

Metabolic Assessments – The Key to Unlocking Your Potential

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Most people associate the word *metabolism* with weight loss, but understanding how your metabolism functions at rest and during exercise is extremely important for anyone who wants to unlock their potential and improve their body composition, fitness or athletic performance. A metabolic assessment allows us to “get under the hood” and see how efficiently (or inefficiently) your engine functions, giving us a detailed snapshot of your metabolic profile and your specific calorie requirements and optimal heart rate training zones. Until recently, this medical technology was incredibly expensive and only available in clinical environments and to professional sports teams. Now, with companies like KORR™ leading the way, metabolic assessments are affordable and available to the masses.

Why is a metabolic assessment so valuable? Your metabolism is as unique as your fingerprint. It is influenced by a myriad of physiological, environmental, and genetic factors including body composition, stress, activity and fitness level and diet. Your metabolism is also dynamic. It changes over time (both positively and negatively) in response to changes in those variables. Without a metabolic assessment to accurately measure your metabolism, we must use out-dated estimation equations that, unfortunately, have a significant margin of error. The Harris-Benedict Equation, used to estimate calorie needs, has a +/-500 calorie/day margin of error, and has been found to be accurate for only about 20% of the population. The equation used to calculate heart rate training zones ($\text{Heart Rate Max} = 220 - \text{Age}$) has a standard error of 10 beats/minute and a potential error of 20 beats/minute. Why are these equations so inaccurate? Because they use generic variables such as age, height, weight and gender and ignore those aforementioned variables unique to the individual that directly affect metabolism. For example, these equations assume all women of the same age, height and weight have the same calorie requirements. Obviously that is not the case. Think all men that are Lance Armstrong's age have the same max heart rate and training zones? You get the idea.

How does a metabolic assessment work? Wearing a comfortable mask, the KORR™ CardioCoach CO₂ system analyzes your body's consumption of oxygen and production of carbon dioxide. It is one of the few portable systems that measures both gases in a mixing chamber. Measuring both gases is critical to understanding your metabolic profile because it measures total calories (a function of oxygen consumption) *and* the relative percentages of fat and carbohydrate utilization (a function of carbon dioxide production).

We first measure your Resting Metabolic Rate (RMR), which is the minimum number of calories your body requires on a daily basis. You simply relax in a reclined position for 10-15 minutes while we monitor your respiration. RMR is the foundation of an effective weight loss program. While it's obvious that eating too many calories can lead to weight gain, eating too few calories can also impede weight loss and actually increase fat storage. It's equally important for athletes to measure their RMR in order to fuel the energy demands of, and ensure complete recovery from, an athletic training program. Without enough calories, training and performance suffer and the recovery process is short-circuited, which can lead to increasing fatigue, decreasing performance, and even illness or injury.

Next, we measure your Active Metabolic Rate (AMR) to see how your metabolism functions during exercise. Depending on your goals and current fitness level, you will walk or run on a treadmill, or ride a stationary bicycle, for 10-12 minutes as we progressively increase the workload while monitoring your respiration and heart rate. This assessment measures Aerobic Threshold (AeT), Anaerobic Threshold (AT), VO₂max, and how many calories and how much fat and carbohydrates your body burns at various exercise intensities. For those interested in weight loss, this assessment identifies the heart rates at which you burn the most fat and provides key insights on how to improve your body's ability to burn fat. For athletes, this assessment identifies powerful predictors of performance (namely, AT and VO₂max) which are extremely valuable training tools used to improve performance and optimize recovery.

Whether your goal is weight loss, fitness improvement or athletic performance, a metabolic assessment is a worthwhile investment that gives you the tools to reach your goals.