In Defense of the Overhead Press

Bill Starr: September 2010

It's a Winner-Not a Sinner-for Shoulder Size and Strength

This installment is a response to an article written by Doug Brignole in the March'10 IRON MAN titled, "Stop the Presses—The Case Against Overhead-Pressing Movements." Normally I wouldn't bother defending an exercise, but I felt morally obligated to step up and put in my two bits about a move that's been a valuable part of my weight-training regimen since I first touched a barbell.

The first routine I ever used included the overhead press. No one taught me how to do the exercise, but I'd purchased a course from George Jowett when I was in high school and recalled the instructions in the manual. It's a simple movement. You clean the bar to the shoulders, then press overhead to lock out. It became my primary upper-body exercise for several years because there were no flat or incline benches available on the military bases where I was training.

Then I became interested in Olympic lifting, where the press was one of the three contested lifts. Overhead pressing took up a third of my training time, and that was the case for every other competitive lifter in the '50s and'60s. It wasn't just Olympic lifters who did a lot of pressing either. Bodybuilders at every level incorporated overhead presses into their routines. Part of the reason was that the American Athletic Union still controlled the sport of bodybuilding, and for the more prestigious contests—Mr. America, Mr. USA—the contestants were awarded athletic points for achieving a degree of success in another sport. Some had black belts in karate or had won awards in a team sport in high school, but most gained the prized five points by participating in Olympic-lifting contests.

It just made sense. They were already pressing heavy weights as part of their bodybuilding routines, they had to go to the meets to enter the physique competitions, and being seen lifting for nine attempts on a platform in front of many of the same judges who would be deciding their fate during the bodybuilding portion of the evening gave them an edge over opponents who didn't lift in the meets.

So everyone who lifted weights—shot-putters, Olympic lifters, bodybuilders and those who trained for overall fitness—did overhead presses. Even those who took part in the odd lifts, which eventually evolved into the sport of powerlifting, did overhead presses because the exercise was often included in an odd-lift meet, if the person holding it happened to excel at that lift.

Now I'll address one of the objections that Doug has to the overhead press: that it doesn't work the lateral deltoid as effectively as the dumbbell lateral raise and that, in fact, the overhead movement

places the shoulders at risk of injury. He gives a detailed account of how external and internal rotation works in the shoulder joint and how the press forces the shoulders into an unsafe range of motion.

Whenever writers lace their text with paragraph after paragraph of anatomy and kinesiology terms, I skim through them for the point they're trying to make. Scientific jargon is usually a means of adding weight to an argument, but in most cases it's no more than a smokescreen. The question that instantly came to mind when I read Doug's claim was, If the press causes problems for the shoulders, why was it that none of the countless Olympic lifters, bodybuilders and strength athletes who did it religiously and with very heavy weights didn't have any trouble with their shoulders?

Doug cites a study to back up his contention, but here's my take on studies. Just about any notion that a person can come up with can be backed up by a study—if the study is designed right. One of the more famous was conducted by Dr. K.K. Klein at the University of Texas in the early '60s. The idea was to determine whether full squats made the knee joints more unstable, which in turn would mean that the joints would be at higher risk of injury. The study proved that full squats did indeed loosen the knee joints and make them more susceptible to injury—and the logical conclusion was that the exercise should be eliminated from all weight-training programs.

That had an immediate impact on strength training for sports, which was already struggling to survive, because coaches and athletic directors weren't going to take any chances of having an athlete injured doing squats. Lawsuits would most assuredly be filed. What most who read the study didn't realize was that the testing procedure was bogus, which meant the results were bogus as well. I know that for a fact because I was one of the test subjects. Twice.

Dr. Klein had fashioned an apparatus out of aluminum that covered the upper and lower leg much like a cast. When the aluminum cast was in place, he would exert pressure against each side of the knee to get a reading from a dial similar to that on a blood pressure gauge. Contrary to all rules of testing, he always asked the test subjects if they did full squats. Of course they did; he was testing us at an Olympic meet in Austin. Then there was the fact that he could apply as much pressure as he wanted to the sides of the knee. When he didn't get the reading he was after, he pushed even harder. Quite a few of us declined to be tested again because the procedure was actually hurting our knees. The point is, the results he was going to get from the study had a built-in bias. Though scientifically invalid, the study carried a lot of weight. It was done by a Ph.D., for heaven's sake!

