

## The Power of Dynamic Pulling Exercises

Explosive barbell lifts like power cleans, power snatches, and high pulls take time to master, but reward you with a monster back and all-body strength, speed, coordination, and athleticism.

**Bill Starr**



Over the last decade, I've noticed that most athletes in the weight room are emphasizing static back exercises like deadlifts, bent-over rows, good mornings, and various machine pulls rather than dynamic, explosive exercises such as power cleans, power snatches, snatch and clean high-pulls, and full cleans and snatches. That's too bad, as the latter are far more useful for athletics and life. While static strength exercises are good, explosive exercises beat them every time for building strength, speed, balance, and coordination.

Of course, it's understandable if you haven't done these very dynamic movements very much. Many fitness facilities do not provide stations where the members can practice explosive lifts, and many discourage doing anything off the floor. Then there is the problem of finding someone who knows how to teach these movements; they are few and far between. As a result, the majority of strength-training athletes just do the simpler exercises. However, if the athlete is serious about getting considerably stronger, he needs to incorporate at least one explosive exercise into his routine. And more is even better.

**Here's why:** When an exercise is done in an explosive manner, the muscles and attachments are worked in an entirely different way than during static movements. The quicker, more synchronized motions required in these exercises forces the nervous system to be involved to a much higher degree. This not only produces greater strength gains, but helps improve other athletic attributes, such as foot speed, timing, balance, and coordination, which are easily carried over to any other athletic endeavor. And although the exercises I'm recommending below are primarily thought of as back movements, they also strengthen the hips and legs as well as the entire shoulder girdle and arms. (Note: I realize that shrugs should be done in an explosive fashion, too, but the move is a short one and quite different from the long-range pulls I'll discuss here.)

### **Movement #1: The Power Clean**

The power clean is a part of my beginning program for athletes, whether they are male or female, young or old. (The only exceptions are those who are unable to rack the bar on their collarbones properly due to a lack of shoulder flexibility or an injury. In those cases, I use a substitute exercise that is equally as explosive. I'll get to that later.)

The power clean has been called "the athlete's exercise" for good reason: gifted athletes excel at it right away. Yet after a less talented athlete has learned the technique and

moves to heavier weights, the strength, speed, balance, and other benefits are greatly enhanced and he/she becomes a more proficient player in any sport.

After I start a sports team on their off-season programs, which always includes power cleans, I can tell the coaches who their best athletes are. I'm always right. The famous rowing organization, The Vesper Boat Club of Philadelphia, used the power clean as a test. All the initiates were required to do the lift before being allowed to get in a shell and row. If the prospects were unable to learn the technique in a certain amount of time, they weren't allowed on the water.

The power clean is the ideal pulling exercise to learn first. After the form on this lift has been mastered, all the other dynamic exercises are much easier to do.

I should note that I have my female athletes do power cleans from the very beginning just as I do the males. Some are wary because they see the men handling heavy poundages and the lift appears to be quite complicated. Yet while it is, indeed, a high-skill movement, it is rather easy to learn. In fact, overall, my female athletes usually display better form on this lift than their male counterparts.

For females and for younger, smaller athletes, I recommend having Olympic-sized five-pound plates available. This is much better than using regular plates. The regular plates place the bar a great deal lower than the five-pound



***The Hang Power Clean***

plastic or rubber plates and makes it more difficult for the athlete to assume the proper starting position. And stacking the metal plates on other plates doesn't work too well either.

Rubber bumper plates are a good idea for those who are able to handle more weight from the beginning. These usually come in kilos, but standard numbers can also be found. This will allow the lifter to start with either 89 pounds (Olympic bar, 45, two 22 lb bumper plates, 44) or 95 pounds (Olympic bar plus two 25 lb plates). Obviously, the bumpers set the bar a bit higher than the 25s, so again have the advantage.

Should the athlete not be strong enough to handle any additional weight, I have him learn the exercise using the empty Olympic bar. Or, in extreme cases, a standard 25-lb bar. Keep in mind that it doesn't matter where you start on a certain exercise, it's where you end up—and it's paramount that form be established before trying to run the number higher.

The power clean requires very little in terms of space or equipment and there is no need for any spotters, which makes it ideal for those who train alone. Although it is a quick and involved movement, it can be learned without a coach. I know this is possible since I learned how to do not only the power clean and power snatch along with the high-pulls, on my own, but also the Olympic lifts (snatch and clean and jerk). I did this by studying sequence photos in magazines and practicing what I saw until the movement felt right. (Editor's note: See "Exercises and Demos" on the CrossFit website.) So while a knowledgeable coach is certainly valuable, it's not an absolute necessity.

