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The association between alcohol consumption and self-rated health among adult Norwegian women

A cross-sectional study from the Norwegian Women and Cancer (NOWAC) cohort

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Abstract

Background: After 1985, the proportion of women who drink alcohol in Norway has increased, narrowing the gender gap in alcohol consumption. In Norway, more women now drink alcohol than before. There is little evidence of an association between alcohol consumption and self-rated health (SRH) in Norwegian women. Therefore, this study aimed at the association between alcohol consumption and SRH in Norwegian women aged 30 to 70 years.

Methods: This is a cross-sectional study of 172,472 Norwegian women aged 30 to 70 years, using data from the Norwegian Women and Cancer (NOWAC) cohort. This study only focused on wave 1 from 1991 to 2008. We used multinomial logistic regression to analyze the association between alcohol consumption and SRH. In addition, we adjusted the analysis separately for age and then for multivariable (age, educational status, cigarette smoking, BMI, physical activity). We further stratified the adjusted models based on educational status.

Results: This study found that alcohol nonconsumption was positively associated with poor health, with an odds ratio of 1.64 and a 95% confidence interval of 1.56 to 1.73. High alcohol consumption was positively associated with excellent health with an odds ratio of 1.21 and a 95% confidence interval of 1.16 to 1.26. The positive association between alcohol nondrinking and poor health by educational status was stronger among women with higher levels of education.

Conclusion: Women who drank high amounts of alcohol were positively associated with good SRH, and women who did not drink alcohol were positively associated with poor SRH. Because this study was cross-sectional, it is not possible to determine the direction of the association. Therefore, future prospective longitudinal studies are needed to investigate causality.

Keywords: Self-rated health, Alcohol, Alcohol consumption

Abbreviations

BMI	Body mass index
BSQF	Beverage-specific quantity frequency
CI	Confidence interval
GF	Graduated frequency
GLF	General lifestyle survey
GQF	Graduated quantity frequency
IBM	International Business Machines Corporation
NOWAC	Norwegian Women and Cancer
OR	Odds ratio
QF	Quantity frequency
REK	Regional Committees for Medical and Health Research Ethics
SD	Standard deviation
SES	Socioeconomic status
SPSS	Statistical Package for the Social Sciences
SRH	Self-rated health

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1 Background

1.1 Alcohol

Human societies have used alcoholic beverages at least since recorded history began (Room et al., 2005). According to the World Health Organization (WHO), alcohol is a psychoactive substance with dependence-producing properties that has been widely used in many cultures (World Health Organization, 2022). Alcohol consumption, as the term is used in clinical and research applications, refers to the ingestion of a beverage typically oral that contains ethanol (Gellman & Turner, 2013). Generally, alcohol consumption is commercially promoted as a lifestyle associated with recreation, partying, and relaxation (World Health Organization, 2021). The relationship between alcohol use and health outcomes is complex and multidimensional (Rehm et al., 2003; Room et al., 2005) and the dose-response association between alcohol consumption and adverse health effects varies from person to person (Skogen et al., 2012). Alcohol consumption contributes to a wide range of negative acute and chronic health consequences (Rehm et al., 2017; Tran et al., 2022). Alcohol drinking is a leading modifiable risk factor for injuries and several non-communicable diseases such as liver cirrhosis, cardiovascular diseases, neuropsychiatric disorders, and seven types of cancer (mouth, pharynx, larynx, esophagus, liver, colorectal, and female breast cancer) (Centers for Disease Control and Prevention, 2022; Ferrari et al., 2014; World Health Organization, 2016). Altogether, alcohol accounts for 5.1% of the global burden of disease and injury, measured in Disability Adjusted Life Years (DALYs) (Sudhinaraset et al., 2016; World Health Organization, 2022). Previous studies have shown an increased risk of mortality by the high level of alcohol consumption (Gmel & Rehm, 2004; Jin et al., 2013; Stockwell et al., 2016; Zhao et al., 2017). Worldwide, 3 million people die each year from harmful alcohol consumption which corresponds to 5.3% of all deaths (World Health Organization, 2022).

Consumption of alcohol and its impact on the burden of disease attributable to alcohol use is alarming for Europe (World Health Organization, 2016). Per capita, alcohol consumption in the WHO European Region varies widely by country but is still the highest in the world (World Health Organization, 2019). Achieving a reduction in alcohol consumption requires concerted action by countries, effective global governance, and appropriate engagement from all relevant stakeholders (World Health Organization, 2022). Characterizing the profile of alcohol consumers is important to develop effective prevention strategies. Alcohol drinking can be influenced by consumers' characteristics such as socioeconomic levels, gender, age, health status, and smoking (Johnstone et al., 1996; Skourlis et al., 2021). The level of health risk from alcohol use varies with gender, age

(White et al., 2002), genetic characteristics of the consumer (Lewis & Davey Smith, 2005), socioeconomic level (Probst et al., 2014) as well as the environment and context in which alcohol consumption occurs (World Health Organization, 2010). Based on the above facts, scientific attention to alcohol problems has accelerated over the past 30 years as significant advances have been made in our understanding of alcohol problems and their prevention and treatment (Room et al., 2005). With growing awareness of the impact of alcohol use on global health and the proliferation of international frameworks for action, there has been a significant increase in demand for global information on alcohol use and alcohol-attributable and alcohol-related harm, and related policy responses (World Health Organization, 2022).

1.1.1 Self-reported alcohol consumption measurement

When considering the degree of risk from alcohol consumption, the duration of the drinking event to the amount consumed is important (Greenfield, 2000). Measures of alcohol consumption typically include drinking volume (e.g., how many drinks in a given reference period, such as drinks/week or drinks/day) and frequency (e.g., how often one drinks in a given reference period), such as drinking days/week (Agrawal et al., 2012). The main approaches to measuring alcohol consumption in survey research can be categorized into three. First is the quantity-frequency (QF) measure which asks questions about usual alcohol consumption to estimate frequency (e.g. number of days per week) and amount of alcohol consumed (e.g. how many (cans/bottles/glasses) consumed on a typical drinking day (Dawson, 2003; Reid et al., 2003). Second is the Graduated frequency (GF) which measures the amount of alcohol consumed by dividing the number of drinks per occasion into graded categories, usually starting with the highest amount consumed by a respondent and decreasing in preset categories (e.g., how often in the last 12 months or more alcoholic beverages of any type in a single day? In the past 12 months, how often have you had at least 8 but fewer than 12 alcoholic beverages of any type in a single day?) (O'Hare, 1991; O'HARE et al., 1997). One of the strengths of GF is that it can more easily identify occasions of heavy consumption (Kim et al., 2012). Third is the short-term recall measure which asks respondents to recall the alcohol consumed within a set of time, e.g. in the previous week or the last 24 hours (e.g. the yesterday method), or they use a diary to record total alcohol consumption over a period of time (Dollinger & Malmquist, 2009; Kim et al., 2012; Poikolainen et al., 2002). Due to the short period of time, it is assumed that the respondents can correctly recall all of their consumption during this period (Kim et al., 2012).

The most globally used measure today is the so-called Quantity Frequency (QF), which inquires about usual frequency and the usual quantity of drinking in two separate questions (Dawson, 2003;

Gerhard Gmel & Jurgen Rehm, 2004; Kim et al., 2012; McKenna et al., 2018). However, it has been criticized for measuring modal values for frequency and quantity instead of averages, which fails to give a true total average volume (Dawson, 2003). But modifications or improvements have been added to QF, such as a beverage-specific version (Kim et al., 2012). Other methods for measuring the average volume of alcohol consumption which can be mentioned are, Beverage Specific Quantity Frequency (BSQF) (where usual frequency and quantity are asked for each beverage separately) (Gmel et al., 2006), General Life-style Survey (GLF), and Graduated Quantity Frequency (GQF) (Nugawela et al., 2016).

Our knowledge of alcohol-related risks and benefits depends on the accuracy of self-reported recall of alcohol use (Poikolainen et al., 2002). Inaccurate measures of alcohol consumption can bias estimates of morbidity, mortality, and the social and economic consequences attributable to alcohol (Kydd & Connor, 2015). However, given that all forms of measurement are imperfect, minor deviations from the truth are unlikely to affect health service research findings or conclusions, so long as respondents are correctly placed along a continuum with respect to the behavior or event of interest (Del Boca & Noll, 2000). Self-reporting methods provide a reliable and valid approach to measuring alcohol consumption (Davis et al., 2010; Del Boca & Darkes, 2003) despite concerns about their validity (Davis et al., 2010).

1.1.2 Alcohol consumption guidelines

Alcohol consumption guidelines vary significantly around the world (Department of Health, 2016; Kalinowski & Humphreys, 2016). The adverse health effects of heavy drinking on populations have prompted some governments to adopt guidelines that define standard drink and low-risk drinking (Babor, 2010). For example, in the United States, a limit of 196g per week is recommended for men and 98g per week for women (Department of Health, 2016). In contrast, guidelines in Italy, Portugal and Spain recommend low-risk cut-offs almost 50% above these (Department of Health, 2016; Kalinowski & Humphreys, 2016). The WHO guideline on brief interventions for risky alcohol use defines a standard drink as 10 g of pure ethanol, with both men and women recommended not to exceed two standard drinks per day (World Health Organization, 2001).

In Norway, it is recommended that alcohol consumption should not exceed about 10 g alcohol per day for women and 20 g alcohol per day for men (Norwegian Directorate of Health, 2014). The Norwegian Directorate of Health also added that alcohol consumption should not exceed 5 percent of energy intake in adults and pregnant and breastfeeding women, as well as children and adolescents, are advised to abstain from alcohol altogether (Norwegian Directorate of Health, 2014). But the

WHO has recently released a statement saying, “We cannot talk about a so-called safe level of alcohol use. It does not matter how much you drink – the risk to the drinker’s health starts from the first drop of any alcoholic beverage. The only thing that we can say for sure is that the more you drink, the more harmful it is – or, in other words, the less you drink, the safer it is” (World Health Organization, 2023).

1.1.3 Alcohol consumption in Norway

Total alcohol sales per person aged 15 and over remained relatively stable until the mid-1990s but increased significantly until 2008 and were fairly stable through 2019 (Norwegian Institute of Public Health, 2022). However, alcohol sales in 2020 and 2021 were higher than in previous years, possibly due to measures to contain the spread of Coronavirus Diseases 2019 (COVID-19), such as travel restrictions that led to a shift in alcohol sales from international to domestic sales (Norwegian Institute of Public Health, 2022).

In Norway, alcohol consumption in terms of frequency and amount on typical drinking days increased significantly among older adults from 1996 to 2016 (Stelander et al., 2021). The rising trend was most evident in the period between 1985 and 2012/2013 and among women (Bye & Moan, 2020). Even though men drink more than women and twice as much alcohol (Norwegian Institute of Public Health, 2019), the gap between women and men in frequent drinking has narrowed significantly, suggesting that women's drinking patterns are converging with men's (Bye & Moan, 2020; Stelander et al., 2021). On average, Norwegians aged 15 years and over consume almost seven liters of pure alcohol per year per inhabitant. According to the Norwegian Patient Registry alcohol-related diseases are registered as the main reason for hospital admission (Norwegian Institute of Public Health, 2019).

A report commissioned by the European Commission shows that Norwegian alcohol policy measures are the most effective due to the effective regulations and taxes imposed on alcohol (Norwegian Ministry of Health and Care Services, 2008). However, this does not mean that Norwegians do not drink alcohol. In fact, “recorded alcohol per capita (15+) consumption (in liters of pure alcohol) by type of alcoholic beverage, 2016” shows that 44% drink beer, 36% drink wine, 17% drink spirits and 3% drink other types of alcohol (World Health Organization, 2018). Furthermore, in 2022, 42% of Norwegian men and 29% of Norwegian women drank alcohol weekly (Statistics Norway, 2023).

Norway probably had the most restrictive alcohol policy in Europe in the 20th century and the main goal of Norwegian alcohol policy has been to minimize alcohol-related health and social problems (Österberg & Karlsson, 2003). The main instruments of Norwegian alcohol policy are the licensing system, the alcohol wholesale monopoly “vinmonopolet” (state-owned alcohol monopoly company), limited sales and serving hours, specific do's and don'ts including the ban on advertising, legal age limits and the restrictive tax policy (Norwegian Ministry of Health and Care Services, 2008). That is why people in Norway drink less alcohol than in most European countries, calculated per inhabitant aged 15 and over (Norwegian Institute of Public Health, 2019).

1.1.4 Alcohol consumption and socioeconomic status (SES)

Several studies suggest that people with higher socioeconomic status consume more alcohol compared to groups in lower social classes (Beard et al., 2016; Roche et al., 2015). However, there are exceptions to this pattern, and some find this association only in women and in certain countries (Beard et al., 2016; Bloomfield et al., 2006). Per unit of alcohol consumed, alcohol-related harm is greater in people with lower socioeconomic status (Hall, 2017). Alcohol consumption itself is lower in groups with lower socioeconomic status than in groups at the higher end of the socioeconomic spectrum, although there is a higher level of alcohol-related harm in the former group (Skogen et al., 2019). This phenomenon, in which alcohol consumption tends to be higher in people with a higher socioeconomic status (SES) while the magnitude of alcohol-related problems is greater in people with a lower SES, has been termed the “alcohol harm paradox” (Smith & Foster, 2014).

In addition, Studies of the association between SES and alcohol drinking have found that higher SES tends to be associated with more frequent drinking, while lower SES tends to be associated with drinking larger amounts (Casswell et al., 2003; Huckle et al., 2010). Other studies have also reported that higher level of education is associated with higher alcohol drinking (Smith et al., 2010) and seems to be the best predictor of alcohol consumption (Beard et al., 2019).

1.1.5 Gender difference in alcohol consumption

Gender differences in alcohol consumption are ubiquitous to such an extent that they can be considered one of the few universal gender differences in human social behavior (Holmila & Raitasalo, 2005; Wilsnack et al., 2005). Although the gender gap in alcohol consumption is seemingly universal, the size of the disparity varies between countries and their respective cultures, from a male to female ratio of current alcohol consumption of 1:1 in New Zealand and Norway to 12.3:1 in India (Hannah Ritchie and Max Roser, 2018; World Health Organization, 2018).

