Trust Your (Healthier) Gut: How Exercise Changes Our Microbiome

When considering the ways in which exercise can alter one’s body, we often think of the resulting changes in physical appearance, such as reduction in body fat or increase in muscle mass. A new study provides insight into the ways in which exercise can affect portions of the body that seem uninvolved in workouts.

According to a group of researchers at the University of Illinois, exercise may change the composition and activity of the trillions of microbes in our guts. Over time, this could improve our health and metabolism. Our microbiome includes a number of different species of microbes that interact, compete and release various substances that play a part in weight control, inflammation, immune responses and many other aspects of health throughout our bodies. Although our microbiomes tend to be relatively stable, this can change with diet, illness, certain drugs, weight and other factors.

Researchers at the University of Illinois wanted to see if exercise would affect the functioning of microbes in humans and if these humans would be better able to resist and heal tissue damage and reduce inflammation than those who did not exercise. This was a follow-up to an earlier animal study in which the same researchers discovered that animals, who received gut bugs from physically active lab mice, had better microbe functioning than those whose microbes had come from sedentary mice.

The human volunteers were asked not to change their normal diets while their aerobic fitness was tested during a twelve-week supervised training program. The researchers discovered that everyone’s gut responded uniquely to the exercise. The gut bugs in some volunteers had increased in numbers while in others, it had declined. However, the researchers did find some similarities. They noticed a widespread increase in certain microbes that help to produce short-chain fatty acids. These fatty acids are believed to aid in reducing inflammation in the gut and the rest of the body. They also work to fight insulin resistance, a precursor to diabetes, and aid our metabolism. Furthermore, this increase in short-chain fatty acids was greatest in volunteers who had begun the experiment at a lean weight compared with those who were obese. These findings suggest that exercise training induces compositional and functional changes in the human gut microbiome that are dependent on obesity status, independent of diet and contingent on sustained exercise.

Overall, the study’s results suggest that even a few weeks of exercise can alter the makeup and function of people’s microbiomes. Jeffrey Woods, Professor of Kinesiology and Community Health at the University of Illinois, who conducted the study, stated that these changes could contribute to some of the broader health benefits of exercise, such as its ability to reduce inflammation throughout the body. The findings of this study are perhaps another reason to stick to our exercise resolutions this year.

References:
Eating Disorders 101: Who, What, Why?

Eating disorders are mental illnesses characterized by disturbed eating or eating-related behaviors that can result in cardiovascular, cognitive, and other serious physical and psychological complications. Currently it is estimated that up to 30 million Americans will suffer from an eating disorder during their lifetime. The diseases include, among others, Anorexia Nervosa (intense fear of gaining weight), Bulimia Nervosa (eating large amounts of foods in a short time with compensatory behavior), Binge Eating Disorder (eating large amounts of foods in a short time without compensatory behavior), and Other Specified Feeding or Eating Disorder (symptoms characteristic of an eating disorder that do not meet full criteria for other disorders).

For those suffering from an eating disorder, treatment is not a straightforward process. It can take anywhere from months to years for a person to fully recover and relapses are not uncommon. It is best for treatment to include a multidisciplinary approach consisting of medical, psychiatric, psychological, and nutritional interventions in combination with support from friends and family. Treatment can take many forms, depending on the severity of the illness, and can range from being followed on an outpatient basis by a health care team to enrolling in a residential treatment facility.

Reference: