
Session 3: Cancer prevention, tobacco and nutrition

S11. The EPIC study – an update

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The European Investigation into Cancer and Nutrition (EPIC) study is an ongoing prospective study aiming to investigate the relationships between diet, lifestyle and environmental factors and the incidence of cancer at various sites. Also mortality from specific causes of death is investigated. The EPIC cohort was initiated in 1992 and has gradually grown into a multi-centre study recruiting 521,000 participants aged 35–70 years, among 23 centres in 10 European countries: Denmark, France, Germany, Greece, Italy, the Netherlands, Spain, Norway, Sweden and the United Kingdom.

The core component of the multiple-choice questionnaires was common to all participating centres, with some optional questions specific to some study centres only. The questionnaires aimed at gathering lifestyle and personal history data and included questions on education, socioeconomic status, employment, current and past occupation, smoking habits and environmental tobacco smoke, contraceptive and reproductive history, use of hormone replacement therapy, physical activity, history of previous and/or current illnesses, any medical and surgical treatment and hospitalization.

The total physical activity level for the participants was ascertained using the Cambridge physical activity index, which combines all occupational, household and recreational activity. In addition to lifestyle data, anthropometric measurements were carried out in all EPIC centres except France, Norway and the Oxford cohort (where information was collected from participants without actual measurements). Measurements included measuring the height, weight and hip circumference of all subjects based on similar protocols. Adjustments were made for between- and within-observer variability, and for reporting bias.

Dietary intake assessment was carried out by extensive country-specific dietary questionnaires, aiming to provide high compliance rates and to detect between and within country variations in dietary habits. The various dietary assessment methods used were tested and evaluated in a series of validation pilot studies conducted within the collaborating centres participating in EPIC, prior to the actual recruitment of the main study cohort, with the aim of assessing the extent to which the candidate dietary assessment methods would detect significant between person variation in true dietary intake level in the given study population. Furthermore, dietary measurements across cohorts were 'calibrated' in order to ensure the comparability of the dietary exposures across the participating centres. This was achieved by collecting additional dietary intake data via face-to-face interviews using a well-standardized 24-hour diet recall method common to all EPIC centres, administered to a representative sub-sample of the whole EPIC cohort (total 36,900 participants).

A 30–40 ml blood sample was collected, fractionated and stored in liquid nitrogen.

With almost 10 years of follow-up, EPIC investigators are now involved in a busy programme of nested investigations, involving the measurement of biomarkers and the study of genetic associations, including genome-wide scans for breast, prostate, lung and pancreatic cancers. Numerous papers have been published in particular on anthropometry, hormones, dietary habits (red meat, fibres), IGF-1 and other exposures in relation to several types of cancer. EPIC is a unique source of information on lifestyles influencing the risk of chronic disease and provides essential information to set preventive strategies.