Traditionally, men have consumed more alcohol in more frequent drinking opportunities and have outperformed women in terms of heavy drinking and, while women were consistently more likely to be lifetime abstinent (Bratberg et al., 2016; Erol & Karpyak, 2015; Stelander et al., 2021; White & Jackson, 2004; Wilsnack et al., 2000). Nevertheless, women appear more sensitive to the negative consequences of alcohol use (Sudhinaraset et al., 2016; White, 2020). It has also been suggested that women have an increased risk of all-cause mortality from alcohol consumption compared to men (Wang et al., 2014). Biological differences in body structure and chemistry lead most women to absorb more alcohol and take longer to metabolize it (Centers for Disease Control and Prevention, 2022; Erol & Karpyak, 2015; Holmila & Raitasalo, 2005; National Institute on Alcohol Abuse and Alcoholism, 2022). Additionally, Centers for Diseases Control and Prevention 2022 further explains that women tend to have higher blood alcohol levels than men after consuming the same amount of alcohol and that the immediate effects of alcohol tend to come on faster and last longer in women than men (Centers for Disease Control and Prevention, 2022). While gender differences in alcohol use and effects have been consistently documented, information on possible gender differences in the association between alcohol use, drinking behavior and subjective health is poorly understood and limited (Stranges et al., 2006). Recent studies also suggest that women are more prone than men to alcohol-related liver inflammation, cardiovascular disease, memory loss, hangovers, and certain types of cancer (White, 2020). Therefore, a better understanding of the different drinking habits of men and women is an important key to address the unique health risks faced by women (White, 2020).

1.2 Self-Rated Health (SRH)

Several studies have been focused on the assessment of the relationship between clinically measured health outcomes and alcohol consumption (Roerecke & Rehm, 2012; Stranges et al., 2006). On the other hand, subjective health, (the way individuals perceive their health) provides a global measure of health status and has been shown to be a robust predictor of all-cause mortality (DeSalvo et al., 2006; Idler et al., 1999; Jylha, 2009; Mossey & Shapiro, 1982; Sajjad et al., 2017). SRH is suggested to capture, psychological, physical and social aspects that may be difficult to assess through objective measures of health (Idler & Benyamini, 1997). Self-rated health also called (self-reported, self-perceived, self- assessed) is a simple, global assessment of how a person perceives his/her health (Bombak, 2013; Hanmer, 2021). Global SRH measurements include a question such as "How would you rate your overall health?" and provide five response categories ranging from excellent to poor (B. K. Finch et al., 2002). SRH interventions are often classified as "fair/poor" versus all other categories because the "poor/fair" categories reflect health problems and/or the presence of disease; a

fair/poor rating also means an increased risk of mortality (Finch et al., 2002; Jylha, 2009). (Brian Karl Finch et al., 2002; Jylha, 2009).

The subjective health assessment reflects a person's holistic sense of health with its biological, psychological, and social dimensions, which is not accessible to any external observer (Miilunpalo et al., 1997). On the contrary, self-rated chronic illnesses and impairments mainly reflect medical dimensions of health, which could also be objectively verifiable by an external observer from physical and laboratory examinations and medical records (Wilson & Cleary, 1995). Therefore, subjective assessments of global health could be even more sensitive in health surveillance than external measures of health (Miilunpalo et al., 1997). For example, the high prevalence of self-rated health complaints across Europe suggests that people feel unhealthy (Williams et al., 2017).

The popularity of SRH as a measure of health status is due in part to its widespread use in surveys of the general population and possibly its predictive power for more objective measures of health such as mortality (van Doorslaer & Gerdtham, 2003). If the association between SRH and objective health measures such as mortality differs significantly between comparison groups, whether due to heterogeneous reporting standards between groups or differences in the content of the health assessment, this would question the validity of the SRH as an outcome for the analysis of health inequalities (Dowd & Zajacova, 2007). Assessment of SRH is simple, inexpensive, quick to administer, and seemingly easy to translate into different languages and provides an effective method for determining the overall health of individuals and populations (Zimmer et al., 2000).

SRH is also affected by other factors like age (Franks et al., 2003), education (Molarius et al., 2007), smoking (Wang et al., 2012), body mass index (BMI) (Molarius et al., 2007) and physical activity (Nieminen et al., 2013). SRH declines with age (Andersen et al., 2007; Franks et al., 2003; McFadden et al., 2008) and low academic performance is strongest predictor of poor SRH (Moor et al., 2019). Previous studies have shown that lifestyle factors such as smoking, physical activity, and obesity are strongly associated with impaired self-rated health (Haveman-Nies et al., 2003; Mackenbach et al., 1994). In addition, longitudinal studies have shown that physical inactivity and smoking predict poor self-rated health (Haveman-Nies et al., 2003; Johansson & Sundquist, 1999). In another study, independent of other factors, BMI and physical activity were strongly correlated with self-rated health (Molarius et al., 2007).

1.2.1 SRH measurement

SRH is widely used as a global measure of health (Wennberg et al., 2013). It is usually measured as a single element, the most common formulation of which is “In general, would you say your health is” with the response items “excellent,” “very good,” “good,” “fair,” or “poor”(Bombak, 2013; Garbarski, 2016; Grønbæk et al., 1999). Individuals with poor SRH tend to have higher mortality and higher utilization of health services than those assessing their health as excellent or good (Bombak, 2013; DeSalvo et al., 2006; DeSalvo et al., 2009). Given the utility of SRH as a good predictor of objective measures, it has been widely used in surveys and studies (Clarke & Ryan, 2006; Idler & Benyamini, 1997). SRH is strongly correlated with other direct measures of health and functioning and has been shown to predict mortality beyond other indicators of mortality risk such as blood pressure, body mass index, serum cholesterol levels, and chronic conditions (Calhoun et al., 2018).

1.2.2 SRH and SES

Socioeconomic differences have been observed in SRH (Molarius et al., 2007). A variety of SES factors contribute to explaining differences in SRH, such as social class (Eikemo et al., 2008; Kelleher et al., 2003), differences in the labor market (Hernández-Quevedo et al., 2006), or differences in education systems (Grossman, 2000; Smith, 2004). In general, people with low socioeconomic status have poorer SRH of their health than people with high socioeconomic status (Kawachi et al., 1999; Van Lenthe et al., 2004). Although other SES measures such as income or occupational status are important in explaining health-related inequalities, educational status is the main factor explaining differences in SRH, particularly in countries characterized by less flexible economies and a fragmented social welfare system (Olsen & Dahl, 2007; Von dem Knesebeck et al., 2006) 30).

1.3 Alcohol consumption and self-rated health

Elucidating the causal relationship between alcohol consumption and health is not easy (Frisher et al., 2015). In particular, the U- or J-shaped association between alcohol consumption and health is related to the "sick-quitter" hypothesis that people stop or moderate drinking for health reasons, and to known health risks associated with overconsumption (Ng Fat et al., 2014). Drinking 1-2 drinks/day is associated with higher odds of good/excellent SRH (Lang et al., 2007). Drinking 1 to 2 drinks per day also have better SRH than non-drinking (Satre et al., 2007). Since the association between alcohol consumption and health is bidirectional, current moderate alcohol consumption may be an indicator of good health rather than a consequence (Ng Fat et al., 2014). Poor health was

associated with non-drinking among young adults (Power et al., 1998), even after adjusting for a variety of demographic and social factors (Ng Fat & Shelton, 2012).

Sufficient evidence supports the relationship of drinking patterns with alcohol-related consequences and self-rated health problems (Fernández-Artamendi et al., 2018; Romac et al., 2022). Most studies appear to indicate that abstainers have a higher risk of chronic conditions compared to those who regularly consume alcohol at low or moderate levels, while former drinkers and heavy drinkers have the highest risk of all (Green & Polen, 2001; Holahan et al., 2010; Liang & Chikritzhs, 2013). Excessive alcohol consumption has adverse health consequences, as it increases the risk of diseases such as certain types of cancer, cardiovascular and liver dysfunction, and leads to disability and premature death (Rehm et al., 2017; World Health Organization, 2016). Alcohol consumption and SRH are important predictors of mortality (Sakurai et al., 1999).

Even though, there is very few evidence about the association between alcohol consumption and SRH in the Norwegian population (Bye & Moan, 2020), a newly published paper from the Tromsø study cohort by (Stelander et al., 2023) identified a strong positive association between high alcohol consumption and better SRH and a negative association between alcohol abstinence and poor SRH in women. In general, after the 1985th has been an increase of proportion of women who drink alcohol in Norway, narrowing the gender gap in the alcohol consumption (Bye & Moan, 2020). Given the biological differences of alcohol metabolism between women and men and the increase of proportion of women who drink alcohol in Norway, it is of interest to study the association between SRH and alcohol consumption among Norwegian women.

The level of awareness of the risk of alcohol use on health can be influenced by other factors. Some studies have identified gender, age, and higher education as strong factors associated with the level of awareness of the risk of alcohol use (Doyle et al., 2023). People with lower levels of education were less likely to be aware of the risk of alcohol use (Doyle et al., 2023). Therefore, the association between alcohol consumption and SRH may be different according to education levels.

2 Study objectives

2.1 Rationale

So far, several studies have been published on the association of alcohol consumption and SRH. This led to a growing awareness of the health effects of alcohol consumption and SRH as a strong predictor of mortality. Harmful consumption of alcohol is no more an individual problem. The concept of harmful alcohol use is broad and includes drinking that has adverse health and social

consequences for the drinker, those around them and society in general, as well as the drinking patterns that are associated with an increased risk of adverse health effects consequences (World Health Organization, 2010). Due to this fact, alcohol consumption has been identified as a growing public health issue and a global burden of disease.

According to Norwegian Institute of Public Health, more women are now drinking alcohol than before in Norway. Based on this fact this study aims to investigate the relationship between alcohol consumption and SRH among Norwegian women aged 30-70 years.

2.2 Research question

What is the association between alcohol consumption and SRH among Norwegian women aged 30 to 70 years?

2.3 Hypothesis

H₀ (null hypothesis) = There is no association between alcohol consumption and SRH among Norwegian women aged 30 - 70 years.

H₁ (alternative hypothesis) = There is an association between alcohol consumption and SRH among Norwegian women aged 30 - 70 years.

3 Materials and methods

3.1 Study design

This is a cross-sectional study using data from the Norwegian Women and Cancer (NOWAC), which is a national population-based cohort established in 1991 (Christine L. Parr, 2008).

3.2 Study population

To address the research question, data from the NOWAC research based at the Institute of Community Medicine, Medical Faculty, University of Tromsø, Norway is used. The NOWAC study was created as a national population-based cohort study by taking advantage of the existing population registers in Norway (Lund et al., 2003). All women were randomly selected from the Norwegian Central Register of Persons, which contains information about all Norwegian residents, including a unique identity number consisting of the date of birth and five additional digits that make up a unique combination (Lund et al., 2003). The selected women received letters of invitation along with the questionnaire (Attah et al., 2017). Women who completed the questionnaire (n = 172, 472) with detailed questions regarding alcohol consumption, health status, socioeconomic status and

lifestyle were enrolled in the study. The response rate at NOWAC was dependent on age at recruitment (decreasing with age), geography (highest in Northern Norway) and length of the questionnaire (higher with shorter questionnaires) (Lund et al., 2007). The overall response rate was 52.7% (Hansen et al., 2021).

3.3 Data Collection

The women to be invited were selected from the central register of persons. The register contains information on all women living in Norway, including women on temporary work permits, refugees, etc (Lund et al., 2003). An invitation to participate in the study together with a baseline questionnaire and a pre-stamped return envelope enclosed was mailed to each woman (Hansen et al., 2021). The questions for both the exposure (alcohol consumption) and outcome (SRH) are included with the first questionnaire of 1991 which consists of four pages. The questionnaires were returned to the Institute of Community Medicine, University of Tromsø in a prepaid envelope and a list of all serial numbers of all responders was sent back to Statistics Norway (Lund et al., 2003). For the general questions from the first questionnaire wave 1 (see appendix 1) and number of women recruited in the corresponding years (see appendix 4).

Exposure to alcohol consumption was assessed using the question: “are you a teetotaler?” from questionnaire 1 and follow up questionnaires (see appendices 1, 2, and 3). The women who replied “no” were asked to answer additional questions e.g., “how many glasses of beer did you consume on average last year (1/2-liter units)?”, “how many glasses of wine did you consume on average last year?”, and “how many drinks of spirits did you consume on average last year?” These questions were used to calculate the average alcohol consumption. Average alcohol consumption is calculated in grams per day among drinkers based on the content of pure alcohol in different beverages and usual portion sizes in Norway (Hansen et al., 2021).

Furthermore, SRH as an outcome was collected based on the question “how do you perceive your own health?” The respondents were to answer as “excellent”, “good”, “poor”, and “very poor” (see appendices 1 and 3).

3.4 Inclusion and Exclusion criteria

Norwegian women from the Norwegian Central Person Register who agreed to participate and who answered the questionnaires of alcohol consumption and SRH were included. Those who did not agree to participate in the survey were not included. The baseline population of women for alcohol consumption were 172 472. Out of these 164 097 women were valid cases and 8375 were missing

cases. Based on the outcome variable SRH, 143 042 were valid cases and 29 430 were missing cases. All participants with valid and missing cases were included for the descriptive analysis.

3.5 Variables used in the analysis

All the variables used in this analysis were from the NOWAC cohort. Alcohol consumption was the exposure variable and SRH was the outcome variable. We considered age, lifestyle factors like smoking, physical activity, body mass index (BMI), and socio-economic factor (education), as adjustment variables.

3.5.1 Alcohol consumption

Alcohol consumption in grams per day (g/d) was used in our analysis as an exposure variable. It was categorized, in 3 categories based on the level of consumption as nondrinkers, moderate drinkers, and high drinkers. Nondrinkers were women who did not consume alcohol, or their daily intake of alcohol was 0.00 grams per day and was coded and given value 1. Moderate drinkers were women who drank at moderate level whereby lowest value of daily intake of alcohol in grams was 0.01 and highest values of daily intake of alcohol was 10.00 g/d. Moderate drinkers were deliberately coded and labeled as 3 because as they had largest number of participants from the subgroups they were taken as reference group and SPSS in multinomial regression takes the last coded as a reference category. Furthermore, high drinkers were women who drank >10 grams of alcohol per day and were coded and labeled as 2. The valid cases were 164 097, and missing cases were 8375 (4.9%).

