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Accentuate the Negative

>X-Force Breaks Through

by Roger Schwab

Photography by William Boyd

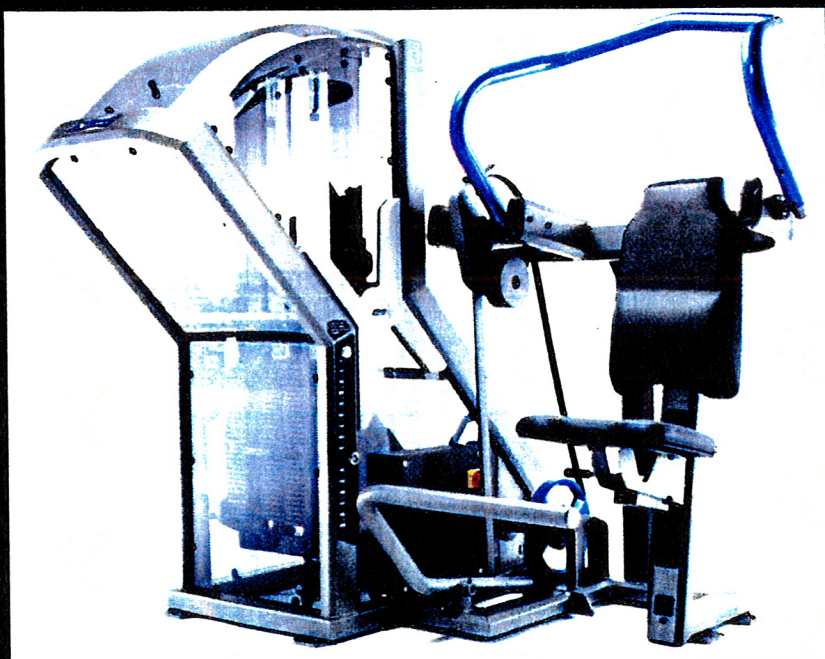
"Start thinking not in terms of how much you can lift but, rather, how much you can *lower*!" With those prescient words, Arthur Jones cracked open a new era in progressive-strength training—an era brimming with possibilities, anticipation and great expectations of muscular strength and size. Nonetheless, it proved instead to be an era clouded by confusion, question marks and, ultimately, misunderstanding.

When Jones spoke, many of us listened. In plain English he explained that we all possess three levels of strength: concentric (lifting), static (holding) and negative (lowering). Negative strength is approximately 40 percent greater than positive strength, and static strength is midway between the two.

According to a study published in the *British Journal of Sports/Medicine* in 2009, "Eccentric (negative) training performed at high intensities was shown to be more effective in promoting increases in muscle mass measured in muscle girth. Eccentric training showed a trend toward increased muscle cross-sectional area measured with MRI. The superiority of eccentric training to increase muscle strength and mass appears to be related to the higher loads developed during negative contractions." (Roig, M., et al. *Br J Sports Med.* 43:556-568; 2009)

AT AN AGE [67] WHERE MOST TRAINEES ARE SIMPLY TRYING TO MAINTAIN THEIR CURRENT STRENGTH, I HAVE STIMULATED LEAN MUSCULAR GAINS AS FAST AS OR FASTER—AND CERTAINLY MORE EFFICIENTLY—THAN ANY PREVIOUS TYPE OF TRAINING.

According to Ellington Darden, Ph.D., "When the strain on the muscle is focused and intense from multiple repetitions with controlled negatives, the movement mechanisms at the microscopic cellular level—actin protein filaments and myosin movement molecules—pull apart and tear slightly. *All growth* from strength training *must* be stimulated by preparing and slightly tearing at least some of the involved



actin and myosin tissues. That slight tearing is the catalyst for repair and overcompensation."

Science seems to indicate that negative work is possibly the most significant phase of the repetition. The question is, as it has been since Jones first emphasized the negative, What's the best way to apply that information to the workout? After all, with a barbell or a conventional machine, even by "accentuating the negative," you can only lower what you can lift.

Using a barbell necessitated the use of spotters, who would have to coordinate the handoff of the heavier resistance to the trainee, who would then lower the weight slowly. Even so, problems arose when the heavy resistance plus rapid breathing permitted extended rest between reps. It would cause the set to degenerate into a series of single reps, allowing sufficient time for the muscles to recover partially instead of being sufficiently fatigued. That gave the illusion of stimulating strength, but in reality it

invited injury.

