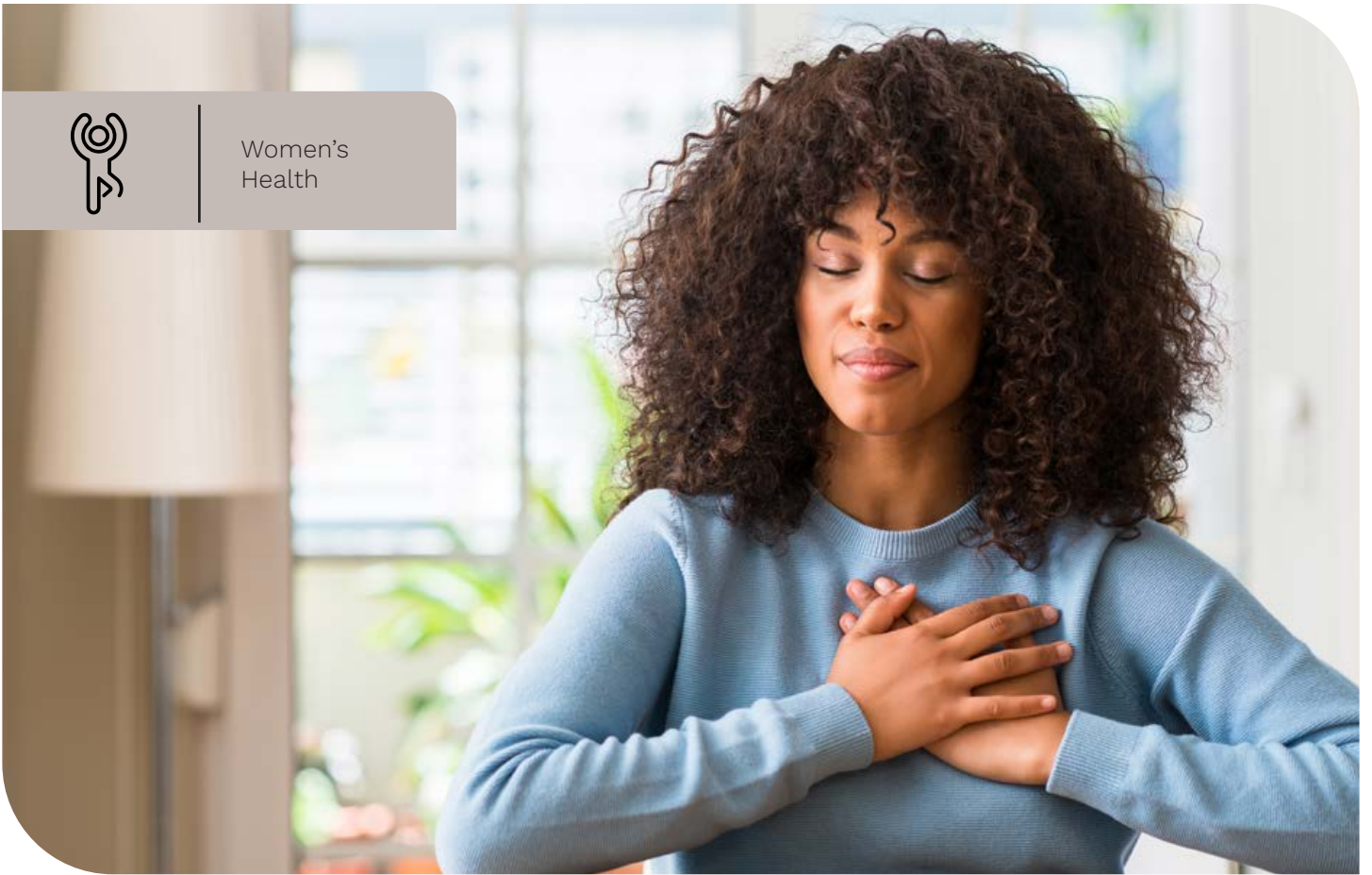




Women's
Health



January 2024

Cardiovascular Health in Women

Women's Health Issue Brief, Part 3

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This is part three in a series of briefs about key women's health issues with particular relevance to women of workforce age and for which employers can act to improve both the quality of life and health of women in the workforce. Each brief provides a general overview of each of the women's health issues below and then describes research related to employer workforce and/or health care costs and health inequities as applicable.

