

Infertility study unearths problems in Missouri

For the first time, researchers have found convincing evidence that semen quality differs significantly between regions of the United States.

A study led by Shanna Swan, PhD, an epidemiologist and research professor of family and community medicine, suggests that fertile men in more rural areas have lower sperm counts and less vigorous sperm than men in urban areas. Swan's team of researchers believes that environmental factors, such as extensive use of agricultural chemicals, might contribute to these differences.

Swan led a group of researchers who studied 512 couples receiving

prenatal care at clinics in Columbia, Mo., Minneapolis, Los Angeles, and



Professor Shanna Swan, PhD, directs the Study for Future Families.

New York as part of the ongoing Study for Future Families. The National Institutes of Health and the Environmental Protection Agency are funding the first two phases of the study for a total of \$5.6 million.

Swan's team has found that semen quality was equally high in Minneapolis and New York, and slightly lower in Los Angeles. However, men in mid-Missouri had counts and quality that were significantly lower than men from any of the urban centers.

"We believe that agricultural chemicals could be contributing to this decrease in semen quality," Swan says. "The county in which our Missouri participants lived is quite rural. In 1997, 57 percent of the land was used for farming, compared to 0 percent to 19 percent for the other three counties we studied. We are continuing this research and examining the exposure of men to specific chemicals used in farming."

Prior studies of semen quality were conducted in large metropolitan areas. The only other published study on a comparable semi-rural population analyzed semen quality among men in Iowa, and it also found reduced sperm concentration. Swan and her colleagues are now studying semen quality in Iowa City.

Swan's study involved researchers at the University of Minnesota, the University of California at Los Angeles Medical Center, the Mount Sinai School of Medicine, the University of California at Davis, and researchers in Denmark and Japan. The findings appeared in the Nov. 11 online journal of the National Institute of Environmental Health Sciences.