

AUTO-REGULATING YOUR EXERCISES

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WHAT IS AUTOREGULATORY TRAINING?

Autoregulatory otherwise known as AREG is a method of training in which the management of the volume (sets, reps, etc..) and intensity are self regulated by the individual in training. Depending on how the individual is feeling a particular day will show in the work capacity achieved for that day. In other words, you stop an exercise or a workout once your performance decreases by a certain amount. For instance, if you are performing Autoregulatory jump training, you may stop a set once you cannot reach the same height for your jumps. You will then stop the exercise once you cannot perform the same amount of repetitions per set. Your body is regulating the amount of work you are doing according to your performance that day.

HOW DOES IT WORK?

Basically you are teaching your body to work maximally or near maximal during your training sessions so it will perform in this manner on the field. If you had a set number of repetitions to be performed on a given day and your body was tired or fatigued you may not reach this set number of repetitions of the exercise. On the other side of the coin, you may be feeling great on a given day and the set amount of repetitions may not be enough so you will under-train. Autoregulatory training ensures that you, the athlete, are teaching your body to fire maximally, rather than submaximally. Would you rather run a fast 40 and throw down a basketball, or touch backboard 50 times and run 10 slow 40's. If the answer is, the fast 40 and dunk, then adding Autoregulatory training to your workouts would be a wise decision.

RECOVERY FROM AUTOREGULATORY WORKOUTS

The amount of fatigue an athlete induces during a particular workout is equal to the amount of time it will take for the athlete to completely recover and supercompensate from that workout.

Example: If an athlete induces a 6% fatigue during the workout (meaning a 6% drop in performance whether it be 6% drop in weight for a set amount of reps, 6% drop in reps for a given weight, 6% drop off in jump height, etc...) To recover from this 6% fatigue it would then take about 2 days to recover from the workout and another 2 days to achieve supercompensation. ($1/3$ of 6% = 2 days to recover, and another $1/3$ of 6% = 2 days to fully supercompensate). You can also use a 10-12% dropoff rate and the recovery will then be 6-8 days. $1/3$ of 10% = 3.3 days or $1/3$ of 12% = 4 days so it will take 3.3/or 4 days to recover and 6.6 or 6 days to supercompensate. Bottom line is: the amount of fatigue you bring about during a workout = the amount of rest you need to recover and supercompensate from that workout.

Fatigue, Recovery, and Supercompensation Chart

% of Fatigue Induced During Initial Workout	Days to Recover from Workout	Days to Supercompensate from Initial Workout
6%	2 days	4 days
10-12%	3.3-4 days	6.6-8 days
12+	5+ days	8-12 days

SAMPLES OF DIFFERENT TYPES OF AUTOREGULATORY TRAINING

WEIGHT DROPOFF METHOD:

Example: An athlete performing the squat.

The athlete builds up to his/her max effort for the day at 100lbs for 10 reps. If the athlete is working out his squat or similar movement every 4 days we will create a 6% dropoff rate. 6% of 100 = 6. We deduct 6lbs from 100lbs and get 94lbs. The athlete will then perform sets of 10 at 94lbs until he can no longer achieve 10 reps in a set. Once he cannot perform 10 reps the exercise is done.

Breakdown:

6% dropoff

100lbs for 10 reps. 6% of 100=94lbs. Keep performing sets of 10 at 94lbs

10-12% dropoff

100lbs for 10 reps. 10-12% of 100 = 88-90lbs. Keep performing sets of 10 at 88-90lbs

REPETITION DROPOFF METHOD:

The same athlete is squatting 100lbs for 10 reps. Now for repetitions counts they use a chart;

Repetitions	Drop off margin per repetition
0-6	3-5% per repetition
6-12	2-3% per repetition
12-20	1-2% per repetition

What does this Chart Mean?

If the athlete performed the squat and performed 10 reps at the 100lbs, and he was working at the 6% rate (working out legs every 4 days), this would mean he would perform 7-8 reps per set at the same 100lbs.