Other briefs in this series:

Part 1, Overview of Women's Health

Part 2, Women's Mental Health

Part 4, Obesity in Women

Part 5, Menopause / Healthy Aging in Women

Heart disease is the leading cause of death for both men and women, responsible for about one in every five female deaths. Medical costs of coronary heart disease are projected to increase by approximately 100% by 2030, highlighting a growing health and socioeconomic problem.

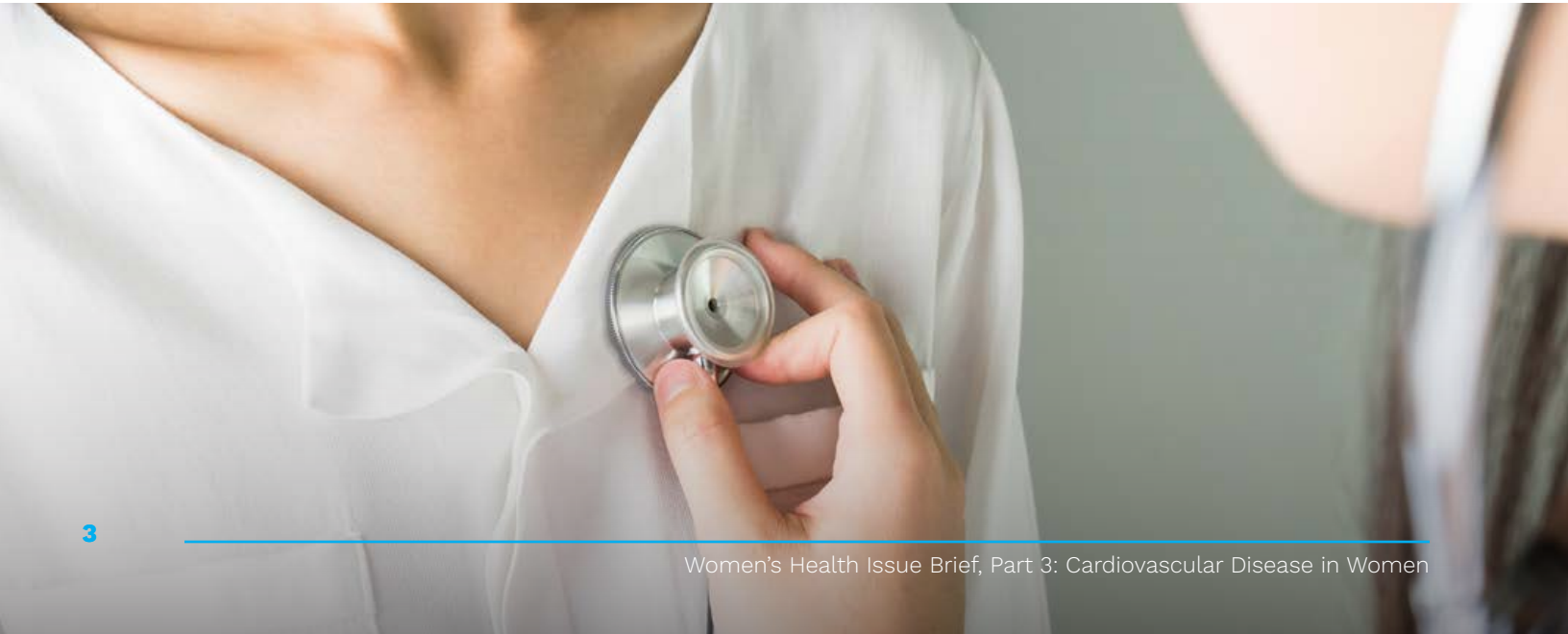
Overview of Cardiovascular Disease in Women

Heart disease is the leading cause of death for both men and women, responsible for about one in every five female deaths.¹ Over 60 million women (44%) in the United States are living with some form of heart disease; common types of heart disease in women are coronary artery disease, arrhythmia and heart failure.² According to a 2020 study published in the Journal of the American Heart Association, women diagnosed with depression during pregnancy are at an increased risk of being diagnosed with cardiovascular disease within two years following childbirth compared to individuals without depression.³ In the United States, high blood pressure develops in about 13.0% of pregnancies.⁴ Although more men die of heart disease than women, heart disease in women tends to be underdiagnosed, therefore, treatment is less effective once the condition is discovered.⁵