**Set-Up:** Lifting starts with the feet. In order to find your ideal starting position for the power clean, shut your eyes and place your feet as if you were going to do a standing broad jump. That's your strongest pulling stance. The grip will vary slightly due to the shoulder width of the athlete, but this works well for most: extend your thumbs on an Olympic bar so that they just touch the smooth center. A bit of trial-and-error may be necessary. If your grip is too close, you will have trouble racking the bar on your shoulders correctly. If it's too wide, the racking motion will be stressful to your shoulders or elbows. After a few sets, you'll be able to determine what's right for you.

Grip the bar tightly and pull it in so that it's touching your shins. This is a key point. The bar absolutely has to start snug to your body. If it's so much as an inch away, it will move upward in an improper line.

With your weight centered throughout the entire foot, lower your hips and flatten your back. It's okay to set your hips high if you're able to hold that same position as you bring the bar off the floor. Higher is good since it provides a longer lever from your hips. However, if you cannot maintain that starting position, lower your hips a bit. Before starting the pull, *make sure your frontal deltoids are slightly out in front of the bar.*



**The Set-Up**

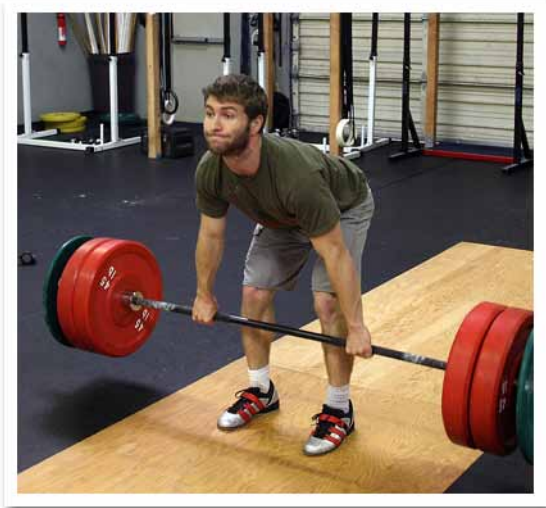
**The Pull:** With perfectly straight arms, bring the bar off the floor in a smooth, controlled motion. Don't attempt to jerk the bar upward to set it in motion. This will alter your solid starting position and cause the bar to run forward or out of the proper line.

The bar always tries to run forward, so you have to concentrate on keeping it close as it travels upward. Your arms should still be locked and straight as the bar passes your knees.

Then **explode.** The moment the bar clears the knees, drive your hips forward and, in that same instant, contract your traps. These coordinated, powerful moves will extend the bar up to or past your navel.

At this point, you bring your arms into the mix. Bend them straight back, contracting your traps as you climb high on your toes. The combination of traps, biceps, brachioradialis, brachialis, and calves will provide the final, powerful snap at the very top of the pull.

With the bar accelerating upward, you're getting ready to rack the bar across your frontal deltoids—which is the most difficult phase for those who have tight, inflexible shoulders. While the bar is floating upward, drive your elbows under it, dip slightly, and secure it firmly on your shoulders. As you rack, try not to let the bar crash down on your collarbones, which can be painful and lead to bone damage if done repeatedly. Use a short dip (not an exaggerated one) that resembles a quarter squat to help absorb the shock to your shoulders.



**The Pull**

This next step is very important: as you rack the bar, your torso must be upright or a bit forward. Do not lean back, as this invites problems for your lower back. Work with lighter weights until you are able to rack the bar correctly. For those few who cannot get the feel of a proper rack and continue to lean back, I have them take a small step to the side. Some prefer to do a skip jump. Either way is fine, just so it helps to keep the upper body erect as you stand upright with the weight under control.

Lowering the bar to the floor is done in two stages: First, flip the bar off your shoulders and lower it to where your body bends at the waist, bending your knees a bit to lessen the impact. Then, after you pause long enough to make sure your back is flat, set the bar down on the floor.

Before the next rep, reset, making sure that the bar is snug against your shins, your frontal deltoids are out in front of the bar, your back is flat, and your hips are set correctly. Breathing is done just before you set the bar in motion after you have racked it. Hold your breath while pulling.

**Avoid form foul-ups:** The most common form mistakes are: 1) allowing the bar to swing too far out front, 2) letting the back round, 3) bending the arms too soon, 4) bending the arms before the final snap has been achieved, and 5) the one I just made a big deal of, leaning backward at the finish.

