9 - Special Populations

Does this stuff work for everyone?

We have argued that highly individualized training is necessary to reach close to full genetic potential, and that the closer the trainee gets to his or her genetic potential, the more important this specificity becomes. But this raises a question: Do the training models presented here, when applied at the appropriate level—novice, intermediate, and advanced—work for all populations? Do they work for women, children, older people, and injured people? And the answer is: Yes, they pretty much do.

Women

It is very important to understand the following true thing: women are not a special population. They are *half* (more, actually) of the population. With very, very few exceptions, they are trained in exactly the same way as men of the same age and level. By virtue of a different hormonal profile, the magnitude of change in strength and mass will differ, but the biological processes that bring about those changes are otherwise the same as those in men. Since the processes are the same, the methods used to affect progress are also the same. And the response to the method depends on the effectiveness of the method, not the sex of the individual using it. Many excuses have been made over the centuries that exercise has been practiced, sometimes by women, but usually for them. The bottom line is that everyone, regardless of sex, gets out of a correctly designed training program exactly what they put into it. Ineffective "firming and toning" routines have no basis in physiology, and the results obtained from them demonstrate this rather conclusively.

That said, there are several important differences between the performances of men and women, both in the weight room and on the field. As a general rule, women do not have the same level of neuromuscular efficiency as men. This is probably due to the differences in hormonal profile and the much lower levels of testosterone, and it is evident across the spectrum of performance. Women can use a higher percentage of their 1RM for more reps than men can, probably because their 1RM performance is not as efficient in demonstrating true absolute strength. Their performances at max vertical jumps, throws, snatches, cleans, jerks, and other explosive movements that involve high levels of motor unit recruitment are performed at lower levels than those by men of the same size and level. And, while levels of absolute strength relative to muscle mass are essentially the same in the two sexes, women's upper body movements suffer from the large relative difference in local muscle mass distribution.

As a practical matter, if daily, weekly, or monthly programming models are used to increase strength or power, some modifications are required for women since the intensities used are based on the individual 1RM, and women can work with a higher percentage of this 1RM for reps. For example, table 7-2 indicates that 70% for 10 reps would constitute a heavy set with a high adaptive stimulus, when, for women, this is only a medium set with a moderate adaptive stimulus. Table 9-1 adapts the data in table 7-2 for female populations. By the same token, if increased mass is the goal, a relatively larger amount of high-volume work over a longer time at a slightly higher intensity would be needed.

But if the hormonal fluctuation model (see chapter 8) is used, no modifications are absolutely required. Even though female testosterone levels are lower, a depression of the ratio of testosterone to cortisol is the important factor, and the

hormonal fluctuation model has been effective in accomplishing this in both sexes. The menstrual cycle, however, may introduce another scheduling factor: there is a testosterone peak at 12 days before ovulation that may affect the way HFM works for women. Scheduling maximal workloads to nearly coincide with this peak could possibly accelerate recovery and supercompensation. However, no data has yet to demonstrate that such timing would significantly improve performance. The variability of discomfort and associated effects of menses requires close cooperation between trainee and coach. For simplicity and comfort, for some women it may be appropriate to program an offload week during menses.

One other consideration: the average American female is both iron and calcium deficient. Both of these deficiencies may affect health and performance. Low iron stores can affect metabolism and oxygen transport, leading to a perception of chronic low energy or fatigue. Altering the diet to include more iron-rich foods, cooking with cast iron cookware, and considering iron supplementation is a good idea. Low calcium intakes predispose every age group to lower bone density and degeneration (osteopenia). Virtually every study examining weight training with osteoporotic women shows dramatic improvement in bone density. Calcium supplementation improves upon that effect.

So, there are differences in the physical characteristics of the two sexes, but they still are trained the same way. The mechanisms of progress and development, while constrained at different levels by the hormonal milieu, operate the same way. Mammalian physiology is much older than the human species; with very few exceptions, the rules are the same for all of us. Tissues adapt to stress by getting stronger, and the response to the stress is a function of the stress, not the sex of the organism to which the tissue belongs.