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# Q&A

[BY MATT BRZYCKI]



## How many calories are used during a strength-training workout?

Estimates of caloric expenditure during a strength-training workout are highly inconsistent because of many variables. This

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includes the amount of muscle mass that's engaged in the exercises, the effort during the exercises and the recovery between exercises, as well as body size and body composition.

In one study, 15 women (who weighed an average of 139.7 pounds) performed one set of nine exercises to muscular fatigue in an average of 21.3 minutes. They used an average of about 56.07 calories above their baseline values, or about 2.63 calories per minute. In that same study, the women performed three sets of nine exercises to muscular fatigue (in a "circuit" fashion) in an average of 63.1 minutes. In this workout, they used an average of about 158.14 calories above their baseline values, or about 2.51 calories per minute.

As part of another study, six men performed five sets of 10 exercises to muscular fatigue in 96 minutes. Prior to the study, the researchers estimated the caloric expenditure of the workout for two of the men. One man (who weighed 154 pounds) used 534 calories above his baseline value, or about 5.56 calories per minute; the other man (who weighed 199 pounds) used 695 calories above his baseline value, or about 7.24 calories per minute. **FM**

## Are slower speeds of movement as good as faster speeds of movement for increasing muscular size, strength and power?

In one study, subjects were divided into three groups. One group raised the weight in 0.75 seconds or less, another group raised the weight in 2.0 seconds or more, and the third group raised the weight in 0.75 seconds or less in the first six weeks of the study and 2.0 seconds or more in the last four weeks. All three groups significantly increased their leg power during the vertical jump. There

were no significant differences between the groups.

In another study, subjects were divided into two groups. One group was to “explode upward as fast as possible” and the second group was to “raise the bar in a slow and controlled man-

## Slow-speed repetitions are at least as effective as fast-speed repetitions.

ner so that acceleration is minimized.” Both groups were instructed to “lower the weight in a slow and controlled manner.” After seven and a half weeks of training, both groups significantly increased their one-repetition maximum squat, vertical jump and muscular size (of the thigh). There were no significant differences between the groups, although the slow group improved more in the vertical jump.

Bottom line: Research has shown that slow-speed repetitions are at least as effective as fast-speed repetitions for improving muscular size, strength and power. **FM**

## Can potassium help to lower blood pressure?

It's estimated that about 50 million people in America — and about 1 billion people on the planet — have high blood pressure or hypertension. Research has found that reducing sodium intake lowers blood pressure. But this information, pardon the pun, should be taken with a grain of salt. The reason? It appears that it's difficult to restrict the intake of sodium enough to produce a significant decrease in blood pressure.

There's a relationship between sodium and potassium as it pertains to blood pressure. Effectively, a favorable sodium-to-potassium ratio can be achieved by either decreasing sodium intake or increasing potassium intake.

In one study, 59 subjects were randomly assigned to two groups. One group was given a potassium supplement and the other a placebo (sorbitol



and fructose) three times per day for six weeks. The subjects who received potassium significantly decreased their systolic and diastolic blood pressures (from 118.15 to 111.93 and 75.48 to 71.47, respectively); meanwhile, the subjects who received the placebo increased their systolic and diastolic blood pressures (from 115.74 to 117.12 and 70.53 to 72.98, respectively).

How can someone get more potassium? A simple and inexpensive way is to eat potassium-rich foods such as fruits and vegetables. **FM**

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