Bending the arms too early is usually due to a history of doing a great deal of biceps work for the arms. This can be corrected with practice; while I usually don't encourage lifting in front of a mirror, in this case, it can be helpful. Quite often, an athlete doesn't realize he's bending his arms before he activates his traps until he watches himself in a mirror.

Maintaining a flat back is frequently a problem for beginners. When this happens, I tell them to lock their shoulder blades together and keep them that way throughout the up and down motion. When the elbows bend too soon, the finish is adversely affected, because the traps cannot be contracted as fully as when the arms remain straight with the frontal deltoids still out in front of the bar. The top-end of the power clean is similar to an upright row, although much more explosive since the weight used is heavier.

At the finish of the pull, the athlete should be high on his toes, the bar close and even touching his body, traps shrugged, and elbows up and out to the sides. The lift is considered a "quick lift" because the bar has to move fast and the athlete must react instantly. Perfect form can only be achieved with lots of practice. Five sets of five reps works well for these. Once you start moving bigger numbers, you can begin using the heavy, light, and medium concept (using different relative loads on different training days).

### **Movement #2: The Power Snatch**

The power snatch is another dynamic pulling exercise that is very beneficial for all strength athletes, and is particularly helpful for those who are unable to rack the bar properly in the power clean. While the power clean is pulled to shoulder height, the power snatch will go from the floor to a locked out position overhead. Even those with poor shoulder flexibility are able to lock the bar out overhead in the power snatch.

There are two reasons why I incorporate the power snatch into all my athletes' programs once they have learned to do power cleans correctly. First, the snatch uses a wider grip than the clean, and pulling weights using that wider grip activates many muscle groups that are not highlighted as much during the power clean—most notably the lats,

## The Power of Dynamic Pulling... (continued)

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rhomboids, wide portions of the traps, and rear deltoids. Secondly, locking out a heavy poundage overhead and holding it in place builds strength in all those groups that are responsible for stabilizing the spine and strengthening the core.

**Wider grip, longer pull:** Although there are many similarities between the power clean and the power snatch, there are two major differences: the grip and the length of the pull.



*Hand, foot and knee positions are critical for successful pulling.*

For the power snatch, take a rather wide grip. On an Olympic bar, there is a score six inches in from the collars. Wrap your middle finger around that score. I start everyone with this standard grip and vary it when necessary.

Foot positioning is the same as for power cleans; so is keeping the bar tight against your shins and having your frontal deltoids out in front of the bar.

The pulling motion is identical to the power clean. The bar breaks the floor smoothly, arms stay straight until you kick in your traps, elbows turn up and out and, most importantly, the bar climbs upward close to your body—so close that if you were wearing a belt it would hit it. That is why I don't recommend wearing a belt while doing any of these exercises.

The biggest difference between power snatching and power cleaning is that the snatch requires a much longer pull. The bar will climb up over your head.

As it is heading past your shoulders, bend your knees slightly, dip under the weight, and lock them out. Ideally, your elbows will be completely straight when you fix the

bar overhead. But in the beginning, most catch the bar with bent arms. While that's okay at first, don't make it a habit. This is especially true if you have an intention of trying to do full snatches in the future, because pressing out a snatch is cause for disqualification in competition.

When the bar is locked-out overhead, it should be fixed on a line running up from the back of your head. That's the strongest position to hold a weight overhead since it's directly over your spine. Learn to push up against the bar, extending and stretching it, rather than just holding it in a passive fashion. Hold it in this manner for five to six seconds on your final rep and you'll get an added bonus of improved strength in all of your supporting muscles, from your upper back down to your ankles.

Lower the bar as I advised for the power clean, in two stages. First, to your waist, then on to the floor while keeping your back very straight and tight. Then reset, making sure all your mechanics are correct and do the next rep.

The clean and snatch power pulls should both resemble a whip, although it's even more critical for the snatches. The bar comes off the floor slowly, picks up speed through the middle, and is no more than a blur at the finish. You are, in fact, attempting to throw the weight upward.

Form mistakes are the same as with the power cleans: letting the bar run too far forward, rounding the back, bending the arms too soon, and turning the elbows back before the final pop at the end. This is a long, coordinated movement that takes hours of practice to perfect. While learning the technique, stay with lower reps. Fives for warm-ups are okay, then go to triples. This will help you to concentrate on the many small form points and also allow you to handle a bit more weight.

One thing to note about the power clean and power snatch: even if you do not master the technique on them, you will still derive benefits from doing them if your form is at least good. Of course, the better your form, the more weight you can use, but they are still quite helpful in building strength even with lighter poundages.

