

TRAINING WITH AMRAPs

By Bryce Lewis

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The AMRAP or AMAP set is a training concept meaning simply to perform as many reps as possible with a given training load, taken from the acronym for “as many as possible”, or “as many reps as possible”. Bryan Mann, a researcher from Missouri State links the origins of this idea to 1945 and military surgeon Captain Thomas DeLorme, who used a basic increase in load from session to session and a set to failure after three sets of ten repetitions for post-surgery soldiers healing from bone and joint repairs. From there, Mel Siff proposed the idea again in Supertraining, called it the APRE (autoregulated progressive resistance exercise) method. It was Bryan Mann who did the research on APRE in comparison to linear and block models of periodization.

Since then, it has experienced a resurgence of popularity in the last year or two, and many athletes are interested in how to make use of this training tool. This brief article will serve to illustrate some concepts of the AMRAP set and cover some psychological, programming, and strength benefits, and some potential pitfalls.

First, AMRAP sets are one method of testing. Most common tests for a powerlifter involve a fixed number of reps and a variable load. For example, a two rep max involves ramping up the load set after set and choosing loads carefully to arrive at a single set with the maximum load. Similarly, any rep max employs this basic utility, the most important of all being the 1RM because of its parity with the sport of powerlifting. The AMRAP set is the opposite, involving a fixed load and variable number of repetitions.



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AMRAP set as a testing tool:

In this example, AMRAPs culminate a training block and are used as a measuring stick for progress, comparing either to previous set/rep combos, AMRAP sets, or estimated 1RMs.

Physiology:

Because AMRAPs are generally higher in number than, say, four reps, they can be employed at the end of volume training blocks, where adaptations in that particular rep range are more likely to come by. Doing a volume block that centers around repetitions above five for example and then performing your best 1RM will probably not result in peak performance. We need time to adapt to training modalities. This is one basis behind peaking protocols leading into competition—preparing the athlete to best perform at 1RMs. Unlike 1RMs as well, AMRAPs if programmed effectively take less of a toll on recovery. We're able to perform AMRAPs more frequently than we're able to perform 1RMs. However, some proponents of Bulgarian training will tell you frequent 1RMs are sustainable, it is actually frequent heavy singles that are sustainable in some cases, and not max attempts.

Deviations from a lifter's usual technique aren't "make or break" moments for the AMRAP set either. We can recover from one miss-grooved repetition and move on to perform others beautifully. There is more room for error, and I often find myself using AMRAPs as a testing tool for newer, less experienced athletes for exactly this reason. Technique is less refined and we are less likely to rule out technical inefficiency as a cause of poor performance in the test.

AMRAP sets have further utility, like heavy singles, and can be taken to RPEs less than 10 (maximal effort). Having an athlete perform an AMRAP and capping the set at an RPE 9 will not only be even easier to recover from, but also still provide rather accurate data on estimated 1RM. Simply add one rep to the athlete's set and calculate the resulting estimated 1RM. These numbers can be almost as accurate as taking the set to full RPE 10, as affirmed by research from Eric Helms and Dr. Mike Zourdos.

Psychology:

AMRAPs as a testing tool build confidence, if done correctly. If we choose a weight for an athlete to perform a 1RM with and the athlete fails after 4-12 weeks dedicated to a single testing moment, there is a general sense of dissatisfaction, disappointment, and failure. "Was all this time wasted?" is something I can almost hear a few lifters saying verbatim after going through a situation like this. As coaches, we'd rather athletes succeed and while 1RMs are extremely important and preparing for them is a regular part of peaking for competitions, the AMRAP has its place too. Performing well in an AMRAP set and beating one's expectations has similar positive feelings associated with succeeding. However, there is the added benefit that failure doesn't mean zero work is done. Athletes are still able to crank out some reps, though not quite as many as they hoped. It seems to be less of a psychological blow.



Similarly, in terms of success and performance, getting in just one more rep is often achievable with the right mindset, training partner, song, or extra "oomph". Athletes often report watershed moments of realizing they are capable of far more than they previously thought they were, leading to a recalibration of their whole RPE scale. Suddenly RPE 8 now represents a much higher weight than it used to. I had an experience like this once that I'll never forget. Some "friends" took me through an AMRAP/drop set from hell on leg press a long time ago. I had no idea what the hell I was doing in training and I'm not sure they did either, but what I did learn was that I had been sandbagging for basically a year. I realized that my best effort now was better than it had ever been, and nothing really changed strength-wise from the 10 minutes before that set to the 10 minutes after that set. What did change was a shift in mindset that I was capable of great things. And so are you! It just may take a hell of a performance on an AMRAP set to discover that fact.

