ESM Methods:

Medical history

Information on coronary heart disease and stroke at baseline was obtained from self-reported medical diagnosis or from hospital discharge registries; hypertension and hyperlipidemia were based on self-reported diagnosis and/or use of medication. Family history of type 2 diabetes in a first-degree relative was collected in all participants except those from Spain, Italy, Heidelberg (Germany), and Oxford (United Kingdom).

Statistical analyses:

Family history of diabetes, waist circumference, and hypertension were not included in the multivariable models because they did not change the risk estimates and were not available for all participants. Dietary factors not included in the models because they did not change the risk estimates were total protein, total fat, vitamin C, vitamin E, glycemic index, and glycemic load.

Effect modification by sex, BMI (<25, 25-<30, ≥30), physical activity (inactive, moderately inactive, moderately active, active), smoking (never, former, current), intake of magnesium, vitamin B1, glycemic index, and glycemic load (≥median versus <median for all dietary variables) was assessed by modeling cross-product terms between these variables and fibre intake and by stratified analyses.

To investigate the robustness of the associations, sensitivity analyses were conducted by excluding participants who reported diseases at baseline (history of stroke (n=261), angina pectoris (n=522), myocardial infarction (n=547), hypertension (n=6,863), or hyperlipidemia (n=4,402). We also excluded the following groups of participants one by one: those with a family history of diabetes (n=3,473 in addition to all participants from Italy, Spain, Oxford (United Kingdom) and Heidelberg (Germany) where family history was not ascertained), those who

developed type 2 diabetes within the first 2 years of follow-up (n=975), and those in the top or bottom 10% of the ratio of energy intake/ energy requirement (n=5,218).

Meta-analysis

Publications were extracted independently by two investigators. References from the publications obtained were scanned for additional references. One study [1] was identified from a separate search for another project on *glycemic index, glycemic load* and *diabetes*. When there was more than one paper published from a study we used the most recent publication, unless the previous publication provided more details needed for the dose-response analyses. We excluded the publications from EPIC-Potsdam and EPIC-Netherlands [2, 3] because those data are included in the present study, but results for insoluble and soluble fibre from EPIC-Potsdam [2] are included in this analysis because data on insoluble and soluble fibre intake was not available in the EPIC-InterAct study. We excluded duplicate publications from the Nurses' Health Study [4, 5] and used a publication that provided sufficient information for inclusion in dose-response analyses from that study [6], but the most recent result was used for the high vs. low intake analysis of cereal fibre [5]. We used risk estimates with the most comprehensive adjustment for confounding factors, but for one study which adjusted for inflammatory markers as an exploratory analysis we used the less extensively adjusted model [7]. For some studies that only provided results with fibre as a continuous variable [8, 9] we used data that were obtained previously by contact with the authors for the high vs. low intake analysis [2]. For one study which used the highest intake category as the reference category [10] we used the method by Hamling to convert risk estimates so the lowest category became the reference [11]. For studies which reported results stratified by gender or ethnicity, but not overall, we pooled the results using a fixed effects model before combining with the remaining studies. When the median consumption value per category was not provided, the midpoint of the upper and lower boundaries in each category was assigned. If exposure categories were open-ended or had extreme upper and lower bounds, the width of the

adjacent category was used to derive the upper or lower boundary. Sources of heterogeneity were explored in subgroup analyses and meta-regression analyses stratified by study characteristics. Sensitivity analyses were carried out by excluding one study at a time.

Reference List

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