Training Articles

These articles are great reading from some of the top experts in the field today.

Houston Chronicle Identifies Tyler Hobson of Pendulum Fitness

Weights and Means
Written by: Richard Justice (Houston Chronicle)

Tyler Hobson vividly remembers that day a couple of years ago when he walked into the University of Michigan's weight room and saw the Wolverines using his equipment.

All of a sudden, he remembered why he'd worked two jobs for almost a decade, why he's learned to live on three hours of sleep, why he's seen so little of his family and why he didn't give up when no one seemed much interested.

And then that day, he saw the Wolverines using his leg press, the one he was convinced was better than any on the market, the one that would put less stress on the joints and allow players to get stronger quicker.

With a drawer full of rejection slips and a book of unreturned telephone calls, he could not help but smile.

"That was probably the high point", he said. "You don't get into that weight room unless you've got something pretty good. That's when I know I'd achieved something".

He'd done the design work at his Conroe home, often rising at 3 a.m. for three or four hours before reporting to his regular job at a Conroe ceramics factory. He'd bout the steel and the roller bearings, did the cutting, drilled the holes and went through dozens of prototypes before finally getting it right.

"I can't count how many I designed, thought it would be right and

then ended up taking a blowtorch and cutting it in pieces," he said.

When he finally got one right, he gave a few dozen away before convincing Michigan to buy one, and before shipping it, he made sure he had the color - Michigan's colors - just right.

He bolted it together and tested it in a nondescript corner of a Conroe storage facility where he still spends 18 or more hours most days welding, drawing, cutting and constructing.

All for that moment in Ann Arbor.

In an industry frilled with multimillion-dollar corporations and sometimes vicious competition, his Pendulum Fitness, a small Conroe?based operation, had elbowed its way in among the giants.

Later, there would be other special moments.

He would take pride in knowing the Tamp Bay Buccaneers used his equipment during their run to the Super Bowl.

He would hear from Bucs fullback Mike Alstott, who thought so much of the Pendulum leg?press machine that he bought one for his home.

He would hear from offensive lineman Randall McDaniel, who asked him to help furnish his home weight room after retiring from the NFL.

He would hear Denver Broncos tight end Shannon Sharpe announces that the Pendulum squat machine is one of the reasons he's still an elite player at age 34.

He would receive orders from a hotel in Kuwait City, a health club in Austria and a host of other places.

What began as his goal of doing one thing better than anyone else ended up with a classic pursuit of the American dream.

These days, the Houston Texans are regular customers.

"He has provided us with a tool to get stronger," Texans strength coach Dan Riley said. "It's only a tool. We still have to put it to use, but it's a way to get stronger".

Hobson's customer list includes the Jacksonville Jaguars, Detroit Lions, Baltimore Ravens, Philadelphia Eagles, New York Giants, Cincinnati Bengals and others.

Notre Dame, Michigan State, Air Force and Penn State are among

a long list of college and high schools using Pendulum.

He has a backlog of orders and attempts to fill them even as he continues to design new equipment when he's not building a piece or driving to, for instance, Cincinnati, as he did last week, to make a delivery.

He has given up his second job, dreams of a day when he can streamline the manufacturing process and still wonders if a passion can turn a profit - but he's still at it.

When Jacksonville Jaguars strength coach Mark Asanovich telephoned at 4 one recent morning, he'd planned on leaving a voice mail.

Instead, Hobson answered the phone.

"We were both already in our offices," Hobson said. "I guess it's a sickness".

That "sickness" is one of the reasons NFL people are so impressed.

"In my field, what happens a lot of times is the cookie-cutter approach," said Asanovich. "These big manufacturers say, ´Here's our product, take it or leave it.´ Tyler comes in and says: ´How can I help you? What can I design that's best for your athletes? ´ That's pretty impressive.

"I'm totally ignorant about design, but I know what I want. He's a guy who makes it a reality. Beyond this skills and design is his passion for what he does. When people have a sincere love for what they're doing, that's huge".

When a reporter jokes about this being the classic American story of being rewarded for building a better mousetrap, Hobson interrupts.

