**Supplementary material 2.**

**Assessment and coding of dietary records**

For the dietary recommendations data, 7-day food intake data were used. Participants were asked to fill out a structured dietary record to quantitatively assess food and drink consumption on seven consecutive days. Details on brand names, amounts and portion sizes, preparation details and recipes of meals, foods and fluids consumed throughout the day, and specific dietary regimens that were adhered to were reported in the dietary records. To promote correct use of the dietary records, control procedures were applied; participants received oral and written instructions on how to fill out the dietary records. Additionally, all completed records were checked for incomplete and/or inconsistent information and, when necessary, clarification and more information from participants was requested.

Dietary records were coded by trained dieticians using the Dutch Food Composition Table 2011, based on the Dutch Food Composition database (‘Nederlands Voedingsstoffenbestand’, NEVO), which contains energy, and macro- and micro-nutrient values for foods and drinks. Dietary quantities in grams were coded based on a standardized Dutch code book (‘Maten, Gewichten en Codenummers 2003’, Division of Human Nutrition, Wageningen University, Wageningen, and TNO Nutrition, Zeist, 2003). Difficult or unclear dietary products or recipes from the records were regularly discussed by dieticians to reach consensus on coding. After coding, records were entered into a web-based food calculation programme Compl-eat (Division of Human Nutrition, Wageningen University, Wageningen). Seven day mean daily intake of foods, macro- and micronutrients were used for data analyses.

Agreement in coding between dieticians was evaluated. For this purpose, a total of 16 7-day dietary records from the cross-sectional part of the EnCoRe study, i.e. 10% of all dietary records in that study were randomly selected and coded again by two dieticians. Intraclass correlation coefficients (ICCs) were calculated for absolute agreement and consistency to estimate inter-coder reliability for mean daily energy, protein, carbohydrate, fat, and fiber intake across the seven days. The ICCs for absolute agreement and consistency were comparable, suggesting that there were no systematic differences between coders. Mean ICCs for agreement were very high, with values ranging from 0.87 to 0.98.

WCRF/AICR dietary recommendation scores were calculated based on the Dutch Food Composition table data, using corresponding existing or created dietary groups within Compl-eat (e.g. for red meat, processed meat, sugary drinks, fruits, vegetables). Energy density (kcal/100g) was calculated from the energy provided by all solid and semi solid foods (including yoghurt and soup), divided by the weight of these foods (per 100g). Sugary drinks (g/day) were calculated as the amount of sugar-containing drinks used, including drinks with natural sugar like fruit juices as well as soft drinks and other available sugar-containing drinks. Drinks to which sugar was added by participants (e.g. coffee) were not included in the sugary drink category (as added sugar was included in the energy density category for solid foods). Fruit and vegetable consumption (g/day) were calculated from the reported use of all fresh, frozen, dried, and canned vegetables and fruits without added sugar. Red meat consumption (g/day) was based on intake of any kind of fresh raw red meat (including beef, pork, lamb, goat, and cut or minced versions of it) that still needed to be prepared before consumption. Intake of processed meat (g/day) included intake of any meat that had been preserved by smoking, curing, salting or addition of chemical preservatives, and was ready for consumption. This also included all processed meat in mixed foods containing processed meats, such as soups or sausage rolls. Calculation of total dietary fiber intake (g/day) was based on the nutrient value from the food calculation table for total fiber (g/day) according to the reported dietary intake. The same approach was used for alcohol intake (g/day).