3.5.2 Self-rated health

Self-rated health as the main outcome variable was used in our analysis. Participants were asked on how they perceived their own health (see appendix 1). Their responses were classified as “excellent”, “good”, “poor”, and “very poor”. In this analysis poor and very poor were merged to one category poor due to the few numbers of women who rated their health as very poor. Poor was coded and labeled as 1, good as 2, and excellent 3. Good health was chosen as a custom reference category when running the multinomial regression analysis due to its large number of participants. There were 143 042 valid cases and 29 430 (17.1%) missing cases of SRH.

3.5.3 Covariates

The characteristics of the participants in this experiment were age, BMI, physical activity, smoking, and education.

3.5.3.1 Age

One of the covariates in this analysis was age. Age was taken as a continuous variable in the whole analysis. Based on alcohol consumption, the mean age and standard deviation (SD) of nondrinkers was 48.9 (9.3), moderate drinkers 49.3 (8.2), and the mean age and SD of women who drank high amount of alcohol was 49.9 (7.8). Since there is no similar age distribution for either exposure or outcome, it is assumed that this age influences the association. There were no missing cases.

Age based on self-rated health had mean and SD 51.1 (8.0), 49.6 (8.1), and 48.3 (8.0) for poor, good, and excellent health respectively. There were no missing cases reported.

3.5.3.2 Years of education

Education as a variable of socioeconomic status is used in our analysis. Women were asked how many years of their education they had in total, including primary and secondary school? For the questionnaires about education (see appendices 1, 2, and 3). Based on their educational status women were categorized as ≤ 9 years, 10 to 12 years, and ≥ 13 years of education. Valid cases of women in this group were 163 264 and there were 9208 (5.3%) women as missing cases. In the analysis educational status ≤ 9 , was coded as 1, 10 – 12 years as 2, and ≥ 13 years as 3.

3.5.3.3 Smoking

Smoking was the third life-style variable that we used. Women were asked if they have ever smoked or not by the questionnaires (see appendices 1, 2, and 3 for smoking questionnaires). If they did smoke, they were further asked the average number of cigarettes they smoked per day in different age groups like at the age of (10-14), (15-19)- (20-24), (25-29), (30-34), (35-39), (40-44), and (45-49). Other questions were also asked, such as whether they lived with someone who smoked or whether any of the adults smoked at home when they were young. In the analysis, smoking was categorized into three as never smoker (coded 1), former smoker (coded 2), and current smoker (coded 3). There were 169 984 valid cases and 2488 (1.4%) missing cases.

3.5.3.4 Body mass index (BMI)

The lifestyle variable BMI, which is calculated as weight in kilograms divided by height in meter square and expressed as kg/m^2 was in the analysis. Women were asked a question for height like, how tall they were, and a question for weight, how much did they weigh to help us calculate the BMI (see appendices 1, 2, and 3). There were 168 121 valid cases of women and 4351 (2.5%) missing cases of women for BMI.

In the analysis, BMI was categorized as underweight (coded 1), normal weight (coded 2), overweight (coded 3) and obese (coded 4). Underweight corresponds to those women with BMI measure ≤ 18.49 kg/m². Normal weight was to represent BMI value 18.50 kg/m² to 24.99 kg/m². BMI value 25.00 kg/m² to 29.99 kg/m² was overweight. Last, BMI value ≥ 30.00 kg/m² was obese.

3.5.3.5 Physical activity

Another lifestyle variable we used was physical activity. Women were asked to scale their current level of physical activity levels on a 10-increment scale from 1 to 10 (see appendices 1, 2, and 3). Women were further categorized from 1(low) to 10 (high) according to their physical activities. This was further recoded as low, moderate, and high in this analysis. Values 1 to 4, 5 to 6, and 7 to 10 were recoded as low, moderate, and high respectively. There were 157 625 valid cases and 14 847 (8.6%) missing cases.

3.6 Access to data and ethical issues

The NOWAC study has been approved by the Norwegian Data Inspectorate and the Regional Committee for Medical Research Ethics (REK) in North-Norway (Reference No.: 2010/2075/REK Nord). Furthermore, the approval for the current project within NOWAC study was assessed and approved by REK. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and the 1964 Declaration of Helsinki and its subsequent amendments or comparable ethical standards (Borch et al., 2017).

3.7 Data safety

The participants' ID is only known to the NOWAC data managers, so any data handled and analyzed in this project was completely anonymized. I received the datafile and it was handled in a password protected personal computer. The datafile was stored in OneDrive-UiT Office 365.

3.8 Dissemination Plan

The research thesis will be available for researchers in the department of community medicine UiT database Munin. Scientific journal publication will be considered if opportunity is granted.

3.9 Statistical analysis

All analysis were performed using IBM SPSS statistics version 28.0.0.0 and the output language was English. The tables were produced in Microsoft Word. The characteristics of the study sample were

presented as means with standard deviations for continuous variables and as percentages and number of participants for the categorical variables. The characteristics tables were divided in to two based on alcohol consumption as an exposure and SRH as an outcome variable. All the other variables were rowed to the columns of the exposure and outcome The results were reported based on the general reporting recommendations for observational studies provided by STROBE (von Elm et al., 2014).

Multinomial logistic regression analysis using SPSS was performed. The reason why we used logistic regression was that our dependent variable (SRH) was a categorical variable with 3 categories. The categories we had for the outcome variable (SRH) were poor, good, and excellent.

SPSS test for assumptions was done. The correlation between the variables in our model from the correlation table showed that a bivariate correlation of all variables was far less than 0.7. In fact, the highest bivariate correlation was 0.247 and that was between physical activity and own health. In addition, the coefficients table under the column collinearity statistics showed that the tolerance values were all above 0.10 and the variance inflation factor (VIF) was below the cut-off 10 (Pallant, 2020) in all variables. Hence according to the 7th edition book of Julie Pallant, the assumption of multicollinearity was not violated.

For the descriptive analysis we included all the participants including the missing values. But for the multinomial logistic regression we used complete case analysis where the missing values were excluded. First, we performed age adjusted model. Second, we performed multivariable model. Variables in multivariable model were age, smoking, BMI, physical activity, and education. Third these age and multivariable adjusted models were further stratified based on educational status. Education is assumed as an effect modifier.

4 Results

4.1 Characteristics of participants according to alcohol consumption

Table 1 shows the characteristics of participants who self-reported alcohol consumption among Norwegian women aged 30 to 70 years. The total number of participants was 172 472 with 4.9% missing cases of alcohol consumption (n = 8375). The missing proportion for the covariates ranges from 1.4 to 17.1%. Most participants 64.4% (n = 111 018) were moderate alcohol consumers followed by nondrinkers 22.5% (n = 38 834). High alcohol consumers women (>10 g/d) were 8.3% (n = 14 245). At enrollment, the mean age of all alcohol consumption participants was 49.3 years

with a standard deviation (SD) of 8.4. High drinkers had the highest mean age of 49.9 years and nondrinkers had the lowest mean age of 48.9 years.

The proportion of women who did not consume alcohol (32.5%) was higher for women with ≤ 9 years of education while the proportion of women who consumed high levels of alcohol was higher for women with ≥ 13 years of education. A higher proportion of missing values for alcohol (29.4%) was observed among women with ≤ 9 years of education than among the others.

Most nondrinkers 19 001 (48.9%) were never smokers. The highest proportion of women who were high drinkers of alcohol (41.5%) were former smokers. The proportion of current smokers among nondrinkers, moderate drinkers, and high drinkers was, 24.9%, 31.5% and 38.6% respectively.

Among women who did not drink alcohol, poor self-rated health of women had the lowest proportion (9.7%) followed by excellent health (22.4%) and the highest proportion among women in good health (50.8%). The highest proportion of women in excellent health (33.4%) was observed among women who drank high amount of alcohol. The highest proportion of good health was observed among women who drank moderately. Poor health was equally high among moderate and high drinkers of alcohol.

The overall BMI mean, and SD was 24.3 (3.9). The highest proportion of overweight and obese women was among nondrinkers. While the lowest proportion of overweight and obese women was among high alcohol consumers. Among nondrinkers 2.6% (n = 1017) were underweight, 11.5% (n = 4449) were obese, and 26.8% (n = 10 414) were overweight. Among high alcohol consumers, 2.2% (n = 311), 5.4% (n = 775) and 22.7% (n = 3235) were underweight, obese, and overweight respectively.

The majority of women 37.7% (n = 64 968) were moderately physically active. The proportion of women who did not drink alcohol and with low levels of physical activity was 24.3% (n = 9446) while the proportion of nondrinkers with high levels of physical activity was 27.4% (n = 10 649). The highest proportion of physical activity level (32.8%) was among women who drank the high amount of alcohol. Low physical activity also had the highest proportion (25.1%) among women with high alcohol consumption. For physical activity levels, moderately active women had the highest missing scores at 2899 followed by 2235 and 1869 for high and low levels of physical activity respectively.

Table 1: Characteristics of participants according to alcohol consumption in the Norwegian Women and Cancer Study

	All	Nondrinker (0 g/d)	Moderate drinker (> 0 to 10 g/d)	High drinker (>10 g/d)	Missing
Participants, n (%)	172 472	38 834 (22.5)	111 018 (64.4)	14 245 (8.3)	8375 (4.9)
Age, mean (SD)	49.3 (8.4)	48.9 (9.3)	49.3 (8.2)	49.9 (7.8)	
Years of education					
≤ 9	38 337 (22.2)	12 615 (32.5)	21 559 (19.4)	1703 (12.0)	2460 (29.4)
10 - 12	55 762 (32.3)	12 029 (31.0)	37 180 (33.5)	4207 (29.5)	2346 (28.0)
≥ 13	69 165 (40.1)	12 012 (30.9)	47 343 (42.6)	7803 (54.8)	2007 (24.0)
Missing	9208 (5.3)	2178 (5.6)	4936 (4.5)	532 (3.7)	1562 (18.7)
Smoking status, n (%)					
Never	58 973 (34.2)	19 001 (48.9)	33 957 (30.6)	2722 (19.1)	3293 (39.3)
Former	58 735 (34.1)	9441 (24.3)	40 968 (36.9)	5914 (41.5)	2412 (28.8)
Current	52 276 (30.3)	9652 (24.9)	34 925 (31.5)	5497 (38.6)	2202 (26.3)
Missing	2488 (1.4)	740 (1.9)	1168 (1.1)	112 (0.8)	468 (5.6)
Self-rated health, n (%)					
Poor	10 981 (6.4)	3759 (9.7)	6196 (5.6)	799 (5.6)	227 (2.7)
Good	85 932 (49.8)	19 710 (50.8)	57 905 (52.2)	7184 (50.4)	1133 (13.5)
Excellent	46 129 (26.8)	8706 (22.4)	32 223 (29.0)	4752 (33.4)	448 (5.4)
Missing	29 430 (17.1)	6659 (17.2)	14 694 (13.2)	1510 (10.6)	6567 (78.4)
BMI (kg/m ²), mean (SD)	24.3 (3.9)	24.7 (4.4)	24.2 (3.8)	23.7 (3.5)	
BMI (kg/m ²) in categories, n (%)					
Underweight	3549 (2.1)	1017 (2.6)	2084 (1.9)	311 (2.2)	137 (1.6)
Normal weight	105 642 (61.3)	21 663 (55.8)	69 785 (62.9)	9642 (67.7)	4552 (54.4)
Overweight	44 774 (26.0)	10 414 (26.8)	28 602 (25.8)	3235 (22.7)	2523 (30.1)
Obese	14 156 (8.2)	4449 (11.5)	8133 (7.3)	775 (5.4)	799 (9.5)
Missing	4351 (2.5)	1291 (3.3)	2414 (2.2)	282 (2.0)	364 (4.4)
Physical activity level, n (%)					
Low	39 139 (22.7)	9446 (24.3)	24 255 (21.9)	3569 (25.1)	1869 (22.3)
Moderate	64 968 (37.7)	13 597 (35.0)	43 173 (38.9)	5299 (37.2)	2899 (34.6)
High	53 518 (31.0)	10 649 (27.4)	35 964 (32.4)	4670 (32.8)	2235 (26.7)
Missing	14 847 (8.6)	5142 (13.2)	7626 (6.9)	707 (5.0)	1372 (16.4)

Note: n=number of participants, SD=standard deviation, g/d=grams per day

4.2 Characteristics of participants according to self-rated health

Self-rated health as an outcome variable was analyzed descriptively in relation to other variables (Table 2). The missing cases for SRH were 17.1% (n = 29 430). Most women 49.8% (n = 85 932) were in good self-rated health category and the lowest proportion (6.4%) were in poor category. Women in excellent health were also represented at 26.8%. The mean age and SD of women in poor, good, and excellent health were 51.1 (8.0), 49.6 (8.1) and 48.3 years (8.0) respectively.

The highest proportion (35.1%) of women in poor health was in women with an educational background of ≤ 9 years and the lowest proportion (27.6%) of women in poor health was among women who reported ≥ 13 years of education. In addition, the proportion of women in excellent health was 52.1% among women with university education compared to 13.3% of women in excellent health among women with ≤ 9 years of education. Also, the highest proportion of women in good health (38.0%) was in women with university education and the lowest proportion in good health (23.5%) in women with low education (≤ 9 years).

Most women 38.3% (n = 4202) with poor health were current smokers, 31.6% (n = 3473) former smokers and 28.4% (n = 3114) were never smokers. The highest proportion (37.2%) of former smokers was among women in excellent health. The highest proportion of current smokers was among women in poor health. The highest proportion of never smokers (39.1%) was among women in excellent health. Women who never smoked comprise the highest proportion of missing cases (35.7%) according to SRH.

Alcohol consumption has also been described with SRH. The highest proportion (34.2%) of non-drinkers were in poor health. The highest proportion of high drinkers was among women in excellent health. While the highest proportion of moderate drinkers was also among women in excellent health. Most of the missing cases (n=14 694) were in women who drank moderately followed, by women who did not drink alcohol (n=6659).