"Well, I'm not sure about that," he said. "I'm still not certain about making this a profitable business, but I do have a passion for it".

Hobson grew up outside Anchorage, Alaska, where his father was in the oil business. He graduated from high school and went to work in the oil industry himself. He was transferred to Houston, laid off and enrolled at Sam Houston State when a part-time job at the ceramics factory turned into a full-time gig.

In his spare time, he became a competitive weight lifter and was so good at it that his office is lined with an array of trophies.

Because he was training at home, his garage became so cluttered with weight-lifting equipment that his wife, Traci, implored him to throw some of it away, or at least give here enough room to park

her car.

He had a better idea.

Instead of dozens of work stations, he’d build a multi?station weight?lifting machine that would incorporate a dozen or so different exercises.

Then he had an even better idea.

He would sell the machines to trainers and health clubs around the country. Instead of rows of weight-lifting equipment, health clubs could purchase his one piece and be set.

He would create a new wave and would ride that wave to fame and fortune.

He spent two years building a prototype machine in his spare time, sometimes sleeping an hour or two at night. Then be placed it in a trailer and rove around the country visiting conventions and personal trainers, believing he’s discovered the next great thing.

I thought it would be a new trend and I’d be able to catch that wave," he said. "That seemed to be something that was coming about. I was wrong. I did not sell any of them".

Yet one day while showing off the station, one guy told him: "Hey, I like that squat machine you have on there. If you could just build one of those, I’d buy one".

He drove back to Conroe and went back to work.

He sold a couple of the squat machines and heard such rave reviews that he believed he’d found the thing that would get his company off the ground.

He began calling potential customers.

"Some people begin trying to sell to high schools and then work their way up," he said. "I started at the top".

Sometimes his calls were returned. Most times, they weren’t.

Instead of making sales, he began shipping the equipment to schools with big?time weight-lifting programs, telling them that if they didn’t like the stuff he’d send a truck and haul it back to Texas.

He also telephoned Asanovich, then the strength and conditioning coach of the Buccaneers.

He asked for five minutes of his time.

"Come on down", he was told.

"I was shocked", Hobson said.

He hurriedly assembled a couple of pieces, packed them in a trailer, asked for a couple of days off of work and made the 1,020-mile drive to Tampa.

Asanovich wasn't sold on what he saw. But he was sold on Hobson.

He suggested some design changes and sent Hobson back to Conroe. When he left Tampa, Hobson believed he'd opened a door into the NFL.

He had. While Asanovich tested the prototype machines, other teams began to purchase it.

Michigan became a customer. Then Notre Dame. And Air Force.

As strength coaches gossiped, his name became familiar, and where he once begged for five minutes, he now regularly fields calls from teams asking to place an order.

His five machines sell for anywhere from $895 to $2,900. He has designed five more he hopes to have on the market within a couple of years. He still builds every piece himself.

"Relationships are the key to what I do", Hobson said. "I don't have a lot of money. I drive 23 hours, and the coaches let me sleep on their couches. The friendships have been priceless. I don't think they're millionaires, either. They seem to live pretty modestly. Most of them are incredible people.

"The thing about these NFL guys is that if they have something really good that they like, they'll talk about it. If they have something they really don't like, they'll talk about it. I've been able to stay small and yet have a strong presence".

How is Pendulum better? For one thing, the machines are custom-built. Athletes tell him his machines are more comfortable and put less stress on the joints.

"I've made machines that can be adjusted to fit the lifter," Hobson said. "The problem with machines is that they're very linear. When you take different bone lengths, it can interrupt with the line of movement of the machine. You have shear factors on the knees. It may feel good to someone 5-4, but not to someone 6-4. By having a machine that would adjust to their weight, these guys are able to position themselves any way they want. They can squat in

complete comfort. You have the benefit of a machine with the effect of a free-weight squat. No one had one that before.

"I had enough experts, like Anthony Clark, the first person to squat over 1,000 pounds, say they were blown away by it. The players are thoroughbreds. They're elite genetic athletes. They're incredible - and very valuable. The better-conditioned they are, hopefully the more injury-free they'll stay. And hopefully, that could add longevity to their career. Everything has to be joint-friendly".