High blood pressure is a major risk factor for heart disease. More than 56 million women in the United States (44.3%) have high blood pressure or are taking blood pressure medicine.⁶ This includes almost one in five women of reproductive age. Having high blood pressure increases the risk of developing heart disease and stroke and can lead to early death.⁷ High blood pressure is often underdiagnosed in women, and fewer than one in four women with high blood pressure (23.3%) have a condition that is well-managed.⁸ Black women are nearly 60% more likely to have high blood pressure than white women.⁹

This issue brief uses gender-specific language and the term “women” for simplicity although much of this information may also apply to transgender men, nonbinary individuals or those who may identify differently than the gender and pronouns used in this issue brief.

Women who have a heart attack at a younger age (age 55 years and younger) also tend to have worse outcomes and are about twice as likely to return to the hospital than their male counterparts. Higher rates of clinical and socioeconomic risk factors such as obesity, heart failure, low income and depression among women most likely contribute to a higher rate of hospital readmissions.¹⁰ The risk for depression is known to increase following a heart attack and may be a risk factor in higher hospitalization rates due in part to undertreatment of the condition in women.



Cardiovascular Disease & Employer Workforce and/or Cost

There is growing evidence that work stress is linked to cardiovascular disease risk, but it is not certain that work stress causes cardiovascular disease.¹¹ One multinational study found that work stressors, such as job strain and long working hours, are associated with an elevated risk (between 10-40%) of coronary heart disease (CHD) and stroke.¹² Another study found that 32% of the effect of work stress on CHD can be explained by the effect of work stress on health behaviors, e.g., low physical activity and poor diet.¹³ And, according to the CDC, there are ten work-related factors that cause 5-8% of healthcare costs and 120,000 deaths in the U.S. each year, including long working hours, high job demand, low job security, low organizational justice and work-family imbalance.¹⁴ Between 2013 and 2030, medical costs of coronary heart disease are projected to increase by approximately 100%,¹⁵ highlighting a growing health and socioeconomic problem.

The CDC suggests the following ways to prevent work-related cardiovascular disease risks:

- Workplace health programs to help reduce cardiovascular disease risk, such as worksite-based health promotion, wellness, or stress management.
- The CDC has a [Workplace Health Resource Center](#) for employers.
- The [National Institute for Occupational Safety & Health \(NIOSH\) Total Worker Health® Program](#) integrates protection from work-related safety and health hazards with the promotion of injury and illness-prevention efforts to advance worker well-being.

Other workplace programs and activities may help reduce cardiovascular disease risk:

- Short physical activity breaks (5-10 min)
- Workplace health screenings and referrals

- Health education programs that counsel employees on healthier behaviors
- Healthy foods in workplace vending machines and cafeterias
- Worksite management to reduce exposure to extreme weather conditions

For example, Chevron's Healthy Heart and Healthy You helps employees learn how diet, exercise, and lifestyle affect health. A comprehensive program addresses multiple risk factors: smoking, excessive stress, poor nutrition, overweight/obesity, abnormal cholesterol/triglycerides, elevated blood pressure, diabetes and sleep issues.^{16,17} The program's goals include: 1) reducing employees' overall risk for cardiovascular disease, 2) increasing the percentage of employees at low risk for cardiovascular disease and 3) encouraging employees' understanding that behaviors can influence long-term health. As part of its corporate culture of health, Chevron links its well-being programs to productivity and safety.

Other employers also seek to address adverse risk and precursors to cardiovascular disease. Some employers deploy Livongo's Diabetes Program to provide participants with a smart phone-enabled, two-way messaging device that measures blood glucose and provides feedback in real time along with access to a diabetes coaching team for questions, goal setting and automated support to manage abnormal glucose readings. In early research, members experienced an average 18.4% decrease in the likelihood of having a day with hypoglycemia (BG <70 mg/dL) and an average 16.4% decrease in hyperglycemia (BG >180 mg/dL) in months 2-12 compared with month 1 as the baseline.¹⁸

More information about healthy living, treatment recommendations and guidelines is provided by the [American Heart Association](#).

For issue briefs on more women's health topics, [click here](#).

