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Marilia Coutinho

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POWERLIFTING

How to Fix Your Bench Press: The Execution

TAGS: bench lockout, elbow flare, elbow tuck, Scapular Adduction, Marilia Coutinho, concentric phase, eccentric phase, lift off, unracking the bar, raw bench press, sticking point, assistance work, power, powerlifter, strength training, bench press

Let us just review the concept of “fixing a lift.” We decided in *How to Fix Your Bench Press: The Setup* that fixing included having learned the lift and having issues that make it less than optimal. We also agreed that it could include a number of approaches, but that in this series we would restrict our focus to form or technique, which includes setup (part one), execution (part two) and programing and assistance work (part three).

Part one has already been published. This is part two, in which we will review the execution issues that may need fixing and how to do that. We will then address programming and assistance work on part three.

RECENT: How to Fix Your Bench Press: The Setup

Up to now, we haven’t even moved the bar yet; it is still sitting there on the support. Before anything happens, the bar needs to be unracked. And that, dear reader, is not trivial.

1. Unracking the Bar

If you are not a part of a powerlifting team, you may not have anyone to unrack the bar for you most of the times. Sometimes, if you are training alone, you may look around, smiling, and try to see if anyone stares back long enough with compassion so that you may approach them and ask for assistance. Frankly, chances are that you are better off alone; if he/she is not a powerlifter (and even if he is, he’s not familiar with your hand-off),

he/she will most probably LIFT-off the bar for you, not HAND-it-off. There is a big difference. Remember where, in part one, I discussed that you should start and finish your lift with adducted scapulae and that the bar should be low enough in the support that you could unrack it without "disarming" your shoulder blades? Well, your assisting buddy might just ruin it all for you. Your hand firmly gripping the bar, if he LIFTS it off for you, he will lift you too and the first thing that will happen is that you will lose the scapular adduction that I insisted so much to be crucial.

If you don't have anyone to hand-off to you, depending on your arm length, you will lose more or less of your scapular depression (there is no way not to lose it). Again, in part one I insisted that both scapular adduction and depression are crucial for a good bench press.

But it is better to lose depression by unracking it yourself than to lose everything by having someone ruin your setup.

So, if you need to do it alone, the best position to unrack the bar is with your eyes in a vertical line from the bar.

If your support is high, this is something you want to fix. Set it lower so that you won't lose adduction. Keep your eyes under the bar so that you move your shoulders as little as possible.

And then the magic. Unrack and strongly depress your scapulae. The bar will place itself in the right position to start descent. Sometimes this alone fixes the problem; many people unrack the bar and forget to depress the scapulae (actually, the great majority doesn't even adduct them). The moment the lifter understands the need to depress it, unracking becomes easier and the bar magically goes to the right place to start the movement: not too high, not too low.

Step 1: Place yourself in such a way that your eyes are under the bar.

Step 2: Unrack the bar without losing your scapular adduction.

Step 3: Immediately and strongly depress your scapulae.

Hugo Quinteiro, IPL world champion and RUM champion, demonstrating the unracking of the bar.

An important observation: if you are a competitor, you want someone to hand-off to you during the competition. Believe me, you don't want to handle weights you have not done at the gym having to re-stabilize your dorsal area by depressing your scapulae after unracking a maximum weight. That person has to at least rehearse that with you during warmup.

2. Scapular Adduction and Elbows

There is a lot of discussion about what is the right elbow angle for the optimal mechanical efficiency of the bench press. I strongly support you to read the science behind it, especially if you are proficient in the statistical aspects of sampling. If you are not, in my humble opinion, read it and consider that when something varies a lot (in technical language, when the standard deviation is very high relative to the average), you should consider that biological individuality plays such a relevant role that you really need to be trained in that science to make any good use of the published results.

The reality is that there is no golden number. The best and most cautious advice is provided also by the most reputable authors in the field, Zatsiorsky and Kraemer [1], suggesting angles from 65º to 90º. Let us agree that 25º is a huge variation.

As I insisted before, if you do your setup right and unrack the bar performing a strong and fast depression of your (already) adducted scapulae, the bar will be in the right place or almost there. Unless you have exceptionally long arms and a very peculiar anatomy, your elbows will not be on a 90º angle to your torso if you depress your scapulae. If you are an arched bencher, the angle will be smaller. If you are a flat bencher, the angle will be greater. Neither is good or bad; it is how your body is built and how you adjust to the movement.

