

High Intensity Versus High Volume

by Ian King | Fri, Mar 17, 2000

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High Intensity Versus High Volume by Ian King In the red corner, we have high intensity. In the blue corner, we have high volume. High intensity looks aggressive, ready to fight, but many ringside experts wonder if he's a little too punch-drunk to put up a good fight. Mike Mentzer and Arthur Jones are in his corner, each carrying a spit bucket. High volume, however, looks more relaxed, perhaps even philosophical. There are few cuts on his face. In his corner, you might find any number of '70s a...

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High intensity looks aggressive, ready to fight, but many ringside experts wonder if he's a little too punch-drunk to put up a good fight. Mike Mentzer and Arthur Jones are in his corner, each carrying a spit bucket.

High volume, however, looks more relaxed, perhaps even philosophical. There are few cuts on his face. In his corner, you might find any number of '70s and '80s bodybuilders, such as the Austrian Oak.

High intensity's robe carries the words "*One set to value*" on the back, while high volume's reads "*More is better.*" This is the fight that *had* to happen, when the new kid on the block wants to knock off the old pro.

So, let's get ready to *rummbllle!!!*

A bit overly dramatic? Perhaps. But in the scenario above, we really do have two ends of the spectrum. And, yes, there's been heated debate and conflict between the two opposing philosophies and their proponents.

Will a winner ever be declared? I doubt it. So where does that leave you? You're going to have to make up your own mind, and the following will help you do just that.

When we talk volume and intensity in strength training, the interpretation usually goes as follows: "volume" refers to how many reps or sets are performed, and "intensity" indicates how much weight is lifted, which can also be expressed as a relative percentage of your maximum capability. For example, if you can do only one repetition at 200 pounds, then 100 pounds represents 50% of your one-rep maximum (1RM).

The universal sporting community perceives the relationship between volume and intensity as being inverse, i.e. the more reps that you do, the lower the weight that you can lift, and vice versa.

Is there a universally accepted definition of what high-volume and high-intensity training constitute? Not that I've seen. So, for the purposes of our discussion, I'm going to apply the following parameters, based on total sets per workout:

Ultra-high volume: 35-plus sets

High volume: 25-34 sets

Medium volume: 15-24 sets

Low volume: 5-14 sets

We've been led to believe that, historically, bodybuilders typically used long workouts with lots of sets. That sometimes equated to 40-plus sets, a workout that lasted over two hours. Irrespective of the accuracy of this perception, we're sure that this was the image presented by mainstream bodybuilding of the '70s and '80s. Were the articles accurate reflections of the bodybuilders' methods? Probably not — but they sure as hell made good reading!

Whatever was the truth, the reading public came to believe that if you want to bodybuild — to develop physiques like those in the muscle magazines — you need a high-volume workout. Did these ultra-high volumes work? I doubt it (or, at least, not for long).

This led the slow-learning public to come to their next conclusion: if you want to be a bodybuilder, you need a high-volume workout, and you must also *take drugs!* So, with this little icing on the cake, the workouts had a greater chance of working. Were these high-volume workouts optimal, even for the drug user? I doubt it.

It was only natural that some began to question the tradition of high-volume training. Industry icons, such as Nautilus inventor Arthur Jones, were among those to pioneer the popularization of an alternative:

Lower-volume, higher-intensity training

If you accept that lower volume allows you to lift heavier — and it's not a hard thing to do — the only question remains, *how low (in volume) should we go?*

The high-intensity movement ultimately took it to the extreme, promoting only one set (to failure) for each exercise. Their rationale was that the greatest levels of intensity will be achieved if only one work set per exercise is performed. But will it? Probably not.

To achieve maximal effort, the body's nervous system often requires more than this to "trick" it into firing at its optimal level. For sure, doing one set — and one set only — allows you to be "fresh" as far as how much muscle energy (ATP) is available for that set. Neurally, I think that high-intensity training misses the boat. Metabolically, though, I have to agree with them.

