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Heart Health Matters

While menopause is a perfectly natural occurrence, hormonal changes and other changes can lead to heart disease. Reduce your risk factors; a happy heart is a healthy heart.

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Heart Health Matters

Menopause is the stage in your life when your periods stop permanently, signaling the end of your reproductive years. It happens when there are no more eggs in your ovaries. Because eggs stimulate your body to produce oestrogen, the levels of estrogen in the blood drop, resulting in menopausal changes in the body when they are exhausted.

As a result of the hormonal changes surrounding menopause, many women experience both physical and emotional symptoms:

- Hot flushes / flashes
- Night sweats
- Insomnia and disrupted sleep
- Racing heart / palpitations
- Weight gain (especially around the waist and abdomen)
- Headaches
- Changes to the skin, hair and nails
- Aches and pains in joints and muscles
- Lower sex drive
- Vaginal dryness, pain during sexual intercourse and increased risk of vaginal infections
- Inability to control urination and increased risk of urinary infections
- Difficulty concentrating and memory lapses
- Fatigue / low energy levels
- Mood swings and irritability
- Depression

While menopause is a perfectly natural occurrence, the decreased levels of oestrogen and other hormones can lead to the above symptoms, as oestrogen has an effect on almost every tissue in the body.

It is observed that Oestrogen helps protect women against heart disease. During menopause, as oestrogen levels drop, the level of fat in a woman's blood can increase. These changes put women at risk for developing heart and circulatory system disorders such as high blood pressure, high cholesterol, stroke and heart disease.

What are the risk factors for heart disease?

Risk factors are conditions or a lifestyle that make a person more likely to develop a disease. They can also increase the chances that an existing disease will get worse. Important risk factors for heart disease that you can proactively manage are:

- Raised blood pressure
- Raised blood cholesterol
- Diabetes and prediabetes ^[1.]
- Smoking
- Excessive alcohol consumption
- Being overweight or obese; unhealthy diet ^{[2.], [3.]}
- Being physically inactive
- Having a family history of early heart disease
- Age (55 or older for women)



Some risk factors, such as age and family history of early heart disease, cannot be changed. For women, age becomes a risk factor over the age of 55. After menopause, women are more likely to get heart disease, partly because their body's production of estrogen drops. Women who have gone through early menopause, either naturally or because they have had their ovaries removed are twice as likely to develop heart disease as women of the same age, who have not yet reached menopause.

While the individual effect of each risk factor varies between different communities or ethnic groups the overall contribution of them is very consistent, ^[4.] and many important cardiovascular risks are modifiable by lifestyle changes.

Age

Age is by far the most important risk factor in developing heart disease, with approximately a tripling of risk with each decade of life. ^[5.] It is estimated that 82 percent of people who die of coronary heart disease are 65 years and older. ^[6.] At the same time, the risk of stroke doubles every decade after age 55. ^[7.]

Exercise

Insufficient physical activity, which is less than 30 minutes of moderate activity daily per week, is currently the fourth leading risk factor for mortality worldwide. Almost 40% of women over 15 years are insufficiently physically active. ^[8.] The risk of ischemic heart disease and diabetes is reduced by almost a third in adults who participate in 150 minutes of moderate physical activity each week (or equivalent). ^[9.] In addition, physical activity assists weight loss, improves blood glucose control and blood pressure, and reduces the risk of heart disease. ^[8.]

Smoking

Risks to health from tobacco use result not only from directly smoking, but also from exposure to second-hand smoke. Approximately 10% of cardiovascular disease is attributed to smoking. ^[8.]



Diet

A high intake of fat coupled with a low intake of fruits, vegetables and fish are linked to cardiovascular risk, although whether all these associations are a cause is disputed. ^[10.] Evidence suggests that a Mediterranean diet may decrease the risk of heart disease ^[11.] and may be more effective than a low-fat diet lowering cholesterol levels and decreasing high blood pressure. ^[12.] The DASH diet (high in nuts, fish, fruits and vegetables, and low in sweets, red meat and fat) has also been shown to reduce blood pressure, ^[13.] lower cholesterol ^[14.] and assist with losing and / or maintaining a healthy weight. ^[15.]

Frequent consumption of high-energy foods, such as processed foods that are high in fats and sugars, promotes obesity and may increase cardiovascular risk. There is evidence that higher consumption of sugar is associated with higher blood pressure and increases the risk of diabetes. ^[16.]

Alcohol

Although studies suggested that low levels of alcohol were protective against CVD, there appears to be an increased risk with moderate or high levels.

Supplements

Niacin, a type of vitamin B3, may decrease the risk of cardiovascular events in those with an elevated risk level. ^[18.] ^[19.] Magnesium supplementation can also lower high blood pressure. ^[20.]