One strength coach tells Hobson his is a "boutique" weight-lifting business.

"I don't know if I want to have ´boutique, ´" he said, "but I appreciate what he meant".

He meant customer service, which extends in a lot of different directions. When a piece broke on an Eagles machine last season, Hobson dropped what he was doing, flew to Philadelphia and repaired it within a day.

Traci Hobson takes many of the orders by telephone and is on a first?name basis with a dozen or so NFL coaches. When the Baltimore Ravens played in Houston last fall, their strength coach left with a box of her homemade chocolates.

"When I pack the truck to make a delivery, she gives me homemade salsa to take to the coaches", Tyler Hobson said. "She exchanges recipes with a few of them".

Without the security of a primary job, he frets about how to make it work. He has established a loyal, growing client base, so much so that he has been forced to limit the orders on some machines simply because he can't get them all built.

He plans to hire at least one full?time employee by the end of the year and has some part?time people around the country who've agreed to go set up the equipment in various weight rooms.

Until then, it's he and his wife and other family members.

"You work all night long and you come up with this piece of equipment", he said. "And then you drive hundreds of miles to deliver it. A coach or an athlete gets on it and says, ´Wow, this is incredible.´ At that point; you've achieved such a sense of satisfaction. To make a living doing this is a dream. That's what I hope to do. It's really a passion".

Some large manufacturers appear to be attempting to copy his design, but he says: "They will never do what I do because they can't. When I've tried to mass produce pieces, that's when I've

gotten in trouble".

Still, he has goals.

"Eventually, I'd like to have 10 pieces to sell", he said. "I've got five now, and that's not enough to attract a sales force. I'd like a more refined manufacturing system. Right now, it's just me and family sitting here putting it together. I don't want to get bigger just to be big. I want to be a small custom manufacturer.

"I want it to be a tool that everyone wants to get their hands on".

Worth The Weight
Written by: Richard Justice (Houston Chronicle)

Many Texans find that Conroe man's machines to just what they want in workouts.

Texans defensive end Corey Sears has been a serious weight lifter for most of his adult life. Having used a variety of equipment over the years, he believes the little company in Conroe - Pendulum Fitness - got it right.

"This is the first machine that really simulates the way you move on the field", he said. "It's very joint friendly. It's the first machine I'd like to have in my home.

Once upon a time, NFL players were not serious about weight lifting. They typically showed up for training camp out of shape after a summer of relaxing or working a part?time job.

Even when teams began encouraging players to lift weights, it was spotty. Many teams asked them to train only during the off-season, meaning that by the end of the season they lost most of the added strength they'd acquired on the first day of camp.

These days, it's different.

When Texans strength coach Dan Riley joined the Washington Redskins from Penn State in 1982, he convinced coach Joe Gibbs that weight lifting must be done year-round.

Gibbs became the first NFL coach to give up practice time in training camp so that players could lift weights, and they continued until the final day of the season, took a month off and were right back in the weight room.

Texans coach Dom Capers, a weight lifter himself, agrees with Riley that it's important.

So even though the start of training camp is more than two months awav. the Texans are back at Reliant Stadium at least

three days a week pounding the weight machines in the NFL´s largest weight room.

The Pendulum leg press machine designed and built by Tyler Hobson, a 39-year-old Conroe man is one of the machines Riley uses.

"I've been lifting weights for years," Sears said. "If you do it correctly, if you set the seat right, it hits you in the right places. A lot of machines don't give you the full range of motion. But the Pendulum put you in there just the way you squat on the field. I'm a big weight-lifter, and this one takes the stress off the lower back. The angle of the set is just right".

The equipment has become so popular among NFL teams that Hobson has a backlog of orders. Tamps Bay Buccaneers fullback Mike Alstott and former Minnesota Vikings offensive lineman Randall McDaniel purchased Pendulum equipment for their homes.

