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Reply to Martyn-St. James and Carroll

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TO THE EDITOR: Martyn-St. James and Carroll (5) manifest that they are surprised because they say "we emphasize bone mineral outcomes after only a 9-wk intervention." They think that we should have mentioned the "bone remodeling transient." The remodeling transient describes a change in bone mass that lasts one remodeling cycle following an intervention that disturbs the calcium homeostasis. First of all, this was not the aim of our study. Second, we did not emphasize our "bone mineral outcomes after the training period," we reported just the effects of the training program on serum osteocalcin, as well as on bone mass (BMC) and bone mineral density (BMD) in several regions (4). Of course we did not mention the so-called "bone remodeling transient" since we did not perform histomorphometric analyses, which require bone tissue. Furthermore our study was not designed to determine if the training program was able to produce a permanent elevation of bone mass. The latter would have required at least 12 mo (assuming that the duration of one remodeling cycle is at least 6 mo). Actually, most physiological adaptations to training are temporary and bone is not an exception. We report a significant enhancement of BMC and BMD in several regions in both sexes after just 9 wk of training, a finding that is not that common (3). Without the continuation of the training stimulus it is very likely that the bone mass gained with training will be lost during the following months (3). According to the "bone remodeling transient theory" the increase observed in bone mass and osteocalcin may be just temporary, we do not have anything to object to this possibility. Was our training method not osteogenic? The response is very clear: our training program was osteogenic, likely due to the combination of strength training with exercise generating high rates of strain in several skeletal regions (1, 2, 6). What our study adds to previous knowledge is that it shows that the osteogenic effect may be detected after only 9 wk of training. The question that remains is whether this osteogenic effect would be similar were this training program applied over 6, 12, or 24 mo. This can only be answered by doing the appropriate experiments, particularly when it remains unknown what is the duration of the remodeling transient in our study population and how our exercise program could affect the remodeling transient.

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