Keep in mind that with many if not most lifters, this angle will change along the descent (or eccentric phase) and the pushing (or concentric phase). So:

Step 4: Leave your elbows alone. Don't tuck it in or (even less) flare it out as you stabilize the bar to initiate the movement.

3. Control in the eccentric phase: what is 'the groove'?

Now you need to worry about what happens to your elbow. There are certain instinctive or unconscious reactions that you may exert control over once you realize you are doing them. One of them is to “shrug” (elevation and upward rotation of the scapulae). Once you shrug, scapular depression is gone (frequently adduction, too) your elbows flare out and your bench press is ruined. Not to mention that this is usually done under some level of panic.

That can happen in the eccentric or concentric phase. Both are disastrous.

Doesn’t the elbow move at all during any of the phases, then? In fact, usually they do. Who hasn’t heard about the “trick” of pretending you are bending the bar as it descends and stretching it outwards as you push it up? “Bending the bar” means rotating elbows inward while “stretching the bar” means rotating them outwards. Without getting into the technicalities of “who” (muscles involved) supinates or pronates what, you do need to know that your elbows move during the eccentric and concentric phase.

Let us focus on the eccentric phase here.

“Tuck your elbows." Who hasn’t heard this one, too? I hope not all, but many certainly did. Be careful there: the “bending the bar trick” is a good one and leads to a relative inward rotation, which is all you need. Exaggerate it and your elbow and wrist will fall out of alignment and you may drop the bar on your face in an extreme case. Remember levers. You want your wrist and elbow to be aligned. So, allow your elbows to rotate, but don’t force inward rotation. Just avoid panicking and flaring them out during the eccentric phase.

If you have been in powerlifting long enough, you have also heard about the proverbial “groove.” A dictionary definition of groove (there are many) is “a long, narrow cut or depression, especially one made to guide motion or receive a corresponding ridge.” That is pretty much what is meant: once you identify your “good grip width”, your starting position, and you control the descent movement allowing your elbows to rotate inward, a very precise bar pathway will be established. That is “the groove" — an invisible fold in space where the bar smoothly flows into the best mechanical efficiency.

It is easy to understand when a lifter disappointedly claims he/she failed a lift because the bench got out of the groove. Many, if not all, experienced lifters have been there. You start the descent and something goes wrong. One of your elbows misbehaves, your wrists play some dirty trick, and first you try to fix it. It doesn’t work; fixing a movement half-way down or half-way up is a miracle. The bar ends up touching the lifter’s torso at an awkward place and he has no way of efficiently pushing it up. He lost the groove. The best way for not losing the groove is controlling the descent.

The eccentric phase is going in favor of gravity. As counterintuitive as it may sound, you need to decelerate it. A lot in powerlifting is deceleration. That is where you control the movement. You decide where the bar goes. You are in control. Although you don't want to use all your ATPs on a hyper-super-mega-slow descent and end up with no energy left to press, you must control the movement during all the eccentric phase.

Also, if you are a competitor, you don't want a double bounce as the bar literally falls on your chest and bounces back. It is written in all rulebooks in the history of powerlifting: you need to keep the bar motionless in contact with your torso before you start pushing.

What about your wrists? Again, there is controversy in that matter. I am in favor of using wrist wraps for protection the whole time. There is no such thing as your wrists getting weaker because you are using wrist wraps too much, an argument that applies to the use of the belt in lower intensities for the squat. The wrist wrap protects the wrist by restricting any joint movement. Another point of instability controlled and, as said before, "stability is the mother of strength."

Many lifters over extend their wrists while benching. I am one of those. In these cases, the wrist wrap is absolutely indispensable.

Some people don't need it and don't like it. They are a minority. But, hey, high performers are always a minority and they are "weird" in one aspect or another of their performance (if not many).

Should the bar be lowered vertically or diagonally to the chest? That is another point of controversy. Usually, if you allow your elbows to rotate inward, even if you don't force it, the bar path will become slightly diagonal. That will be the optimal bar path: trying to make it vertical will lead to elbow flare out and loss of dorsal stability.

Step 5: Keep elbows and wrists aligned.

Step 6: Allow elbows to rotate but don't force it.

Step 7: Don't ever drop the bar. Control the descent.

Step 8: Keep special awareness of your points of stabilization as the bar reaches your chest (scapular adduction and depression, glute contraction, heels down, chest out).

4. Power and the Concentric Phase

The concentric phase is where the powerlifter needs power. Accelerating a dead weight is accomplished through power and the motionless bar on your chest is a more or less dead weight (we will see more about this on programming and accessory exercises).