Women in poor health had the highest mean BMI (25.7 kg/m²), followed by mean BMI in good health (24.6 kg/m²) and mean BMI in excellent health (23.4 kg/m²). Accordingly, 28.8% of the women who responded poor were overweight, 18.3% were obese, 3.7% were underweight, 46.2% were normal weight and 3% missing cases. The proportion of BMI in women in good health showed that 27.8% were overweight, 9.4% were obese 2.0% were underweight, 58.3% normal weight and 2.5% missing cases. Among women who rated their health as excellent 20.8% were overweight, 3.7% were obese, 1.9% were underweight 71.8% normal weight and 1.9% missing cases. The proportion of obese women (18.3%) was highest in poor self-rated health category compared to good (9.4%) and excellent (3.7%) health. The health status of women also differed by being overweight. Poor health women had the highest proportion of overweight (28.8%) compared to those in good health (27.8%) and excellent health (20.8%). Same logic with being underweight as it had the highest proportion in poor health (3.7%) and the relatively lowest proportion in women who reported excellent health (1.9%).

The highest proportion (47.8%) of women in poor health were those women with low levels of physical activity. The lowest proportion (14.4%) of women reporting poor health were women with high physical activity. Women who performed high physical activity 24 010 (27.9%) were in good health than women who performed low physical activity 20 501 (23.9%). Even excellent health proportion (45.3%) was much higher characteristics of women who performed high physical activity than the proportion of women with low physical activity (13.6%).

Table 2 Characteristics of participants according to self-rated health in the Norwegian Women and Cancer Study

	All	Poor	Good	Excellent	Missing
Participants, n (%)	172 472	10 981 (6.4)	85 932 (49.8)	46 129 (26.8)	29 430 (17.1)
Age, mean (SD)	49.3 (8.1)	51.1 (8.0)	49.6 (8.1)	48.3 (8.0)	
Years of education, n (%)					
≤ 9	38 337 (22.2)	3850 (35.1)	20 154 (23.5)	6137 (13.3)	8169 (27.9)
10 – 12	55 762 (32.3)	3435 (31.3)	29 071 (33.8)	14 229 (30.9)	9027 (30.7)
≥ 13	69 165(40.1)	3034 (27.6)	32 648 (38.0)	24 009 (52.1)	9474 (32.2)
Missing	9208 (5.3)	662(6.0)	4059 (4.7)	1754(3.8)	2733 (9.3)
Smoking status, n (%)					
Never	58 973 (34.2)	3114 (28.4)	27 308 (31.8)	18 038 (39.1)	10 513 (35.7)
Former	58 735 (34.1)	3473 (31.6)	29 435 (34.3)	17 171 (37.2)	8656 (29.4)
Current	52 276 (30.3)	4202 (38.3)	28 101 (32.7)	10 430 (22.6)	9543 (32.4)
Missing	2488 (1.4)	192 (1.8)	1088 (1.3)	490 (1.1)	718 (2.4)
Alcohol consumption, n (%)					
Non-drinker (0 g/d)	38 834 (22.5)	3759 (34.2)	19 710 (22.9)	8706 (18.9)	6659 (22.6)
Moderate (> 0 to 10 g/d)	111 018 (64.4)	6196 (56.4)	57 905 (67.4)	32 223 (69.9)	14 694 (49.9)
High (> 10 g/d)	14 245 (8.3)	799 (7.3)	7184 (8.4)	4752 (10.3)	1510 (5.1)
Missing	8375 (4.9)	227 (2.1)	1133 (1.3)	448 (1.0)	6567 (22.3)
BMI (kg/m ²), mean (SD)	24.3 (4.0)	25.7 (5.3)	24.6 (4.1)	23.4 (3.2)	
BMI (kg/m ²), in categories n (%)					
Underweight	3549 (2.1)	410 (3.7)	1747 (2.0)	866 (1.9)	526 (1.8)
Normal weight	105 642 (61.3)	5069 (46.2)	50 115 (58.3)	33 101 (71.8)	17 357 (59.0)
Overweight	44 774 (26.0)	3165 (28.8)	23 898 (27.8)	9591 (20.8)	8120 (27.6)
Obese	14 156 (8.2)	2005 (18.3)	8062 (9.4)	1690 (3.7)	2399 (8.2)
Missing	4351 (2.5)	332 (3.0)	2110 (2.5)	881 (1.9)	1028 (3.5)
Physical activity level, n (%)					
Low	39 139 (22.7)	5244 (47.8)	20 501 (23.9)	6275 (13.6)	7119 (24.2)
Moderate	64 968 (37.7)	3017 (27.5)	35 158 (40.9)	16 627 (36.0)	10 166 (34.5)
High	53 518 (31.0)	1582 (14.4)	24 010 (27.9)	20 882 (45.3)	7044 (23.9)
Missing	14 847 (8.6)	1138 (10.4)	6263 (7.3)	2345 (5.1)	5101 (17.3)

Note: n=number of participants, SD=standard deviation, g/d=grams per day,

4.3 Result of the main analysis

4.3.1 Age adjusted OR

Table 3 shows the main study results in the association of alcohol intake and self-rated health. The odds ratios (ORs) and 95% confidence interval (95% CI) of the age adjusted association between nondrinker and poor health and excellent health were (OR = 1.81, 95% CI 1.73 to 1.89 and OR = 0.78, 95% CI 0.75-0.80) respectively. This suggested a positive association between alcohol non-drinking and poor health. In contrast, non-drinking alcohol was negatively associated with excellent health as OR was less than 1. High alcohol consumers and poor health showed (OR = 1.02, and 95% CI 0.95 to 1.10). This association is not statistically significant as the 95% CI includes 1. But women with high alcohol consumption and excellent health of the age adjusted model showed a positive association (OR = 1.21 and statistically significant 95% CI 1.16 to 1.26).

4.3.2 Multivariable adjusted OR

The multivariable model of poor health non-drinkers showed a positive association but showed a lower OR (OR = 1.64 with 95% CI 1.56 to 1.73) than the OR of the age adjusted model which was 1.8. High alcohol consumption was not associated with poor self-rated health (OR = 0.97, 95% CI 0.89 to 1.06). Alcohol non-drinkers and women with high alcohol consumption showed excellent health (OR = 0.83, 95% CI 0.80 to 0.86 and OR 1.21, 95% CI 1.16 to 2.26) respectively.

Nondrinkers showed a negative association with excellent health (OR= 0.83, 95% CI 0.80 to 0.86), while high drinkers showed a positive association with excellent health (OR= 1.21, 95% CI 1.16 to 2.26).

4.3.3 Subgroup OR according to education level

Table 3 also shows the associations between alcohol consumption and self-rated health of the age adjusted and multivariable model, according to educational status. In both models being non-drinker was positively associated with having poor health and association was stronger in women with higher levels of education (OR for ≤ 9 years = 1.54, 95% CI 1.44 to 1.66, OR for 10 to 12 years = 1.68, 95% CI 1.56 to 1.82, OR for ≥ 13 years = 1.84, 95% CI 1.68 to 2.01) age adjusted model and (OR for ≤ 9 years = 1.54, 95% CI 1.41 to 1.67, OR for 10 to 12 years = 1.69, 95% CI 1.55 to 1.85, OR for ≥ 13 years = 1.79, 95% CI 1.63 to 1.97) multivariable adjusted model.

Table 3: Odds ratios with 95% confidence intervals for the association between alcohol consumption and self-rated health in the total sample and according to education level

Alcohol intake patterns	Age adjusted model				Multivariable model			
	Poor vs Good		Excellent vs Good		Poor vs Good		Excellent vs Good	
Nondrinker vs moderate	1.81	(1.73-1.89)	0.78	(0.75-0.80)	1.64	(1.56-1.73)	0.83	(0.80-0.86)
High drinker vs moderate	1.02	(0.95-1.10)	1.21	(1.16-1.26)	0.97	(0.89-1.06)	1.21	(1.16-1.26)
Education \leq 9 years								
Nondrinker vs moderate	1.54	(1.44-1.66)	0.87	(0.82-0.93)	1.54	(1.41-1.67)	0.84	(0.78-0.90)
High vs moderate	1.22	(1.04-1.44)	1.04	(0.91-1.18)	1.03	(0.85-1.24)	1.20	(1.04-1.38)
Education 10 – 12 years								
Nondrinker vs moderate	1.68	(1.56-1.82)	0.88	(0.83-0.92)	1.69	(1.55-1.85)	0.84	(0.79-0.88)
High vs moderate	1.08	(0.94-1.24)	1.10	(1.02-1.18)	0.98	(0.85-1.14)	1.16	(1.07-1.25)
Education \geq 13 years								
Nondrinker vs moderate	1.84	(1.68-2.01)	0.84	(0.80-0.87)	1.79	(1.63-1.97)	0.82	(0.78-0.87)
High vs moderate	1.01	(0.89-1.14)	1.14	(1.08-1.20)	0.93	(0.82-1.06)	1.22	(1.16-1.29)

Note: Multivariable model performed in all women was adjusted for age, smoking, body mass index, physical activity, and education. Multivariable models in different education levels were adjusted for age, smoking, body mass index and physical activity.

5 Discussion

5.1 Summary of main findings

The aim of this study was to investigate the relationship between self-rated health and alcohol consumption among Norwegian women aged 30-70 years.

The result of this study shows that highest proportion of all alcohol consumption participants were moderate alcohol consumers, followed by non-alcohol consumers and high alcohol consumers respectively. Women in poor health consumed less alcohol than women in excellent health. Good health was more common among women who consumed moderate amount of alcohol. The highest proportion of high drinkers reported excellent health while the highest proportion of non-drinkers reported poor health.

In most age-adjusted models there was no association between high alcohol consumption and poor health with the exception that there was a positive association between high alcohol consumption and poor health among women with ≤ 9 years educational status, However, a positive association between high alcohol consumption and excellent health was observed in all multivariable adjusted models. We also found that alcohol nondrinking was negatively associated with excellent health in both age-adjusted and multivariate models.

5.2 Interpretation of findings

5.2.1 Alcohol and poor SRH

This study found that nondrinking of alcohol was positively associated with poor health. The positive association between nondrinking and poor health could indicate “the sick quitter effect” that people stop or moderate drinking for health reasons and known health risks associated with overconsumption (Ng Fat et al., 2014). This is likely because the non-drinking women could have been former drinkers with poor health who were afraid to drink. Those with poor health were more likely to reduce the frequency with which they drank over time compared to those in good health (Balsa et al., 2008; Platt et al., 2010). This could likely be because the long-term effects of alcohol lead to the development of chronic diseases and other serious problems (Centers for Disease Control and Prevention, 2022) and therefore women report poor health. These results could suggest also that health-related changes in drinking behavior occurred because participants could have been unwell and received medical advice to reduce alcohol consumption (Shaper et al., 1988) or due to medication or drug interactions (Moore et al., 2007). Poor health can be a reason people never start drinking as well (Ng Fat & Shelton, 2012).

Similar results of the positive association between nondrinking and poor SRH have been reported from previous studies. Poor SRH was highest among non-drinkers (Frisher et al., 2015), poorer SRH was associated with nondrinking (Satre et al., 2007), a strong association between nondrinking and poorer SRH in women (Stelander et al., 2023).

Our analysis found no significant association between high alcohol consumption and poor SRH. On the contrary a negative association between high alcohol consumption and poor health by previous population base study in Spain (Guallar-Castillón et al., 2001) and other Mediterranean countries (Valencia-Martin et al., 2009) was found. A negative association between high alcohol consumption

and poor SRH was also found in an article published in the China Population and Development Studies Journal (Zhao et al., 2020).

5.2.2 Alcohol and excellent SRH

Furthermore, high drinkers of alcohol surprisingly showed a positive association with excellent health. The reason for this could be that more current drinkers who were healthy could have been selected and surveyed (Zhao et al., 2020). However excellent health is an indicator of alcohol consumption and not vice versa (Holdsworth et al., 2016; Riediger et al., 2019). This means that women in excellent health can drink as they don't have any health issues that prevent them from drinking. On the contrary, alcohol consumption can cause mild and severe health effects that may be related to drinking behavior and the type of alcohol. Therefore, in such situation alcohol consumption cannot be an indicator of excellent health. Other studies also reported that women who drank at high risk were less likely to have poor self-assessments of their health (Lindstrom et al., 2020; Valencia-Martin et al., 2009). This finding is also consistent with the Troms study, which found a positive association between highest alcohol consumption and SRH in women (Stelander et al., 2023).

5.2.3 Association of alcohol consumption and SRH according to educational status

This paper showed that women with university or college educational background consumed higher amount of alcohol than less educated women. A possible explanation for this could be that alcohol consumption is more accepted by women in higher socioeconomic groups (education in this case). As women's labor market participation increases, influence in the workplace may also be a factor (Van Oers et al., 1999). It could also be due to social gradient in drinking. Generally, women with lower education have lower income and hence less alcohol drinking. Educational level is a resource that is a personal characteristic (Ross & Mirowsky, 2006) that is initially acquired throughout life and contributes to occupational status and income (Lahelma et al., 2004) This result is consistent with (Bloomfield et al., 2006; Christensen et al., 2017; Neumark et al., 2003; Stelander et al., 2023).

This paper also found that alcohol nondrinking is positively associated with poor health in all categories of educational status. The strength of association between nondrinking of alcohol and poor health increases as the level of education increases. The higher the educational status of women the stronger the association between nondrinking of alcohol and poor health. This may possibly be

because level of awareness increases with increasing educational level. Higher educated people are more aware of the consequences of health problems in terms of morbidity or mortality risks (Delpierre et al., 2009). Another hypothesis to explain this finding is that expectations of health increase with the level of education (Delpierre et al., 2009). Health and quality of life expectations were higher among those with a high level of education than among those with an intermediate level of education (Brouwer & van Exel, 2005).

Another finding is that there was stronger association between high alcohol consumption and excellent health as the educational level increases. The possible explanations which can be given are more educated individuals may have more material resources that can help mitigate the negative effects of alcohol consumption through better diet or living in places with less social harm (Bellis et al., 2016). The “human capital” approach would argue that education increases individuals’ ability to synthesize information about the health effects of alcohol use, or that individuals with higher educational attainment have a more health-oriented allocation of resources (Grossman, 2008). More educated individuals may favor healthy habits and avoid unhealthy ones, and education is an important part of health literacy (Rahkonen et al., 1995; Zarcadoolas et al., 2005). Finally, it may also be that there is no causal association, but that future-oriented people invest more in their health and are better educated (Grossman, 2008). This finding is in line with (Stelander et al., 2023).