"In being a smaller vendor, he needs to make a niche for himself", Jacksonville Jaguars strength coach Mark Asanovich said. "That's what he's doing. He provides good customer service and has an open ear to modification. He's both a designer and a manufacturer. He listens".

When he worked in Tampa Bay, Asanovich was the first NFL strength coach to install Pendulum equipment in his weight room. Since then, others, including Riley and the Texans, have followed.

"I don't want to oversell the equipment," Riley said. "It's compatible with our program. We have two pieces, and our players like them. But remember that it's a tool. There still has to be the commitment from the players.

"The thing about Tyler is that he's got great customer service. He's very interested in doing anything he can to improve the product. He wants feedback from the players on things they like or don't like. He really has a passion for strength training".

Hobson began building weight-lifting equipment in his spare time. He eventually became convinced that some of his stuff was better than the equipment now on the market and began building it and trying to get strength coaches to use it.

He believed it was better because it was adjustable to fit every body type and that, in turn, put less stress on the joints.

"You can imagine what those guys are like three weeks into a season", he said. "They're all banged up and bruised up. The last thing they want to do is crawl onto a machine that hurts their joints. You almost have to design the equipment knowing they're going to be training in pain. They're already hurt. The machines are more of rehab tool. It's to maintain that high level of

conditioning.

"Most of the bigger companies have engineers come up with a concept, and then they sell the coaches on why they need this stuff. My approach was, ´You tell me what you want, and I'll come up with it.´ it was a backdoor way to get into this industry. Because of who I'm dealing with, I've gotten incredible feedback from orthopedic guys and others. They're not going to put a player on a piece of equipment without thoroughly checking it out".

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PENDULUM'S SQUAT PRO

Randy Roach

Perhaps one of the most debated issues in the strength and body building industry over the past decades has been whether an individual should perform "the squat" or avoid it like the plague. How effectively one can execute this movement usually determines what camp in which one pitches ones' tent. Anyone with several years of training experience has at one time or another incorporated the squat into a lower body routine. While thousands of athletes have demonstrated tremendous strength with the squat, several thousand others have suffered some level of back or knee injury.

For any experienced trainer who has worked with a variety of people representing all body shapes and sizes, it becomes apparent that some individuals are anatomically structured to perform well with the squat while others simply are not. My personal observations over the years have revealed that individuals with moderate to short femur (thigh) bones, accompanied with moderate to long torsos have a much easier time maintaining their centre of gravity and therefore developing the skills required to accomplish this complex movement in a shorter period of time.

On the other hand, others such as me having longer femur bones and shorter torsos find it extremely difficult to maintain balance and a centre of gravity. The longer femurs force an individual to sit too far back, resulting in an inability for a short torso to properly re-establish the barbell's center of gravity without exposing the lower back to injury. A potential injury may result from the excessive flexion (bending over) at the waist.

Even for those who can squat, there is still a further debate, that being should one squat "to parallel" or go "butt to the floor". Some experts say knee injuries occur from going to deep into the squat while others claim that the process of stopping at parallel is what

creates the strain on the knees. All of this can be quite frustrating for the beginner and even an advanced trainer who wants to be responsible for the safety of trainees through proper exercise selection.

Pendulum Fitness has recently made the trainer's decision of whether to squat much easier with the introduction of the Pendulum Power Squat Pro. This plate loading, variable resistance, multi pivoting machine allows everyone the option to squat with safety.

Because the machine pivots at the hip and shoulder regions, a free form squat is effectively simulated. The variable resistance allows for a lighter load in the bottom position giving some peace of mind to trainers who are doubtful of deep squats. Pendulum has given the option of loading the plates in two locations to provide more or less resistance in both the bottom and top of the squat movement.

The Power Squat Pro finally makes it possible for individuals such as myself, with structural disadvantages, to perform safe deep squats with no pain and a reduced risk of injury. Having longer thighs and a shorter upper body, the machine allows me to maintain a more erect posture with out falling backward.

The Pros of this machine are its heavy duty construction (1600 lb. capacity), multi pivoting joints for accurate squat simulation, double loading locations for a wide range of variable resistance, and adjustable safety pins to prevent being pinned in the bottom position.

