Measurement is a key issue in epidemiology and rightly receives considerable attention in most textbooks. In this issue of the IJE many of the key issues regarding measurement get an outing.

A first concern is with validity of measurement, and this might be a particular issue with respect to somewhat fuzzy categories, such as socioeconomic position. Laura Kauhanen et al. revisit the association of childhood social circumstances with mortality and morbidity in middle age in the Kuopio Ischaemic Heart Disease (KIHD) study. Many studies have found that deprivation in childhood is related to increased cardiovascular disease (CVD) risk in later life, but KIHD was an exception, with one of Kauhanen’s current co-authors having shown that childhood social conditions as reported in adulthood were not independently associated with CVD risk. With longer follow-up they replicate the earlier null finding with adulthood recall of childhood social circumstances but show considerably more evidence of increased risk of CVD when childhood conditions were indexed by historical data from school health records. Adulthood recall of childhood social circumstances may simply be too inaccurate to demonstrate an effect in this context.

In the field of dietary epidemiology, there has been considerable debate regarding which measurement tools provide greatest validity. Laurence Freedman et al. compare the dietary fat-breast cancer association using two dietary assessment methods in the same study population and find more evidence of a robust positive association with 4 day food record assessment of dietary fat intake than with food frequency questionnaire data. In a commentary Sheila Bingham and Nick Day, who have recently reported similar findings from a smaller study, demonstrate that the magnitude of effect of fat restriction on breast cancer in the Women’s Health Initiative (WHI) trial, widely reported as being null, is in fact in line with the magnitude of effect in observational studies utilizing food records. The problem in the WHI, as in many dietary intervention trials, is that it is difficult to help people to make substantial changes in their diet.

Studies utilizing food frequency questionnaires have produced misleading findings in many other areas, leading to the suggestion that it is time to abandon this method altogether. A particular issue in some of these misleading studies has probably been confounding—people who have (or at least report) more health dietary patterns display a wide range of sociodemographic, behavioural, and physiological characteristics that render them at decreased risk of disease, and conventional epidemiological methods cannot account for this degree of confounding. The IJE has been interested in methodological approaches to this problem, and in particular in Mendelian randomization, publishing a collection of articles exploring this relatively novel approach. Mendelian randomization utilizes genetic variants as instruments for environmentally modifiable risk factors for disease. There have as yet been relatively few empirical examples, but this issue of the journal includes four data-based papers and two commentaries covering modifiable intermediate phenotypes (C-reactive protein and fibrinogen), the effects of maternal coffee drinking on stillbirth, and folate intake on atopy.

Early life and intergenerational exposures have received considerable attention as potential influences on later life health over the last 2 decades, and birthweight has been widely used as a measure of intrauterine influences. In a heroic historical cohort study—dating back 150 years—Ruth Morley et al. cast some doubt on the role of birthweight in later CVD risk. In a more contemporary (but still old) study, Anusha Hemachandra et al. find no relationship of birthweight with blood pressure at age 7 and suggest that placental weight to birthweight ratio might provide a better measure of intrauterine growth restriction and indeed show an association of this indicator with blood pressure. In a commentary on the Morley paper, David Barker similarly proposes that birthweight alone is not an appropriate measure of the inter-uterine experience.

The favourable health profile of Cuba—especially when considered in the light of the low GDP of the country—has sometimes been attributed to unmotivated or motivated errors in measurement, but both Richard Cooper et al. and Jerry Spiegel posit that Cuba does indeed present an example of good health at a low cost—albeit a disturbing one in some quarters. Far from being an example of good health, Cuba in the past served the US as the very opposite, and in 1899 at the American Public Health Association Benjamin Lee suggested that so bad was the sanitary situation in Cuba that the public health interests of the US demanded its annexation (see Box 1 for a reprint of the summary of Lee’s paper). Of course, less than 10 years after Lee suggested the annexation of Cuba for US sanitary interests, the actual annexation had occurred, although primarily for the US’s economic rather than physical health. Among the 6207 US causalities between March and June 1898 during the US military intervention, around 90% were from disease rather than being killed in action or from wounds, a large proportion of which was from the yellow fever Lee railed against.

Errors in measurement require attempts at statistical correction, and Steve Cole et al. advance a method treating measurement error within the missing data framework. Measurement in health sciences is universally regarded as a
quantitative issue, but the words of the song *Strange Fruit* resonates with notions that numbers are not all there is. Similar reflections—at least to this reader—are brought to mind by John Darwell’s extraordinary photo-essay on the legacy of Chernobyl.

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References


