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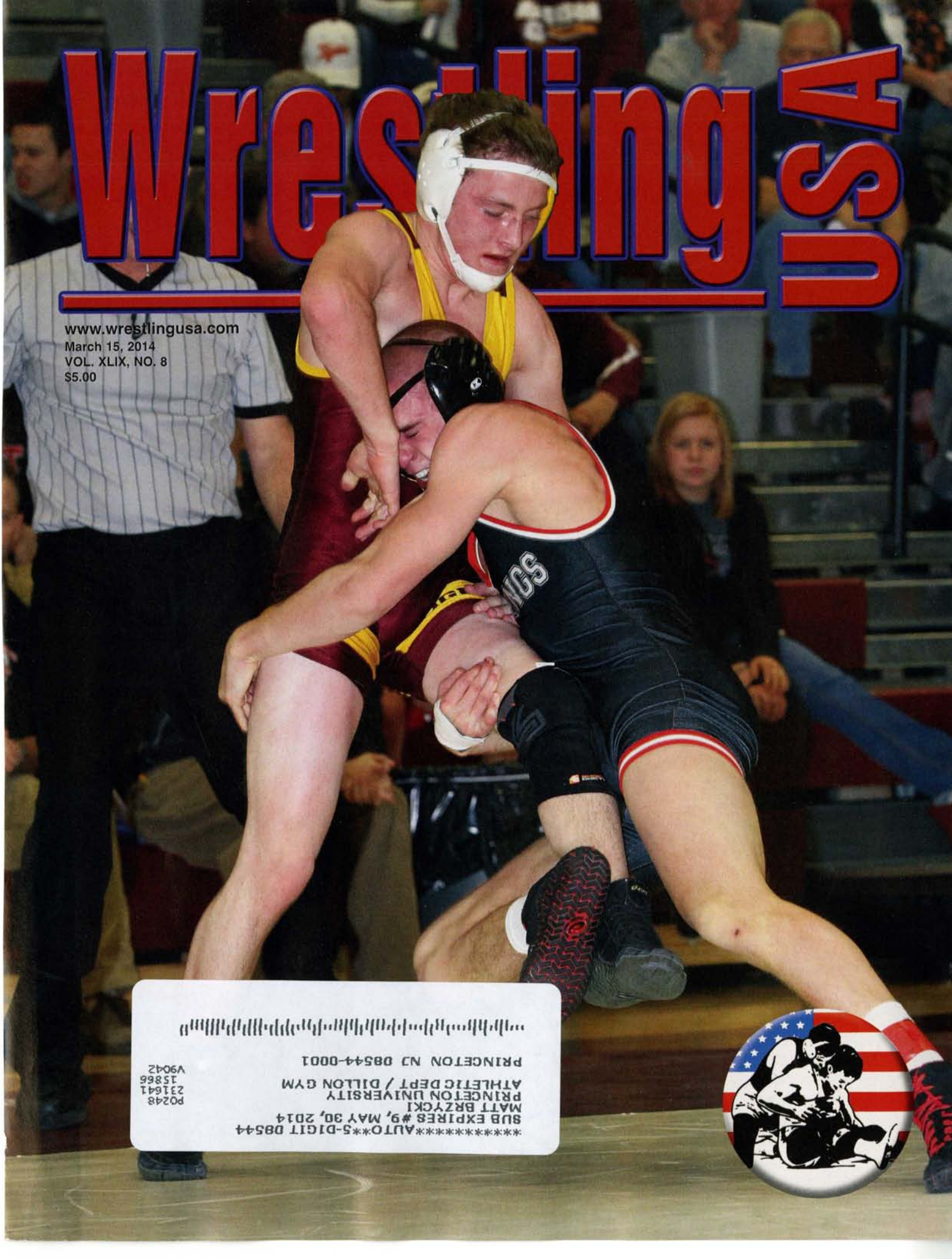


HOW MANY REPS?

By Matt Brzycki

Strength programs have many variables. This includes the number of sets, recovery between sets, number of reps, speed of reps, volume of training, order of exercises, frequency of training and type of equipment. In regards to improving physical appearance, one of the variables that individuals often manipulate is the number of reps.

LOW REPS v HIGH REPS

For decades, it has been thought that doing low reps will increase muscular size ("bulk") and high reps will increase muscular definition ("tone"). However, the vast majority of scientific research fails to support this contention. Let's look at three studies that investigated the effect that different numbers of reps had on various indicators of muscle size.

