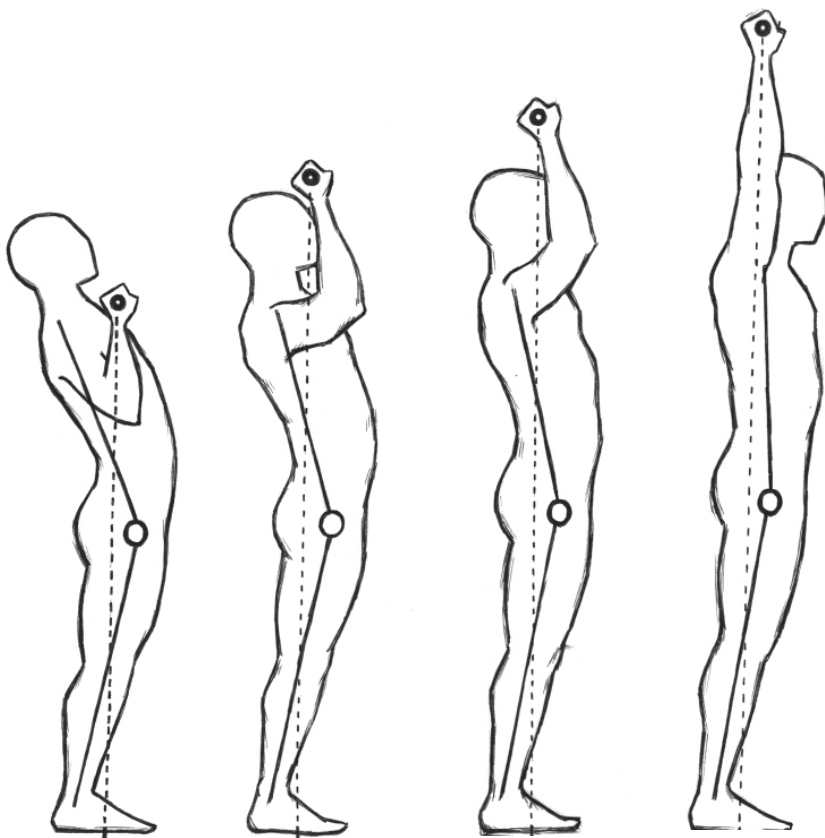


Figure 3-18. The torso drives forward as the bar drives up.

Do this for a set of five, and rack the bar. Do as many sets as necessary with the empty bar to clarify the concept of moving yourself forward under the bar, as opposed to moving the bar back to the shoulder joint. Make sure you're leaning back *before* you start to press, because it's very common to start the press with a vertical torso and then lean back as the bar starts up. Hips-forward must occur before the press starts, or the bar will travel *forward* around your chin, not *up* in an efficient vertical path.

To further reinforce the vertical bar path, think about keeping the bar close to your face on the way up. Aim for your nose as the bar leaves your

shoulders. Then, as you lower the bar for the next rep, aim for your nose on the way down as well. You may actually hit yourself in the nose before you figure this out, but you'll probably do it just once. By establishing a bar path close to your face on both the concentric and eccentric halves of the movement, you practice it starting from the very first sets of the exercise.

After as much practice with the empty bar as is necessary, start up in 5-, 10-, or 20-pound jumps, whatever is appropriate for your age and strength, until the bar speed begins to slow markedly on the fifth rep of the set, and call it a workout.

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