But an alarming and unexpected observation was seen among least educated women of educational status ≤ 9 years. The observation was that contrary to all other outcomes, there was a positive association between high drinking and poor health, and an association between high drinking and excellent health became statistically insignificant. The reason for this could be that socioeconomic disadvantages that arise early in life can increase vulnerability to later exposures such as alcohol consumption (Blas & Kurup, 2010). Because people in low socioeconomic groups are often exposed to multiple different physical, social, and behavioral risk factors that may interact, the effect of any given risk factor is likely to be stronger in the lower social groups than in the higher ones (Diderichsen et al., 2012; Diderichsen et al., 2001).

5.3 Strengths and limitations

5.3.1 Strengths

The main strength of this study is its large, and random sample size and representativeness of the Norwegian female population aged 30–70 (Lund et al., 2003), although women in the NOWAC

cohort are, on average, slightly better educated than the general female population (Attah et al., 2017). The external validity of the NOWAC study instruments has been found acceptable (Lund et al., 2003). Another strength is that the OR was calculated using multivariable adjusted estimates, which reduced the confounding effects of other factors as much as possible.

5.3.2 Bias

Almost all studies are prone to error - they use samples from a population to estimate what is happening or could happen in the entire population (Henderson & Page, 2007). Internal validity, which is the characteristic of a study to produce valid results, can be affected by random and systematic (bias) errors (Tripepi et al., 2010). Random errors occur due to chance and can be minimized by increasing the sample size or reducing the variation in measurements (reducing measurement error) (Tripepi et al., 2010). More generally, bias is any deviation in the collection, analysis, interpretation, and reporting of data that leads to conclusions that systematically underestimate or overestimate the true relationship between a given exposure and outcome (Porta, 2008). Most internal validity violations can be attributed to selection bias, information bias, (Zaccai, 2004) or confounding (Tripepi et al., 2010).

5.3.2.1 Information bias

Information bias, also called measurement bias, is a systematic error that results from inaccurate measurement (or classification) of subjects with respect to study variable(s) (Zaccai, 2004). Information bias occurs during data collection (Delgado-Rodriguez & Llorca, 2004). The term “information bias” is used to describe “a flaw in measuring exposure, covariate, or outcome variables that results in different quality of information between comparison groups” (Porta, 2014). It occurs when information used in a study is measured or recorded inaccurately (Kesmodel, 2018). Information bias can occur for the following reasons: accidental or intentional misreporting by a study participant about something that cannot be objectively verified (e.g., level of alcohol consumption); recording errors in self-administered questionnaires, interviews or diaries or medical records; misinterpretation of information due to non-standard data collection by different people; unintentional or intentional misattribution of results based on prior knowledge of exposure; or erroneous registration or non-registration of exposure based on prior knowledge of a result (Kesmodel, 2018).

This study is based on self-rated data. Alcohol consumption was measured using self-assessment, which could potentially be biased due to underreporting. Population surveys risk underreporting alcohol consumption, which could also lead to an underestimation of the prevalence of heavy drinking (Lindstrom et al., 2020; Stockwell et al., 2004). There is always a risk of recall bias in population surveys, as respondents may have difficulty remembering past health behaviors or information bias as respondents may provide untruthful answers (Lindstrom et al., 2020) which can lead to misclassification errors (Zhao et al., 2020). However, other researchers have found that simple self-completed questionnaires can provide useful estimates of alcohol consumption over time, and that people in population studies have little reason to underreport their consumption (Grønboek et al., 2004). As this study did not identify former drinkers among non-drinkers, former drinkers are more likely to have poor self-rated health (Frisher et al., 2015) and multiple health conditions (Satre et al., 2007). Alcohol consumption from the NOWAC questionnaire was underreported. Therefore, we may have in this model an over representation of moderate drinkers and under representation of high drinkers (Christine L. Parr, 2008).

5.3.2.2 Selection bias

Selection bias is an error due to systematic differences in characteristics between those who participate in a study and those who don't (Zaccai, 2004). Selection bias results from procedures for selecting study participants that produce an outcome in participants that differs from the outcome that would occur in all appropriate individuals in the source population (Aschengrau & Seage, 2013). The overall response rate of this study was 52.7%. This indicates that the remaining 47.3% were non-respondents who can introduce non-response bias. Participants in this study were randomly selected and previously shown to be representative of the Norwegian female population as a whole, with the exception of higher education, than non-responders (Lund et al., 2003). Missing values and non-response are associated with poor health (Knudsen et al., 2010) and risky drinking (Hill et al., 1997), and it is possible that the prevalence of risky drinking (high drinking) and poor self-rated health was underestimated.

5.3.2.3 Confounding

Confounding is the bias in the assessment of the relationship between a risk factor (exposure) and a disease (outcome) and arises when comparing groups that differ in the way they affect the disease

(outcome) (Bhopal, 2016). While confounding bias is bias of the estimated effect of an exposure on an outcome due to the existence of common causes for the exposure and the outcome (Porta, 2014). The covariates used in this study fulfill the definition of confounding. Age was adjusted separately, and the remaining educational status, smoking, BMI, and physical activity were handled based on the multivariate adjustment techniques. Educational status as an effect modifier was further handled by stratification.

5.3.3 Other Limitations

As already explained above, the design of this study is cross-sectional study. Cross-sectional studies are observational studies that analyze data from a population at a single point in time. It is a “snapshot” of a group of individuals (Carlson & Morrison, 2009). Its limitation is that, as the outcome and exposure variables are measured simultaneously, establishment of causal relationship is relatively difficult (Wang & Cheng, 2020). In general, there is no evidence of a temporal relationship between exposure and outcome.(Carlson & Morrison, 2009). Cross-sectional study does not indicate a sequence of events, whether the exposure occurred before, after, or during the onset of the disease outcome (Levin, 2006). Though alcohol consumption was significantly associated with SRH, it is impossible to determine the direction of the association.

Furthermore, another limitation is that this study included only three alcohol consumption patterns: non-drinking, moderate alcohol consumption, and heavy alcohol consumption. The non-drinker group most likely consists of both lifelong non-drinkers and former drinkers, leading to reverse causality issues known as sick-quitters bias (Stelander et al., 2023). Another pattern which is binge drinking was not included in this study’s pattern of drinking as it is widely associated with an increased risk of acute consequences, including long-term consequences, e.g., injury induced irreversible disabilities or death (Anderson, 2007; Courtney & Polich, 2009; Dawson et al., 2008; Gmel et al., 2003; Ham & Hope, 2003; Plant & Plant, 2006).

Another limitation of this study is that other variables, such as income and occupation, were not included and adjusted for in the study as potential confounders that may or may not have affected the association between alcohol consumption and self-rated health. But there is evidence that education has a practical advantage over income, as in many countries surveyed income information is sensitive and therefore can be difficult to obtain in general population surveys (Bloomfield et al., 2006). In fact, in surveys from participating study countries, education was the most requested

indicator of SES and had the fewest missing responses (Bloomfield et al., 2006). Also in comparison to other indicators such as occupational prestige, education should express more precisely what social position is all about, which may be causally related to an increased risk (Marmot, 2002). In general population surveys, measuring the SES by education level has advantages over income or occupation level (Van Oers et al., 1999).

Furthermore, statistical analysis limitations could be considered. Our multinomial logistic regression analysis was performed by the so called complete-case analysis method. This method uses only complete data excluding the missing values. All cases with incomplete data are removed from the analysis (Bennett, 2001). Aside from being easy to implement and providing valid results in case of missing complete at random (MCAR), it has limitations like providing inefficient estimates which may lead to loss of statistical power due to the analysis of a smaller data set (Bennett, 2001), and if the dropout mechanism is not MCAR, the analysis may be biased (Bennett, 2001; Myers, 2000).

Last limitation to be mentioned is that data on Norwegian women for this study were collected between 1991 and 2008. About 14 years have passed since 2008. Those 14 years are not included in this study, so we do not know the current alcohol consumption trend among the Norwegian women. The latest data may have been helpful in assessing the recent association between alcohol consumption and self-rated health among Norwegian women.

5.4 Implications and generalizability

What was previously reported for the NOWAC study is that the external validity is good and the women are thus representative of Norwegian women and their ages (Lund et al., 2003). Selection bias due to a higher participation of highly educated women, the missing cases and the possibilities of information bias and selection bias could contribute to the generalizability of this study.

The present study also shows the positive association of high alcohol consumption and poor health among low SES Norwegian women. The lower the SES the higher vulnerability of high alcohol consuming women to poor health. This is a social gradient in health as health status is directly related to SES. Most importantly, this result may shape future public health measures towards the Norwegian women vulnerable groups. The results of this study also show that the association of alcohol consumption and SRH increases with educational status in Norwegian women. The impacts of long-term alcohol consumption on health of Norwegian women focused on different SES could open a door to the future research. In addition, the findings of this study can generate hypothesis with

respect to the association of alcohol consumption and health of women in general and Norwegian women in particular based on lifestyles and SES.

6 Conclusion

This study found that nonconsumption of alcohol was positively associated with poor self-rated health among Norwegian women. While high alcohol consumption was positively associated with excellent self-rated health. In general, alcohol consumption in Norwegian women could be an indicator of health. As this study is a cross-sectional study, causal relationship cannot be confirmed as temporality is unknown. We do not know whether or not alcohol consumption takes precedence over self-rated health. Therefore, future prospective longitudinal studies are needed to explore causality. Finally, as mentioned earlier, the World Health Organization recently published that no level of alcohol consumption is safe for our health. Hence the Norwegian Directorate of Health might want to consider the national recommendations on alcohol consumption.

7 References

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8 Appendices

Appendix 1: Women's, lifestyle, and health questionnaire 1991 (NOWAC)

KVINNER, LIVSSTIL OG HELSE

Vi ber deg fylle ut spørreskjemaet så nøye som mulig, se orienteringen på brosjyren for nærmere opplysninger.

Sett kryss for JA i ruten ved siden av hvis du samtykker i å være med. Dersom du ikke ønsker å delta, sett kryss for NEI og returner skjemaet i vedlagte frankerte svarkonvolutt, så slipper du å bli purret på.

Med vennlig hilsen
Elliv Lund
Professor dr. med.

KONFIDENSIELT

1 KLH/1991
60.000 34-49 år
1 - 59999
Skj-type 1 - 4 sider

Jeg samtykker i å delta i undersøkelsen JA
NEI

Forhold i oppveksten

I hvilke(n) kommune vokste du opp (0-7 år)?
.....

Hvem var forsørger i familien? (Sett ett kryss)
 far mor begge andre

Hvordan var de økonomiske forhold i oppveksten?

Meget gode	<input type="checkbox"/>
Gode	<input type="checkbox"/>
Dårlige	<input type="checkbox"/>
Meget dårlige	<input type="checkbox"/>

Kroppstype i 1. klasse. (Sett ett kryss)
 veldig tynn tynn normal tykk veldig tykk

Hvor mange års skolegang har du i alt, ta med folkeskole og ungdomsskole?
..... år

Hvilken yrkesutdannelse har du?
.....

Er din arbeidssituasjon: (Sett ett kryss)
 hjemmевærende deltids arbeid
 heltids arbeid utenfor hjemmet
 uførepensjon skolegang

Er du;
 gift samboer annet

Menstruasjonsforhold

Hvor gammel var du da du fikk menstruasjon første gang?
..... år

Hvor mange år tok det før menstruasjonen ble regelmessig?
 Ett år eller mindre Mer enn ett år Aldri
 Husker ikke

Hvor lang tid gikk det mellom 1. dag i en menstruasjonsblødning til 1. dag i neste menstruasjonsblødning da du var 18 år?
..... dager

Hvor lang tid gikk det mellom 1. dag i en menstruasjonsblødning til 1. dag i neste menstruasjonsblødning da du var 30 år?
.....dager

Har menstruasjonen noen gang vært borte mer enn en måned? (Se bort fra svangerskap) Ja Nei

Hvis Ja;

	Ja	Nei	Hvis Ja; Hvor lenge Måneder
Spisevegring	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Etter slanking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Etter p-pille bruk	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ved stress i arbeidet (skift)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ved trening	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Andre årsaker	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Har du vanligvis før-menstruelle plager?
 ingen brystsprenge depresjon annet

Har du hete- eller svettetokter som du mener skyldes overgangsalderen (klimakteriet)? (Sett ett kryss)
 Ingen Lette Plagsomme

Har du regelmessig menstruasjon fremdeles? Ja Nei

Hvis Nei;
 har den stoppet av seg selv?
 operert vekk eggstokkene?
 operert vekk livmoren?
 annet?

Hvor gammel var du da menstruasjonen opphørte?
..... år

Hormonbehandling

Har du brukt hormontabletter i overgangsalderen? Ja Nei

Hvis Ja, hvor gammel var du første gang du fikk det?
..... år

Hvor lenge har du i alt brukt hormontabletter?
.....mnd.....år

- 1 -

Page 42 of 55

Graviditeter, fødsler og amming

Fyll ut for hvert barn opplysninger om fødselsår og antall måneder du ammet hvert barn (fylles ut også for dødfødte eller for barn som er døde senere i livet). I tillegg ber vi deg oppgi hvor mange kilo du la på deg i løpet av svangerskapet. Dersom du ikke har født barn fortsetter du ved neste spørsmål.

Barn	Fødselsår	Antall måneder med amming	Vektøkning i svangerskapet
1			
2			
3			
4			
5			
6			
7			

Har du hatt noe svangerskap som varte mindre enn seks måneder dvs. spontan abort eller selvbestemt abort?

Ja Nei

Hvis Ja, hvor gammel var du ved første abort?

.....år

Hvor mange aborter har du hatt i alt?

.....

Har du hatt svangerskap utenfor livmoren?

Ja Nei

Hvis Ja;

Hvor gammel var du første gang?

.....år

Har du noen gang prøvd i mer enn 1 år å bli gravid?

Ja Nei

Hvis Ja;

Hvor gammel var du?

