

Master Trainer

Lifetime Bodybuilding and Masters Athletes

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What about Training?

The use of the Internet has increased dramatically during the last year. One personal result of that increase has been the incredible number of e-mail messages I receive every day that are from people all over the world who have been going through the ageless-athletes www site. Generally, as Mike Mentzer said a few years ago, many of these people are confused about their training.

Following conventional wisdom, many seemingly ordinary people are attempting to train like professional bodybuilders and not surprisingly are disappointed with their results. Many also are now taking truck-loads of supplements under the misguided but widely promoted notion that taking the right combination of supplements can make the difference between average development and champion level development. Some of these practices defy any common sense and some of these practices are probably dangerous. For example, does anyone really believe that taking hormones will not lead to some possible systemic effects other than the ones desired?

Supplements now tend to be promoted in ways to give them scientific legitimacy. One way is to fill ads with allusions about scientific studies and include these references

in small print. However, these are generally not controlled, double blind clinical trials; at best they may suggest some association with use of the supplement and some favorable outcome. Not all of these studies have been done with humans; some have been done with mice.

Another approach is to have physicians endorse supplements. If they happen to be bodybuilders, that's even better. They may do articles and other pieces that essentially are infomercials for specific supplements they are associated with and widely promote. These doctors do probably use the supplements but does that mean anything? For example, one physician/bodybuilder reported in an article that he takes over 40 doses of different supplements per day and tends to use supplements instead of food. He also noted

*“Train to
make progress!”*

that given the use of so many supplements, he had no idea how or if any of the supplements were working (much less, all the possible interactions). He further explained that his “natural” bodybuilding regimen also required the use of pro-hormones. In another one of his articles, he discussed how that this kind of “diet” resulted in many consecutive days of no bowel movements.

I'm not trying to be gross. I just want to use this example to show the lunacy of this approach and why just because a person is a physician does not necessarily mean a person knows a lot about diet, training, or have much common sense. Would the 99.9% of the rest of the physicians in the world consistently consume supplements with no proven efficacy (but potential harm) when it was apparent that they were interfering with some important normal biological functions? Of course, not.

One of the points I stress in correspondences is that many years ago before the advent of supplements and drugs, there were some really outstanding physiques. Genetic factors will always be the primary factors associated with specific outcomes but it's only when the training stimulus is applied that genetic factors come to fruition.

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Master Trainer focuses on information about lifetime bodybuilding, master athletics, and health and fitness. Information reflects the author's opinions as well as summaries of books, articles, and recent scientific news. This publication does **not** provide medical advice for specific medical problems. Medical advice should be obtained from medical personnel.

- weight training. *Research Quarterly for Exercise and Sport*. 56(4): 345-351, 1985.
15. O'Shea, P. Effects of selected weight training programs on the development of strength and muscle hypertrophy. *Research Quarterly*. 37(1): 95-102, 1966.
 16. Sale, D.G. Influence of exercise and training on motor unit activation. In: *Exercise and Sport Sciences Reviews*. Vol. 15. Pandolf, K.B. (Ed.). Macmillan Pub. Co., NY. 95-151, 1987.
 17. Sanborn, K. et al. Performance effects of weight training with multiple sets not to failure versus a single set to failure in women: a preliminary [sic] study. *International Symposium on Weightlifting and Strength Training*, Helsinki, Finland: 157-158, 1998.
 18. Silvester, L.J. et al. The effect of variable resistance and free-weight training programs on strength and vertical jump. *National Strength & Conditioning Association Journal*. 5: 30-33, 1984.
 19. Stone, M.H. et al. Athletic performance development: volume load – 1 set vs. multiple sets, training velocity and training variation. *Strength and Conditioning* 20(6): 22-31, 1998.
 20. Stowers, T. et al. The short-term effects of three different strength-power training methods. *National Strength & Conditioning Association Journal*. 5(3): 24-27, 1983.
 21. U.S. Department of Health, and Human Services. *Physical Activity, and Health: A Report of the Surgeon General*. Atlanta, GA. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, 22-29, 1996.
 22. Zinovieff, A.N. Heavy-resistance exercises. The "Oxford technique." *British Journal of Physical Medicine*. 14: 129-132, 1951.

Dr. Carpinelli teaches the neuromuscular, kinesiological, biomechanical, and practical aspects of strength training in the Department of Health, Physical Education, and Human Performance Science at Adelphi University. ♦

Have a question about training, fitness, health, or aging?

Send your question to the *Master Trainer*, Ageless Athletes, Suite 221, Memorial Building, 610 N. Main St., Blacksburg, VA 24060-3349

I will try to answer as many questions as possible in future issues.