Socioeconomic disadvantage

Heart disease affects low- and middle-income countries even more than high-income countries. There is relatively little information regarding social patterns of cardiovascular disease within low- and middle-income countries. [21.] Within countries with generally higher-income, it can be concluded that low income and low educational status are consistently associated with greater risk of heart disease [22.] implying that there is cause and effect relationship.

Preventing heart disease post menopause

Heart disease is the most common cause of death for women over the age of 50 years. [24.] Previous cardiovascular events, such as a heart attack or stroke, is the strongest predictor of a future heart health. [9.] Age, sex, smoking, blood pressure and diabetes are other important predictors of future heart disease. [23.], [24.]

High blood pressure is the single, most important, treatable risk factor for heart disease and stroke. By managing and reducing blood pressure, the risk of stroke is reduced by 30 - 40%. Myocardial infarctions (damage to the heart muscle) risk is reduced by 20 - 25% and heart failure is reduced by 50%. [25.]

Regular screening for heart disease after menopause is extremely important. Lifestyle factors such as smoking and weight control can also play a big part in reducing risk. The American Heart Association has outlined diet and lifestyle recommendations to reduce heart disease, resulting in better health, based on a variety of prospective studies. [26.], [27.] In the PREMIER trial, the 10-year heart disease risk was substantially reduced by 12 - 14% by lifestyle intervention. [28.]

If Menopausal Hormone Therapy (MHT) is being used to manage the menopause, it may also contribute to the prevention of heart disease. If you are less than 60 and / or you are within 10 years of transitioning through the menopause, the benefits of MHT far outweigh the risks involved for the majority of healthy women. [29.]

Top 10 prevention tips for heart disease in later life

The menopausal phase in a woman's life is an important window where preventative measures can be most effective with the right intervention:

1. Stop smoking and avoid second-hand smoke. [30.]
2. Reduce alcohol consumption and follow the recommended daily limits. [30.] Consumption of 1 – 2 standard alcoholic drinks per day may reduce the risk by 30%. [31.], [32.] However, excessive alcohol intake increases the risk of heart disease. [15.]
3. Regular aerobic exercise up to 30 minutes per day at least five times per week. [30.]
4. Healthy diet; reduction in sugar consumption; a low-fat, high-fibre diet including whole grains and fruit and vegetables. [30.], [33.] Five portions a day reduces risk by about 25%. [34.]
5. Control of body weight if overweight or obese. [35.]
6. Consider Menopausal Hormone Therapy in pre-menopausal women younger than 60, not only to help manage hot flashes and other symptoms of the menopause transition but also potentially, to help prevent heart disease. [24.]
7. Lower blood pressure if elevated.
8. Decrease cholesterol. [36.], [37.]
9. Decrease psychosocial stress. [38.] Mental stress-induced myocardial ischemia is associated with an increased risk of heart problems in those with previous heart disease. [39.]
10. Seek expert medical advice.

If you would like to discuss any areas in this information booklet, please arrange a visit to your healthcare professional. It is important that your options and prevention strategies are fully explored.