.....år

Hvor lenge prøvde du?

.....år

P-Piller

Har du noen gang brukt p-piller, minipiller inkludert?

Ja Nei

Hvis Ja;

Hvor lenge har du brukt p-piller i alt?

.....år

Hvor gammel var du første gang du brukte p-piller?

.....år

Hvis du har født barn, brukte du p-piller før første fødsel?

Ja Nei

Bruker du p-piller nå?

Har du fått p-piller av andre årsaker enn prevensjon?

Har du blitt anbefalt å slutte med p-piller av medisinske årsaker?

Vi vil be deg om å besvare spørsmålene om p-pille bruk mer nøye.

For hver periode med sammenhengende bruk av samme p-pille merke håper vi du kan si oss hvor gammel du var da du startet, hvor lenge du brukte det samme p-pille merket og navnet på p-pillene.

Dersom du har tatt opphold eller skiftet merke, skal du besvare spørsmålene for en ny periode. Dersom du ikke husker navnet på p-pille merket, sett usikker. For å hjelpe deg til å huske navnet på p-pille merkene ber vi deg bruke den vedlagte brosjyre som viser bilder av p-pille merker som har vært solgt i Norge. Vennligst oppgi også nummeret på p-pillen som står i brosjyren.

Periode	Alder ved start	Brukt samme p-pille sammenhengende		Nr.	P-pillene (se brosjyren) Navn
		år	måneder		
Første					
Andre					
Tredje					
Fjerde					
Femte					
Sjette					
Syvende					
Åttende					

Annen prevensjon

Hvor ofte har du eller partner benyttet en av følgende prevensjonsmetoder, og hvor mange år?

	Aldri	Av og til	Ofte	Alltid	Antall år
Kondom					
Pessar					

Har du hatt spiral?

Ja Nei

Hvis Ja;

Hvor gammel var du første gang den ble satt inn?

.....år

Hvor mange år har du hatt spiral i alt?

.....år

Er du sterilisert?

Ja Nei

Hvis Ja;

Hvor gammel var du da du ble sterilisert?

Sykdom

Har du hatt noen av følgende sykdommer? Hvis Ja; Alder ved start

	Ja	Nei	Hvis Ja; Alder ved start
Høyt blodtrykk			
Sukkersyke (diabetes)			
Årebetennelse			
Blodpropp i legg eller lår			
Hjerneslag, uansett type			
Hjerteinfarkt			
Reumatoid artritt (leddgikt)			
Crohns sykdom, ulcerøs colitt			
Psoriasis			
Fibromyalgi/Fibromyositt			
Deprimert mer enn 14 dager			

Allergi

Har du følgende allergiske sykdommer? Hvis Ja; Alder ved start

	Ja	Nei	Hvis Ja; Alder ved start
Eksem			
Høysnue			
Astma			

Er du allergisk overfor

	Ja	Nei
Bestemte typer mat		
Pollen		
Husdyr		
Annnet		

Egen opplevelse av helse

Oppfatter du din egen helse som; (Sett ett kryss)

meget god god dårlig meget dårlig

Brystkreft i nærmeste familie

Har noen nære slektninger hatt brystkreft; Vet ikke

	Ja	Nei	Vet ikke
mor			
søster			
mormor			
farmor			

Undersøkelser for kreft

Hvor ofte undersøker du brystene dine selv?

(Sett ett kryss)

Aldri	
Uregelmessig	
Regelmessig (Omtrent hver måned)	

Går du til regelmessig undersøkelse av brystene dine med mammografi? (Sett ett kryss)

Nei	
Ja, med 2 års mellomrom eller mindre	
Ja, med mer enn 2 års mellomrom	

Har du tatt kreftprøve fra livmorhalsen regelmessig?

Aldri	
Sjeldnere enn hvert 3. år	
Hver 3. år eller oftere	

Høyde og vekt

Hvor høy er du?

Hvor mye veier du i dag?

Hvor mye veide du da du var 18 år?

Røykevaner

Har du noen gang røkt? Ja Nei

Hvis Ja, ber vi deg om å fylle ut for hver fem års periode i livet hvor mange sigaretter du i gjennomsnitt røkte pr. dag i den perioden.

Alder	Antall sigaretter hver dag						
	0	1-4	5-9	10-14	15-19	20-24	25+
10-14							
15-19							
20-24							
25-29							
30-34							
35-39							
40-44							
45-49							

Bor du sammen med noen som røker? Ja Nei

Hvis Ja, hvor mange sigaretter røker de til sammen pr. dag?

Røkte noen av de voksne hjemme mens du var barn? Ja Nei

Hvis ja, røkte

bare far bare mor far og mor andre

Fysisk aktivitet

Vi ber deg angi din fysiske aktivitet etter en skala fra svært liten til svært mye ved 14 års alder, ved 30 års alder og i dag. Skalaen nedenfor går fra 1-10. Med fysisk aktivitet mener vi både arbeid i hjemmet og i yrkeslivet samt trening og annen fysisk aktivitet som turgåing ol.

Alder	Svært lite										Svært mye									
14 år	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10
30 år	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10
I dag	1	2	3	4	5	6	7	8	9	10										

Har du drevet konkurranseidrett? Ja Nei

Hvis Ja, hvor mange år i alt?

Kosthold

For hver matsort nedenfor ber vi deg krysse av i den ruten som passer hvor ofte du i gjennomsnitt i løpet av siste år har spist slik mat.

	6-10 pr dag	4-5 pr dag	2-3 pr dag	1 pr dag	5-6 pr uke	2-4 pr uke	1 pr uke	1-3 pr måned	Nesten aldri
Helmelk (glass)									
Skummet melk (glass)									
Lettmelk (glass)									
Kokekaffe (kopper)									
Traktekaffe (kopper)									
Pulverkaffe (kopper)									
Grov brød (skiver)									
Fint brød (skiver)									
Ost (skiver)									
Poteter									
Epler/pærer									
Appelsiner o.l.									

Middag

	6-7 pr uke	4-5 pr uke	3 pr uke	2 pr uke	1 pr uke	2-3 pr måned	1 pr måned	Nesten aldri
Rent kjøtt								
Oppmalt kjøtt								
Fet fisk (makrell, laks o.l.)								
Mager fisk (torsk o.l.)								
Ris, spagetti								
Gulerøtter								
Kål								
Kålrot								
Salat								
Broccoli/Blomkål								

Hva slags fett blir vanligvis brukt i din husholdning?

	På brød	Til matlaging
Smør eller hard margarin		
Myk (soft) margarin eller olje		
Smør/margarin blanding		

Hvor mye melk drakk du som barn hver dag?

drakk ikke melk 1-3 glass 4-6 glass 7 glass eller mer

Hvor ofte spiste du grønnsaker til middag som barn?

aldri 1 gang i uken eller mer sjelden
 2-3 ganger i uken 4 eller flere ganger

Alkohol

Er du total avholdskvinne?

Ja Nei

Hvis Nei, hvor ofte og hvor mye drakk du i gjennomsnitt siste året?

	6-10 pr dag	4-5 pr dag	2-3 pr dag	1 pr dag	5-6 pr uke	2-4 pr uke	1 pr uke	1-3 pr måned	Nesten aldri
Øl (1/2 liter)									
Vin (glass)									
Brennevin (drinker)									

Solvaner

Dersom du i begynnelsen av sommeren soler deg kraftig, blir huden din; (Sett ett kryss)

brun uten å først være rød rød
 rød med svie rød med svie og blemmer

Etter gjentatt og lenge soling, blir huden din; (Sett ett kryss)

dypt brun brun lys brun aldri brun

Hvor mange uregelmessige føflekker større enn 5 mm har du sammenlagt på begge beina (fra tærne til lysken)?

(På siste side av brosjyren er det bilder som viser hva vi mener med uregelmessige føflekker.)

0 1 2-3 4-6 7-12 13-24 25+

Hvilken øyefarve har du? (Sett ett kryss)

brun grå, grønn eller blanding blå

Hvilken hårfarve har du? (Sett ett kryss)

mørkbrun, svart brun blond, gul rød

Hvor mange ganger pr. år er du blitt forbrent av solen slik at du har fått svie eller blemmer med avflassing etterpå? (Ett kryss for hver aldersgruppe)

Alder	Aldri	Høyst 1 gang pr.år	2-3 g. pr. år	4-5 g. pr. år	6 eller flere ganger
Før 10 år					
10-19 år					
20-29 år					
30-39 år					
40-49 år					

Hvor mange uker i gjennomsnitt pr. år har du vært på badeferie i syden eller i Norge?

Alder	Aldri	1 uke	2-3 uker	4-6 uker	7 uker eller mer
Før 10 år					
10-19 år					
20-29 år					
30-39 år					
40-49 år					

Hvor ofte har du solt deg i solarium?

Alder	Aldri	Sjelden	1 gang pr. mnd.	2 gang pr. mnd.	3-4 gang pr. mnd.	oftere enn 1 gang pr. uke
Før 10 år						
10-19 år						
20-29 år						
30-39 år						
40-49 år						

Takk for at du ville delta i undersøkelsen!

KVINNER OG KREFT**KONFIDENSIELT**

Vi ber deg fylle ut spørreskjemaet så nøye som mulig, se orienteringen på brosjyren for nærmere opplysninger.

Sett kryss for JA i ruten ved siden av hvis du samtykker i å være med. Dersom du ikke ønsker å delta, sett kryss for NEI og returner skjemaet i vedlagte svarkonvolutt, så slipper du å bli purret på.

Med vennlig hilsen

Eiliv Lund
Professor dr. med.

17 KK/1995

6.000 30-39 år

120000 - 125999

Skj-type VII - 2 sider

Jeg samtykker i å JA
delta i undersøkelsen NEI

Hvor mange års skolegang/yrkesutdannelse har du i alt, ta med folkeskole og ungdomsskole? år

Hvor mange personer er det i ditt hushold? Antall:

Hvor mange inntekter er det i husholdet?

Hvor høy er bruttoinntekten i husholdet pr. år?

- under 150 000 kr 151 000–300 000 kr
 301 000–450 000 kr 451 000–600 000 kr
 over 600 000 kr

Menstruasjonsforhold

Hvor gammel var du da du fikk menstruasjon første gang? år

Har du regelmessig menstruasjon fremdeles? Ja Nei

Alder da menstruasjonen opphørte? år

Graviditeter, fødsler og amming

Fyll ut for hvert barn opplysninger om fødselsår og antall måneder du ammet hvert barn (fylles også ut for dødfødte barn for barn som er døde senere i livet). Dersom du ikke har født barn, fortsetter du ved neste spørsmål.

Barn	Fødselsår	Antall måneder med amming
1		
2		
3		
4		
5		
6		

P-Piller

Har du noen gang brukt p-piller, minipiller inkludert? Ja Nei

Hvis Ja;
Hvor lenge har du brukt p-piller i alt?år

Hvor gammel var du første gang du brukte p-piller?år

Bruker du p-piller nå? Ja Nei

Vi vil be deg om å besvare spørsmålene om p-pille bruk mer nøye. For hver periode med sammenhengende bruk av samme p-pille merke håper vi du kan si oss hvor gammel du var da du startet, hvor lenge du brukte det samme p-pille merket og navnet på p-pillene.

Dersom du har tatt opphold eller skiftet merke, skal du besvare spørsmålene for en ny periode. Dersom du ikke husker navnet på p-pille merket, sett usikker. For å hjelpe deg til å huske navnet på p-pille merkene ber vi deg bruke den vedlagte brosjyre som viser bilder av p-pille merker som har vært solgt i Norge. Vennligst oppgi også nummeret på p-pillen som står i brosjyren.

Periode	Alder ved start	Brukt samme p-pille sammenhengende år	Nr.	P-pillene (se brosjyren)	
				Navn	Navn
Forste					
Andre					
Tredje					
Fjerde					
Femte					
Sjette					
Syvende					

Brystkreft i nærmeste familie

Har mor hatt brystkreft? Ja Nei

Undersøkelser for brystkreft

Hvor ofte undersøker du brystene dine selv? (Sett ett kryss)

- Aldri.....
Uregelmessig.....
Regelmessig (omtrent hver måned).....

Går du til regelmessig undersøkelse av brystene dine med mammografi? Ja Nei

Høyde og vekt

Hvor høy er du? cm

Hvor mye veier du i dag? kg

Hvor mye veide du da du var 18 år? kg

Røykevaner

Har du noen gang røkt? Ja Nei

Hvis du røker eller har røkt ber vi deg om å fylle ut for hver fem års periode i livet hvor mange sigaretter du i gjennomsnitt røkte pr. dag i den perioden.

Antall sigaretter hver dag							
Alder	0	1-4	5-9	10-14	15-19	20-24	25+
10-14							
15-19							
20-24							
25-29							
30-34							
35-39							

Røker du nå? Ja Nei

Fysisk aktivitet

Vi ber deg angi din fysiske aktivitet etter en skala fra svært lite til svært mye ved 14 års alder og i dag. Skalaen nedenfor går fra 1-10. Med fysisk aktivitet mener vi både arbeid i hjemmet og i yrkeslivet, samt trening og annen fysisk aktivitet som turgåing o.l. Sett ring rundt det tallet som best angir ditt nivå av fysisk aktivitet.

Alder	Svært lite										Svært mye									
14 år	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10
I dag	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10

Kosthold

For hver matsort nedenfor ber vi deg krysse av i den ruten som passer hvor ofte du i gjennomsnitt i løpet av siste år har spist slik mat.

	6-10 pr dag	4-5 pr dag	2-3 pr dag	1 pr uke	5-6 pr uke	2-4 pr uke	1 pr uke	1-3 pr måned	Nesten aldri
Helmelk (glass)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lettmelk (glass)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kaffe (kopper)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Brød (skiver)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ost (skiver)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Poteter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Appelsiner o.l.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Middag	6-7 pr uke	4-5 pr uke	3 pr uke	2 pr uke	1 pr uke	2-3 pr mnd	1 pr mnd	Nesten aldri	<input type="checkbox"/>
Rent kjøtt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Oppmalt kjøtt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fet fisk (makrell, laks o.l.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mager fisk (torsk o.l.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fiskeboller/pudding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ris, spaghetti	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pizza	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grøt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Hvorfor spiser du ikke mer fisk

	Lite viktig	Viktig	Meget viktig
– for høy pris	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
– for lite utvalg	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
– for ujevn tilgang	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
– kvaliteten varierer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
– uten tilgang på ferdigretter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
– lukt ved tilberedning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
– vanskelig å tilberede	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
– smaken	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
– familien liker ikke fisk	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
– annet, angi	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Alkohol

Er du total avholdskvinne? Ja Nei

Hvis Nei, hvor ofte og hvor mye drakk du i gjennomsnitt siste året?