My Experiment with Low-Volume HIT

by Matt Brzycki

Coordinator of Health Fitness, Strength and Conditioning – Princeton University

One of the most hotly debated topics among HIT proponents pertains to the volume and frequency of training. Personally, I've had a number of discussions with several others – including e-mail exchanges with Dr. Richard Winett – concerning my training, especially as it applies to the volume of exercises. The volume (and frequency) that I've been using for many years has been detailed in previous issues of this newsletter (August, 1996 and December, 1997). In brief, I've been doing 3 weekly total-body workouts since March 1985. The workouts have consisted of approximately 20 exercises (including several for the neck) – each done for one set to the point of muscular fatigue – and have taken roughly one hour to complete. (Keep in mind, though, that as many as 14 of the 20 exercises have been single-joint movements which are generally far less demanding than multiple-joint movements.)

Like most people, my approach to strength training and my opinions about it have been shaped a great deal by how I was "raised" so to speak. I was first exposed to HIT in March 1980 by Tom Laputka at the 4F Club, a fitness center located in Forty Fort, Pennsylvania. Tom had been schooled directly in HIT by Arthur Jones. The interpretation of HIT that we used at the "club" called for 3 weekly total-body workouts consisting of 18 exercises (excluding any for the neck). Each exercise was done for one set to the point of "momentary muscular failure." An almost identical version of HIT was presented to me in December 1980 in a course that I took at Penn State called "Development of Strength Training Programs." The instructor of the course was Penn State's Strength and Conditioning Coach, Dan Riley. (Dan left a few weeks after the end of the course to become the Strength and Conditioning Coach of the Washington Redskins – a position that he still holds today.) From 1984-90, I was the Assistant Strength and Conditioning Coach at Rutgers University (New Jersey). In terms of volume (and frequency), my supervisor – Dr. Paul Kennedy – favored virtually the same version of HIT to which I had been previously exposed. As a side note, during those six years, all of the school's athletes that we trained – from male football and baseball players to female gymnasts and golfers – performed HIT. So, I guess you could say that I'm a product of my environment or upbringing.

With regard to the volume (and frequency) of training, very similar interpretations of HIT have been used to train literally thousands of athletes at the collegiate and

professional levels. So, the volume (and frequency) of HIT that I've been using is not unusual. What may very well be unusual, however, is someone using this volume (and frequency) of HIT while in their early 40s. By the time this article appears in print, I will have "rolled over" 42 on the odometer of life. Understand that age is relative. To a 22-year old, 42 is old; to a 62-year old, 42 is young. At any rate, until recently I never thought of myself as being "old." Older, yes; old, no. Part of the reason is probably because – with the exception of about 5 weeks – I've been either a student or an employee on college campuses since September 1979. Being constantly around people for nearly two decades who are, for the most part, between the ages of 18 and 22 has undoubtedly altered the way that I've perceived my actual age. Also contributing to this perception is the fact that I've kept myself in good physical condition that is "younger" than most people my age. Factor in a wife who is nearly 4 years my junior and our tireless, high-voltage, 2-year-old son and it's easy to see why I don't picture myself as "old." But the reality of my actual age is becoming more and more apparent. I've begun to notice a greater amount of instances – especially off-campus or "in public" – where I'm referred to as "sir" or "mister." Physically, I've also noticed an increasing number of gray hairs in my beard and on my head (at least in the hairs that are left). In 1997, I decided to begin getting – at least for now – a physical exam every other year. (And my physician is younger than I am.) The last time that I had my annual eye exam, the optometrist (who is also younger than I) told me that at my age I should be needing bifocals but that my eyes are "resisting." Mister? Gray hairs? Annual physicals? Bifocals? It must be true. I'm getting older. And, frankly, it's sobering.

As time goes on, it's been increasingly more difficult for me to make progressions in weight and/or repetitions. Part of this can be attributed to my current lifestyle in which the late evening hours are used for relaxing, reading, writing and performing familial responsibilities. This often limits me to less than 5 hours of sleep the night before a workout (and usually not more than 6 hours of sleep the other nights). For years, I knew that as I got older I would have to eventually reduce the volume (and frequency) of my training in order to allow for more recovery. Actually taking that step, however, has been difficult from a psychological standpoint. I liken this step to my decision to switch my marathon 4-hour workouts to HIT in 1985.

I wait for each issue of this newsletter with great anticipation. Besides being on time and exceptionally well written, I always read something that gives me pause and triggers deep reflection. Shortly after reading the December

1998 issue, I decided to take a seemingly small but emotionally difficult step. Eliminating an entire workout was just too radical of a change for me to make. So, I elected to significantly decrease the volume of my HIT during 1 of my 3 weekly workouts.

For my experiment with low-volume HIT, I decided to do a workout that is sometimes simply referred to as a "3 x 3" (i.e., a "three by three"). Although a 3 x 3 workout can be modified in a countless number of ways, it is basically a multiple-joint hip movement followed by a multiple-joint chest movement followed by a multiple-joint upper back movement and repeated two more times with as little rest between the exercises as possible. In other words, it is 3 exercises done for 3 sets each – thus the name "3 x 3." Using the 3 aforementioned types of movements addresses every major muscle in the body including the hips, quadriceps, hamstrings, chest, upper back, shoulders, biceps, triceps and forearms.

