PRESS RELEASE

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NUS and Harvard study: Lifestyle Changes Can Cut Cardiovascular Disease Risk by Nearly 90% in Women with Gestational Diabetes History

With cardiovascular disease and other chronic conditions like diabetes and obesity on the rise, NUS Medicine launches first of its kind Master of Science in Nutrition and Lifestyle Medicine to train more healthcare professionals in preventive medicine, focusing on lifestyle and nutrition to promote healthy ageing, lower healthcare costs, and support well-being across the lifespan.

Singapore, 6 August 2025 — A landmark study led by researchers from the Yong Loo Lin School of Medicine, National University of Singapore (NUS Medicine), and Harvard T.H. Chan School of Public Health found that women with a history of gestational diabetes mellitus (GDM) can slash their risk of future cardiovascular disease (CVD) considerably through sustained healthy lifestyle habits.

Modifiable Habits Make a Lifesaving Difference

GDM — a condition characterised by elevated blood sugar during pregnancy — remains one of the most common pregnancy complications worldwide.

The new study, published in the Journal of the American Heart Association (JAHA), tracked over 4,300 women from the long-running Nurses' Health Study II cohort, all of whom had a history of GDM but were free of heart disease and diabetes at the outset. The research found that women who adopted a long-term commitment to a combination of five healthy lifestyle behaviours—maintaining a healthy weight, not smoking, regular physical activity, eating a high-quality diet, and moderate alcohol intake—reduced their risk of developing CVD by up to 86% compared to those who did not adopt any these habits. Remarkably, among women who consistently followed all five optimal lifestyle factors, no cardiovascular events were observed over nearly 28 years of follow-up.

"Our findings suggest that CVD is not an inevitable outcome for women with a history of gestational diabetes," said Dr Yang Jiaxi, Senior Research Fellow at the Global Centre for Asian Women's Health (GloW), NUS Medicine, and co-first author of the study. "Even modest lifestyle improvements after pregnancy can significantly reduce future heart risk." In fact, the study

underscored the importance of improving lifestyle habits over time as these changes were associated with substantially reduced CVD risk, while declines in these habits increased risk substantially.

Co-first author, Dr Frank Qian, who was a Master of Public Health student working in the Department of Nutrition at Harvard T.H. Chan School of Public Health at the time of the research, said, “As a cardiologist and public health practitioner, these findings are really a wakeup call on the importance of counselling and promoting an environment where women with a history of GDM can adopt the behavioural changes that can stave off cardiovascular complications. We’re really talking about the opportunity to prevent or delay a large number of mostly premature cardiovascular events.” Dr Frank Qian is currently a Cardiovascular Disease Fellow at Boston Medical Center and a Clinical Instructor at the Boston University Chobanian & Avedisian School of Medicine.

Turning the Tide against Heart Disease in Singapore and Asia

In Singapore, CVD accounted for 30.9% of all deaths in 2023 — nearly 1 in 3 deaths in Singapore is due to heart disease or stroke[1]. With Asian women facing some of the world’s highest risks for developing GDM[2] and with a GDM nearly doubling the risk of subsequent CVD, these findings spotlight the potential for targeted lifestyle interventions as a powerful tool for reducing CVD risk and support long-term prevention efforts.

Early, sustained efforts of promoting healthy weight, diet, and physical activity starting from the reproductive years can yield long-lasting benefits for women’s heart health. The research team stressed the urgent need for increased public health efforts and clinical guidelines targeting women after GDM and hope that these findings can spur future studies to identify the most effective prevention strategies at both the clinical and population levels.

“These findings once again underscore the importance of continued follow-up for women who experience high blood sugar in pregnancy. Supporting them in adopting healthy dietary and lifestyle habits is crucial to safeguarding their long-term cardiometabolic health and overall well-being. These women face a higher risk of developing other chronic conditions, making early intervention all the more vital. We are investigating sustainable intervention approaches and underlying molecular mechanisms in our ongoing studies,” said Professor Zhang Cuilin, Chair Professor in Women’s Health at the NUS Medicine Department of Obstetrics and Gynaecology and Director of GloW at NUS Medicine and senior author of the study.

