

LA FITNESS

PERSONAL TRAINING

An Informative Newsletter

Vol. 9

January 1998

By John Platero

1998!

I can't believe a whole new year is starting. Time flies.

I wish you all the best in the year to come. I'm excited about the advanced classes for the POST-REHAB FITNESS SPECIALIST. I think we all need a boost of knowledge.

I hope everyone had a great holiday. I know it's going to take me a whole month to work off all the food I ate. I don't regret a mouthful though.

Anyway, here's some new training ideas I've been thinking about. I hope you'll enjoy them.

How to gain leverage in your training.

Would it be possible to train with the same amount of weight and make an exercise harder by manipulating the lever systems of the body? Is it possible to make an exercise safer and lighter, but still attain the same benefits?

If weight or load remains the same, then speed, distance and placement of the load are going to be the variables. An increase in speed of an exercise with load can definitely increase the danger to the joint. A decrease in speed will be safer on the joint, but it sure can get boring.

Manipulating the levers can be the best choice, the most fun and the safest on the joint.

First let's review some basic concepts of biomechanics.

A "parallel force" system is whenever two or more parallel forces act on the same object, but at some distance from each other. To better understand this concept, we first must examine the principles of a lever system. Here are some examples:

There are three types of levers in mechanics: A first class lever is where the axis is in the middle of two forces like a seesaw. A second class lever is where

the resistance is between the axis of rotation and the effort force, similar to a wheelbarrow, and lastly, a third class lever is where the effort force lies between the axis of rotation and the resistance, like a shovel.

Remember, a lever is not unlike the handle on a shovel or the handle of a frying pan. In the body, the bones are examples of levers or rigid bars that rotate around an axis. The term "lever arm" is used to describe the distance from the axis of rotation to the point at which the force is applied to the lever. The "resistance arm" is a term referring to the lever arm of the resistance force while the "effort arm" is a term that refers to the lever arm of the effort force. Got that?

If you were holding a frying pan, the resistance arm would be the distance from your hand to the end of the frying pan, while the effort arm would be the distance from your hand back to your elbow. The axis of rotation would be your wrist. This will start to make sense when we apply it later to exercises.

Take for example a standing calf raise:

The weight is on your shoulders, the axis of rotation is at the MTP or metatarsophalangeal joint, (where your foot bends when you stand on your tip toes) and the weight or resistance force (which is gravity acting on both the weight plus the weight of the body) is centered on the forefoot behind the axis at the MTP joint. The calf muscles or the "triceps-surae" actively contract to lift the body off the ground. This is a second class lever which is very rare in the human body. Remember the wheelbarrow.

The only problem is compression from the weight on the shoulders through the spine.

What if we were to use a CYBEX rotary calf machine which is a seated joint axis machine? Now, instead of standing, the weight is off your spine and the axis of rotation has now moved back to the ankle. The load is now centered on the MTP joint, in front of the axis and the calf of course, has no choice but to remain in the same spot. Now you have a first class lever or a seesaw.

You can definitely lift more with a wheelbarrow than a seesaw, but will the calf work any less because of the inferior lever system?

I don't think so.

Actually, because there is a disadvantage from the lever system, the calf might even work harder!

The speed remained the same; the load became actually lighter (which is better for the joint) and the calf is still working real hard. As an extra bonus, you have rid yourself of the spinal compression from the weight on the shoulders!

If you have to perform a standing calf, try it on a Hammer shrug machine where the weight is grasped in the hands. The limiting factor will be the amount of weight you can hold, which can be remedied with straps. At least, now you've saved your spine.

For biceps, a dumbbell curl works great. How can you make it harder without increasing the weight or speed?

There are three muscles that help flex the elbow. The brachialis, the brachioradialis and the biceps brachii. The brachialis works hard regardless of hand position, but to emphasize the biceps brachii, you must supinate. Why? Because both heads of the biceps brachii are attached to the radius which makes them a powerful supinator. Supination is when your hands hang at your side with palms facing forward. Recall from your anatomy, the radius is the bone in your forearm that crosses over the ulna to cause supination.

To add tension on the biceps without increasing the weight, try something a little different. Instead of grasping the handle in the middle of the dumbbell, move your hands toward the outer end of the handle closer to the outside weight away from your body. Realize this will cause your hand to rotate or "pronate" toward the body. That's OK, in fact that's the whole idea. You are actually increasing the length of the resistance arm (for supination), forcing your biceps to work even harder as a supinator, resulting in more "work" on the biceps with the same amount of weight! If extra weight is needed, try a one-pound "plate mate" (800-877-3322) and feel the difference a single pound can make!

For abdominals, try a Swiss ball. Normally, when you perform a crunch, the ribs move toward the pelvis and the lower back or lumbar spine will naturally flatten against the floor. In reality, there is not a lot of "work" done until the back actually flattens against the floor. Your ribs aren't coming up as much as your back is moving downward with the help of gravity. Instead, lie back on the Swiss ball. Don't worry, hyperextension of the thoracic spine (upper back) is natural. The ball is round, so it'll

contour to the curvature of your lower spine and offer extra support while increasing the amount of "work" performed by the abdominals. The ball permits an increase in range of motion by allowing you to stretch back over the ball in hyperextension, which forces your abdominals to lengthen and results in more work when shortening, while returning forward during the upward movement of the "crunch". To further increase the resistance force, extend your arms behind your head which again increases the resistance arm and therefore makes it more challenging. You'll feel your abdominals like you've never felt them before!

Unwanted Stress to the joint.

