Online Resource 1

Methods

Risk factors and relative risks

We derived relative risks (RR) and 95% confidence intervals (95%CI) adjusted for confounding factors from meta-analyses [1-4].

The RRs for overweight/obesity and alcohol consumption were derived from meta-analyses by the World Cancer Research fund in 2010, based on 19 and nine cohort studies, respectively [3]. The estimated RR was 1.13 (95%CI 1.08-1.18) per 5 kg/m^2 increase of body mass index (BMI), from the reference BMI category of 20-25 kg/m^2.

The RR for physical inactivity was derived from a meta-analysis by Wu et al. based on eight studies evaluating moderate plus vigorous recreational activity [4]. A dose-response analysis indicated that the RR for breast cancer was 0.95 (95%CI 0.93-0.97) for every two hours per week increase in moderate and vigorous recreational activity. We therefore, used the inverse of this continuous RR (1.05, 95%CI 1.03-1.07) to estimate the increase in breast cancer risk per increase of two hours of activity/week in contrast to the reference category (i.e. inactive).

The RR of smoking was derived from a meta-analysis by Gaudet et al [2]. This meta-analysis was based on 15 cohort studies including 991,100 women, of which 31,198 breast cancer cases. RRs were 1.09 (95%CI 1.04-1.15) and 1.12 (95%CI 1.08-1.16) for past and current smoking, respectively. The RR for fiber intake was derived from a meta-analysis by Aune et al. evaluating 16 prospective studies [1]. The authors estimated a continuous RR of 0.95 (95%CI 0.91-0.98) per increase of 10 grams of fiber intake per day.

Studies that were included in the above meta-analyses provided estimates that were adjusted for multiple confounders, including other lifestyle related risk factors.

Prevalence of exposure: detailed information about national surveys and registration databases

Age-specific prevalence rates of risk exposure were derived from large national surveys or registration databases in the years 1997 [5] and 2000-2001 [6-8].

The permanent national survey on living conditions and welfare (Dutch acronym: *POLS*) by Statistics Netherlands (CBS) provided information on the exposure prevalence of alcohol use and

BMI [8]. The ongoing questionnaire survey started in the year 1997. Data are collected through questionnaires sent out to a random sample of the Dutch population. In the year 2001 the response rate was 60%. BMI was derived from self-reported weight and height (kg/m^2) and classified in normal weight (BMI≤25 kg/m^2), overweight (BMI 25-30 kg/m^2) and obese (BMI≥30 kg/m^2), based on 2,136 available questionnaires for females aged >40 years. Alcohol use was estimated in average number of consumptions per week (reported on weekdays and weekends separately) and was based on 1,736 questionnaires.

Data on physical activity was collected from 2,898 women via the *OBIN* investigation, a continuous online questionnaire and telephonic survey in a random sample of 11,000 Dutch inhabitants on accidents and physical activity in the Netherlands [6]. Information was collected on number of days per week that women adhered to the prescribed 30 minutes/day of at least moderate intense physical activity, including occupational and non-occupational activity. Additionally, a sample of *OBIN* participants filled in more detailed activity diaries, from which the mean absolute number of minutes activity per day was estimated for each different level of risk factor exposure.

Prevalence rates of smoking were derived from a continuous national online questionnaire on smoking behavior in 20,000 adults, including 6,590 women in the age category of interest [7]. The questionnaire explored current and past smoking behavior. Dietary fiber intake was assessed by the Dutch National Food Consumption Survey from 1997-1998, which was performed in a random sample of 5,958 Dutch inhabitants. Participants kept a 2-day food diary in which they recorded all foods and beverages they consumed. Data was available for 1,462 women above the age of 40 [5,9]. Dietary fiber intake was calculated using an application in SAS and the Dutch Food Composition Table (NEVO, 1996). Subsequently, age-specific prevalence rates of dietary fiber intake and the mean dietary fiber intake per defined risk category were determined.

Reference List

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