This research project was funded by the Wenner-Gren Foundation.

Pearl Memorial Speaker

Reproduction is costly for human females. There are energetic costs. Also, both the pregnancy and child rearing take time, which is not then available for an alternative reproductive effort. In addition, there are risks of long-term health problems and even death, if the pregnancy leads to uncontrolled increases in blood pressure, hemorrhage, or obstructed labor. Thus, one would expect facultative fecondability and selection for early loss of low quality or risky pregnancies. In some placental mammals, relatively little is required of the conceptus for implantation and gestation. The Virginia opossum implants only superficially, and there is no rescue of the corpus luteum. Pregnancy lasts only as long as a normal estrous cycle. The young are born so prematurely that the energy, time, and risks of pregnancy are small. However, in most mammals, pregnancy extends beyond the length of an estrus cycle, and the gestation must be maintained endocrinologically. Progesterone, produced by the corpus luteum, is the usual hormone for this purpose. In some species, the conceptus is not involved in extending the normal life span of the corpus luteum. For example, in rodents such as the laboratory mouse, mating stimulates rescue of the corpus luteum. Even if fertilization never ensues, the hormonal environment for pregnancy is maintained in pseudopregnancy. However, in primates, the conceptus must rescue the corpus luteum, and then within several weeks produce sufficient progesterone to maintain the uterine environment for pregnancy. In the North Carolina Early Pregnancy Study, we collected data for investigating the endocrine correlates of pregnancy loss. We enrolled 221 women at the time when they stopped contraception and started attempting to conceive. Women collected first morning urine samples daily for up to 6 months during their pregnancy attempt. The 151 women who became pregnant (based on clinical pregnancy testing) continued to collect first morning urine through their 8th gestational week. The urine samples from conceptive cycles for both unrecognition and clinical pregnancies were assayed for human chorionic gonadotropin (hCG), the endocrine signal from the conceptus that rescues the corpus luteum. A very sensitive hCG assay allowed us to estimate the day of implantation for both clinical pregnancies and very early pregnancy losses. Urinary estrogen and progesterone metabolite measurements allowed us to estimate the day of ovulation and identify corpus luteum rescue. This presentation will review the endocrine correlates of pregnancy loss in the context of possible adaptive reproductive strategies.

P: 20
Evidence for a positive secular trend in obesity in Colombia. TA Bekelman, DL Dufour. Department of Anthropology, University of Colorado, Boulder, Colorado.

The prevalence of obesity is increasing globally, and appears to be growing at a particularly rapid pace in Latin America. The best-documented examples are Brazil, where the prevalence of adult obesity doubled (from 6 to 12.4%) in the 22-year period of 1975–1997, and Chile, where the prevalence almost doubled (from 10 to 18%) in the 9-year period of 1988–1997. Trends in the prevalence of obesity have been less well documented for other countries in Latin America. Here we present data on the prevalence of obesity in Colombian women based on a preliminary analysis of the 2005 demographic and health survey (DHS). The 2005 DHS data were collected from a national sample of 38,143 women aged 15–49 years, and classified into five economic categories (poorest, poorer, middle, richer, richest) on the basis of household characteristics and ownership of durable goods. Obesity was defined as a BMI (weight, kg/height, m²) ≥ 30. The 2005 DHS data indicate that 14.5% of women were obese, a 63% increase from the figure of 9.2% reported for the 1995 DHS data. Our analysis of the 2005 DHS data also indicate that average BMI was positively associated with economic category (poorest = 24.2 kg/m²; poorer = 25.0 kg/m²; middle = 25.5 kg/m², richer = 25.9 kg/m², richest = 25.9 kg/m²), as was the prevalence of obesity (poorest = 10.6%; poorer = 13.8%, middle = 15.6%, richer = 18.1%, richest = 17.0%). These findings suggest a positive secular trend in obesity in Colombian women similar in magnitude to that reported for Brazil and Chile.