

## Tool: Why Should You Exercise?

Exercise is an undeniably healthy behavior. In addition to keeping your body strong and fit, it stimulates physiological changes that can help prevent disease. The table below breaks down the biological processes at play during each stage of exercise, and some of the long-term health benefits that people who exercise may expect to experience. Be sure to also review the charts on the next page, which demonstrate visually metabolic rate before, during, and after exercise.

STAGES OF EXERCISE				
At rest	Initial Burst (0–10 sec)	10–90 seconds	90+ seconds	Long-Term
ATP is made from carbs and fat.	ATP is made from creatine phosphate.  Metabolic rate remains at resting levels.	ATP is made from cytoplasm carbs through anaerobic metabolism. Glucose is converted to pyruvic acid, which begins to generate lactic acid.  Metabolic rate rapidly increases.	ATP is made from fat as glycogen in muscles depletes. The moment of running out of carbs is called “hitting the wall.”  Lactic acid builds up in the muscles and produces a tired feeling.  Metabolic rate levels off at its peak and then begins to drop rapidly. Initially, it will settle lower than when you began, but will gradually recover to its original rate over time.	The body gets more efficient at converting lactic acid back to glucose the more you exercise, increasing your stamina.  Increased turnover of neurotransmitters (norepinephrine, epinephrine, serotonin, and dopamine) from exercise has anti-depressive effects. Less depression leads to more self-efficacy and therefore better dietary and health choices.  People who exercise experience lower mortality rates regardless of BMI.

The chart on the left shows how your respiratory quotient (RQ), a measure of metabolic rate, changes depending on which type of substrate is being burned for energy at different stages of exercise. The chart on the right compares metabolic rate during and after exercise. Notice that the curves match!

