

# Women's Health

## Advancing Women's Health

“Why do some diseases affect women more than men? Why do women respond to some drugs and therapies differently than men? What environmental factors and behaviors most influence women's health? We don't know. But we want to find out. And we need the help of women of all ages from communities across Kentucky,” says Leslie Crofford, director of the Center for the Advancement of Women's Health.

The center is leading the Kentucky Women's Health Registry, which is collecting information to track health trends and recruit women to participate in medical trials. Crofford hopes to collect data from 25,000 Kentucky women over the next 10 years. (To participate,

visit [www.kywomensregistry.com](http://www.kywomensregistry.com).) The center is reaching out to women through research, student and resident training, and health information workshops, as well as primary care with an emphasis on prevention.

Crofford came to the center to continue her studies on rheumatic diseases, including arthritis and fibromyalgia—chronic, widespread muscle pain, accompanied by fatigue. In 2005 the journal *Arthritis & Rheumatism* published her study on Pfizer's drug Lyrica™, which was shown to significantly reduce the pain of fibromyalgia and improve sleep. “The inflammatory and stress-related diseases I study are much more common in women, so it's a natural fit.”



## Breaking the Cycle of Violence against Women

The safety of women and girls is the goal of the university's innovative Center for Research on Violence Against Women. The center began in 2002 and is led by Carol Jordan, who spent eight years on the executive staff of former Governor Paul Patton.

The program grew out of a recognized need to strengthen interdisciplinary research and graduate education that focuses on violence against women and to improve the status of women in higher education. It began as a small operation, but under Jordan's leadership has quickly grown into a nationally recognized center with four staff, four endowed chairs and professorships, 11 faculty associates, and two graduate students.

The first UK Women's Safety Study done in 2004, one of the largest studies ever to address the safety of college women, revealed that 36.5 percent of 1,010 female undergraduate and graduate students had been sexually or physically assaulted, or stalked. In response to these data, UK President Lee T. Todd Jr. committed an additional \$1.25 million to support improvements in campus safety. A follow-up evaluation study is under way this year.

Other center projects are analyzing trends in domestic violence protective orders over the past decade, investigating patterns in sentencing and parole board decisions in cases where victims of domestic violence kill the offender, and exploring patterns of homicide in cases of intimate partner violence through a review of autopsy records of women who have been murdered.

## Good Dental News for Expectant Mothers

In 2006 expectant mothers received some good news—treatment for periodontal disease is safe during pregnancy.

UK's John Novak and James Ferguson took part in the largest clinical trial ever to try to determine the connection between maternal periodontal disease and increased risk of pre-term birth and low birthweight. The results were published in November 2006 in the *New England Journal of Medicine*.

"Dental treatment is not usually recommended during the first trimester because this is such an important time in fetal development," says Novak, associate director of the College of Dentistry's Center for Oral Health Research. Ferguson is chair of the College of Medicine's Department of Obstetrics and Gynecology. This project was backed by a five-year NIH grant.

The study enrolled 823 women with periodontal disease, which is caused by bacterial plaque and toxins that accumulate under the gums. The volunteers, between 13 and 17 weeks pregnant, were divided into two groups: those who received periodontal treatment (cleaning the root to remove bacteria and toxins from below the gums) before the 21st week of pregnancy and a control group that received the same treatment after delivery.

The study also concluded that treatment for periodontal disease did not reduce the risk for pre-term delivery, low birthweight, smaller fetal growth, or serious levels of hypertension, but may reduce the risk for spontaneous abortions and stillbirths.



# Other Key Research

## New Treatments for Parkinson's

Parkinson's disease affects more than one million people in North America, progressively impairing control of body movement and often leading to immobility. In 1999, UK joined the fight against Parkinson's by establishing a Morris K. Udall Parkinson's Disease Research Center of Excellence (one of 12 in the United States) to develop new treatments and therapies.

Researchers at the center, directed by Greg Gerhardt (anatomy and neurobiology, left below), focused their work from the outset on a protein called glial cell-line derived neurotrophic factor (GDNF), which is produced by cells in the brain and required for the normal development and differentiation of dopamine cells.

In 2002 Gerhardt, Don Gash (anatomy and neurobiology, right below), and John Slevin (neurology and molecular and biomedical pharmacology) launched the first U.S. clinical trial of GDNF, sponsored by Amgen, a large biotech company that holds a patent on GDNF. The 10 patients in the UK trial had programmable pumps implanted in their abdomen, a system that delivered GDNF directly to a second implant—a small, multi-port catheter in the brain. The catheter dispersed the drug over a broad area in the brain involved in Parkinson's.

At the two-year point, all 10 patients had completed the Phase I leg of the trial, and all of those who had gotten GDNF reported that their lives had improved dramatically. No one reported any significant side effects.

But citing safety concerns and potential side effects of this drug, Amgen stopped the trial in 2004.

"This was a severe setback for the patients in our study, of course," says Gerhardt, "but the trial showed us that GDNF was definitely something to be further investigated." The UK research group then began working with a "brother" of GDNF, a molecule called Neurturin, which hits the same targets as GDNF. A California company, called Ceregene, has since sponsored a clinical trial, currently in Phase II, using this new molecule.

