

## Time Under Tension

By Justin Opal

Time under tension is a critical element in every exercise program. It ensures that you are giving your body the correct instructions in the form of muscular contractions to receive the results you desire. The human body is similar to a computer in the way they both interpret instructions. When you are giving a computer a command you have to be exactly right, if you are off even by a little bit in your command you can hit enter all day long and still not get the results you want.

Our bodies make specific adaptations to imposed demands. If for example you are the average 19 year old male who wants to increase muscle mass to get buff for the beach you have to put the correct demands on your musculature to receive the adaptation of increased muscle mass (hypertrophy). Scientific studies have shown that the most effective way to gain muscle is to progressively overload the muscles using contractions to momentary failure between 30 and 60 seconds per set.

Now most young males who want to put on muscle lift heavy for 10 fast reps per set which usually correlates to 20 seconds of muscular tension or less. This form of training is telling your body to increase power with limited hypertrophy. Which is fine if your goal is to improve power, but in the example above the males wanted to increase muscle mass. This reinforces the importance of goal setting. You have to know where you are going to get there, and to make sure you are not misplacing your time and energy you have to know how to get there. Good intentions will only take you so far. The males in this example would achieve their goals faster if they used an appropriate weight to fatigue their musculature within the correct program framework.

<b>Workout Variables</b>	<b>Strength/Power</b>	<b>Hypertrophy</b>	<b>Endurance</b>
Sets (min - max)	1-4	2-5	1-3
Reps (min - max)	1-8	8-14	15-25
Time Under Tension	4-30sec	30-60sec	60-100sec
Rest between sets	2-4min	1-2min	30sec-1min
Rest between workouts	48-72hrs	48-72hrs	24-72hrs

Another common mistake is to go for the largest weights you can handle and throw momentum into your reps. Manipulation of momentum does have a vital role in sport.

But, if you want to educate your muscles to promote the correct changes in your body you have to challenge them with the appropriate time under tension, not just heaving big weights around. Every moment that momentum is bringing the weight up is taking away from the muscle stimulus of the contraction making the exercise less effective. Instead of using a weight that is too heavy for you to control try a more appropriate weight which allows you to squeeze as much tension as possible out of every repetition in the targeted muscles maximizing your precious work out time.

Time under tension really is a simple concept to grasp when you take a second to think about it. That is one of the reasons why it is often overlooked in many exercise programs. No one can escape the passage of time, even if you are not paying attention to it. Remember if you cannot contract your muscles at the end of every movement's range of motion you have used momentum not muscular contractions to get there. A set is constant tension, if the tension is relieved at any point the set is actually over. So if you follow the pattern of doing a rep then taking a break you are performing a lot of single rep sets. With a lack of muscular contractions comes a lack of instructions to your body, which translates, to a lack of desired results. Time under tension is the key to clear communication with our bodies.

After reading this brief summary of time under tension you might say you already use good form with slow and controlled contractions. If this concept interests you there is a self-check to test how much tension you are giving your musculature with your current exercise program. All you need to do is watch the clock during your next work out to time how long it takes you to perform your work sets. A good baseline tempo for a slow and controlled repetition is 4 seconds (2sec eccentric & 2sec concentric). If your current program calls for 2–3 sets of 10–15 reps it should take you 40–60sec to complete those reps (does it?). This 4-second tempo is also a minimum for quality muscular contractions. Once you get started with this time under tension concept there is a great deal of variety in the tempo of the repetitions, which can maximize the effectiveness of each exercise.

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