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Don't Muddle The Middle

Incomplete technique that ignores the mid-range limits performance.
Here's how to strengthen the critical in-between.

Bill Starr

Whenever someone starts on a strength program, his primary objective is just to get in the work on a regular basis. How the various exercises are done isn't usually a great concern at this stage, just so the form is adequate enough to complete the workouts. And that's okay. In the beginning, when relatively light poundages are used, form mistakes don't matter all that much. A power clean that runs too far out front can be pulled back into the correct line. An overhead press driven backward can be compensated for and saved. Adjustments can be made in poorly aligned squats or flat benches. So it's only natural for the athlete to assume that as he gets stronger and lifts heavier weights, technique won't matter; he'll continue to be able to redirect the misguided bar on any exercise.

But it's not so.

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THE DOs AND DON'Ts OF BUILDING MID-RANGE STRENGTH

DO

1. Strengthen middle-range muscles and attachments.
2. Visualize a smooth blend between the start and middle of the exercise.
3. Practice on incline benches, which are much harder to cheat on than flat benches or overhead lifts, and provide excellent visual feedback.
4. Practice a dead stop at the bottom of the squat, which keeps you tight and forces you to drive upward in a more controlled fashion with more power transfer power. Master this, and you soon won't need to stop at all.
5. Do clean high pulls in front of the mirror; this will clearly display your form flaws.
6. Test your mid-range strength in a power rack, then eventually switch to isotonic-isometric holds. If you find a large gap between the starting and middle strength levels, you can take steps to improve the lagging areas.
7. Use specific exercises and dumbells. Bent-over rows, partial deadlifts starting from mid-thigh, good mornings and near-straight-legged deadlifts all work the middle. Dumbbells, unlike a bar, are hard to cheat with as they cannot be jammed through a pressing motion, and require constant middle involvement and balance.

DON'T

1. Rebound the bar off your chest on a bench press with such force that there is no need to involve the middle.
2. Bridge in the middle of a bench press when the bar stalls out.
3. Use a knee-kick to start an overhead press instead of keeping knees locked.
4. Bounce rubber weights off the floor on pulling exercises.
5. Forget the middle, particularly on pulling exercises, as most of them have a longer range of motion than pressing and squatting. Letting the bar float free for a brief moment could result in a missed attempt.

As a person gets stronger and the numbers start to climb, more attention must be given to technique. This is fairly obvious for large-muscle exercises like squats, power cleans, high pulls, flat and incline benches, and overhead lifts. But the form must also be refined on those auxiliary movements for the smaller groups as well—calf raises, shins, triceps and bicep work, plus all those done on machines. Because in strength training, as in life, the small points make the difference.

The very first rule of technique is that every exercise consists of three, not two parts—the start, the middle, and the finish, each of which must be done correctly to handle max attempts or set personal records. Unfortunately, the middle—the mid-range of an exercise—often gets overlooked. That's a big problem because the middle takes on a different significance as the poundages go up.

This form mistake can be difficult to notice at first, often because of a powerful start. Example: An athlete with really strong hips can propel the bar upward with such intensity that it zips right through the middle range. The result: All he thinks about is getting that explosive start and then locking that bar out at the top. The middle never enters his mind. That is, until the weight is heavy enough that he can no longer jack it up through the middle. Then it "sticks"—and since those muscle groups responsible for elevating the bar up through the middle ranges are relatively weak, the bar comes crashing down.

Yet even then, quite a few athletes misinterpret why they're failing with limit attempts. They decide their start isn't strong enough and spend time trying to correct that weakness. And that does solve the problem for a short period of time.

But unless they do something to strengthen those muscles and attachments used in the middle range, they're never going to improve to any great degree.

The middle is not brought into the mix by those who cheat to start an exercise. This is particularly evident on the flat bench where athletes rebound the bar off their chests with such force that there is no need for them to involve the middle. This version of the bench press consists of an aggressive, incorrect start and a lockout. On those occasions where the bar does stall out in the middle, they simply resort to another cheating tactic: bridging.