The most demanding exercises for the hips are some type of squat, deadlift (with an Olympic bar or a trap bar) or leg press. Certainly, dips and chins represent the most challenging selections for the chest and upper back, respectively. For variety, dips and chins can also be performed in a negative-only fashion or as 30/30 repetitions. Three other exercise options for the chest are the bench press, incline press and push-ups. Any type of pulling movement – such as lat pulldowns or rows – is suitable for the upper back.

The first time that I ever did a 3 x 3 was on June 7, 1996. On that date, the 3 exercises that I performed were the leg press, dip and chin. By doing each set to the point of muscular fatigue and taking as little rest as possible between sets, the metabolic stress proved to be more demanding than any other workout that I'd ever done. At least to that point. I began doing a 3 x 3 regularly as my mid-week (Wednesday) workout on December 2, 1998. The 3 exercises that I chose to do were the deadlift, MedX Chest Press and chin. From the standpoint of muscular fatigue, this 3 x 3 was brutally effective. For more than 5 minutes following that workout, my upper and lower arms were engorged with so much blood that I laid on my back with my arms perpendicular to the ground in an attempt to "drain" the blood. The pain was simply unbelievable and widespread throughout the entire length of my arms. I couldn't even close my hand to make a fist. Despite the high degree of pain in my arms immediately following the workout, I had very little soreness in that area the next day. However, my entire posterior musculature was sore to the bone from the tops of my traps to the bottom of my butt.

From a standpoint of total systemic fatigue – that is, my

"The 3 x 3 workout is an extraordinary, very brief workout."

muscles, heart, lungs and so on – this workout was incredibly demanding. After the first set of deadlifts, I was already inhaling and exhaling like I had just sprinted a quarter mile. At this point, my lungs were on fire and I was gasping frantically for air. Needless to say, every subsequent set was progressively more difficult. It only took me 17 minutes and 33 seconds to perform the 3 x 3 on this date . . . and I was panting the entire time. When I finished my last exercise (the third set of chins), my heart was pounding furiously and my pulse registered 150 beats per minute.

Every Wednesday from December 2, 1998 to February 24, 1999, I performed a 3 x 3 – a total of 13. I had planned on doing another 3 x 3 on Wednesday, March 3. However, I left on an unexpected business trip the night before and was unable to train as scheduled. Therefore, I did that week's 3 x 3 on Friday, March 5. The following is a summary of the data from my first and fourteenth workouts along with a number of performance notes. My bodyweight during this period was about 172 lbs.

Exercise	12-2-98 (weight x reps)	3-5-99 (weight x reps)
Trap Bar Deadlift	224 x20	256.5 x20
MedX Chest Press	440 x12	466 x11
Chin	BW+10 x 8	BW+13.75 x 8
Trap Bar Deadlift	164 x16	236.5 x19
MedX Chest Press	380 x10	420 x10
Chin (30/30)	BW x 1 (30/30)	BW+10 x 0 (27/30)
Trap Bar Deadlift	144 x15	231.5 x16
MedX Chest Press	340 x10	390 x 9
Chin (negative-only)	BW+40 x 8	BW+56.25 x 8
Total Reps Performed:	100	101
Total Weight Used:	1,742	2,080.5
Workout Time:	17:33	17:44
Heart Rate:	150	156

Notes:

1. I did no warm-up sets or stretching prior to any of these efforts. Each of the workouts consisted of 9 sets, period.

2. The weights for the first 3 exercises were set up beforehand; thereafter, my training partner (Tony Alexander) set the weights so that all I did was lift.

3. The distance from the MedX Chest Press to the chin bar was no more than 8 feet; to increase the intensity (and decrease the workout time), the trap bar was placed midway between the two. In effect, the entire workout took place within a distance of 8 feet.

4. Prior to this, I had not done trap bar deadlifts since June 3, 1998; I had not done negative-only chins since December 19, 1997.

5. I used wrist straps during deadlifts and chins; I did not wear a belt during deadlifts.

6. The first time through the movements, my goal was to reach muscular fatigue at about 20 reps for the hip exercise, 12 for the chest exercise and 12 for the upper back exercise. When I repeated the sequence the second time, my repetition goals were 15 for the hip exercise, 10 for the chest exercise and 1 (30/30 rep) for the upper back exercise. The third time through the movements, I had goals of 12 for the hip exercise, 8 for the chest exercise and 8 for the upper back exercise. In summary, the repetition goals for these movements were 20, 15 and 12 for the hip exercise and 12, 10 (or 1 30/30 rep) and 8 for the chest and upper back exercises. Whenever I achieved or surpassed my target reps, I increased the resistance.

7. When I was able to complete the 30/30 chin, I counted it as 1 rep as part of the "total reps performed"; if not, I counted it as 0 – even if it was done in 29/30.

8. In the chinning movements, I did not count my bodyweight as part of the "total weight used."

9. The workout on March 5, 1999, began at 5:30 in the morning – the day after I completed a business trip in which I drove 993 miles in 45 hours.



Matt Brzycki with his biggest supporters, Alicia and Ryan.

Photo courtesy of Matt Brzycki