Endnotes

- 1 [https://www.cdc.gov/heartdisease/women.htm#:~:text=Over%2060%20million%20women%20\(44,in%20every%205%20female%20deaths.](https://www.cdc.gov/heartdisease/women.htm#:~:text=Over%2060%20million%20women%20(44,in%20every%205%20female%20deaths.)
- 2 Ibid.
- 3 Ostchega Y, Fryar CD, Nwankwo T, Nguyen DT. Hypertension prevalence among adults aged 18 and over: United States, 2017–2018. NCHS Data Brief, no 364. Hyattsville, MD: National Center for Health Statistics. 2020.
- 4 Ford ND, Cox S, Ko JY, et al. Hypertensive Disorders in Pregnancy and Mortality at Delivery Hospitalization – United States, 2017–2019. MMWR Morb Mortal Wkly Rep. 2022;71(17):585–591. Published 2022 Apr 29. doi:10.15585/mmwr.mm7117a1
- 5 <https://www.webmd.com/women/features/5-top-female-health-concern>
- 6 Centers for Disease Control and Prevention. Estimated Hypertension Prevalence, Treatment, and Control Estimates Among US Adults. Accessed Feb 24, 2022. <https://millionhearts.hhs.gov/data-reports/hypertension-prevalence.html>
- 7 Ford ND, Robbins CL, Hayes DK, et al. Prevalence, Treatment, and Control of Hypertension Among US Women of Reproductive Age by Race/Hispanic Origin. Am J Hypertens. 2022;35(8):723–730. doi:10.1093/ajh/hpac053
- 8 Centers for Disease Control and Prevention. Estimated Hypertension Prevalence, Treatment, and Control Estimates Among US Adults. Accessed Feb 24, 2022. <https://millionhearts.hhs.gov/data-reports/hypertension-prevalence.html>
- 9 Op cit Ostchega.
- 10 Sawano M, Lu Y, Caraballo C, et al. Sex Difference in Outcomes of Acute Myocardial Infarction in Young Patients. J Am Coll Cardiol. 2023 May, 81 (18) 1797–1806. <https://doi.org/10.1016/j.jacc.2023.03.383>
- 11 Sara JD, Prasad M, Eleid MF, et al. Association Between Work-Related Stress and Coronary Heart Disease: A Review of Prospective Studies Through the Job Strain, Effort-Reward Balance, and Organizational Justice Models. J Am Heart Assoc. 2018;7:e008073. <https://doi.org/10.1161/JAHA.117.008073>
- 12 Kivimäki M, Kawachi I. Work Stress as a Risk Factor for Cardiovascular Disease. Curr Cardiol Rep. 2015 Sep;17(9):630. doi: 10.1007/s11886-015-0630-8. PMID: 26238744; PMCID: PMC4523692.
- 13 Chandola T, Britton A, Brunner E, et al. Work stress and coronary heart disease: what are the mechanisms? European Heart Journal (2008) 29, 640–648 doi:10.1093/eurheartj/ehm584
- 14 <https://www.cdc.gov/niosh/topics/heartdisease/default.html>
- 15 Heidenreich PA, Trogon JG, Khavjou OA, et al. Forecasting the future of cardiovascular disease in the United States: a policy statement from the American Heart Association. Circulation. 2011; 123:933–944.
- 16 <http://gbchealth.metarhythm.com/asset/chevrons-cardiovascular-health-program/>
- 17 <https://www.chevron.com/sustainability/social/health>
- 18 Downing J, Bollyky J, Schneider J. Use of a Connected Glucose Meter and Certified Diabetes Educator Coaching to Decrease the Likelihood of Abnormal Blood Glucose Excursions: The Livongo for Diabetes Program. J Med Internet Res. 2017 Jul 11;19(7):e234. doi: 10.2196/jmir.6659. PMID: 28698167; PMCID: PMC5527250.



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About the Purchaser Business Group on Health (PBGH)

Purchaser Business Group on Health (PBGH) is a nonprofit coalition representing nearly 40 private employers and public entities across the U.S. that collectively spend \$350 billion annually purchasing health care services for more than 21 million Americans and their families. PBGH has a 30-year track record of incubating new, disruptive operational programs in partnership with large employers and other health care purchasers. Our initiatives are designed to test innovative methods and scale successful approaches that lower health care costs and increase quality across the U.S.