Due to those and other problems the concept of negative training and its great promise was lost—until now! Forty years after Arthur Jones initiated the conversation of eccentric exercise, Mats Thulin of Sweden and his X-Force team of engineers have taken a giant step toward refining and perfecting the negative-accentuated training system by solving those problems.

According to Darden, who is currently conducting research with X-Force equipment at the Gainesville Health & Fitness Center in Gainesville, Florida, "The approach that Thulin applies so effectively involves a tilting weight stack powered by an electric servo motor. As the user begins the positive stroke, the weight stack tilts to a 45 degree angle, instantly reducing the selected resistance by approximately 29 percent. At the apex of the positive stroke, the tilted weight stack returns to vertical, and then the user lowers 100 percent of the selected resistance.

"For example, on the X-Force Pec Seated Press machine, you select 140 pounds. As you start the positive phase, lifting the resistance, you are moving 100 pounds [29 percent less than 140]. *Quickly*, in 0.5 of a second, the weight stack goes back to the vertical position as you do

a controlled negative rep with 140 pounds [40 percent more than 100 pounds]. Ideally, the set is completed in five to eight repetitions."

Bjorn Alber, M.D., sums up the above: "In conventional training the trainee is expected to complete eight to 12 repetitions before reaching muscular failure. In X-Force training, thanks to a high inroad [capacity to exhaust muscles], the trainee can be expected to reach failure in five to eight repetitions! In order to ensure the involvement of all three phases of muscular action, X-Force recommends a 3/1/5 cadence approach—three seconds of concentric work followed by one second of static work and then five seconds of eccentric work."

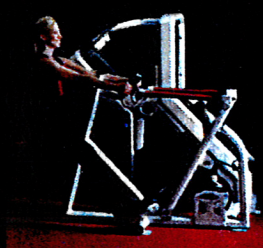
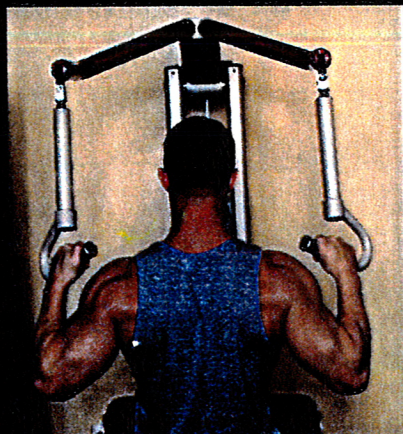
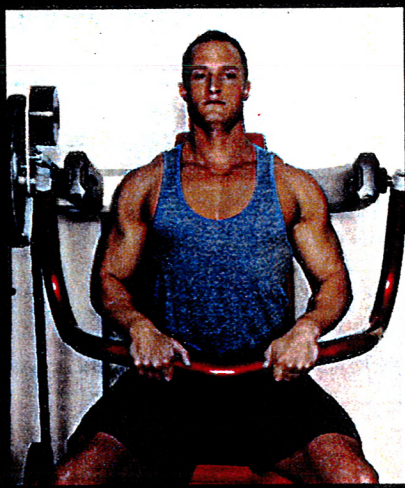
What of the practical application of X-Force training?

On January 5, 2012, The fitness center I own, Main Line Health and Fitness in Bryn Mawr, Pennsylvania, became the first training center in the USA to purchase X-Force. (It's now also available at the Gainesville Health & Fitness Center under the direction of industry leader Joe Cirulli.)

As I write this, I have been training on X-Force equipment for three months, once a week, a total of 14 workouts. To state unequivocally that at age 67 I have found these to be the most productive workouts of my life is an understatement. At an age where most trainees are simply trying to maintain their current strength, I have stimulated lean muscular gains as fast as or faster—and certainly more efficiently—than any previous type of training. After the first six weeks I had increased my bodyweight by six pounds, with bodyfat 7.3 percent at the start and 7.7 percent six weeks later.

This is a game-changer, not supposed to occur at my age. I have found that one workout a week on X-Force equipment is all I need or want. I expect to see similar results or better being stimulated by younger intense trainees working out in the same manner. Hyperbole? Hardly. X-Force equipment is that good!

Editor's note: For more information, visit www.X-Force.se. **IM**



"IN ORDER TO ENSURE THE INVOLVEMENT OF ALL THREE PHASES OF MUSCULAR ACTION, X-FORCE RECOMMENDS A 3/1/5 CADENCE APPROACH—THREE SECONDS OF CONCENTRIC WORK FOLLOWED BY ONE SECOND OF STATIC WORK, AND THEN FIVE SECONDS OF ECCENTRIC WORK."