References

1. Micha, R; Michas, G; Mozaffarian, D (Dec 2012). "Unprocessed red and processed meats and risk of coronary artery disease and type 2 diabetes—an updated review of the evidence.". *Current atherosclerosis reports* 14 (6): 515–24. doi:10.1007/s11883-012-0282-8. PMC 3483430. PMID 23001745.
2. Howard, BV; Wylie-Rosett, J (Jul 23, 2002). "Sugar and cardiovascular disease: A statement for healthcare professionals from the Committee on Nutrition of the Council on Nutrition, Physical Activity, and Metabolism of the American Heart Association.". *Circulation* 106 (4): 523–7. doi:10.1161/01.cir.0000019552.77778.04. PMID 12135957.
3. Finks, SW; Airee, A; Chow, SL; Macaulay, TE; Moranville, MP; Rogers, KC; Trujillo, TC (April 2012). "Key articles of dietary interventions that influence cardiovascular mortality.". *Pharmacotherapy* 32 (4): e54–87. doi:10.1002/j.1875-9114.2011.01087.x. PMID 22392596.
4. Yusuf S, Hawken S, Ounpuu S; et al. (2004). "Effect of potentially modifiable risk factors associated with myocardial infarction in 52 countries (the INTERHEART study): case-control study". *Lancet* 364 (9438): 937–52. doi:10.1016/S0140-6736(04)17018-9. PMID 15364185.
5. Finegold, JA; Asaria, P; Francis, DP (Dec 4, 2012). "Mortality from ischaemic heart disease by country, region, and age: Statistics from World Health Organisation and United Nations.". *International journal of cardiology* 168 (2): 934–945. doi:10.1016/j.ijcard.2012.10.046. PMID 23218570.
6. "Understand Your Risk of Heart Attack". American Heart Association. http://www.heart.org/HEARTORG/Conditions/HeartAttack/UnderstandYourRiskofHeartAttack/Understand-Your-Risk-of-Heart-Attack_UCM_002040_Article.jsp#
7. Mackay, Mensah, Mendis, et al. *The Atlas of Heart Disease and Stroke*. World Health Organization. January 2004.
8. Shanthi Mendis; Pekka Puska; Bo Norrving; World Health Organization (2011). *Global Atlas on Cardiovascular Disease Prevention and Control* (PDF). World Health Organization in collaboration with the World Heart Federation and the World Stroke Organization. pp. 3–18. ISBN 978-92-4-156437-3.
9. World Health Organization; UNAIDS (1 January 2007). *Prevention of Cardiovascular Disease*. World Health Organization. pp. 3–. ISBN 978-92-4-154726-0.
10. Walker C, Reamy BV (April 2009). "Diets for cardiovascular disease prevention: what is the evidence?". *Am Fam Physician* 79 (7): 571–8. PMID 19378874.
11. Nordmann, AJ; Suter-Zimmermann, K; Bucher, HC; Shai, I; Tuttle, KR; Estruch, R; Briel, M (September 2011). "Meta-analysis comparing Mediterranean to low-fat diets for modification of cardiovascular risk factors.". *The American Journal of Medicine* 124 (9): 841–51. doi:10.1016/j.amjmed.2011.04.024. PMID 21854893.
12. Sacks FM, Svetkey LP, Vollmer WM; et al. (January 2001). "Effects on blood pressure of reduced dietary sodium and the Dietary Approaches to Stop Hypertension (DASH) diet. DASH-Sodium Collaborative Research Group". *N. Engl. J. Med.* 344 (1): 3–10. doi:10.1056/NEJM200101043440101. PMID 11136953.
13. Jump up^ Obarzanek E, Sacks FM, Vollmer WM; et al. (July 2001). "Effects on blood lipids of a blood pressure-lowering diet: the Dietary Approaches to Stop Hypertension (DASH) Trial". *Am. J. Clin. Nutr.* 74 (1): 80–9. PMID 11451721.
14. Azadbakht L, Mirmiran P, Esmailzadeh A, Azizi T, Azizi F (December 2005). "Beneficial effects of a Dietary Approaches to Stop Hypertension eating plan on features of the metabolic syndrome". *Diabetes Care* 28 (12): 2823–31. doi:10.2337/diacare.28.12.2823. PMID 16306540.
15. Wang, X; Ouyang, Y; Liu, J; Zhu, M; Zhao, G; Bao, W; Hu, FB (Jul 29, 2014). "Fruit and vegetable consumption and mortality from all causes, cardiovascular disease, and cancer: systematic review and dose-response meta-analysis of prospective cohort studies.". *BMJ (Clinical research ed.)* 349: g4490. doi:10.1136/bmj.g4490. PMC 4115152. PMID 25073782.
16. Te Morenga, L. A.; Howatson, A. J.; Jones, R. M.; Mann, J. (2014). "Dietary sugars and cardiometabolic risk: systematic review and meta-analyses of randomized controlled trials of the effects on blood pressure and lipids". *American Journal of Clinical Nutrition* 100 (1): 65–79. doi:10.3945/ajcn.113.081521. ISSN 0002-9165
17. Bruckert, E; Labreuche, J; Amarenco, P (June 2010). "Meta-analysis of the effect of nicotinic acid alone or in combination on cardiovascular events and atherosclerosis". *Atherosclerosis* 210(2): 353–61. doi:10.1016/j.atherosclerosis.2009.12.023. PMID 20079494.
18. Lavigne, PM; Karas, RH (Jan 29, 2013). "The current state of niacin in cardiovascular disease prevention: a systematic review and meta-regression.". *Journal of the American College of Cardiology* 61 (4): 440–6. doi:10.1016/j.jacc.2012.10.030. PMID 23265337.
19. Jee SH, Miller ER III, Guallar E; et al. (2002). "The effect of magnesium supplementation on blood pressure: a meta-analysis of randomized clinical trials". *Am J Hypertens* 15 (8): 691–696. doi:10.1016/S0895-7061(02)02964-3. PMID 12160191.
20. Mariachiara Di Cesare, Young-Ho Khang, Perviz Asaria, Tony Blakely, Melanie J. Cowan, Farshad Farzadfar, Ramiro Guerrero, Nayu Ikeda, Catherine Kyobutungi, Kelias P. Msyamboza, Sophal Oum, John W. Lynch, Michael G. Marmot & Majid Ezzati (February 2013). "Inequalities in non-communicable diseases and effective responses". *Lancet* 381 (9866): 585–597. doi:10.1016/S0140-6736(12)61851-0. PMID 23410608.
21. J. P. Mackenbach, A. E. Cavelaars, A. E. Kunst & F. Groenhouf (July 2000). "Socioeconomic inequalities in cardiovascular disease mortality: an international study". *European Heart Journal* 21 (14): 1141–1151. doi:10.1053/euhj.1999.1990. PMID 10924297.
22. Tunstall-Pedoe, H. (2011). "Cardiovascular Risk and Risk Scores: ASSIGN, Framingham, QRISK and others: how to choose". *Heart* 97 (6): 442–444. doi:10.1136/hrt.2010.214858. ISSN 1355-6037.
23. Collins P., Webb C., *Cardiovascular risk assessment in women – An update, Climacteric 2016* (pending publication)
24. Kriplani A, Banerjee K. An overview of age of onset of menopause in Northern India. *Maturitas* 2005;52:199–204
25. Lichtenstein AH, Appel LJ, Brands M, et al. *Diet and lifestyle recommendations revision 2006: a scientific statement from the American Heart Association Nutrition Committee*. *Circulation* 2006;114:82–96.

