



Q: Dear Coach: I wish to exercise, lose weight, and see results! I participate in twice weekly circuit training with a girlfriend and we do timed sets of 90 seconds per exercise, multiple repetitions, before changing sets - such as squats with weights, or ball squats, circuit machines, and similar. I like to keep up my cardio training. Are we on the right track? - "Circuit Trainer" .

A: Dear Circuit-Trainer: Congratulations for your will-power. Short-term weight loss is the result of a basic physiological equation: more out and less in! In other words, more exercise output and thus use of stored fuel or energy sources combined with a decreased caloric intake (less food or high-calorie drinks) should result in the mobilization of fats and a loss of overall body weight. Strategies such as reducing salt in one's diet can result in less water retention and thus serve as a short-term weight loss strategy, also.

The basic equation for weight loss is:

- 1lb = 3500 kCal (calories)
- 2 lbs = 7000 kCal
- 1 kg = 2.2lbs = 7700kCal

If you wish to lose 1kg of bodyweight in a week, you will have to reduce your caloric intake and/or increase your exercise output by at least 1100kcal per day!

As a Strength and Conditioning Coach, I like to advise that long-term exercise and lifestyle strategies for management of weight and body composition are preferred. This requires developing an understanding of specific weight training goals and cardiovascular and intensity-training methods, and it helps us better answer your question.

If you are doing circuit weight training of 90-second circuits, I would estimate that you are performing close to 35 - 45 repetitions of exercise per set. At this volume, the exercise would serve as a cardiovascular endurance activity. My concern would be the difficulty to maintain correct form during this high-volume repetition set.

Overall, if you simply want to manage your weight and maintain a lean body mass, a schedule of cross-training with cardiovascular exercise, muscular endurance, and high-intensity interval training to mix-up the routine should be an effective strategy.

Muscular endurance programs are targeted toward slow-twitch Type I muscle fibers - those that give the appearance of long, lean, toned muscles - like female ballet dancers, rowers, triathletes, distance cyclists, or marathon runners. Also, for those genetically embellished with a greater proportion of Type II fibers (the power, strength, bulking, body building fibres), training with endurance is believed to convert some Type IIB to Type IIA fibres, a fast-twitch fibre that has an intermediate ability to manage fatigue, endurance, capillary density, and aerobic capacity, thus aiding your aerobic endurance training.

A muscular endurance program has the following qualities:

- Repetitions per set: 12 - 20 (or ≥ 12)
- Number of sets: 2- 3
- Rest period between sets: ≤ 30 seconds



- Weight load lifted: $\leq 67\%$ your maximum of a single lift (repetition max); and I would recommend that you aim for 30 - 40% of your maximum lift capacity to predominantly target your oxidative, aerobic system

Your circuit training program, if coordinated by time, could be modified to allow for 30 - 45 seconds of controlled exercise repetitions in a set with a 20 - 30 second rest followed by a repeat of the set. For example:

- 30 seconds work: 30 seconds rest: 30 seconds work = 90 seconds total
- 35 seconds work: 20 seconds rest: 35 seconds work = 90 seconds total
- 45 seconds work: 30 seconds rest: 45 seconds work = 120 seconds total

Add some cardiovascular sessions during your work-outs - such as over 30 minutes of sustained continuous cycling and some interval training - such as spin cycling classes with interval sprints or jumps - and you're on your way to your training goal!

Aim for 3 - 4 mixed sessions per week (at least 1 - 2 with some muscle endurance and strength training) since you are beyond the brand new beginner stage and progress to 4 - 7 sessions per week as your training progresses.

Long term training with some muscular strength and endurance training will help increase your basal metabolic rate and your lean body mass. Cardiovascular endurance training will help you lower your body fat and weight and improve your overall health profile.

Guest response - Sara Pazell, director of L'Amour Yoga Institute Pty Ltd, is a strength and conditioning coach, occupational therapist, personal trainer and group fitness instructor. She is a fellow Paradise Training trainer with Coach Tim.