### The Next Level: High Pulls

After you have been doing the two aforementioned quick lifts for two to three months, you're ready to add in two other dynamic exercises that will add a higher degree of strength to your entire body: clean and snatch high pulls.



High pulls are exactly what their names imply: pulling weights high by using a clean or snatch grip. While they should be much easier to learn than the more complicated power movements, they aren't. In fact, I can teach an athlete to do a perfect power clean or power snatch much faster than I can get him to perform a decent high pull.

The high pull consists of a deadlift followed by a shrug. Simple enough. Yet, learning to make these two moves flow together in a smooth, continuous fashion takes hours of practice. Since these are done to overload the muscles involved in pulling, more weight will be used than on the power movements. This is why high pulls are so tough to master. The heavier poundages magnify the small form mistakes that can often be corrected in the power snatch or clean, and these result in a sloppy set.

**Don't bend too soon:** The most difficult part of the high pull is dealing with the sequence—the transition between the deadlift and shrug. The deadlift is usually no problem, unless the athlete allows the bar to run forward. When that happens, the lift is doomed. You must not bend your arms until you have contracted your traps. You might be able to get away with doing this with the power moves, but you can't with high pulls. Bending the arms too soon will result in a herky-jerky finish and the bar will not climb as high as it should.

The object of high pulls is height. With this in mind, pull every rep just as high as you can. For the light, warm-up weights, this may mean pulling the bar up higher than

your head. Then, as the poundages increase, the bar will not travel nearly as high, but you will have established the pattern of extending as fully as you can. Remember, the higher you pull the bar, the more muscles you activate, and therefore the more strength you gain.

At the finish of a high pull, you should be fully extended, high on your toes, elbows up and out, with the bar tucked in close to your body. Try to resist it a bit at the top and don't crash the bar back to the floor. Use the same method of lowering the bar as I recommended for the power movements, stopping at your waist and easing it down to the floor.

Use straps for high pulls. You may not need them for the warm-up sets but they're beneficial when the weights get heavy. The straps will help you

concentrate on form rather than thinking about gripping the bar.

**Go light at first:** Most have trouble with high pulls because they use too much weight too soon. *The exercise only yields benefits when it's done perfectly.* Should you raise your hips at a faster rate than the bar is moving, or bend your arms too soon, then you are, in effect, building bad habits into your pulling motion and this will carry over to all of your other pulling exercises.

While learning the technique on the high pulls, only use 20-30 pounds more than your best power clean or snatch. So a 175-pound power cleaner would only handle 195 or 205 until he has the form down pat. Only do threes on these. Again, the lower reps will allow you to focus on the various key points. After you feel like you have the technique licked, run the numbers on up. However, should form break down, lower the weights. It's counterproductive to do high pulls incorrectly, so always put form ahead of poundages. A set done flawlessly with 225 is worth more than a sloppy attempt with 275.

There are two ways to incorporate high pulls into your program. They can be done separately or right after power cleans or power snatches. Should you decide to just do either kind of high pulls, it's a smart idea to start out with a couple of sets of power cleans or power snatches. These will warm-up the muscles involved in high pulling and help you get the feel of that movement and find the proper line for the heavier lifts. If you want to

do power cleans or power snatches and follow them with high pulls, drop a set of the quick lifts and do three to four sets of high pulls. When you are able to recover from this workout, do five sets of both.

Your eventual goal for high pulls is to handle 75 more pounds on the snatch version than you can power snatch and 100 more pounds than you are power cleaning. While this may take six to eight months, there's no hurry. As Ben Franklin so sagely stated, "*Make haste slowly.*"

**Final word: Explosive, dynamic pulls do a body good:**

By alternating the two forms of high pulls along with power cleans and power snatches, you'll insure that all of your back muscles receive equal attention. Dynamic pulling exercises not only greatly improve back strength, they also have a very positive effect on hip and leg movements and many upper body exercises. While these explosive lifts do require a lot of concentration and practice to master the technique, it's time well spent. And after you become proficient in these dynamic movements, you'll be ready to tackle those highly-advanced quick lifts – full cleans and full snatches.



*About The Author*

*Bill Starr is the author of the books **The Strongest Shall Survive: Strength Training for Football, Defying Gravity**, and thousands of magazine articles. He was the editor of Bob Hoffman's **Strength and Health**, Joe Weider's **Muscle Builder**, and a nationally-ranked Olympic weightlifter and powerlifter back in the day. Bill was one of the first professional strength coaches in the country, has forgotten more about training than most coaches will ever have the opportunity to learn, and makes a very convincing crab cake if you can talk him into it.*

*-Mark Rippetoe*