MedicalXpress

Irregular exercise pattern may add pounds

February 4 2008

The consequences of quitting exercise may be greater than previously thought, according to a new study from the U.S. Department of Energy's Lawrence Berkeley National Laboratory that determined that the weight gained during an exercise hiatus can be tough to shed when exercise is resumed at a later date.

The study, conducted by Paul Williams of Berkeley Lab's Life Sciences Division, found that the key to staying trim is to remain active year-round, year-after-year, and to avoid seasonal and irregular exercise patterns. Most of all, don't quit. Failure to do so may be a contributing factor in the nation's obesity epidemic.

"The price to pay for quitting exercise is higher than expected, and this price may be an important factor in the obesity epidemic affecting Americans," says Williams, whose study is published in the February issue of the journal *Medicine & Science in Sports and Exercise*.

The study should prompt people to think twice before taking a break from their exercise regimens, despite the pressures of family and work obligations, or waning motivation.

Using data collected from the National Runners' Health Study, Williams found that the impacts of increasing and decreasing vigorous exercise aren't the same among all runners. At distances above 20 miles per week in men and 10 miles per week in women, the pounds gained by running less were about the same as the pounds lost by running more. At these exercise levels, the effects of training and quitting training are

comparable, and the weight gains and losses associated with changes in exercise levels are probably reversible.

However, Williams found that people who didn't run as many miles per week face an uphill battle if they want to lose the pounds accumulated during an exercise hiatus. At these less intense levels, an interruption in exercise produces weight gain that is not lost by simply resuming the same exercise regimen.

"At lower mileages, there is asymmetric weight gain and loss from increasing and decreasing exercise, leading to an expected weight gain from an exercise hiatus," says Williams. "In other words, if you stop exercising, you don't get to resume where you left off if you want to lose weight."

Specifically, Williams compared 17,280 men and 5,970 women who decreased their running distance with 4,632 men and 1,953 women who increased their running distance over a 7.7-year period. He found that runners who decreased their distance from five to zero miles per week gained four times as much weight as those who decreased their distance from 25 to 20 miles per week. He also found that people who started running after an exercise layoff didn't lose weight until their mileage exceeded 20 miles per week in men, and 10 miles per week in women.

Williams says his findings suggest that an effective public health policy for preventing weight gain may need to include a strategy to keep physically active people active. His study also underscores the importance of avoiding start-stop exercise patterns. Exercise designed to prevent obesity may fall short of its benefits if the exercise is irregular, seasonal, or often interrupted.

"We are getting fat because we don't exercise sufficiently and consistently. The real solution to the obesity epidemic is getting people

to exercise before they think they need it, and to stick with it," says Williams. "The ounce of prevention is indeed worth a pound of cure."

A study by Williams published in the same journal in August, 2007, revealed that middle-age weight gain is reduced by one-half in runners who ran 30 or more miles per week, compared to runners who ran less than 15 miles per week. These results, in conjunction with this more recent study, suggest a new way of tackling the obesity problem.

"Many scientists attribute the obesity epidemic to excess calories rather than exercise, because dieting has been shown to produce more weight loss than exercise," says Williams. "My findings suggest that calorie intake and body weight may be self regulating in active individuals."

Source: Lawrence Berkeley National Laboratory