Why "more or less"? Because the amount of time the bar is motionless in contact with the lifter's torso determines the loss of elastic energy lost for the push [2].

What you don't want to do is jerk it. The start of the concentric phase has to be powerful, yet controlled. Following the "stretch trick," there will be a slight outward rotation of the elbow. But remember: the golden rule is keeping elbow and wrist aligned. You don't want to flare out your elbow while your wrists (and the bar) are still down. It will be mechanically impossible to push the weight up.

This article is not about a kinetic analysis of the bench press and the muscle chains involved (to know more about this, here is a good source [3]), but it is important to know that there is a change in the relative contribution of primary motor muscles along the concentric phase. In spite of the fact that most electromyographic activity is detected at the "lift-off" phase (when the bar is pushed away from its motionless position in contact with the lifter's torso) for all primary muscles involved, there is a proportionally greater contribution of the triceps at the later stage ("lockout") than the first.

Fixing your bench press means also identifying where you have more difficulty: at the lift-off or at the lockout? Or transitioning from one to the other, at the famous “sticking point”?

Let us continue to assume this is a raw bench press because if we are dealing with shirted (equipped) benching, it is a whole different ball game. That said, knowing whether your problem is stabilizing the bar to start the movement, controlling the descent, lifting-off, transitioning, or locking it out is what will determine how to program your next training cycle and what assistance work to use to fix these problems on the long term. You may need more stability (supra-maximal work). You may need a different technique (we’ve been talking about it here). You may also need more strength in a phase than the other: your concentric phase may be too weak in one phase relative to the others. That is where assistance work comes in, too.

Step 9: Apply power to the lift-off from your chest.

Step 10: Allow your elbows to rotate outward ("flare out"), never losing alignment with your wrists.

5. Is there a sticking point or not? Does it really stick?

Yes, there is [4,5,6,7]. And I purposely added more primary scientific references to this claim than to others. Frankly, primary muscles in action during the bench press or incident forces on the shoulders are non-controversial. Other subjects, like the contribution of stabilizers during the lift, are too controversial. The sticking point just needs to stop being questioned. It exists, period.

There are several hypotheses for the sticking point. One thing, though, is certain: it is a transition. All three powerlifts have transitions from the lift-off to the lockout.

There are primary motor muscles that follow a succession of predominance along the concentric phase. Up to the sticking point, we usually say there is “pectoral dominance,” since pectorals are more intensely recruited. As the sticking point is passed, we usually say there is “triceptal dominance.” Again, this is a question of proportion: electromyographic data show that all primary motor muscles are more highly activated during the first part of the concentric phase (“lift-off”).

The sticking point is where there is a transfer of “proportional dominance,” if you want, from one chain to the other. And it is where there is least mechanical advantage, which is evidenced by the velocity curve.

But the real key to a good, competitive bench press is to efficiently make use of the synergist chains, mostly related to stabilizing the lifter-barbell system so that the levers will function optimally. What do we do when we know there is mechanical disadvantage in a certain phase of the movement? It is universal: it is inherent to the movement. It is harder for you and for everybody else. But if you are failing your bench press there, then something has and can be done.

Videotape the whole bench press. Is there a visible excessive flare out of your elbows at the sticking point? To the point that the bar gets out of the groove? If so, you need to work on stabilizing this phase. We will see, in the next article, what assistance exercises we can use to help you keep a smoother elbow flare out during the concentric phase.

Working on stabilization and control of both eccentric and concentric phase at lower intensities should start to fix this issue.

Hugo Quinteiro, IPL world champion and RUM champion, (unwillingly) demonstrating the sticking point.

On the next part of this series, we will approach programming and the assistance exercises. To review, here are the ten steps:

- Step 1: Place yourself in such a way that your eyes are under the bar.
- Step 2: Unrack the bar without losing your scapular adduction.
- Step 3: Immediately and strongly depress your scapulae.
- Step 4: Leave your elbows alone. Don't tuck it in or (even less) flare it out as you stabilize the bar to initiate the movement.
- Step 5: Keep elbows and wrists aligned.
- Step 6: Allow elbows to rotate but don't force it.
- Step 7: Don't ever drop the bar. Control the descent.
- Step 8: Keep special awareness of your points of stabilization as the bar reaches your chest (scapular adduction and depression, glute contraction, heels down, chest out).
- Step 9: Apply power to the lift-off from your chest.
- Step 10: Allow your elbows to rotate outward ("flare out"), never losing alignment with your wrists.

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