The cons of this machine are that beginners will require some instruction to effectively use the machine. Because it does closely simulate a real squat, there is still some potential for error. For the advanced lifter who can squat with large loads, this machine gives the athlete a leverage advantage that may require loading a good number of plates on the machine.

In summary, this is the best functional squat apparatus that I have encountered. I train a number of people and 95% of them can squat safely and effectively with this machine. The anatomically advantaged athletes will still excel here, however those less genetically blessed will no longer have to go searching for the old leg press.

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Strength Training: How Often Should One Train?

By Ted Lambrinides, PhD

One is constantly bombarded with strength training information such as Lee Haney's 7:00 a.m. bicep workout and 7:00 p.m. triceps workout to the Bulgarian 3 time's daily workout. Many trainees feel if they only had more time to train then they too could have championship results.

The truth, however, is quite different. There have been a few scientific research studies performed which have looked at the importance of training frequency. Gillam (1) compared five groups training at different frequencies. Resistance training 3 days/week and 5 days/week were found to be superior to training 2 days/week. However, the training program was impractical in that it consisted of 18 sets of one rep maximum of the bench press. How many people do you know to max out each workout? How somebody can max bench press 5 times per week for nine weeks and not experience shoulder problems is amazing.

In a more recent study by Braith et al. (2) they evaluated the effectiveness of strength training performed either 2 days/week or 3 days/week. Training consisted of a single set of variable resistance bilateral knee extensions performed to volitional fatigue with a weight load that allowed seven to ten reps. When the subjects could perform more than ten repetitions, the weight load was increased by approximately 5%. The subjects performed the concentric contraction phase of each rep in 2 seconds and the eccentric phase in 4 seconds. Forty four subjects trained for 10 weeks and 47 subjects trained for 18 weeks. Twenty six subjects served as controls and did not train. The group which trained 3 days/week derived better results than the 2 days/week. However, these data indicate that one training 2 days/week may derive approximately 80% of the isometric strength benefits achieved by those training 3 days/week.

One may take the results of this investigation and say "I have to train 3 days/week". Remember the above study just looked at leg extension. Who is to say if the subjects squatted or leg pressed the results would be similar?

Also, what happens when one trains the entire body relative to results and recovery ability? I recently finished a research project here at the Hammer Research Center which evaluated the effectiveness of training 3 days/week and 2 days/week. The subjects trained their whole body each workout. Each exercise was performed to a point of failure. It should be noted that these training sessions were highly supervised to insure that nobody was "wimping out". The study lasted 7 weeks. The subjects were evaluated for body composition, maximal strength in the bench press and leg press, and basal metabolic rate. At present, all the data have not been statistically analyzed. But I don't believe that there was much of a difference between the two groups. The kids busted their butts and obtained gains in strength and size despite being "trained subjects".

From a subjective point of view, the group which trained three times started to have problems getting motivated towards the end of the study. How anyone can train hard, attentively, and productively 2-3 times a day, six or seven days a week is beyond me. From an empirical research point of view, I have trained top players in the NFL, NBA, and numerous major college football players and they have obtained excellent results training 2-3 times/week. I seriously doubt that their bodies could recover from more frequent workouts over a period of time.

One of the ironies of strength training is that many divergent methods of training can all yield results. Sure, I know people who train 4-6 days/week while performing 4-5 sets per exercise and get good results in the short term. However, what many trainees's who train 4-6 days per week finds out over time is that half their weekly workouts must be sub-maximal. In other words, 2 or 3 hard workouts a week and 2 or 3 going through the motion workouts a week.

Training 2 or 3 days/week are as effective training frequencies as any as long as intensity is high. There does not exist any scientific literature to my knowledge that would suggest that the more advanced trainee needs to train more frequently, although some do. There are a number of factors (nutrition, lifestyle, emotional stress, sports/practice, injury, number of exercises performed in a workout, type of exercises performed in a workout, level of trainee, volume of work performed per workout) which can influence training frequency recommendations. One of the groups of trainees which may require increased training frequency is individuals rehabilitating an injury (3). Olympic lifters may train more frequently because much of their work is skill work using light training loads. They may train more frequently to fine tune their execution. Such training sessions are of no practical value to any other population. Training hard...training for results and improvement should be done not so infrequent that adaptation processes are inhibited. If you don't feel recovered don't train. More exercise sessions per week in and of themselves will not produce better results because there will be less time available for recovery. Recovery is an important component of the results equation...Progressive resistance workouts + Proper Nutrition + Recovery=Results.