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These athletes really don't care how they perform the exercise, just so the numbers keep moving higher. Eventually, however, that ugly form becomes a huge problem. They can no longer rebound a max poundage with sufficient force to drive it high enough even to utilize a bridge. Since those groups that are normally used to bench press a weight through the sticking point have only been utilized fractionally, they provide little assistance and the lift is a failure.

The same thing happens when athletes use a knee-kick to start their overhead presses instead of keeping their knees locked. This sends the bar through the middle and bypasses those groups that need to be involved in the movement. It also occurs to a lesser extent when an athlete who is using rubber plates on his pulling exercises rebounds the weights off the platform. Once more, those groups normally needed to bring the bar up through the middle range aren't called upon nearly as much as they would have been if the athlete had started from a dead stop.

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I've also found that even if athletes don't employ any kind of cheating, they frequently ignore the middle and think in terms of a start and finish, period. That means the bar will float free for a brief moment; if it's a heavy weight that usually spells a missed attempt.

While the middle range is a critical factor in any exercise, it's especially true for any pulling movement because most of them have a longer range of motion than pressing and squatting. This means that when athletes forget to concentrate on the middle range of power cleans, power snatches, full cleans, full snatches and high pulls, the shortcomings are going to be much more evident. This is even truer for any athlete trying to master the more complicated quick lifts: snatch and clean.

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Tips for Involving the Middle

Understand the "smooth blend" concept:

The very first step is to be aware of the role that the middle plays in the execution of an exercise. Then, understand that while there are three parts, they are actually a smooth blending of all the segments; not three separate moves. Think of the middle as the extension of the start. When the start and middle go together in one continuous motion, the finish is a great deal easier and often takes care of itself.

There should be no hesitation between the start and the middle, and the middle and the finish. The three are linked in a powerful, harmonious manner. Once this notion is firmly established, it's much easier to put the theory into practice.

Incline benches:

I've found that the best way to teach a smooth transition is to have the athlete do incline benches. The incline is a controlled exercise and is much harder to cheat on than flat benches or overhead lifts. It provides excellent visual feedback since the bar is directly in front of the eyes during the start-to-middle transition. Plus, the athlete is firmly locked onto the bench so balance and body positioning aren't a problem. I have the athlete get set and I tell him to put as much juice into the start as possible; then as soon as he does that, I want him to lean back into the bench and drive hard into the moving bar. When he gets the feel of that, it's not difficult to utilize the same idea for flat benches, overhead presses, and even weighted dips.

Dead stop on squats:

Since the athlete cannot see the bar during a squat, it's a bit more difficult to learn this move. But it can be done. I have the athlete come to a dead stop at the bottom of the squat. This forces him to drive upward in a more controlled fashion than if he didn't pause at the bottom of the squat and allows him to connect the start with the middle more easily. In addition, pausing for a brief moment on either back or front squats makes the athlete stay extremely tight, a necessary component in order to transfer power up into the middle range. With a bit of practice, the athlete learns how to explode out of the hole and instantly apply more pressure to the upward moving bar. Once this is achieved, the dead stops are no longer needed.

Do high pulls in the mirror:

I use clean high pulls to teach the concept for pulling exercises. Since heavier poundages can be used on high pulls than on power cleans and power snatches, or full cleans and snatches, the form flaws display themselves more readily. So any hesitation from the start to middle can be spotted. I've stated before that I don't encourage my athletes to train in front of a mirror, but it helps to do so when they are trying to learn to make this transition properly. High pulls are good in this regard because all the athlete has to think about is pulling the bar just as high as he can. He doesn't have to be concerned about racking the bar or locking it out overhead. His full concentration can be centered on blending the start with the middle. When this is done without a hitch, the top will follow along nicely.

Get in a power rack:

In many cases, the start-to-middle transition isn't done correctly because the muscles needed to move a weight through that range are simply not strong enough. Which brings me to the often-asked question on this topic, "How do I know if my middle range is relatively weak on a certain exercise?" The answer, "Get in a power rack."

