

Premature menopause is associated with increased risk of heart problems

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Menopause before 40 years of age is associated with elevated risks of

heart failure and atrial fibrillation, according to a study published today in *European Heart Journal*, a journal of the European Society of Cardiology (ESC). The study in more than 1.4 million women found that the younger the age at menopause, the higher the risk of new-onset heart failure and atrial fibrillation.

"Women with [premature menopause](#) should be aware that they may be more likely to develop heart failure or [atrial fibrillation](#) than their peers," said study author Dr. Ga Eun Nam of Korea University College of Medicine, Seoul, Republic of Korea. "This may be good motivation to improve lifestyle habits known to be linked with heart disease, such as quitting smoking and exercising."

Cardiovascular disease typically occurs up to 10 years later in [women](#) than men. Premenopausal women are thought to benefit from estrogen's protective effect on the cardiovascular system. The cessation of menses and subsequent decline of estrogen levels may make women more vulnerable to cardiovascular disease.

Premature menopause affects 1% of women under the age of 40 years. Prior studies have found a link between premature (before age 40) and early (before age 45) menopause and [cardiovascular disease](#) overall, but the evidence for heart failure or atrial fibrillation alone is limited. This study examined the associations between premature menopause, age at menopause, and incident heart failure and atrial fibrillation. Data were obtained from the Korean National Health Insurance System (NHIS), which provides health screening at least every two years and includes 97% of the population.

The study included 1,401,175 postmenopausal women aged 30 years and older who completed the NHIS health check-up in 2009. Participants were followed up until the end of 2018 for new-onset heart failure and atrial fibrillation. Information was collected on demographics, health

behaviors and reproductive factors including age at menopause and use of hormone replacement therapy (HRT). Age at menopause was categorized as below 40, 40 to 44, 45 to 49, and 50 years or older. Premature menopause was defined as having the final menstrual period before the age of 40 years.

Some 28,111 (2%) participants had a history of premature menopause. In these women, the average age at menopause was 36.7 years. The average age at study enrollment for women with and without a history of premature menopause was 60 and 61.5 years, respectively. During an average follow up of 9.1 years, 42,699 (3.0%) developed heart failure and 44,834 (3.2%) developed atrial fibrillation.

The researchers analyzed the association between history of premature menopause and incident heart failure and atrial fibrillation after adjusting for age, smoking, alcohol, physical activity, income, body mass index, hypertension, type 2 diabetes, dyslipidemia, chronic kidney disease, coronary heart disease, HRT, and age at menarche. Women who had experienced premature menopause had a 33% higher risk of heart failure and a 9% higher risk of atrial fibrillation than those who did not.

The researchers then analyzed the associations between age at menopause and incidence of heart failure and atrial fibrillation after adjusting for the same factors as in the previous analyses. The risk of incident heart failure increased as the age at menopause decreased. Compared with women aged 50 years and above at menopause, those aged 45 to 49, 40 to 44, and below 40 years at menopause had 11%, 23%, and 39% greater risks of incident heart failure, respectively. Similarly, the risk of incident atrial fibrillation increased as the age at menopause decreased, with 4%, 10%, and 11% higher risks for those aged 45 to 49, 40 to 44, and under 40 years at menopause, respectively, compared with women aged 50 years and above at menopause.

The authors said that several factors may explain the associations between menopausal age, heart failure and atrial fibrillation, such as the drop in [estrogen level](#) and changes in body fat distribution.

Dr. Nam concluded, "The misconception that heart disease primarily affects men has meant that sex-specific risk factors have been largely ignored. Evidence is accumulating that undergoing [menopause](#) before the age of 40 may increase the likelihood of heart disease later in life. Our study indicates that reproductive history should be routinely considered in addition to traditional risk factors such as smoking when evaluating the future likelihood of [heart failure](#) and atrial fibrillation."

More information: Shin J, Han K, Jung JH, et al. Age at menopause and risk of heart failure and atrial fibrillation: a nationwide cohort study. *European Heart Journal* (2022). [DOI: 10.1093/eurheartj/ehac364](https://doi.org/10.1093/eurheartj/ehac364)

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