	6-10 pr dag	4-5 pr dag	2-3 pr dag	1 pr dag	5-6 pr uke	2-4 pr uke	1 pr uke	1-3 pr mnd	Nesten aldri
Øl (1/2 lite)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vin (glass)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Brennevin (drinker)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Solvaner

Dersom du i begynnelsen av sommeren soler deg kraftig, blir huden din; (sett ett kryss)

brun uten først å være rød rød
 rød med svie rød med svie og blemmer

Hvor mange uregelmessige føflekker større enn 5 mm har du sammenlagt på begge beina (fra tærne til lysken)? På siste side av brosjyren er det bilder som viser hva vi mener med uregelmessige føflekker.

0 1 2-3 4-6 7-12 13-24 25+

Hvor mange ganger pr. år er du blitt forbrent av solen slik at du har fått svie og blemmer med avlassing etterpå? (ett kryss for hver aldersgruppe)

Alder	Aldri	Høyst 1 gang pr. år	2-3 g. pr. år	4-5 g. pr. år	6 eller flere ganger
Før 10 år	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10-19 år	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20-29 år	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30-39 år	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Hvor mange uker i gjennomsnitt pr. år har du vært på badeferie i syden eller i Norge?

Alder	Aldri	1 uke	2-3 ukerr	4-5 ukerr	7 ukerr eller mer
Før 10 år	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10-19 år	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20-29 år	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30-39 år	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Hvor ofte har du solt deg i solarium?

Alder	Aldri	Sjelden	1 gang pr. mnd.	2 ganger pr. mnd.	3-4 ganger pr. mnd.	oftere enn 1 gang pr. uke
Før 10 år	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10-19 år	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20-29 år	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30-39 år	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Hvilken solfaktor bruker du?

I dag Påske Sommer
 For 10 år siden

Hvor ofte dusjer eller bader du?

	Mer enn 1 g dagl	1 g dagl	4-6 g pr. uke	2-3 g pr. uke	1 g pr. uke	2-3 g pr. mnd.	Sjelden aldri
Med såpe/shampo	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Uten såpe/shampo	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Takk for at du ville delta i undersøkelsen!

KVINNER OG KREFT

Vi ber deg fylle ut spørreskjemaet så nøye som mulig, se orienteringen på brosjyren for nærmere opplysninger.

Sett kryss for JA i ruten ved siden av hvis du samtykker i å være med. Dersom du ikke ønsker å delta, sett kryss for NEI og returner skjemaet i vedlagte svarkonvolutt, så slipper du å bli purret på.

Med vennlig hilsen

Eiliv Lund
Professor dr. med

KONFIDENSIELT

19 KK/1996
20.000 45-69 år
200000 – 219999
Skj-type VIII - 8 sider, hele landet

Jeg samtykker i å delta i JA

spørreskjema-undersøkelsen NEI

Forhold i oppveksten

I hvilke(n) kommune vokste du opp (0-7 år)?

.....

Hvordan var de økonomiske forhold i oppveksten?

Meget gode

Gode

Dårlige

Meget dårlige

Usikker

Kroppstype i 1. klasse. (Sett ett kryss)

veldig tynn tynn normal tykk veldig tykk

Hvor mange års skolegang/yrkesutdannelse har du i alt, ta med folkeskole og ungdomsskole? år

Menstruasjonsforhold

Hvor gammel var du da du fikk menstruasjon første gang? år

Hvor mange år tok det før menstruasjonen ble regelmessig?

Ett år eller mindre Mer enn ett år

Aldri Husker ikke

Har du regelmessig menstruasjon fremdeles?

Ja Nei

Har uregelmessig menstruasjon

Hvis Nei;

har den stoppet av seg selv?

operert vekk eggstokkene?

operert vekk livmoren?

annet?

Hvor gammel var du da menstruasjonen opphørte? år

Graviditeter, fødsler og amming

Fyll ut for hvert barn opplysninger om fødselsår og antall måneder du ammet hvert barn (fylles også ut for dødfødte eller for barn som er døde senere i livet). Dersom du ikke har født barn, fortsetter du ved neste spørsmål.

Barn	Fødselsår	Antall måneder med amming
1		
2		
3		
4		
5		
6		
7		

Hormonbruk i overgangsalderen

HORMONTABLETTER/PLASTER/KREM/STIKKPILLER

Har du noen gang brukt hormontabletter/plaster? Ja Nei

Hvis Ja; hvor lenge har du brukt hormontabletter/plaster i alt? år

Hvor gammel var du første gang du brukte hormontabletter/plaster? år

Bruker du tabletter/plaster nå? Ja Nei

HORMONPREPARAT TIL LOKAL BRUK I SKJEDEN

Har du noen gang brukt hormonkrem/stikkpille? Ja Nei

Hvis Ja; hvor lenge har du brukt krem/stikkpille i alt? år

Hvor gammel var du første gang du brukte hormonkrem/stikkpille? år

Bruker du krem/stikkpille nå? Ja Nei

Vi vil be deg om å besvare spørsmålene om bruk av hormontablett/ plaster/krem/stikkpille (hormonpreparater) mer nøye. For hver periode med sammenhengende bruk av samme hormonpreparat håper vi du kan si oss hvor gammel du var da du startet, hvor lenge du brukte det samme hormonpreparatet og navnet på dette. Dersom du har tatt opphold eller skiftet merke, skal du besvare spørsmålene for en ny periode. Dersom du ikke husker navnet på hormonpreparatet sett usikker. For å hjelpe deg til å huske navnet på hormonpreparatene ber vi deg bruke den vedlagte brosjyre som viser bilder av hormonpreparater som har vært solgt i Norge. Vennligst oppgi også nummer på hormontabletten/plasteret/kremen/stikkpillen som står i brosjyren.

Periode	Alder ved start	Brukt samme hormontablett/plaster/krem/stikkpille Sammenhengende år	Nr.	Hormontablett/ plaster/krem stikkpille (se brosjyre) Navn
Første				
Andre				
Tredje				
Fjerde				
Femte				

P-Piller

Har du noen gang brukt p-piller, minipiller inkludert?

Ja Nei

Hvis Ja;

Hvor lenge har du brukt p-piller i alt?

Hvor gammel var du første gang du brukte p-piller?

Bruker du p-piller nå? Ja Nei

Vi vil be deg om å besvare spørsmålene om p-pille bruk mer nøye. For hver periode med sammenhengende bruk av samme p-pille merke håper vi du kan si oss hvor gammel du var da du startet, hvor lenge du brukte det samme p-pille merket og navnet på p-pillene.

Dersom du har tatt opphold eller skiftet merke, skal du besvare spørsmålene for en ny periode. Dersom du ikke husker navnet på p-pille merket, sett usikker. For å hjelpe deg til å huske navnet på p-pille merkene ber vi deg bruke den vedlagte brosjyre som viser bilder av p-pille merker som har vært solgt i Norge. Vennligst oppgi også nummeret på p-pillen som står i brosjyren.

Periode	Alder ved start	Brukt samme p-pille sammenhengende år	Nr.	P-pillene (se brosjyren) Navn
Første				
Andre				
Tredje				
Fjerde				
Femte				

Abort og infertilitet

Har du hatt noe svangerskap som varte mindre enn seks måneder dvs. spontanabort eller selvbestemt abort? Ja Nei

Hvis Ja, hvor gammel var du ved første abort?

Hvor mange aborter har du hatt i alt?

Har du noen gang prøvd i mer enn 1 år å bli gravid? Ja Nei

Hvis Ja, hvor gammel var du?

Hvor lenge prøvde du?

Sykdom

Har du hatt noen av følgende sykdommer?

	Ja	Nei	Hvis Ja: Alder ved start
Høyt blodtrykk	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hjertesvikt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Årebetennelse	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Blodpropp i legg eller lår	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hjerteinfarkt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Slag	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Migrene	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Epilepsi	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kreft	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sukkersyke (diabetes)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Oppfatter du din egen helse som; (Sett ett kryss)

meget god god dårlig meget dårlig

Allergi

Er du allergisk overfor Ja Nei

bestemte typer mat

Hvis Ja, angi:

Melk o.l.

Sitrus (appelsin o.l.)

Skalldyr

Annet

Hjerte- karepreparater

BRUKER DU LEGEMIDLER FAST

mot høyt blodtrykk? Ja Nei

mot hjertekrampe (angina)? Ja Nei

mot hjertesvikt og/eller uregelmessig hjerterytme? Ja Nei

Hvis ja ved ett eller flere av spørsmålene, vennligst angi hvilke hjerte-karepreparater du bruker, og når behandlingen ble påbegynt.

Preparat	Behandlingsstart		
	år	måned	
.....
.....
.....

Bruk av smertestillende midler

Har du det siste året periodevis brukt smertestillende midler daglig eller nesten daglig? Angi hvor mange måneder du brukte dem og sett 0 hvis du ikke har brukt smertestillende midler.måneder

Bruker du acetylsalisyltabletter fast? Ja Nei

Hvis Ja, angi navn:

hvor mange pr. dag?tabletter

hvor lenge har du brukt i alt?mndår

Har du brukt smertestillende midler siste 14 dager?

Ja Nei

Hvis Ja;

Var dette reseptbelagte smertestillende midler? Ja Nei

Brukte du Paralgin forte? Ja Nei

Codalgin forte? Ja Nei

Codacetyl? Ja Nei

Andre reseptbelagte smertestillende:

Var dette reseptfrie smertestillende midler? Ja Nei

Hvis Ja, var det Albyl-E? Ja Nei

Dispril? Ja Nei

Globentyl? Ja Nei

Globoid? Ja Nei

Novid? Ja Nei

- Fenozonpreparater (f.eks. Fanalgin, Fenazon, Fenazon-koffein, Antineuralgica)? Ja Nei

- Paracetamolpreparater (f.eks. Panodil, Paracet, Paracetamol, Pinex)? Ja Nei

- Ibuprofenpreparatet (f.eks. Brufen, Ibox, Ibumetin)? Ja Nei

Undersøkelser for kreft

Hvor ofte undersøker du brystene dine selv?

(Sett ett kryss)

Aldri.....

Uregelmessig.....

Regelmessig (omtrent hver måned).....

Går du til regelmessig undersøkelse av brystene

dine med mammografi? (Sett ett kryss)

Nei.....

Ja, med 2 års mellomrom eller mindre.....

Ja, med mer enn 2 års mellomrom.....

Har du tatt kreftprøve fra livmorhalsen regelmessig?

Aldri.....

Sjeldnere enn hvert 3. år.....

Hvert 3. år eller oftere.....

Brystkreft i nærmeste familie

Har noen nære slektninger hatt brystkreft;

Ja Nei Vet ikke

mor

mormor

farmor

søster

Høyde og vekt

Hvor høy er du? cm

Hvor mye veier du i dag? kg

Hvor mye veide du da du var 18 år? kg

Har du i løpet av kort tid (noen måneder) uten å være gravid, endret din vanlige vekt med mer enn fem kilo?

Ja Nei

Hvis Ja, angi din laveste vekt kg

angi din høyeste vekt kg

Gjør du noe forsøk på å endre kroppsvekten din?

Nei

Ja, jeg ønsker å legge på meg

Ja, jeg ønsker å gå ned i vekt

Røykevaner

Ja Nei

Har du noen gang røkt?

Hvis Ja, ber vi deg om å fylle ut for hver aldersgruppe i livet hvor mange sigaretter du i gjennomsnitt røkte pr. dag i den perioden.

Alder	Antall sigaretter hver dag						
	0	1-4	5-9	10-14	15-19	20-24	25+
15-19							
20-29							
30-39							
40-49							
50-59							
60-69							

Ja Nei

Røker du daglig nå?

Bor du sammen med noen som røker?

Hvis Ja, hvor mange sigaretter røker de

til sammen pr. dag?

Fysisk aktivitet

Vi ber deg angi din fysiske aktivitet etter en skala fra svært lite til svært mye ved 14 og 30 års alder og i dag. Skalaen nedenfor går fra 1-10. Med fysisk aktivitet mener vi både arbeid i hjemmet og i yrkeslivet, samt trening og annen fysisk aktivitet som turgåing o.l. Sett ring rundt det tallet som best angir ditt nivå av fysisk aktivitet.

Alder	Svært lite					Svært mye				
	1	2	3	4	5	6	7	8	9	10
14 år										
30 år										
I dag										

Har du drevet konkurranseidrett? Ja Nei

Hvis Ja, hvor mange år i alt? år

Sosiale forhold

Er du: (Sett ett kryss)

gift samboer skilt/separert ugift enke

Hvor mange personer er det i ditt hushold? Antall:

Hvor mange inntekter er det i husholdet?

Hvor høy er bruttoinntekten i husholdet pr. år?

under 150 000 kr 151 000–300 000 kr
 301 000–450 000 kr 451 000–600 000 kr
 over 600 000 kr

Kosthold

Vi er interessert i å få kjennskap til hvordan kostholdet ditt er vanligvis. Kryss av for hvert spørsmål om hvor ofte du i gjennomsnitt siste året har brukt den aktuelle matvaren, og hvor mye du pleier spise/drikke hver gang. Dersom du aldri/sjelden bruker matvaren, trenger du ikke krysse av for mengde.