This was calculated using the chart above. Since he is working in the 6-12 rep range, this means there is a 2-3% dropoff per rep. So we want to use a 6% fatigue rate (workout legs every 4 days), so the first rep drop $10-1=9$ would equal 2% fatigue (2% total and we want 6%), then $9-1=8$ would equal another 2% fatigue (4% total and we want 6%), then $8-1=7$ to equal 6 which is the 6% total we are looking for.)

If the athlete only performed 5 reps this would mean he would perform 3-4 reps with 100lbs because each rep is worth 3-5% fatigue in the 0-6 rep count.

To illustrate:

1. 100lbs for 5 reps training legs every 4 days
2. Looking for 6% drop in reps because we are training every 4 days in the repetition method of dropoff.
3. 5 reps falls into the 0-6 category of repetitions so there is a 3-5% fatigue rate per rep lost.
4. Lets use the 3% dropoff per rep first then the 5% dropoff per rep in the following example
5. We need 6% dropoff so $5-1=4$ which equals a 3% total fatigue.
6. Then we do the math $4-1=3$ which equals another 3% to put the total fatigue at 6% (our target)
7. If we were to use the 5% drop per rep then it would be $5-1=4$ which equals 5% drop and we need a 6% total. (Close enough to round out the number.)

Now if the athlete was using a 7 day training period, we would want a 10% drop. So with the 3% chart dropoff number at 100lbs for 5 reps it would look as follows:

To illustrate:

1. 10% fatigue is the goal
2. 5 reps $-1\text{rep} = 4\text{ reps} = 3\%$ drop per the 1 rep for a total of 3% fatigue
3. 4reps $-1\text{rep} = 3\text{ reps} =$ another 3% drop per the rep for a total of 6% fatigue
4. 3reps $-1\text{ rep} = 2\text{ reps} =$ another 3% drop per the rep for a total of 9% fatigue. Close enough to 10 so the athlete will perform sets of until he either reaches 2 reps for a maximum effort or perform sets of 2 until he can no longer do another set at 100lbs.

HEIGHT DROPOFF METHOD:

An overhead goal or height measurement system will be necessary for this method of Autoregulatory Training.

Example: Athlete performing depth jumps using a vertical leap testing device.

The athlete performs 5 repetitions to reach a height of 10'2". This will be the max training height for the day. The athlete will now be expected to reach the 10'2" for as many repetitions in a row as possible with an adequate rest between repetitions. Once the athlete cannot reach the same height (10'2") then the set will be done. For instance say the athlete was able to hit 10'2" for 5 repetitions. The athlete is now expected to perform sets of 5 successful repetitions in a row (reaching 10'2"). Once the athlete cannot perform a successful set (only hits it 4 times in a row) the athlete is then done with the exercise and time to move on to the next exercise. Remember, in order to increase your vertical leap, you need to teach your body to fire maximally. Performing thousands of repetitions of submaximal jump exercises will not do the trick.

Note- if the athlete jumps higher on than the maximum height achieved (in this example 10'2") the athlete will then use that as the new training height for the remaining sets.*****

Summary:

- Find maximal height for the day, or try to work up to higher height than previous workout
- Perform as many repetitions as you can at that height.
- Stop set once you cannot reach height (allow for jump mistakes)
- Stop exercise once you cannot match same amount of successful repetitions

SPEED/TIME DROPOFF METHOD:

Example: Athlete performing 20 yard sprints using electronic timing device

The athlete performs his/her first 2-4 sprints submaximally to warm up the muscles and avoid injury. The athlete then sprints maximally 20 yards and records the time (for example 3 seconds). Depending on how often the athlete is performing sprint training will determine how much of a time dropoff to allow. For instance if the athlete is training every 4 days, then about a 5% dropoff in time would work. So 5% of 3 seconds would equal 0.15, then add this to the 3 seconds and you then have your dropoff (end the workout) time. The athlete will now perform 20 yard sprints trying to keep the time below 3.1 seconds for each sprint with the same amount of rest between each sprint. Once the athlete cannot maintain the 3.1 or faster, the athlete is done with the 20 yard sprints for the day. Record how many sets you are able to perform, and also record your working time.