References

26. Spring B, Ockene JK, Gidding SS, et al. Better population health through behavior change in adults: a call to action. *Circulation* 2013;128:2169–76
27. Maruthur NM, Wang N-Y, Appel LJ. Lifestyle interventions reduce coronary artery disease risk. Results from the PREMIER trial. *Circulation* 2009;119:2026–31
28. Hodis HN, Mack WJ. The timing hypothesis and hormone replacement therapy: a paradigm shift in the primary prevention of coronary heart disease in women. 2. Comparative risks. *J Am Geriatr Soc* 2013;61:1011–18
29. Website source: <http://www.nhs.uk/Conditions/Heart-attack/Pages/Prevention.aspx>
30. World Heart Federation (5 October 2011). "World Heart Federation: Cardiovascular disease risk factors". Retrieved 5 October 2011.
31. The National Heart, Lung, and Blood Institute (NHLBI) (5 October 2011). "How To Prevent and Control Coronary Heart Disease Risk Factors – NHLBI, NIH". Retrieved 5 October 2011.
32. Klatsky AL (May 2009). "Alcohol and cardiovascular diseases". *Expert Rev Cardiovasc Ther* 7 (5): 499–506. doi:10.1586/erc.09.22. PMID 19419257.
33. Ignarro, LJ; Balestrieri, ML; Napoli, C (Jan 15, 2007). "Nutrition, physical activity, and cardiovascular disease: an update.". *Cardiovascular research* 73 (2): 326–40. doi:10.1016/j.cardiores.2006.06.030. PMID 16945357.
34. McTigue KM, Hess R, Ziouras J (September 2006). "Obesity in older adults: a systematic review of the evidence for diagnosis and treatment". *Obesity (Silver Spring)* 14 (9): 1485–97. doi:10.1038/oby.2006.171. PMID 17030958.
35. McMahan, C. Alex; Gidding, Samuel S.; Malcom, Gray T.; Tracy, Richard E.; Strong, Jack P.; McGill, Henry C. (2006-10-01). "Pathobiological determinants of atherosclerosis in youth risk scores are associated with early and advanced atherosclerosis". *Pediatrics* 118 (4): 1447–1455. doi:10.1542/peds.2006-0970. ISSN 1098-4275. PMID 17015535.
36. Raitakari, Olli T.; Rönnemaa, Tapani; Järvisalo, Mikko J.; Kaitosaari, Tuuli; Volanen, Iina; Kallio, Katariina; Lagström, Hanna; Jokinen, Eero; Niinikoski, Harri (2005-12-13). "Endothelial function in healthy 11-year-old children after dietary intervention with onset in infancy: the Special Turku Coronary Risk Factor Intervention Project for children (STRIP)". *Circulation* 112 (24): 3786–3794. doi:10.1161/CIRCULATIONAHA.105.583195. ISSN 1524-4539. PMID 16330680.
37. Linden W, Stosel C, Maurice J (April 1996). "Psychosocial interventions for patients with coronary artery disease: a meta-analysis". *Arch. Intern. Med.* 156 (7): 745–52. doi:10.1001/archinte.1996.00440070065008. PMID 8615707.
38. Wei, J; Rooks, C; Ramadan, R; Shah, AJ; Bremner, JD; Quyyumi, AA; Kutner, M; Vaccarino, V (15 July 2014). "Meta-analysis of mental stress-induced myocardial ischemia and subsequent cardiac events in patients with coronary artery disease.". *The American journal of cardiology* 114 (2): 187–92. doi:10.1016/j.amjcard.2014.04.022. PMID 24856319.

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