Hvor mange glass melk drikker du vanligvis av hver type. (Sett ett kryss pr. linje)

		aldri/ sjelden	1-4 pr. uke	5-6 pr. uke	1 pr. dag	2-3 pr. dag	4+ pr. dag
Helmelk	(søt, sur)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lettmelk	(søt, sur)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Skummet	(søt, sur)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Hvor mange kopper kaffe drikker du vanligvis av hver sort? (Sett ett kryss for hver linje)

		aldri/ sjelden	1-6 pr. uke	1 pr. dag	2-3 pr. dag	4-5 pr. dag	6-7 pr. dag	8+ pr. dag
Kokekaffe		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Traktekaffe		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pulverkaffe		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Hvor ofte spiser du yoghurt (1 beger)? (Sett ett kryss)

aldri/sjelden 1 pr. uke 2-3 pr. uke
 4-6 pr. uke daglig

Hvor ofte har du i gjennomsnitt siste året spist kornblanding, havregryn eller müsli? (Sett ett kryss)

aldri/nesten aldri 1-3 pr. uke 4-6 pr. uke 1 pr. dag

Dersom du spiser kornblanding e. l., hvor stor porsjon pleier du vanligvis å spise hver gang? (Sett ett kryss)

mindre enn 1 dl 1 dl 1,5 dl 2+ dl

Hvor mange skiver brød/rundstykker og knekkebrød/skonrokker spiser du vanligvis? (1/2 rundstykke = 1 brødskeive) (Sett ett kryss for hver linje)

	aldri/ sjelden	1-4 pr. uke	5-7 pr. uke	2-3 pr. dag	4-5 pr. dag	6+ pr. dag
Grovt brød						
Fint brød						
Knekkebrød o.l.						

Nedenfor er det spørsmål om bruk av ulike påleggstyper. Vi spør om hvor mange brødskiver med det aktuelle pålegget du pleier å spise. Dersom du også bruker matvarene i andre sammenhenger enn til brød (f. eks. til vafler, frokostblandinger, grøt), ber vi om at du tar hensyn til dette når du besvarer spørsmålene.

På hvor mange brødskiver bruker du? (Sett ett kryss pr. linje)

	0 pr. uke	1-3 pr. uke	4-6 pr. uke	1 pr. dag	2-3 pr. dag	4+ pr. dag
Syltetøy og annet søtt pålegg						
Brun ost, helfet						
Brun ost, halvfet/mager						
Hvit ost, helfet						
Hvit ost, halvfet/mager						
Kjøttpålegg, leverpostei						
Salater med majones						

Videre kommer spørsmål om fiskepålegg.

Å hvor mange brødskiver pr. uke har du i gjennomsnitt siste året spist? (Sett ett kryss pr. linje)

	0 pr. uke	1 pr. uke	2-3 pr. uke	4-6 pr. uke	7-9 pr. uke	10+ pr. uke
Makrell i tomat, røkt makrell						
Kaviar						
Annet fiskepålegg						

Hva slags fett bruker du vanligvis på brødet?

(Sett gjerne flere kryss)

- bruker ikke fett på brødet
- smør
- hard margarin (f. eks. Per, Melange)
- myk margarin (f. eks. Soft)
- smørblandet margarin (f. eks. Bremykt)
- Brelett
- lett margarin (f. eks. Soft light, Letta)

Dersom du bruker fett på brødet, hvor tykt lag pleier du smøre på? (En kuvertpakke med margarin veier 12 gram).

(Sett ett kryss)

- skrapet (3 g) tynt lag (5 g) godt dekket (8 g)
- tykt lag (12 g)

Hvor ofte bruker du ris og spaghetti/makaroni?

(Sett ett kryss pr. linje)

	aldri/sjelden	1-3 pr. mnd	1 pr. uke	2 pr. uke	3+ pr. uke
Ris					
Spaghetti, makaroni					

Hvor ofte spiser du risengrøt? (Sett ett kryss)

- aldri/sjelden 1 pr. mnd 2-3 pr. mnd 1+ pr. uke

Hvor ofte spiser du frukt? (Sett ett kryss pr. linje)

	aldri/sjelden	1-3 pr. mnd	1 pr. uke	2-4 pr. uke	5-6 pr. uke	1 pr. dag	2+ pr. dag
Epler/pærer							
Appelsiner o.l.							
Bananer							
Annen frukt (f.eks. druer, fersken)							

Hvor ofte spiser du ulike typer grønnsaker?

(Sett ett kryss pr. linje)

	aldri/sjelden	1-3 pr. mnd	1 pr. uke	2 pr. uke	3 pr. uke	4-5 pr. uke	6-7 pr. uke
Gulrøtter							
Kål							
Kålrot							
Broccoli/blomkål							
Blandet salat							
Grønnsakblanding (frossen)							
Andre grønnsaker							

For de grønnsakene du spiser, kryss av for hvor mye du spiser hver gang. (Sett ett kryss for hver sort)

- gulrøtter 1/2 stk. 1 stk. 1 1/2 stk. 2+ stk.
- kål 1/2 dl 1 dl 1 1/2 dl 2+ dl
- kålrot 1/2 dl 1 dl 1 1/2 dl 2+ dl
- broccoli/blomkål 1-2 buketter 3-4 buketter 5+ buketter
- blandet salat 1 dl 2 dl 3 dl 4+ dl
- grønnsakblanding 1/2 dl 1 dl 2 dl 3+ dl

Hvor mange poteter spiser du vanligvis (kokte, stekte, mos)? (Sett ett kryss)

- spiser ikke/spiser sjelden poteter
- 1-4 pr. uke 5-6 pr. uke
- 1 pr. dag 2 pr. dag
- 3 pr. dag 4+ pr dag

Hva slags fett blir vanligvis brukt til matlaging i din husholdning? (Sett gjerne flere kryss)

- smør
- hard margarin (f. eks. Per, Melange)
- myk margarin (f. eks. Soft)
- smørblandet margarin (f. eks. Bremykt)
- soyaolje olivenolje maisolje

Fisk

Vi vil gjerne vite hvor ofte du pleier å spise fisk, og ber deg fylle ut spørsmålene om fiskeforbruk så godt du kan. Tilgangen på fisk kan variere gjennom året. Vær vennlig å markere i hvilke årstider du spiser de ulike fiskeslagene.

	aldri/sjelden	like mye hele året	vinter	vår	sommer	høst
Torsk, sei, hyse, lyr						
Steinbit, flyndre, uer						
Laks, ørret						
Makrell						
Sild						

Med tanke på de periodene av året der du spiser fisk, hvor ofte pleier du å spise følgende? (Sett ett kryss pr. linje)

	aldri/sjelden	1 pr. mnd	2-3 pr. mnd	1 pr. uke	2 pr. uke	3+ pr. uke
Kokt torsk, sei, hyse, lyr						
Stekt torsk, sei, hyse, lyr						
Steinbit, flyndre, uer						
Laks, ørret						
Makrell						
Sild						

Dersom du spiser fisk, hvor mye spiser du vanligvis pr. gang? (1 skive/stykke = 150 gram)

(Sett ett kryss for hver linje)

- kokt fisk (skive) 1 1,5 2 3+
- stekt fisk (stykke) 1 1,5 2 3+

Hvor ofte bruker du fersk eller frossen fisk?

(Sett ett kryss for hver linje)

	aldri/sjelden	1 pr. mnd	2-3 pr. mnd	1 pr. uke	2+ pr. uke
Fersk fisk					
Frossen filet					

Hvor mange ganger pr. år spiser du fiskeinnmat?

(Sett ett kryss pr. linje)

- 0 1-3 4-6 7-9 10+
- Rogn
- Fiskelever

Dersom du spiser fiskelever, hvor mange spiseskjeer pleier du å spise hver gang? (Sett ett kryss)

- 1 2 3-4 5-6 7+

Hvor ofte bruker du følgende typer fiskemat?

(Sett ett kryss pr. linje)

	aldri/sjelden	1 pr. mnd	2-3 pr. mnd	1 pr. uke	2+ pr. uke
Fiskekaker/pudding/boller					
Plukkfisk, fiskegrateng					
Frityrisk, fiskepinner					
Andre fiskeretter					

Hvor stor mengde pleier du vanligvis å spise av de ulike rettene? (Sett ett kryss for hver linje)

- fiskekaker/pudding/boller (stk.) 1 2 3 4+
(2 fiskeboller=1 fiskekake)
- plukkfisk, fiskegrateng (dl) 1-2 3-4 5+
- frityrisk, fiskepinner (stk.) 1-2 3-4 5-6 7+

Hvor ofte spiser du skaldyr (f. eks. reker, krabbe)?

(Sett ett kryss)

- aldri/sjelden 1 pr. mnd 2-3 pr. mnd 1+ pr. uke

I tillegg til informasjon om fiskeforbruk er det viktig å få kartlagt hvilket tilbehør som blir servert til fisk.

(Sett ett kryss pr. linje)

	aldri/sjelden	1 pr. mnd	2-3 pr. mnd	1 pr. uke	2+ pr. uke
Smeltet eller fast margarin/fett					
Seterrømme (35%)					
Lettrømme (20%)					
Saus med fett (hvit/brun)					
Saus uten fett (hvit/brun)					

For de ulike typene tilbehør du bruker til fisk, vær vennlig å kryss av for hvor mye du vanligvis pleier spise.

- smeltet/fast fett (ss) 1/2 1 2-3 4+
- seterrømme (ss) 1/2 1 2-3 4+
- lettrømme (ss) 1/2 1 2-3 4+
- saus med fett (dl) 1/4 1/2 3/4 1 2+
- saus uten fett (dl) 1/4 1/2 3/4 1 2+

Spiser du etter egen oppfatning nok fisk?

- Ja Nei

Hvis nei,

hvorfor spiser du ikke mer fisk

- | | Lite viktig | Viktig | Meget viktig |
|---------------------------------------|--------------------------|--------------------------|--------------------------|
| - for høy pris | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - for lite utvalg | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - for liten tilgang på fersk fisk ... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - kvaliteteten varierer | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - liten tilgang på ferdigretter ... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - lukt ved tilberedning | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - vanskelig å tilberede | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - smaken | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - familien liker ikke fisk | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - annet, angi | | | |

Hvor ofte pleier du bruke følgende kjøtt- og fjærkreretter? (Sett ett kryss for hver rett)

	aldri/sjelden	1 pr. mnd	2-3 pr. mnd	1 pr. uke	2+ pr. uke
Steik (okse, svin, får)					
Koteletter					
Biff					
Kjøttkaker, karbonader					
Pølser					
Gryterett, lapskaus					
Pizza m/kjøtt					
Kylling					
Andre kjøtetter					

Dersom du spiser steik eller koteletter, hvor mye pleier du å spise? (Sett ett kryss for hver linje)

Steik (skiver) 1 2 3 4+
 Koteletter (stk.) 1/2 1 1,5 2+

Dersom du spiser følgende retter, oppgi mengden du vanligvis spiser: (Sett ett kryss for hver linje)

- kjøttkaker, karbonader (stk.) 1 2 3 4+
 - pølser (stk. a 150g) 1/2 1 1,5 2+
 - gryterett, lapskaus (dl) 1-2 3 4 5+
 - pizza m/kjøtt (stykke à 100 g) 1 2 3 4+

Hvor mange egg spiser du vanligvis i løpet av en uke (stekte, kokte, eggerøre, omelett)? (Sett ett kryss)

0 1 2 3-4 5-6 7+

Vi ber deg fylle ut hovedrettene til middag en gang til som en oppsummering. Kryss av i den ruten som passer hvor ofte du i gjennomsnitt i løpet av siste år har spist slik mat til middag

	5+ pr. uke	4 pr. uke	3 pr. uke	2 pr. uke	1 pr. uke	2-3 pr. mnd	1 pr. mnd	1 nesten aldri
Rent kjøtt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Oppmalt kjøtt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fet fisk (makrell, laks o.l.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mager fisk (torsk o.l.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fiskemat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Hvor ofte spiser du iskrem (til dessert, krone-is osv.)? (Sett ett kryss for hvor ofte du spiser iskrem om sommeren, og ett kryss for resten av året)

– om sommeren aldri/sjelden 1-3 pr. mnd 1 pr. uke 2-3 pr. uke 4+ pr. uke
 – resten av året aldri/sjelden 1-3 pr. mnd 1 pr. uke 2-3 pr. uke 4+ pr. uke

Hvor mye is spiser du vanligvis pr. gang? (Sett ett kryss)

1 dl 2 dl 3 dl 4+ dl

Hvor ofte spiser du bakervarer som boller, kaker, wienerbrød, vafler, småkaker? (Sett ett kryss)

	aldri/sjelden	1-3 pr. mnd	1 pr. uke	2-3 pr. uke	4-6 pr. uke	7+ pr. uke
Bakervarer						

Hvor ofte spiser du sjokolade? (Sett ett kryss)

aldri/sjelden 1-3 pr. mnd 1 pr. uke
 2-3 pr. uke 4-6 pr. uke 1+ pr. dag

Dersom du spiser sjokolade, hvor mye pleier du vanligvis å spise hver gang? Tenk deg størrelsen på en Kvikk-Lunsj sjokolade, og oppgi hvor mye du spiser i forhold til den. (Sett ett kryss)

1/4 1/2 3/4 1 1,5 2+

Kosttilskudd

Hvor ofte tar du følgende kosttilskudd? For tran og tranpiller vær vennlig å sette ett kryss for vinteren og ett kryss for resten av året; også om du bruker det like ofte gjennom hele året.

	aldri/sjelden	1-3 pr. mnd	1 pr. uke	2-3 pr. uke	4-6 pr. uke	daglig
Tran,						
- om vinteren	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- resten av året	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tranpiller,						
- om vinteren	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- resten av året	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fiskeolje-kapsler	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Andre kosttilskudd	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Navn						

Dersom du tar tran, hvor mye pleier du å ta hver gang?

1 ts 1/2 ss 1+ ss

Dersom du tar tranpiller/kapsler, hva heter de og hvor mange tar du hver gang?

navn: stk. pr. gang:.....

Dersom du tar fiskeoljekapsler, hva heter de og hvor mange tar du hver gang?

navn: stk. pr. gang:.....

Alkohol

Er du total avholdskvinne? Ja Nei

Hvis Nei, hvor ofte og hvor mye drakk du i gjennomsnitt siste året? (Sett ett kryss for hver linje)

	aldri/sjelden	1 pr. mnd	2-3 pr. mnd	1 pr. uke	2-4 pr. uke	5-6 pr. uke	1+ pr. dag
Øl (1/2 L)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vin (glass)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Brennevin (drinker)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Appendix 4: Number of women recruited with the respective timeline and questionnaires



