

Exercising may “hurt” more for diabetics

With Diabetes, Exercise “Pain” May Limit Health Gains

By Todd Neff

No pain, no gain. So goes the old iron-pumping mantra.

Type 2 diabetes, though, might be turning this maxim on its head. That’s according to Amy Huebschmann, MD, an assistant professor of General Internal Medicine at the University of Colorado School of Medicine who studies ways to overcome barriers to exercise so vital to the health of diabetics and everyone else.

Huebschmann’s overarching research goal is to reduce the effects of cardiovascular disease on women with type 2 diabetes. Recently, her work has focused on a narrower question that nonetheless has big implications. What if people with type 2 diabetes actually feel *worse* than non-diabetics when they exercise?

Two Huebschmann studies, one of which is going on now at University of Colorado Hospital, indicate that indeed, exercise feels harder to diabetics than others of similar age, body-mass index, and physical activity habits.

The National Institutes of Health (NIH) this month awarded her a three-year, \$300,000 career-development award through the Colorado Clinical & Translational Sciences Institute to develop an exercise program that takes these differences into account, allowing more gain for less pain.

When the going gets tough. Conventional wisdom holds that the harder something is, the less likely it is that most of us will do it. Science backs this up. “One study found that obese individuals who lost weight gained it back faster if exercise felt harder to them,” Huebschmann said.

It’s a subtle but potentially significant point for health care providers struggling to manage the rapidly growing type 2 diabetes patient population. The NIH estimates that roughly 20 million adults have type 2 diabetes – in which the body either resists

insulin or can’t produce it fast enough to break down sugar – with perhaps 1.4 million new cases each year. The American Diabetes Association estimates those patients rack up \$174 billion in direct and indirect medical costs annually.

Exercise is vital for them to control blood sugar and reduce their risk of cardiovascular disease. Yet it’s undeniably difficult for diabetics to maintain physical fitness.

Huebschmann got interested in the diabetes-exercise connection during medical school, when her father, an executive with a hectic schedule, was diagnosed with type 2 diabetes.

“He was a former athlete, but he really didn’t have any idea about what kind of exercise he should be doing to keep up his health,” Huebschmann said. “He kind of thought his weekend yard work would be enough.”

In 2009, Huebschmann published an article based on work done in the 1990s by Judith Regensteiner, PhD, director of CU’s Center for Women’s Health Research. Huebschmann found that, indeed, diabetics seem to perceive a given amount of exercise as more difficult than non-diabetics with similar characteristics.

The follow-up. Two years ago, she launched a follow-up study to quantify these differences. “This study will also measure blood lactate during exercise and other factors that might



Amy Huebschmann, MD, is studying why people with type 2 diabetes have a harder time than others in taking off weight and keeping it off.

influence a patient's tolerance for exercise," Huebschmann noted. Psychological factors are taken into account along with physiologic factors.

Huebschmann has enrolled 35 of the 50 women she needs to complete the study, called EXPRESS (for Exercise-related Perceived Rate of Exertion at Steady-State in type 2 diabetes).

Hollie LaGrotta, 55, enrolled in the study last winter. She said the prevalence of type 2 diabetes and the benefits exercise brings diabetics make Huebschmann's research vital.

"I think it's incredibly, enormously needed," she said.

For more information or to learn about enrolling in the EXPRESS study, contact Jordan Thomas at Jordan.thomas@ucdenver.edu or (720) 848-6690.

Exercise Tips for Type 2 Diabetics (and the rest of us, too)

Having a hard time getting motivated to get out the door? Amy Huebschmann, MD, has a few suggestions to help you move.

- » Set aside time on your calendar for exercise – make it an appointment on your calendar so it's an obligation and not just an option.
- » Find someone to exercise with, or to at least encourage you to exercise. Family and social support is closely linked with successful exercise programs.
- » Choose exercise that works for you. Do you like to dance? Dance! Do you like to walk? Walk! Don't feel like the only way to exercise is at the gym.
- » Don't feel like you have to train for an Ironman triathlon. Medically speaking, a total of 2.5 hours a week – done in at least 10-minute stretches – gets the job done (for more tips, see the 2008 Physical Activity Guidelines for Americans at <http://www.health.gov/paguidelines>)
- » Have ways to address fear of injury. If your blood sugar tends to drop when exercising, bring a snack along; if you're afraid of falling, stay on exercise equipment rather than venturing outdoors.