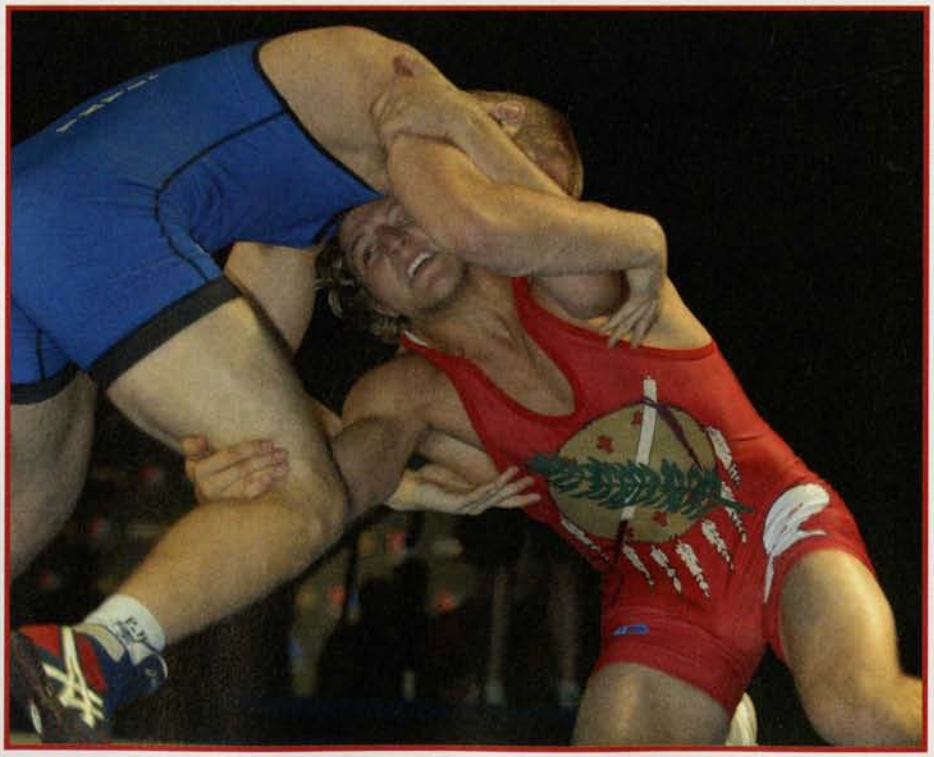
STUDY #1

Researchers at the University of Victoria in Canada randomly assigned 24 male subjects (average age 24.2) to two experimental groups. Both groups did four "core" exercises with free weights for the triceps and biceps (close-grip bench press, tricep extension, bicep curl with a barbell and bicep curl with dumbbells) and "supplemental" exercises with free weights for the chest, upper back ("lats") and shoulders (bench press, bench pull and seated press).

One group did six sets of four reps of the core exercises and two sets of the supplemental exercises with three minutes of recovery between sets. The other group did three sets of 10 reps of the core exercises and one set of the supplemental exercises with two minutes of recovery between sets. The two groups performed each set to the point of muscular fatigue.

The groups trained three times per week for 10 weeks. There was at least 48 hours of recovery between sessions. (A third group acted as a control and didn't train.)

Both of the rep protocols produced significant improvements in muscle cross-sectional area, muscle girth (circumference) and skinfold measurements. There were no significant differences between the two groups in any of those measures. (Side note: Both protocols also produced significant improvements in strength with no significant difference between groups.)



2013 Junior Freestyle National Championship Finals - 195 lbs. Joel Dixon (Oklahoma) attempting a takedown shot on Mitch Sliga (Indiana). Sliga won by technical fall over Dixon 10-0. Photo by Wyatt Schultz.

STUDY #2

Researchers at Georgia Southern University randomly assigned 44 male subjects (average age 21.1) to three experimental groups. (Six subjects withdrew from the study for personal reasons; the remaining 38 subjects were used for data analysis.) The three groups did one exercise with free weights for the lower body (squat).

One group did four sets of 3 to 5 reps, the second group did four sets of 13 to 15 reps and the third group did four sets of 23 to 25 reps with six minutes of recovery between sets. The three groups performed each set to the point of muscular fatigue.

The groups trained three times per week for seven weeks. The amount of time between sessions wasn't specified. (A fourth group acted as a control and didn't train.)

All of the rep protocols produced significant improvements in quadriceps thickness. The groups that did moderate reps and high reps increased thigh girth more than the group that did low

reps which, interestingly enough, is the exact opposite of the prevailing notion. None of the rep protocols produced a significant increase in bodyweight or hamstring thickness. The researchers didn't compare the differences between groups in any of the measures.

STUDY #3

Researchers in Switzerland randomly assigned 25 male subjects (average age 36) to two experimental groups. Both groups did three exercises with machines for the lower body (leg press, squat and leg extension).

One group did four sets of 3 to 5 reps with three minutes of recovery between sets. The other group did two sets of 20 to 28 reps with one minute of recovery between sets. The two groups performed each set to the point of muscular fatigue.

The groups trained two times per week for the first four weeks and three times per week for the last four weeks. The amount of time between sessions wasn't specified.

Both of the rep protocols produced significant improvements in muscle cross-sectional area. There were no significant differences between the two groups. (Side note: Both protocols also produced significant improvements in strength and muscular endurance with no significant differences between groups.)

THE LAST REP

Note that in all three studies, each set was done to the point of muscular fatigue. This is something that shouldn't be overlooked in any strength program. The fact of the matter is that you must reach – or at least approach – muscular fatigue in order to maximize your physical development.

Other than monozygotic (identical) twins, each individual has a different genetic potential for achieving muscular definition and muscular size. Some are predisposed toward developing highly defined physiques while others are predisposed toward developing heavily muscled physiques. Whether sets consist of low reps, high reps or something in between, you'll still develop according to your genetics.

Editor's Note: Matt Brzycki has authored, co-authored and edited 17 books on strength and fitness including four that are devoted to wrestling. His latest book is A Practical Approach to Strength Training (4th edition).