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ACCENT ON INTENSITY

One set of a high-intensity exercise can be more efficient and just as productive as multiple sets of the exercise

By MATT BRZYCKI/Assistant Strength Coach, Rutgers University

EXCEPT for genetics, *intensity* is the most important factor in achieving maximum gains from strength training.

We know that little or no strength gains can occur below a certain level of intensity. Obviously, the intensity level must be great enough to exceed this threshold for growth to take place.

Unfortunately, no one knows precisely what level of intensity is necessary to stimulate growth.

Intensity Continuum

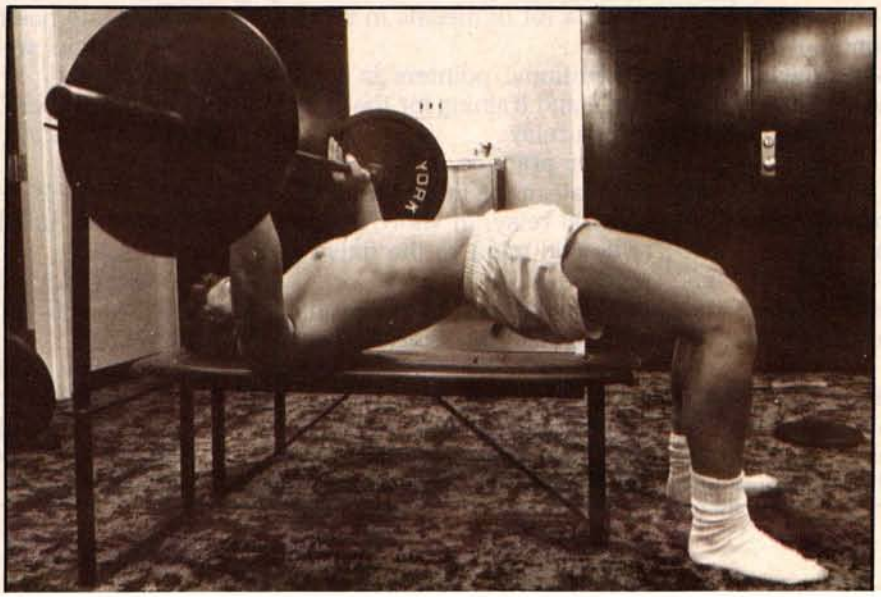
Though the minimum threshold level is unknown, a logical examination of the facts can determine the most *productive* level.

Suppose a 90% level of intensity was the threshold for achieving maximum results. How could we pinpoint 90% intensity. . .or 95% intensity — or any other level of intensity for that matter?

We have to understand that only two levels of intensity can be determined easily. One level is *0% intensity*, or complete inactivity. Obviously, no intensity creates no stimulus and therefore produces no effect.

The only other identifiable level can be found at the opposite end of the continuum — *100% intensity*. This level is characterized by an all-out effort for a prescribed amount of time.

It is literally impossible to deter-



mine any other level of intensity. So, the only productive and quantifiable level is 100% intensity.

Time & Intensity

The question arises: How can we get our athletes to achieve 100% intensity in the weight room? Various concepts are available. The most common recommendation is to increase some program variable such as the number of sets, the number of exercises, or the frequency of workouts.

Although this may seem like a valid idea, it's doubtful that an increase in any of these variables will raise the intensity to a desirable level. The reason is simple: it lies in the inverse relationship between time and intensity. *As the time or length of an activity increases, the intensity of effort decreases.*

Put more simply: You cannot train at a high level of intensity for long periods of time. Anyone who has survived the rigors of a three-hour practice session can testify to this!

By increasing sets, exercises, or frequency, you ultimately increase the training time. Result: a decreased level of intensity.

Once you understand the logic of this principle, it becomes obvious that in order to train at a high level of intensity, you must train for a relatively short period of time.

Attaining Max Intensity

Our reasoning thus far has established that 100% intensity is the only desirable level we can measure, and that this level is best achieved by training to the point of momentary muscular failure. At this point, the athlete will have stimulated the maximum number of fibers for growth.

Let's say an athlete must perform a set of leg extensions with 100 pounds. In order to overcome inertia and provide impetus to the 100 pounds of resistance, the athlete's quadriceps must exert slightly more than 100 pounds of force. Any force less than or equal to 100 pounds, will not move the weight.

During the first repetition, only a small percentage of the available muscle fibers will be working. As the athlete performs each repetition, some fibers will fatigue. Fresh fibers will be simultaneously recruited to assist the fatigued fibers in generating ample force.

This will continue until the last repetition — when momentary muscular failure is finally reached. At this point, as we have indicated, the athlete will have stimulated the maximum number of fibers for growth, but he can no longer create enough force to lift the weight.

By performing one maximal set, the athlete has accomplished the equivalent of several submaximal sets. Conclusion: One set of an exercise performed at high intensity is just as productive as multiple

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RITUALS

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tance of the last.

The coach should not interfere with this ritual except to keep the thrower adhering to the progression. Some throwers, especially after fouling their first throw, will want to go on attack on their second throw, when a controlled throw would be more strategically sound.

Nobody gets to the finals with three fouls, and each foul makes another foul more likely when the thrower goes on attack before completing a controlled throw.

Except for very subtle changes in technique to correct glaring problems, the coach should avoid making changes during the meet.

Summing up, the administration of the throw starts with a mental decision to refine the controllable variables of each throw to eliminate distractions.

INTENSITY

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sets and is obviously more efficient.

Many "experts" are cynical of this type of strength training. More often than not, their cynicism stems from a poor experience with it — undoubtedly due to their submaximal level of intensity.

One set of an exercise can produce striking results, but only if it is done with an all-out effort.

Conclusion:

A high level of intensity is required for optimal strength gains. Although less than 100% intensity may provide enough stimulus to produce maximal results, 100% intensity is the only desirable level that can be quantified.

This level of intensity is typified by training to the point of muscular failure — which requires only one set of the prescribed exercise.

Since it is literally impossible to train hard for long periods of time, the entire session should not exceed 30 to 40 minutes. At most, 14 to 18 total exercises should be performed per workout, with the emphasis on the gluteals, legs, and upper torso.

In short, *train harder, but briefer.*