Not only did Klein cheat with the actual testing, but he failed to take into account that while all his test subjects did do lots of heavy squatting, they also did a ton of heavy snatches and cleans, which placed their knees under a huge amount of dynamic stress. With same testing apparatus I could have put together a study proving that full squats were perfectly safe.

I recently read a piece in Reader's Digest describing a study that concluded that vitamin C had no effect on preventing colds. Bullshit. Hundreds of studies have concluded just the opposite, and I don't need to read that vitamin C helps. I know it does from experience, not only in my own life but in the lives of dozens and dozens of others who take the vitamin consistently. I've seen people knock out a bad case of the flu by overdosing on C. So why would such a study appear in a popular magazine? Because the pages are filled from start to finish with ads from pharmaceutical companies—powerful firms that certainly do not want people to even consider a natural alternative to curing an illness. If that happened, they'd lose money, and money is what it's all about.

There are 35,000 lobbyists in Washington, and they all have something to sell. Say they set up a study that will conclude what they want it to and get the information to a writer on the payroll who has an in with a certain magazine. Presto, the study gets in print. Not the facts of the study, of course. Not how much vitamin C each subject took and how many times a day or how long the study lasted: only the conclusion. Who's going to bother to check it out?

It's also easy to get caught up in well-worded double-talk. By throwing a large number of scientific terms around, people can establish themselves as an authority on a certain subject. The best example I ever met was Arthur Jones, the inventor of Nautilus machines. The guy was smart, and he was a master marketer. (In another life I'm sure he sold snake oil on the Western frontier.) Arthur could wow medical doctors, Ph.D.s, owners of pro sports teams and heads of state. His sales pitch included engineering terms, how levers and various angles work, plenty of kinesiology phrases with insertions, origins, actions and innervations, with a good dose of physics and, if need be, a primer on anthropology. He could refute any objection with a sufficient number of 20-letter words to shut up the most ambitious antagonist.

Bob Hoffman sold enough weight-training equipment to make him a millionaire, and Joe Weider came along and outdid him 30-fold, but neither of them could hold a candle to Jones when it came to marketing. The first piece of Nautilus equipment I saw was larger than two lifting platforms, and you could do only one exercise on it. I thought he had to be kidding. Who would spend big bucks on something like that?

Well, everyone knows that Nautilus revolutionized the fitness industry. Of course, Arthur had studies to back up his contentions. The one that most recall and really put him over the top in the field of bodybuilding was the Colorado Experiment, where Casey Viator, coming back from an injury and long layoff, miraculously transformed himself from an out-of-shape average guy to someone capable of winning a Mr. Universe title. It was all done in a month, and he used only Nautilus to accomplish his remarkable feat.

It was a hoax. How do I know for sure? Because Casey told me himself. He did go through the Nautilus routine under the supervision of Jones, but he also sneaked out at night and trained with weights at the Y. Plus, he was using steroids.

Here's my point: Look past studies that may seem a little shaky and turn to empirical evidence—that is, verifiable by observation and experience. Back to the point I made early about everyone doing overhead presses: If they didn't bring about the desired results, why were they done? If they caused a great deal of shoulder problems, wouldn't the athletes have been smart enough to drop them from their routines? The bottom line is that they did overhead presses because they produced results. Unless you use really ugly technique, they're perfectly safe for your shoulders.

What Doug said about presses being stressful when the shoulder joints are placed in a certain position does most likely occur if the athlete stands completely erect when doing the exercise. No one, however, stands rigidly erect when doing a press. You bow your body under the bar or lie back slightly when the bar climbs overhead.

Doug also suggests that lateral raises are far better than overhead presses for building the lateral deltoid. I can see where that might be the case if you use only light weights for presses—which is typically what occurs now—but if you handle heavy weights, the press is the superior exercise.