I'll use the back squat to illustrate. Set the pins inside the rack at a position that would be the lowest you go in the squat. Start out light, then add weight until you find your max. Now move the pins up to a spot where the middle range begins. For most, this is where the tops of the thighs are parallel to the floor. Follow the same procedure used for the rock-bottom starts. Only do two or three reps. That's plenty for you to find out what you want to know. Very few athletes are able to handle nearly as much in the middle as they can from the bottom, but this is to be expected since there are so many large muscle groups utilized in the start. Although there will always be a disparity, what you're looking for is a large gap between the starting and middle strength levels.

This same procedure can be used to isolate and identify weaker areas on any pulling and pressing exercises as well. Once the athlete knows where he stands in terms of relative strength, he can then take steps to improve the lagging areas. And the very best way to do that is to get back into the power rack.

I'll stay with the back squat as my example exercise. Set the pins in the rack at that spot which has shown itself to be relatively weak; just below that spot is also good. Squeeze under the bar, get set, and knock out three reps. Add weight and do another set, and so on until you find your limit. These can be done in place of your regular squat workout or added to your session. If the middle is really weak, it's best to work the rack although it's a good idea to do some full squats first to warm up the muscles and establish a groove.

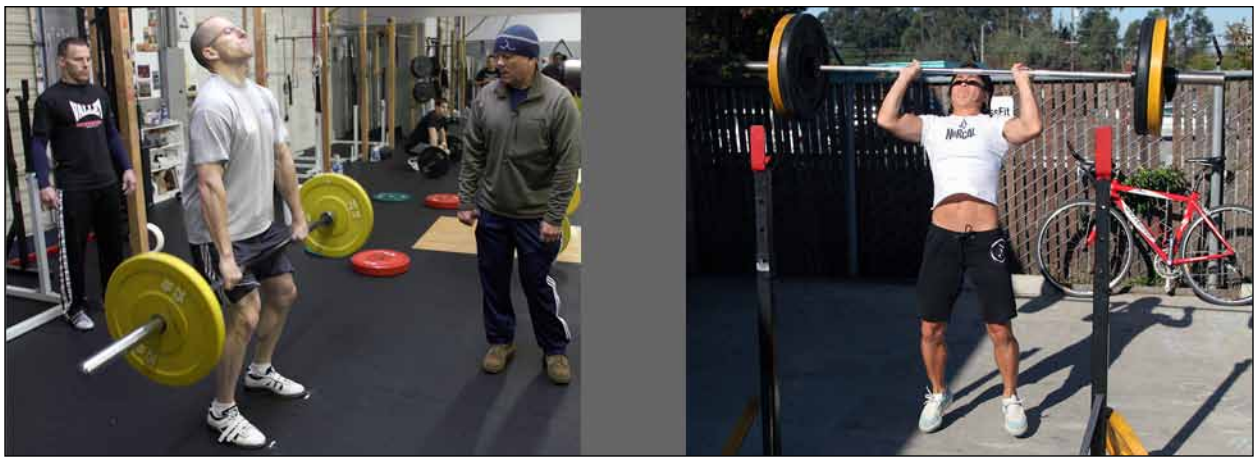
Switch to isotonic-isometric holds:
After doing squats starting from the middle for several weeks, switch over to the Big Dog of pure strength training: isotonic-isometric holds in the power rack. The starting pin position will be the same, but now there will be pins positioned just a few inches above the bottom pins. Because this takes a bit of learning to master, start out with a light poundage. Get under the bar, making sure your feet, back, hips, and shoulders are where they're supposed to be, then squat the bar up into the top pins. Lock it tightly against those pins and do two more reps in the same manner. Add weight and repeat the process. The third set will be the final, work set. Tap the top pins twice, then fix the bar against the top pins and apply 100% effort against the bar for eight to twelve seconds.

Selecting the correct amount of weight for that final isometric hold will take some trial and error. The main thing to keep in mind about this exercise is that holding the bar in the isometric contraction for the required count is more important than how much weight is on the bar. If you can't hold the weight for a minimum of eight seconds, it's too heavy. Conversely, if you still have something left after twelve seconds, you need more resistance.