Launch of First of its kind Master’s Programme in Nutrition and Lifestyle Medicine

“In fact, with cardiovascular disease and other chronic conditions like diabetes and obesity on the rise, the need to instil a mindset shift around health has never been more urgent. People need to understand that nutrition and lifestyle changes can play a powerful role in preventing many of these diseases. It’s against this backdrop that we are launching the Master of Science in Nutrition and Lifestyle Medicine—to equip professionals with the knowledge and tools to drive this critical change in our communities”, added Professor Zhang.

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[1] Immigration and Checkpoints Authority, Ministry of Home Affairs, Singapore. Report on Registration of Birth and Deaths 2023. Accessed in July 2025.

[2] Li LJ, Huang L, Tobias DK, Zhang C. Gestational Diabetes Mellitus Among Asians - A Systematic Review From a Population Health Perspective. Front Endocrinol (Lausanne). 2022;13:840331.

The Master of Science in Nutrition and Lifestyle Medicine (MSc NLM) is the first programme of its kind in Asia. It combines scientific knowledge, hands-on training, and global collaboration to prepare future leaders—both regionally and globally—to advance health and well-being at individual and population levels. The programme places a strong emphasis on preventive medicine—focusing on lifestyle and nutrition to tackle non-communicable diseases and promote well-being over the lifespan through an interdisciplinary lens.

Students will have the opportunity to learn from and collaborate with world-class faculty from institutions such as Harvard University, Université Paris Cité, and the Culinary Institute of America, as well as other leading academic and research centres—through lectures, research projects, and capstone internships.

“By equipping professionals with evidence-based data and tools for practice, the MSc in Nutrition and Lifestyle Medicine aims to promote healthy ageing, lower healthcare costs, and support long-term well-being,” added Professor Zhang.

Application for the Master of Science in Nutrition and Lifestyle Medicine programme is open till 30 Sep 2025. For more information, please visit
https://medicine.nus.edu.sg/graduatestudies/education/msc-in-nutrition-and-lifestyle-medicine/

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About National University of Singapore (NUS)

The National University of Singapore (NUS) is Singapore’s flagship university, which offers a global approach to education, research and entrepreneurship, with a focus on Asian perspectives and expertise. We have 15 colleges, faculties and schools across three campuses in Singapore, with more than 40,000 students from 100 countries enriching our vibrant and diverse campus community. We have also established our NUS Overseas Colleges programme in more than 15 cities around the world.

Our multidisciplinary and real-world approach to education, research and entrepreneurship enables us to work closely with industry, governments and academia to address crucial and complex issues relevant to Asia and the world. Researchers in our faculties, 30 university-level research institutes, research centres of excellence and corporate labs focus on themes that include energy; environmental and urban sustainability; treatment and prevention of diseases; active ageing; advanced materials; risk management and resilience of financial systems; Asian studies; and Smart Nation capabilities such as artificial intelligence, data science, operations research and cybersecurity.

For more information on NUS, please visit www.nus.edu.sg.

About the NUS Yong Loo Lin School of Medicine (NUS Medicine)

The NUS Yong Loo Lin School of Medicine is Singapore's first and largest medical school. Our enduring mission centres on nurturing highly competent, values-driven and inspired healthcare professionals to transform the practice of medicine and improve health around the world.

Through a dynamic and future-oriented five-year curriculum that is inter-disciplinary and inter-professional in nature, our students undergo a holistic learning experience that exposes them to multiple facets of healthcare and prepares them to become visionary leaders and compassionate doctors and nurses of tomorrow. Since the School's founding in 1905, more than 12,000 graduates have passed through our doors.

In our pursuit of health for all, our strategic research programmes focus on innovative, cutting-edge biomedical research with collaborators around the world to deliver high impact solutions to benefit human lives.

The School is the oldest institution of higher learning in the National University of Singapore and a founding institutional member of the National University Health System. It is one of the leading medical schools in Asia and ranks among the best in the world (Times Higher Education World University Rankings 2025 by subject and the Quacquarelli Symonds (QS) World University Rankings by subject 2025).

For more information about NUS Medicine, please visit https://medicine.nus.edu.sg/