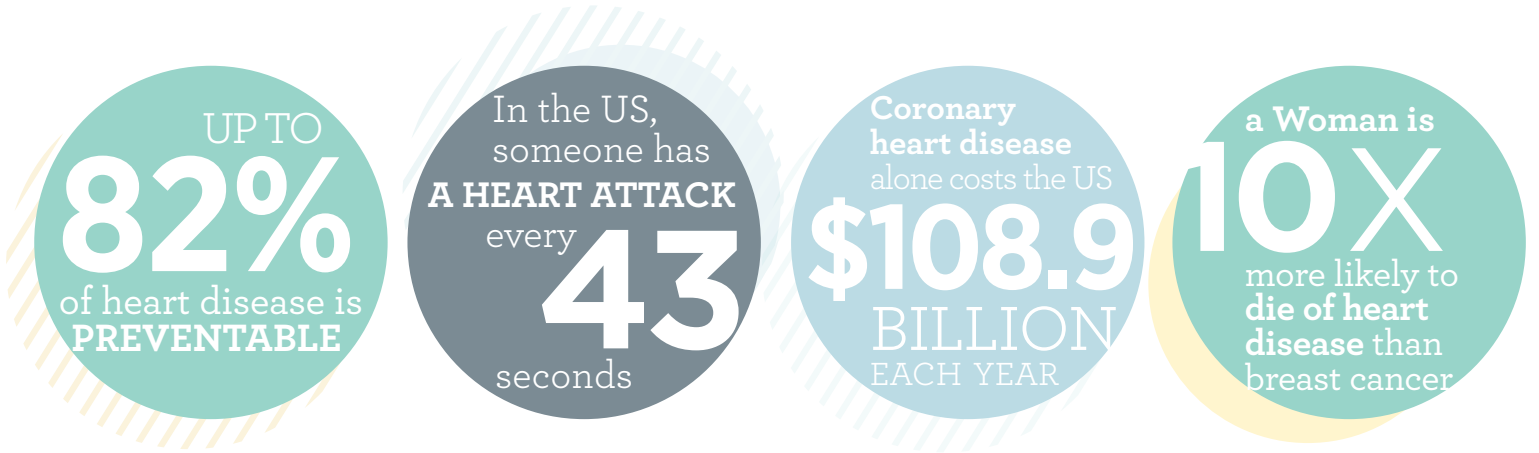


HEART DISEASE is the number one cause of death in the United States and worldwide. The disease can manifest as blockages in veins and arteries, disrupted heart rhythms, and more. Though men have historically been the subject of study and attention, women's unique signs and symptoms have been getting more visibility in recent years. Hadassah Medical Organization is leading the way.



HMO RESEARCH:

- At HMO's Cardiovascular Research Institute, Dr. Ronen Beeri, Institute Director, is collaborating with colleagues at Mt. Sinai (NY) Medical Center in using gene therapy to replace failing heart cells. They are taking viruses that do not elicit an immune reaction inside the body and employing them as transporters of specific genetic material into the heart cell. In this way, for example, they can bring up the level of calcium--an event necessary for healthy heart contractions.
- HMO's physicians participated in one of the first multinational trials, using this gene therapy.
- HMO researchers have proven that heart cells can regenerate following a heart attack. They have implanted stem cells from a mouse's left atrial appendage that successfully replicated mature cardiac cells in a damaged area of the heart.
- HMO just opened a cardio-genetic consultation clinic to identify the triggers of various heart conditions. With this new genetic knowledge, early diagnosis and treatment as well as preventive health measures can save lives.

HMO COLLABORATIONS:

European Union; Mount Sinai Medical Center; Massachusetts General; Massachusetts Institute of Technology (MIT); The Forsyth Institute, Cambridge, MA; Harvard School of Public Health; Harvard Medical School

NEXT STEPS:

- HMO's Linda Joy Pollin Cardiovascular Wellness Institute, led by Dr. Donna Zfat-Zwas, has partnered with HMO's Endocrinology Department to investigate the female heart's response to menopause in an animal model. The study is identifying the differences in heart anatomy and function in mice once the ovaries are removed.
- HMO is investigating the differences in the way men and women perceive chest pain as it relates to the signs and symptoms of a heart attack.
- Researchers are looking at differences in effects of anticoagulant drugs on women.

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WOMEN'S HEART HEALTH: AWARENESS & ADVOCACY

- Prof. Chaim Lotan, head HMO's Heart Institute and former President of the Israel Heart Society, has pioneered the recognition of women's heart disease and the gender disparities in symptoms, research, and treatment. He has made it his mission to raise awareness of these differences.
- HMO's Linda Joy Pollin Cardiovascular Wellness Institute, led by Dr. Donna Zfat-Zwas, learned in a research study that only 34.4% of Israeli women and 25.9% of Arab women know heart disease is a major cause of women's deaths.
- The Pollin Institute has initiated community outreach programs in Haredi and Arab neighborhoods to raise awareness about preventive heart health and empower women to be forces for change in nutrition and exercise in those communities.
- Thanks to advocacy by Dr. Zfat-Zwas, women's heart health took center stage in Israel's Knesset, with a special hearing in its Committee for the Status of Women and Gender Equality.
- The Pollin Institute recruited policy makers in the Knesset to sign a declaration it crafted to promote women's heart health awareness and the need for gender-specific treatment.
- Dr. Ronen Beeri's work has noted several differences between men and women including:
 - Women have degenerative disease of the valve at a younger age.
 - By age 80 or 90, women and men do not have a different amount of valve disease or stenosis. But, later in life, women undergo some experiences that affect their hearts, which men do not. If they get breast cancer, for example, the radiation treatments they are given cause stenosis to occur more quickly. These patients are now monitored more closely.
- Hadassah in the United States has been advocating for funding for the Office of Research on Women's Health, and heart disease education and screening programs through the Centers for Disease Control (CDC) and the U.S. Department of Health and Human Services (HHS).

NEXT STEPS:

- The Pollin Institute and HMO's Heart Institute will continue their specialized care for women and research into women's heart disease in Israel.
- In the United States, Hadassah is forging ahead with its growing advocacy campaign for Gender Equity in Medical Research (GEM) in order to fight these disparities in heart disease research and other health specialties.

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