Again, my proof comes from observation. How did John Grimek, Steve Stanko, Vasily Alexeev, Vern Weaver, Chris Dickerson, Sergio Oliva, Bob Gajda, Dennis Tinerino and the other greats from that era get their awesome delts? Not from lateral raises, that's for sure. They built them with overhead presses and used really heavy poundages. When Grimek weighed in the mid-180s, he pressed 350, and without any sort of performance-enhancement drug to boot. The reason pressing doesn't do a whole lot for the delts nowadays is that no one uses much in the way of resistance. When was the last time you saw anyone press 300 pounds overhead? How about 250? Even 200? I bet few have seen even that much done.

So if you're going to use light weights only, then perhaps lateral raises would have more effect than presses. When you decide to up the numbers on your presses, though, the benefits to the deltoids become very evident.

I mentioned the fantastic deltoid development on some of the stars of the physique world in the '50s and '60s, but how about the delts on the top pressers during that same time frame—John Davis, Doug Hepburn, Jim Bradford, Norb Schemansky, Bill March, Phil Grippaldi, Russ Knipp, Joe Dube, Ernie Pickett, Bob Bednarski and, best of all, Ken Patera. You don't press 507 pounds, as Ken did, by doing lateral raises, and all of those record holders in the overhead press possessed delts like cannonballs.

I have nothing against lateral raises. In fact, I like them, include them in my own routine and advise others whom I'm training to do so. I also do overhead presses, however, and suggest others do so. Why not use both and get the benefits from the different movements?

One form of overhead pressing Doug mentioned that is harmful is behind-the-neck presses. I've been trying to get people to stop doing them since the '70s. I never read of any study proving that they were stressful to the shoulders or read any articles denouncing them. I came to my conclusion by watching a large number of trainees in gyms sustain shoulder injuries when they did behind-the-neck presses. Then I went to my kinesiology text and learned that shoulder joints aren't designed to rotate in that range of motion and that when you do the move with resistance, you place a tremendous amount of stress on those joints.

I consider all behind-the-neck exercises taboo, including chins and lat pulldowns. They're not necessary. You can use more weight in the front, and there's no risk of damaging your shoulders.

While I don't agree with Doug about lateral raises, it's not that big a deal. When he suggests that overhead presses are responsible for injuries to the rotator cuff, however, he hits a sore spot. That's so incorrect. Whenever someone approaches me and asks what he can do about a dinged rotator cuff, I tell him to start doing overhead presses—the very best exercise for strengthening those small muscles and the ones that surround them in the back.

If pressing harmed the rotator cuffs, everyone who lifted weights back when I first got involved in the activity would have had torn rotator cuffs. Yet none did, and those lifters all did countless numbers of presses with impressive weights. Prior to 1972, when the press was the standard of upper-body strength, there was no such thing as a rotator cuff injury. We weren't even aware that it existed. There was no mention of rotator cuffs in the anatomy and kinesiology texts of the late '60s.

That's because when you press heavy weights overhead, not only do the arms and shoulders get a significant amount of work, but so do the back, hips and legs. Supporting a heavy weight overhead and holding it for a few moments forces your entire structure to stay very tight and locked into a muscle-building contraction. That means the rhomboids, lats and traps receive a great deal of direct work, and as they grow stronger, they help protect the rather delicate rotator cuffs.

Unless a rotator cuff is so far gone that surgery is required, a steady diet of overhead presses can cure the problem. I have athletes start by pressing dumbbells, and when the numbers move up appreciably, I switch them to the barbell and continue upward once more.

I certainly don't mind anyone stirring the soup and trying to keep those who train seriously from doing something that will harm them. I do a fair amount of muckraking myself. I always admired men like Upton Sinclair and Thorstein Veblen, who went after industries that had power and money and were doing more harm than good. In this case, though, Doug's contention that overhead presses have a negative influence on the health of the rotator cuffs is dead wrong.

What he should be examining instead is the role that the flat bench has played in rotator cuff problems. It's no coincidence that those injuries began occurring right after the bench press replaced the overhead press as America's primary upper-body exercise. That came about for several reasons, and they all emerged at about the same time.

