Ali Pohlmeier

While pursuing her doctorate in nutritional sciences at Texas Tech University, UTMB postdoc Ali Pohlmeier studied the pathophysiology of polycystic ovary syndrome or PCOS. She became intrigued by the possible connection between diet, insulin, and PCOS symptoms. Women with PCOS often have too much insulin because their bodies don’t use it effectively. Excess insulin leads to increased testosterone which can cause acne, male-pattern hair growth, abdominal weight gain and problems with ovulation—all symptoms of PCOS.

Pohlmeier was struck by the prevalence of PCOS—affecting 10 to 20% of all women according to the U.S. Office on Women’s Health. More than half of these women are overweight or obese and thus at increased risk for type 2 diabetes, cardiovascular disease, and cancer. Plus obesity often worsens PCOS symptoms, making a change in diet and lifestyle the first line of treatment. “I’m a dietitian,” Pohlmeier explained, “so naturally I began considering ways a change in diet could positively impact women diagnosed with PCOS.”

She developed a plan she labels a “modified Mediterranean” diet—higher in monounsaturated fats and protein, moderate in carbohydrates. Next she secured funding to conduct a pilot study from the Laura W. Bush Institute for Women’s Health. Pohlmeier found a research partner at Tech’s Health Sciences Center, Jennifer Phy, DO, a reproductive endocrinologist. Their year-long study began in 2012, with 24 subjects of reproductive age and a BMI between 25 and 45. Although 15 of the subjects were trying to conceive, that was not a criterion for the study.

The plan was simple—study participants were given a list of items to restrict from their diets, but they were also given freedom to eat as much as they wanted of anything on the list of approved foods—lean meat and poultry, fatty fish, vegetables, avocados, olives and olive oil, fruits, and nuts/seeds. After only 8 weeks, positive results included significant reductions in weight and waist circumference, fasting insulin, VLDL-cholesterol, triglycerides, and testosterone. Pohlmeier used a metabolic cart to measure each patient’s metabolism before and after the 8 week study. She found the women’s metabolism also improved, indicating the possibility their bodies were using insulin more effectively.

Remarkably, 8 of the 15 women trying to conceive became pregnant. Pohlmeier is quick to point out it is impossible to know how much the diet plan contributed to this result, if at all. “When Dr. Phy started seeing her infertility patients getting pregnant, the idea of maintaining a control group was no longer
possible,” Pohlmeier said. Recognizing the potential, however, Pohlmeier resolved to secure additional funding to continue her research on a larger scale. “Any diet that helps a woman with PCOS lose weight will decrease symptoms and increase her chances of becoming pregnant, but women with PCOS have a really hard time losing weight.” Pohlmeier asserted, “my diet plan allows them to eat until they are full and doesn’t require calorie or carbohydrate counting, which may have contributed to the positive results. I believe this plan has potential clinical significance.”

In 2013 after completing the study and receiving her PhD from Tech, Pohlmeier began work as a postdoc under Abbey Berenson, MD, PhD, in UTMB’s Center for Interdisciplinary Research in Women’s Health. The results of Pohlmeier’s pilot were recently published in *Applied Physiology, Nutrition and Metabolism*, and are under review for additional publications. “I’m looking at every possibility to obtain support for this research,” Pohlmeier said, “and I’m excited at the prospect of doing it at UTMB. Any step forward in treating PCOS, no matter how small, is really dramatic, because it can impact literally millions of women and their families.”