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WHAT IS THE BEST TRAINING SPEED FOR STRENGTH DEVELOPMENT?

By Wayne L. Westcott, PhD

In high school, I had a close friend who was on the weightlifting team. He taught me how to do the three basic exercises of that era, namely, the barbell bench press, barbell curl and barbell standing press. We used good form and moderate movement speeds, with one exception. One day per week we did "cheat" curls instead of "strict" curls. Cheat curls were performed with more weight and faster speed. We accomplished this by bending at the waist and using our large hip extensor muscles to initiate the lifting movement and generate momentum.

Although the weight load was much heavier, cheat curls did not fatigue my biceps muscles as well as the less impressive strict curls. The reason was that my "assisting" muscles did most of the work in cheat curls, whereas my biceps did most of the work in strict curls. I began to understand that momentum-assisted weight training reduced the role of the target muscles, which made the exercise less productive. It did not take too long before I realized that momentum-assisted weight training also increased the risk of injuries.

Several years later, I learned that momentum was not the only problem associated with fast movement speeds. After performing dozens of standardized strength tests on a state-of-the-art isokinetic computer, I noted a consistent pattern. Without exception, as the movement speed increased the movement force decreased. For example, at a two-second lifting speed (60 degrees/second), my right quadriceps produced 174 pounds of muscle force. However, at a one- second lifting speed (120 degrees/second) my right quadriceps produced only 132 pounds of muscle force.

To further examine this speed/strength relationship, I conducted a small study with six previously untrained women between 18 and 36 years of age (Westcott 1986). The subjects trained their left leg at a slow speed (60 degrees/second) and their right leg at a fast speed (240 degrees/second). After nine training sessions the subjects were evaluated for strength improvements. As presented in Table 1, the slow training produced significant strength gains at both movement speeds, whereas the fast training did not increase strength at either movement speed. Although the number of

subjects was too small to make generalized conclusions, the women in this study responded better to the slower training speed.

More recently, I examined the effects of four different movement speeds on strength development using Nautilus machines (Westcott 1994). All of the subjects (198 previously untrained men and women) exercised in small classes in our research center. The participants were carefully instructed and supervised, and trained in exactly the same manner except for their exercise speed.

Group A performed each repetition in four seconds (2 seconds up/2 seconds down). They averaged 10 repetitions per set for a total time of about 40 seconds per exercise.

Group B performed each repetition in six seconds (2 seconds up/4 seconds down). They averaged 10 repetitions per set for a total time of about 60 seconds per exercise.

Group C performed each repetition in eight seconds (4 seconds up/4 seconds down). They averaged 10 repetitions per set for a total time of about 80 seconds per exercise.

Group D performed each repetition in 14 seconds (10 seconds up/4 seconds down). They averaged 5 repetitions per set for a total time of about 70 seconds per exercise.

All four training groups used a resistance that fatigued the target muscle group within the anaerobic energy system (40-80 seconds). They all performed one set of the following Nautilus machines: (1) leg extension; (2) leg curl; (3) leg press; (4) chest cross; (5) decline press; (6) compound row; (7) overhead press; (8) biceps curl; (9) triceps extension; (10) low back; (11) abdominal; (12) neck flexion; and (13) neck extension.

After eight weeks of training the strength gains in all 13 exercises were averaged and compared for the four training groups. As shown in Table 2, all four training speeds produced significant improvements in overall muscle strength. Although there were no statistical differences between the four groups, the slower movement speeds appeared to be more effective for stimulating strength gains.