The underlying aim of the high-intensity "movement" was to lower the volume, allowing intensity to be raised. The theory is nice, but some forget that volume isn't just sets per exercise, it's also total sets per workout. So, if you do only one work set per exercise, but perform 20 or more different exercises, you may have negated the low-volume advantage!

The most common criticism of "one set to failure" training is the absence of an adequate stimulus (enough work sets) to adequately deplete the total pool of muscle motor units and, therefore, muscle fibers. Again, a fair theory. But I see that the benefits of one set to failure pretty much negate the possible limitations that this method presents.

I believe that training one set to failure is often inadequate for athletes, who benefit more from developing anaerobic work capacity (short-term explosive endurance) than one set to failure will typically provide. I also believe that it's not the best choice for those who need to

"learn" the skill of the strength exercise (such as weightlifters and other strength and power athletes). Low volume might not be adequate here.

The main question comes down to who might benefit from "one set to failure" methods of training. Anyone who's come off a higher-volume program will, most likely, get an immediate benefit — if for no other reason than because the "new" method won't overtrain them to the same extent!

Anyone who's recovery-impaired or time-challenged may also benefit from using this method. If, for whatever reason, you aren't recovering well (improving) from training, reducing volume is one of my first troubleshooting recommendations. And, for those with limited time (e.g. only 20 minutes) during the day to squeeze in training, you might also benefit from using the "one set to failure" method.

For those people who may benefit from low-volume training, does this mean that they should only use this method? No!

There's no type of training that will be optimal if variety is inadequate! And variety means more than just which exercise that you perform. I strongly recommend that you also vary your volume and intensity.

If I was to be the "judge" in the high volume versus high intensity "debate," I'd declare them both winners — a draw. Not because the fight promoter has my ATM PIN number or that I lack the courage of conviction and, therefore, choose to sit on the proverbial fence. Rather, I believe that there's merit to both. It's more a matter of knowing which one suits you, when to use either one, and so on. Don't lose the possibility of benefiting from either method by joining the dogma society!

Is there a way to optimally use both methods in your training? The two main ways to exploit the integration of higher volume and higher intensity are described in the following tables.

The first table shows a variation of linear periodization in which the number of sets reduces in a constant manner, thereby allowing the intensity to raise in a reverse manner. This method has been popularized in American strength science literature for some 20 years, so it's old-hat to some and not cutting-edge enough. Nevertheless, I find that it's an effective method for those with less experience, and for those who need to carefully monitor changes in strength and skill through specialization in any one lift. This latter group includes strength athletes at all levels.

Table 1) Linear periodization of training volume

	Total sets per workout*	Sample reps per set
Weeks 1-3	20-25	12-15
Weeks 4-6	15-20	6-8
Weeks 7-9	10-15	10-12
Weeks 10-12	5-10	4-6

*Count only the work sets in this total, not the warm-up sets.

The second table, using a variation of alternating periodization, is more "hip" because it's relatively new to American strength training. Despite this, West German sports scientist Dietmar Schmidtbleicher, one of its early proponents, was writing about this method some 20 years ago! So, in reality, it's no more "new" than linear periodization. I find this method to be

effective for those who have the necessary experience to handle more radical shifts in their program, and for those who are more interested in size than strength. It's certainly effective in keeping the body continually adapting!

Table 2) Alternating periodization of training volume

	Total sets per workout*	Sample reps per set
Weeks 1-3	20-25	12-15
Weeks 4-6	10-15	6-8
Weeks 7-9	15-20	10-12
Weeks 10-12	5-10	4-6

*Count only the work sets in this total, not the warm-up sets.

If I had to choose between volume and intensity — you know, "if you were stranded in a gym all by yourself and could only choose one training variable," I'd go with intensity. I believe that intensity is more important to neural-based training (such as strength training) than volume. But this doesn't mean that I'm going to throw out volume. It plays a role, too.

If you're not stranded in a gym and limited to one training variable, you don't need to choose between one or the other — this isn't a presidential election. You can enjoy the benefits that both have to offer.

Therefore, the judges have ruled this fight to be a *draw!*