Note- if the athlete achieves a faster time than the previous fastest time achieved (in this example 3 seconds) the athlete will then use that as the new training time for the remaining sets.*****

Summary:

- Warm up with 2-4 submaximal sprints
- Find best time for the day at your training distance
- Perform as many sets as you can at pre-determined dropoff time (best time +% fatigue allowed)
- Stop once you cannot perform a set below allotted dropoff time.

WORK PERFORMED IN SET TIME DROPOFF METHOD:**Example: Athlete performing maximal amount of squats in 20 seconds using hand timer**

An athlete is squatting for time during this workout. After a proper warm-up the athlete works up to a weight of 225 pounds for 10 repetitions in 20 seconds. The athlete can then allow a 2 repetition drop off to give him/her working sets of 8-10 repetitions in 20 seconds. If the athlete chooses to perform 10, 9, or 8 reps per set, it is his/her choice. The athlete will keep performing sets of 8-10 repetitions in 20 seconds. Once the athlete can no longer perform 8 repetitions in 20 seconds, the exercise is done. Record the reps, training weight, and time used for the day.

Summary:

- Pre-determine time for working sets
- Warm up properly before attempting working weight
- Time first set with working weight and record repetitions achieved in set time
- Calculate drop-off repetitions according to chart above
- Perform sets of determined repetitions in set time.
- Stop when you cannot match the same amount of repetitions in a set.
- If you find yourself performing more than 10 sets, the weight may be too light.

DISTANCE (Throw) DROPOFF METHOD: Typically Reserved for Med Ball Throws.

Example: Athlete performing sets of overhead (Viking) med ball throws.

After a proper warm up the athlete will then begin a set of overhead throws. The athlete is trying to throw the med ball over a large fence. The athlete will keep throwing the med ball over the fence until they are no longer able to. You can perform this exercise in sets with equal rest between repetitions and sets, or in single repetition sets where one throw is considered a set. The exercise is done once the athlete can no longer throw the ball over the set height, or the athlete cannot match the same amount of reps per set.

POMS (Power Output Measurement System) DROPOFF METHOD:

Example: Athlete performing snatches with 64% 1rm using Power Measurement Device

After proper warm up sets, the athlete will measure the amount of power generated per repetition of the snatch exercise. Once the athlete has achieved the highest wattage for that particular workout, he/she will then perform repetitions using at most a 10% dropoff (5-6% is preferred for the SuperUPZ program) in power per repetition. Say the athletes 64% 1RM is 160 lbs. The athlete will try to snatch the bar overhead as fast as possible, generating maximal power. The power measurement device will record the highest wattage. Once the wattage drops by the pre-determined dropoff, the set will be done. For instance, say the athlete generate 1800 watts of power for a max. The 5% dropoff is then 1710 watts (5% of 1800= 90, 1800-90= 1710 dropoff wattage). The athlete will then perform repetitions until he/she can no longer generate more than 1710 watts. For this example, the athlete performs 5 reps on the first set using 1800 as the max and 1710 as the dropoff. The athlete is then expected to perform 5 reps for as many sets as possible, keeping the power output above 1710. Once the athlete can no longer perform a set of 5 reps above 1710 watts, the exercise is then done for the day.

Note- if the athlete achieves a higher wattage than the previous high wattage achieved (in this example 1800 watts) the athlete will then use that as the new max training wattage for the remaining sets.*****

Summary:

- Warm Up Properly
- Determine Maximal Power Output for the workout, and calculate drop off allowance.
- Perform repetitions above dropoff. Stop once you cannot achieve drop-off power output.
- Stop exercise once you cannot match same amount of repetitions per set above dropoff

There are other methods of Autoregulated training, but this article is only a very simplified look at Autoregulatory Training. Don't try to overcomplicate it as it may confuse you. There is much more to Autoregulatory Training and if you are interested in learning from two of the experts on the subject, I highly recommend reading Mel Siff's Supertraining, and Dietrich Buchenholz's The Best Sports Training Book Ever Written. The purpose this article is to touch the surface and educate you on how to autoregulate exercises during your journey to increased sports performance.

ENJOY, WORK, andSUCCEED!!!