After you have been doing these for a while, you can skip the two warm-up sets and just do one work set. This can be done right after you finish your squats. That way, everything is warmed up and ready for a maximum exertion. Only do one work set per position, and if you decide to do isotonic-isometrics for two or three squat positions be sure to go light on your squats that day. This is highly concentrated work, and if you put every ounce of strength into that max exertion your attachments will be spent for that day.

Isos can, of course, also be used to strengthen weak areas in any pulling or pressing exercise as well. Usually, these are in the middle range. First, find out exactly where they are, then attack them in the rack. When done correctly, the isotonic-isometric contractions produce results quickly, but the key is to assume a perfect body position while locking into the top pins. Should you use faulty form, then the strength gained will not be convertible to the exercises you're wanting to improve.

Visualize an explosive middle that "whips" the bar:
As you gain strength in the weaker middle, you also have to utilize it better. This means thinking middle. For those who have been only concerned with a strong start and solid finish, this change takes some concentration. This is especially true for long movements such as power cleans and power snatches. The athlete needs to blend that strong start into an explosive middle, and this is best done by focusing on picking up the speed of the bar once



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it leaves the floor, maintaining perfect body mechanics all the way. The analogy of a whip is useful in this regard. The higher the bar climbs, the faster it moves, so at the very top of the pull, it's no more than a blur. Practice makes this happen.

Build-up with specific exercises and dumbbells:
Besides working in the rack, you can attack the weaker middle with some specific exercises, such as bent-over rows, partial deadlifts where you start the bar from mid-thigh, and either good mornings or almost straight-legged deadlifts. To build a stronger middle for any form of pressing, I like dumbbells. Unlike a bar, dumbbells cannot be jammed through a pressing motion. They have to be more involved, even when the start is strong. There's also more balance needed to press heavy dumbbells than is required with a bar and this, too, builds more strength in the muscles being used in that exercise. Another reason I like dumbbells is it's difficult to cheat with them. Try rebounding them off your chest or shoulders and they run amok. They have to be guided through the proper range of motion and this deliberate action builds a different sort of strength.

Slow down and deliberately work the middle:
I mentioned that the middle is a vital part of any exercise, even those in the ancillary category. The reason why many are not obtaining the expected gains from doing biceps, triceps, or calf work, is because they aren't bringing the middle range into the exercises. Take standing calf raises, for instance. The majority of athletes I see doing them are just jamming up and down in a herky-jerky fashion. The solution: slow down through the middle. Make those muscles work harder than normal and they will respond favorably. Some even go so far as to pause in the middle on some upper arm or shoulder exercise. It's a small thing, yet it bears fruit.

Summary

Very few strength athletes pay as much attention to the middle portion of an exercise as they do the start and finish. Yet, that part is one-third of the equation for any exercise. Without a solid middle, the finish will not be nearly as strong and on max attempts this spells failure. So here's what I recommend: Give the middle more prominence in your training. This can be accomplished by coming up with a short key that will help remind you to involve the middle while doing a lift.

This works for me: Do a perfect start, then follow through behind that momentum immediately. This will eventually be condensed to: Start-Middle. Next, identify the weaker areas in that middle range and get to work strengthening them. When this is done, all the exercises in your program will benefit, and rather quickly.

Ultimately, improvement is the name of the game in strength training. In order to make consistent progress and achieve a higher level of overall strength, the middle must be given equal status and not treated like an inconsequential stepchild.

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About the Author

Bill Starr coached at the 1968 Olympics in Mexico City, the 1970 World Olympic Weightlifting World Championship in Columbus, Ohio, and the 1975 World Powerlifting Championships in Birmingham, England. He was selected as head coach of the 1969 team that competed in the Tournament of Americas in Mayague, Puerto Rico, where the United States won the team title, making him the first active lifter to be head coach of an international Olympic weightlifting team.

Bill Starr is the author of the books ***The Strongest Shall Survive: Strength Training for Football and Defying Gravity*** *which can be found at The Aasgaard Company Bookstore.*

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