There was the rapid growth of the sport of powerlifting, in which the bench press is one of the contested lifts. Weider gained control of competitive bodybuilding and dropped the athletic points. There was no longer a reason for physique contestants to do the Olympic lifts, and nearly all of them stopped overhead pressing. Aspiring bodybuilders followed suit. In 1972 the International Olympic Committee dropped the press from official competition. The reason given was that it was causing lower-back injuries—not true. What was really behind the decision was that the judges were using as a political tool the new, dynamic form of the press that Tony Garcy had invented. Those in charge of the sport couldn't figure out how to control the judging, so they simply got rid of the problem. At the same time, strength training for athletes, especially for the sport of football, was growing in favor across the country, and nearly every program included the bench press.

By the mid-'70s the flat bench had become the most popular exercise in weight training. Prior to that time anybody who wanted to know how strong you were asked, "How much can you press?" That changed to, "How much can you bench?" The bench press was the only exercise many who trained with weights cared about, and they worked it hard and often. It isn't unusual to find someone benching at every session in the gym.

Rotator cuff injuries started to surface at that time because few weight trainers bothered to give equal attention to their backs, so those groups fell way behind the chest and front deltoids. Ambitious athletes worked with determination to move up to a 300-pound bench without any regard for their back. Their pecs tightened and shortened, all while the delicate rotator cuff muscles were getting weaker and weaker—a process known as "reciprocal inhibition." Suddenly, orthopedic surgeons were raking in the dough from performing surgery on the damaged muscles.

So Doug is pointing his finger at the wrong culprit. There's nothing wrong with bench pressing if it's done correctly and in concert with lots of hard work on the back, especially the upper back, and is not

overworked to the point of absurdity. Plus, if you do overhead presses along with flat benches, the rotator cuffs gain another layer of protection. The thing is, you have to work the overheads to limit and not do them as a la-di-da ancillary movement.

Rather than denouncing the overhead press, Doug and other writers on strength training should be encouraging athletes to incorporate the lift into their routines. My strength programs all use the overhead press and always have. I was one of the few who incorporated the lift in the ’70s, however, when it was out of vogue, and most likely I’m still in the minority for doing so. Yet the press has great value for any strength athlete. Why? It provides convertible upper-body strength that athletes in nearly every sport in the book can use. Flat benches have little value in basketball, baseball, volleyball or tennis because athletes in those sports need vertical strength. Overhead presses provide it.

It takes a great deal more athleticism to press a maximum poundage on the overhead press than it does on the flat bench. All the support for the overhead press has to come from the body. That means the feet, ankles, legs, hips and all segments of the back have to be extremely tight and in proper alignment for a limit attempt to be successful. Pressing a heavy weight overhead is, in fact, a high-skill movement that requires a great deal of timing, coordination and balance along with strength.

At three universities over the course of 15 years, I’ve had only two athletes who overhead-pressed 250 pounds, and they both weighed right at 220. When I first got involved in lifting, the gauge of upper-body strength and the original goal I set for myself was to be able to press bodyweight. That’s still a good mark to set, and I bet there aren’t many who can accomplish that feat these days.

I mentioned that the overhead press provides convertible strength for other sports activities, but it benefits other upper-body exercises as well, including the flat bench. When I was pressing heavy, I could always bench-press 100 more pounds than I was able to press—even without including flat benches in my training. Nearly every Olympic lifter I trained with could do the same. It doesn’t work the other way around, however. I’d bet my ’89 Caddy that there isn’t a 400-pound bencher in the country, and maybe even the world, who can overhead-press 300 pounds.

The overhead press doesn’t need any more abuse. It’s had more than its share of unwarranted criticism in the past and needs to be restored to a position of prominence in strength training and bodybuilding. If Grimek, Stanko, Alexeev, Weaver and others hadn’t believed it was a terrific upper-body exercise, they wouldn’t have done it. They did, though, and got the results they were seeking. In the future I’ll write further on the overhead press with technique pointers and the best set-and-rep formulas. For now, think of the overhead press as your friend, not your enemy.