Anytime we lift a weight we impose certain stresses or forces on the joints of our body. Some of these forces are impossible to eliminate, however minimizing the excessive forces will definitely keep your joints "in business" for the long haul. With this in mind, let's review some more physics.

Newton's "third law of reaction" states: "For every action there is an equal and opposite reaction." Therefore, when two surfaces make contact with each other there can be a perpendicular force or "contact force" like a bat hitting a ball, or a parallel force referred to as a "shear force" akin to rubbing both hands together. When adding load or weight, excessive stress or forces can occur inside the joint and, in time, possibly lead to degeneration of the joint. Here's how to lower the unwanted shear forces while exercising:

Anytime you can move a weight or the resistance closer to the joint the better. Not only will you be able to use a heavier weight, but the shearing will be less.

For example, while performing hip extension, abduction or adduction with an ankle cuff, move the cuff up above the knee. This will protect your knee joint and lower the shear force in your hip. Better yet, use the multi-hip machine with the pad just above the knee. As long as the axis of the machine is aligned with the moving hip you'll be fine.

When performing lateral raises, flays or stiff arm pull downs for lats, try moving the weight to your elbow. This will be easier on your elbow and lower the shear forces in your shoulder.

For lateral raises, you might have to find an ankle cuff that will fit around your arm. Try to use a cable instead of a dumbbell, or as Tom Purvis taught me, simply hold the dumbbell in the crook of your arm.

For flays, the cable and ankle cuff work great, particularly with an incline bench. Remember to slide the cuff above your elbow. You might however, need

someone to help attach the cable to each ankle cuff.

To perform straight arm pulldowns with a cuff, you'll need a longer strap that allows your arms to

For knee extensions, move the pad higher on the shin close to the knee. In physical therapy clinics I've seen an attachment used on ACL patients that straps to the lower leg, transferring the load or resistance force up closer to the knee. This will considerably reduce the amount of shear force across the Patellofemoral joint. Remember, your knee is a hinge joint -- it only moves up and down. Be sure the axis of the machine is lined up correctly with the knee. There is no exception.

If you want an alternative leg extension exercise and remove all the unwanted shear forces, try a "terminal knee extension". I learned this from a physical therapist named Michael Jones and adapted it to a multi-hip machine.

Stand on the platform of the multi-hip machine and place the pad at a 45' angle. Place the pad right behind the kneecap in the "popliteal fossa". There is no motion at the hip so you don't have to align the hip to the axis of the machine.

Adjust the weight and just extend your leg against the resistance at the pad. This eliminates all the shear forces and allows the knee to work in it's prime engineered function. I love it!

I hope this will provide you with a few ideas on how to train harder as well as smarter. These techniques will not only improve your workouts in the short term, but might also keep you healthier for the long term, preventing you from injury and keeping you fit forever.

POST REHAB FITNESS SPECIALIST

I'm very excited about these classes and can't wait to go through this class.

This is a "practical", "in the field", course for information on the therapeutic application of Personal Training. Each day will cover two specific regions of the body. There is relatively one month between each day in order to assimilate the material and apply the techniques.

January 31, 1998, 8 am - 6 pm in Westwood.

Would you like to do Television?

Are you interested in modeling, hosting or participating in fitness infomercials? I had a meeting with a large production company that does about 50 infomercials a year. They are always in need of talent. If you are interested please send me a 8 x 10

spread wide enough to slide past your body. The only place I've found them is at FOCUS at 1-888-553-6287.

picture and a bio to:

Future Fit
3500 Overland Ave Ste 230
La, Ca. 90034

IMPROVEMENTS

Do not use the LA FITNESS name or logo on any of your flyers without the prior written approval from LA FITNESS. Also, the statement "**Independent Contractor not affiliated with LA FITNESS**" should be on all of your flyers, cards, price sheets or advertisements. If you need stickers, let me know

CLUB POLICIES

If you want to change your EFT you must do so a month in advance. It was in the agreement you signed.

Go to the front desk and get an Eft form. Fill it out and fax it to me at 310- 287-0801 or Chad Abramo at 714-509-2507.

- Please show your card to the front desk at least once a day.

- In event of an accident and someone is injured, please go to the front desk and ask for an "incident report". Fill one of those out, make a copy for yourself, fax a copy to me at 888-287-0801 and give the other to the front desk. This way your covered.

- If you have not received a "trainers card", or you have moved, call 800-600-2540, ext 561 and ask for Jim Irwin. Give him your correct address so you can be sent one.

- This is a reminder, you will be charged a 10% late fee plus a \$10 bank charge if your rent comes back to us. We will also deny you entry to the club until you pay the balance. If your rent is \$300 it will cost you \$340 to get back in to the club. THERE WILL BE NO MORE EXCEPTIONS.

OPPORTUNITIES

If you're stuck looking for Christmas gifts I found a satellite dish for your home for only \$49! If you're interested in getting a satellite dish, just call me at 1-800-778-6060 and I'll get you the number.

UPCOMING EVENTS

FUTURE FIT

PERSONAL TRAINING SCHOOL

Sat. and Sun. 8:30 am - 6:00 pm,

January 17-18 LA FITNESS - Marina Del Rey

Sat. 8:00 am - 6:00 pm

January 31 - Westwood

310-209-5002 (for directions)

\$159

310-827-0904 (for directions)

\$159 1-800-778-6060 to register

POST REHAB FITNESS SPECIALIST

Please send any suggestions, comments, complaints, praises, accomplishments, articles or information you might find useful to the newsletter or training program to:

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