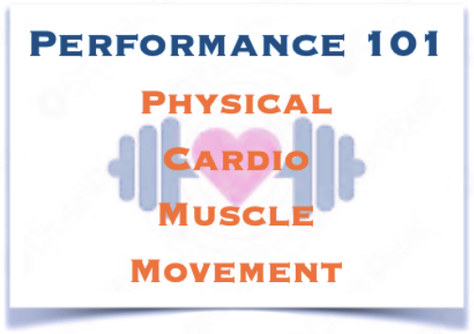
Load and Time Under Tension and Use of a Wide Repetition Range With Training for Muscular Growth.

Summary: If one's goal is simply to maximize overall muscle mass, exercise prescriptions should include training across a wide spectrum of repetition ranges according to a great review of the subject (review). The reason for this is that muscle fibers respond to different stimulus, where fast muscle fibers respond to load, while slow fibers respond to time under tension. Higher-intensity exercise seems necessary to fully stimulate fast-twitch fiber growth, whereas lower-intensity exercise preferentially enhances hypertrophy in slow-twitch fibers. Suggestion, with compound exercises use heavier weights for lower reps and for isolation exercise use lower weight for higher reps.



A drop set is an advanced resistance training technique that focuses on repeatedly training a muscle until failure. This works the muscle with time under tension.

The rest-pause method focuses on performing more reps and getting more work done in less time. It assures the weight, rep range and rest period are optimized so you get stronger in less time. Basically, the rest-pause method is three sets in one, with mini-breaks in between.

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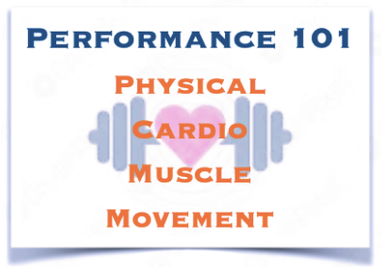
Drop Sets and Rest and Pause Training



If one's goal is simply to maximize overall muscle mass, exercise prescriptions should include training across a wide spectrum of repetition ranges according to a great review of the subject (review). The reason for this is that muscle fibers respond to different stimulus, where fast muscle fibers respond to load, while slow fibers respond to time under tension. Higher-intensity exercise seems necessary to fully stimulate fast-twitch fiber growth, whereas lower-intensity exercise preferentially enhances hypertrophy in slow-twitch fibers. A periodized approach combining high and low-intensity training may help ensure an optimal hypertrophic response in the full continuum of fiber types. Both linear and nonlinear models are viable approaches here, as neither has been shown to be superior to the other in this regard. Thus, intensities can be varied within and/or across multiple training sessions or by alternating target repetition zones every few microcycles. Training loads can easily be manipulated based on the characteristics of the exercises within a training sessio**n, favoring high-load training on multi-joint exercises like the squat and deadlift, saving higher repetition ranges for single-joint, isolation type exercises** that may be better suited to lighter training loads. Although training percentages or repetition ranges can be varied in a periodized manner, advanced training techniques may provide additional hypertrophic benefit. Drop sets, where training load is progressively decreased on subsequent sets with little to no rest once the point of fatigue or technical failure is achieved at each training load, may provide the best of both worlds. Training load can be maximized initially to capitalize on type II fiber activation; however, as fatigue sets in, training loads can be progressively decreased to increase the time under tension to maximally stimulate the type I fibers. In addition, rest-pause training, where a set with a given training load is extended beyond the point of fatigue by taking small rests within the set, may provide a similar benefit by increasing the duration of loading. Care must be taken when using these techniques to balance the need for increased muscle recruitment and time under tension to promote optimal hypertrophy against the potential for elevated levels of fatigue and overuse.

Key Point on Strength: If the goal is strength then hypertrophy is a means to maximize strength, then higher-intensity loads should be favored over lighter loads, as gains in strength are greater with high-load training as compared with low-load training even when a comparable hypertrophic response occurs. If strength is to be maximized in specific exercises, as in sports such as power- lifting, higher-intensity training is essential