

Epidemiology: Contributing to basic science by looking at the big picture

Allen Wilcox,
Epidemiology Branch

Epidemiology is usually thought of as the scientific arm of public health. The macro-level observations of epidemiology can also provide insights or raise fundamental hypotheses of interest to laboratory scientists. Some examples come from NIEHS epidemiologic studies of fertility and pregnancy. The number of fertile days in a typical human menstrual cycle – long underestimated by biologists – was resolved in an epidemiologic study. Another example from epidemiology is the discovery of a connection between the rate of development of a fertilized human egg and the rate of fetal maturation. Finally, new data show a connection between a mother's age and gene methylation in her newborn – suggesting the possibility of undiscovered mechanisms of methylation.

Brief Biography

Allen J Wilcox is a Senior Investigator in the Epidemiology Branch, where he has worked for 35 years. His research specialty is reproductive and perinatal epidemiology. He has carried out studies on infertility, pregnancy loss, diseases of pregnancy, fetal growth and preterm delivery, birth defects, and cerebral palsy. He is author of *Fertility and Pregnancy: An Epidemiologic Perspective*, a textbook published by Oxford University Press. He is past president of the American Epidemiological Society and the Society for Epidemiologic Research. He served for ten years as Chief of the Epidemiology Branch, and recently stepped down after 14 years as Editor-in-Chief of the journal EPIDEMIOLOGY. He has an MD from the University of Michigan, a PhD in epidemiology from the University of North Carolina, and an honorary doctoral degree from the University of Bergen (Norway).