Discussion

The training groups involved in the Nautilus study used moderate to very slow movement speeds, all of which produced excellent strength increases. The 14-second protocol required a very slow (10-second) lifting movement that minimized momentum and maximized muscle tension. It is possible that the very slow muscle contractions are advantageous for strength development. However, due to the tough and tedious nature of very slow lifting movements, this training technique typically requires close

supervision for best results.

Based on the findings of this study, it would appear that there is a range of moderate to very slow movement speeds that are effective for strength development. Also, as there were no exercise- related injuries to any of the subjects, the four-second, six-second, eight-second and 14-second repetitions seemed to represent safe training speeds.

My personal preference is six-second repetitions, with a two-second lifting phase and a four- second lowering phase. This is the standard Nautilus training protocol, going slower on the lowering movement to emphasize the negative muscle contraction.

The main consideration is to train at a controlled movement speed, so that you are lifting the weight rather than allowing the weight to lift you. One way to check this is to have trainer say "stop" at some point during your repetition. If the weight keeps moving your movement speed is probably too fast, thereby placing more emphasis on momentum than on muscle control.

There are at least four reasons for training with controlled movement speeds. First, controlled movement speeds reduce momentum, permitting the target muscles to do their job. Second, controlled movement speeds avoid abrupt acceleration and deceleration forces, reducing tissue trauma and injury risk. Third, controlled movement speeds provide more muscle tension throughout each repetition. Fourth, controlled movement speeds produce more muscle force output.

If you are a competitive weightlifter, then you need to train with fast movement speeds to be successful in this explosive-action sport. However, if you are performing strength exercise for the purpose of muscular fitness, I recommend using controlled movement speeds no faster than four seconds per repetition.

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Bulky Muscles for Women? Who's Kidding Whom?

Roger Schwab

This is an article that should never have had to be written. With the fitness craze hitting gargantuan proportions I guess we should

have expected outrage in some quarters. Unfortunately, this subject has gone too far, too fast, and is threatening the entire "guts" of the fitness movement for women.

Somehow, along the way, women have been told, read, or believed that the "wrong" type of exercise (in this case, progressive weight--resistance exercise) would build "bulky", masculine-type ... should I even whisper the word, "muscles". The person or persons who propagandized this physiologically absurd innuendo must have been a super salesman with a personal vendetta against females. The ominous outcome is the evident signpost directing women's physical fitness back to the dark ages. And if the lies and misunderstandings of the female physical potential are continually nourished rather than countered with physiological fact, meaningful exercise for women will die an early, shameful death.

Such a paradox. The only way to maximize results in the feminine physique, to prevent and rehabilitate injury, to possibly retard atrophy in bone mass and combat osteoporosis in the elderly - is being downplayed out of sheer ignorance. And just what is the missing piece to the puzzle? Strength, of course! And the reactionary force that be lead one to believe that with the acquisition of strength comes - you guessed it - big muscles! Nonsense! If women really were developing these huge muscles from light weight- resistance exercises, the male and female athletes who have been training hard for years would be nothing less than I gorillas, and I tell I you clearly, this has never been nor ever will be the case. It is very, very difficult for, most men, even men who have the potential (high testosterone levels and long muscles) to develop huge muscles. Muscles just do not grow on trees. It is brutally hard to develop large muscles for those who want them, let alone for those who dread them.

So exercise, women, and if you are seeking results - 1. A firmer, tighter figure, 2. A body less prone to injury, 3. Improved flexibility and cardiovascular efficiency, and 4. Yes, even a stronger physique - then train sensibly. This means train hard; the harder and briefer, the better.

Follow these simple guidelines:

1. If you are exercising seriously and begin to notice "bulky muscles", have a skin fold measurement taken. Chances are that it is not bulky muscles you are seeing but rather too much body fat. There is a big, big difference.

2. Big muscles on women are nearly always the result of either genetics (inherited characteristics) or long muscles (not long bones).

3. Most women, 99 percent, do not have the potential to

develop large muscles even if they wanted them.

4. If, by hard exercise, a woman develops some muscle size (which will be, must be minimal), it will probably improve her figure so markedly she will never look back. Smart person! She will have unlocked the key to strength, the final breakthrough to the total woman.