

## [ research shorts ]

## Type 1/Type 2

## Gym Makeover Benefits Kids

Tweaking gym classes to be small and super-active can help make overweight kids more fit, according to a recent study. The kids who were part of such classes lost body fat and saw improvements in their cardiovascular health and insulin sensitivity—all ways to lower risk for type 2 diabetes.

In a rural school outside of Madison, Wis., researchers divided 50 overweight 12-year-olds into two different physical education programs for the year.



ARIEL SKELLEY/MASTERFILE

Half the kids took traditional gym classes with their peers at school. Class size was larger (35 to 40 students) and kids exercised for only 25 minutes of the 45-minute period. They played team sports like kickball and football, in which kids stood around more, either waiting to be picked for teams or standing in line.

The other half took a “fitness-oriented” program, in which the class size was smaller (14 students) and kids exercised for roughly 42 minutes of the 45-minute class. These kids learned how to speed walk and ride bicycles, activities they could engage in the rest of their lives.

The kids in the fitness program improved their cardiovascular fitness by 10 percent and improved their insulin sensitivity, while the kids in the traditional program saw no change in either. The fitness kids also lost more body fat.

The study was published in the October 2005 *Archives of Pediatrics and Adolescent Medicine*.

—Kate Ruder

*The Research Shorts section features articles about cutting-edge research relating to diabetes. The studies presented in this section involve products, technologies, and theories that are in the early stages of testing and development. Because there's no way to know which studies will pass the test of time, it's important that readers not base any treatment decisions on these results.*

## Type 2

## Water Pill May Help Kidney Disease

A water pill used to treat high blood pressure may also help people with type 2 who have kidney disease. In a study of 20 people with type 2 and kidney disease who were taking blood pressure drugs, Danish researchers found that adding spironolactone (Aldactone) to the mix of drugs reduced the participants' albuminuria levels. Albuminuria (protein in the urine) is a sign of kidney disease.

In the study, each participant took either spironolactone or placebo (dummy pills) every day for 8 weeks in addition to the other blood pressure medications he or she was already taking. After 8 weeks, the participants provided three urine specimens, each 24 hours apart. Then those who took spironolactone were switched to placebo for 8 weeks, and those who took placebo were switched to spironolactone.

At study's end, the researchers discovered that albuminuria had decreased 33 percent in the participants while they were taking spironolactone. After analyzing the data, the researchers determined that such a reduction in albuminuria could mean a 29 percent lower chance of developing end-stage renal

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disease, the final phase of kidney disease.

There was one small caveat: The participants' average A1C rose from 7.8 percent to 8.1 percent while taking spironolactone. (Both numbers indicate a need for improved blood glucose control.) However, the researchers noted that the benefit of reduced albuminuria most likely outweighs the potential negative effects of a slight increase in A1C.

This study appeared in the September 2005 issue of *Diabetes Care*.

—Terri D'Arrigo

## Type 2

### Smokers At 3-Fold Risk Of Diabetes

News about smoking just got worse: If you're a smoker, you're nearly three times more likely to develop type 2 diabetes than a non-smoker.

Scientists examined 514 women and 392 men. Participants included whites, African Americans, and Latinos between the ages of 40 and 69; none of them had diabetes.

After 5 years, researchers compared the incidence of diabetes in smokers and non-smokers. Participants were considered smokers if they described themselves as "current" smokers and had smoked

more than 100 cigarettes during their lifetime.

Twenty-five percent of smokers as opposed to 14 percent of non-smokers had developed type 2 diabetes at the 5-year follow-up.

Interestingly, former smokers did not have an increased risk of diabetes as compared with people who had never smoked, suggesting that quitting can reverse the trend.

Smoking appears to be an independent risk factor for developing diabetes, and although

the link is not new, previous studies have focused on white men. Strengths of this research are that it included both men and women belonging to three ethnic groups.

Previous research has shown that smoking impairs your ability to use insulin effectively and that chemicals in cigarettes, such as nicotine, are linked to a higher risk of diabetes.

The recent study appeared in the October 2005 issue of *Diabetes Care*.

—Kate Ruder



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