AMRAP set as a training tool:

In this example, AMRAPs are used as a regular tool at specified intervals, often central to the progression of a training program.

Physiology:

When we talk about using the AMRAP set as a training tool, at the very least, we are referring to using it more frequently than a testing approach. More commonly, we're referring to using them at regular intervals, and on that note Bryan Mann has led the research recently for strength sports. In his dissertation, he explains using APRE (autoregulated progressive resistance exercises). In APRE, an athlete's performance on one AMRAP set at the end of the week for example, will dictate an increase in training load the following week. We see examples of this in the 5/3/1 approach from Jim Wendler, where AMRAPs are used on a weekly basis (5+, 3+, and 1+), The Juggernaut Training Protocol from Chad Wesley Smith, where the APRE method is used to test at the end of each four-week block of training, or elsewhere in Mike Zourdos' athletes' training in a weekly or semi-weekly fashion. This is probably one of the reasons for the increased in use and interest of AMRAPs. Mann uses



most training ideas, we have to fit it to the context of the athlete's psychology, training experience, and training yearly plan.

Programming:

Frequent AMRAPs can be useful in gauging an athlete's tolerance to the given training volume. When a lifter comes up short of their expected rep range, it may be an indication that the lifter is no longer able to recover from the current volume. This may be an opportunity for the coach to reduce volume in the progression to promote recovery. On the other hand, if a lifter exceeds the expected rep range it can be a useful tool for adjusting the training max within the cycle. This increase in training max will naturally increase volume and potentially put the lifter closer to their volume threshold for a more robust training effect. Frequent testing allows for a more aggressive progression if the lifter's performance dictates increases in training max and/or training volume.

The AMRAP is both a training and testing tool, but it's still a tool. Like any other tool, if you use it incorrectly, you're bound to wind up doing more harm than good. Hammers are great tools, but they don't catch fish very well. Make sure you fit the AMRAP within the context of a larger training plan that allows for adherence, consistency, progression, and yearly planning.

a similar principle, and performance above a specific baseline (say performing 5 extra reps means +10lbs in training load the next week) necessitates an increase in training load in the following week. See Mann's research and articles for more on this.

While using AMRAPs in one of the above frameworks can be an excellent idea, its important to know that performing any kind of test designed to see maximal effort of some kind can be very taxing. Somewhat paradoxically, performing AMRAPs more frequently will likely result in better recovery than vice versa, likely because athletes are adapting to the new training stimulus and the repeated bout effect. This isn't to say that using AMRAPs for testing is unwarranted, just that they may require a larger period of recovery or reduced training volume, or the expectation that performance may be hampered until the athlete recovers. Under more frequent use, athletes can expect to adapt to the usage of regular AMRAPs after ~3 weeks in our athlete's experiences, after which the AMRAP will cause less of a recovery deficit.

Physiologically too, the AMRAP sets are a way to gather a little more volume, though a case can easily be made for just another set instead of adding the extra reps in the same set. I can imagine training protocols where AMRAP sets are taken to a fixed RPE, eliminating some of the fatigue associated with pushing AMRAP sets all the way to failure.

Psychologically:

Looking ahead to frequent tests allows athletes to mentally prepare in smaller increments than large "do or die" tests at the end of 8, 12, or 16 weeks. Some athletes thrive under frequent testing environment, while others find that the energy to mentally prepare yourself to perform maximally every single week is simply too much. As is the case with



About the Author

Bryce Lewis is a competitive, drug-free, elite powerlifter in the 205 lbs weight class. He holds records in both the USA Powerlifting federation (USAPL) and American Powerlifting Association (APA), and strives to promote the comprehension and love of powerlifting training throughout the world. Through his success as an elite lifter, Bryce's dream is to pass on his knowledge and skills through [The Strength Athlete](#) (TSA) powerlifting coaching services online in addition to his popular [YouTube Channel](#) and Facebook fan page. By these efforts, Bryce hopes to help raw, drug-free powerlifting gain more prominence and acceptance internationally.

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