Not All Exercises Are Created Equal

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Università degli Studi di Palermo
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We read with interest the report “Comparison of Aerobic Versus Resistance Exercise Training Effects on Metabolic Syndrome (From the Studies of a Targeted Risk Reduction Intervention Through Defined Exercise - STRRIDE-AT/RT)” in the September 15, 2011, issue of The American Journal of Cardiology. As the investigators clearly demonstrated, aerobic training (AT) had a significantly greater effect than resistance training (RT) on the metabolic syndrome score. We agree in general that these findings confirm previous data on AT, but we would point out that they make up only part of the multifaceted picture of correlations between exercise and the metabolic syndrome. In contrast to Bateman et al’s findings, other studies suggest that the combined effects of RT and AT may be more beneficial for lean body mass, which is essential for glucose and fat metabolism, than RT or AT alone. Also, Potteiger et al reported that RT is at least equivalent to AT on those variables. This conflicting results can be attributed to the extremely wide range of exercise variables; for example, AT may be performed in different ways to achieve the same results. Also, RT may be done using different methods that can have differing effects on muscle metabolism and signaling pathways related to insulin. Also, Holten et al and Bweir et al reported that RT positively affects insulin sensitivity and glycosylated hemoglobin levels. Focusing only on the difference between classic methods of AT and RT, without considering different methodologies of training, may underestimate the importance and the effects of these variables. We would also like to point out that 3 sets of 8 to 12 repetitions, as reported, is not of course the only method of RT and is certainly not the most effective. More studies on different kind of RT and AT need to be conducted before assuming at an absolute level that “RT was not effective at improving the [metabolic syndrome] score; however, AT was.” An RT program is a composite of several important variables, including (1) muscle action used, (2) type of resistance used, (3) volume (total number of sets and repetitions), (4) exercises selected and workout structure (e.g., the number of muscle groups trained), (5) the sequence of exercise performance, (6) rest intervals between sets, (7) repetition velocity, and (8) training frequency. Therefore we believe that research studies should take into account and give more attention to exercise variables, and this is especially true for RT.

Antonio Paoli, MD
Padua, Italy
Antonino Bianco, PhD
Palermo, Italy