

NEWS RELEASE

For immediate release:

KKH leads groundbreaking large-scale pre-pregnancy study *Search for links between mothers' health and well-being before and during pregnancy, and long-term outcomes for mother and child*

17 June 2015, Singapore: KK Women's and Children's Hospital (KKH), Singapore Institute for Clinical Science (SICS) of the Agency for Science, Technology and Research (A*STAR), the National University of Singapore (NUS) and the National University Health System (NUHS) have launched Singapore's first large-scale pre-conception study which will involve 1,000 local couples. The study will investigate the effects that nutrition, lifestyle, mental health, and other environmental factors may have before and during pregnancy on the eventual health and socio-emotional outcomes of the mother and baby. The study, called "S-PRESTO", is short for Singapore PREconception Study of long-Term maternal and child Outcomes.

S-PRESTO will recruit couples who are actively planning pregnancy. Information will be gathered from these couples from the time they plan to conceive through successful conception and up until their child is two years old. The aim is to define the critical development pathways and mechanisms that link maternal and perinatal health and nutrition to child development, with the longer term goal of developing more effective approaches to intervention and prevention of metabolic diseases and neurodevelopmental disorders.

"S-PRESTO follows on from the highly successful birth cohort study, GUSTO (Growing Up in Singapore Towards healthy Outcomes). GUSTO showed us that the mother's health during pregnancy affects the child's health outcomes, such as higher glucose levels in the expectant mother, even in the absence of diabetes, can affect an infant's body fat composition¹, and that full term babies born to mothers with anxiety and depressive symptoms during pregnancy, end up smaller in birth size². GUSTO inevitably led us to question the influences of the couple's health on the child even before the mother is pregnant, as positively suggested by some international studies. S-PRESTO was thus launched as a local study which will focus on the preconception stage, through to when the child is two years old. The main aim is to use the data to help enhance health outcomes for every birth in Singapore", said Associate Professor Jerry Chan, KKH Principal Investigator, S-PRESTO, and Director, KK Research Centre, KKH.

"Collaborating with the leading local maternity hospital on S-PRESTO enables us to investigate the important clinical window known as the preconception stage in great detail through a large study cohort. S-PRESTO also provides a critical opportunity to validate and extend our findings from GUSTO, including associations between specific epigenetic 'marks' and developmental outcomes in the offspring, and paves the way for better maternity and child care in the future", said Associate Professor Chong Yap Seng, Executive Director, Singapore Institute for Clinical Sciences (SICS) of the Agency for Science, Technology and Research (A*STAR), and Senior Consultant, National University Health System (NUHS).

S-PRESTO is recruiting couples who meet the following criteria:

- Where the wife is 18 to 45 years old
- Currently residing in Singapore, and intending to reside in Singapore for the next five years
- Who are actively planning pregnancy
- Of Chinese, Malay or Indian ethnicity
- Intending to receive antenatal care and deliver at KKH

Under S-PRESTO, participants and their future children will receive complimentary investigations and reports until their children are two years of age. For more information on S-PRESTO, couples may visit www.s-presto.sg or call 1800-SPRESTO (1800-777 3786).

This research is supported by the Singapore National Research Foundation under its Translational and Clinical Research Flagship Programme and administered by the Singapore Ministry of Health's National Medical Research Council.

* References of published GUSTO studies

1. Broekman BF, Chan YH, Chong YS, Kwek K, Cohen SS, Haley CL, Chen H, Chee C, Rifkin-Graboi A, Gluckman PD, Meaney MJ, Saw SM; GUSTO Research Group. The influence of anxiety and depressive symptoms during pregnancy on birth size. *Paediatr Perinat Epidemiol.* 2014 Mar;28(2):116-26.

2. Aris IM, Soh SE, Tint MT, Liang S, Chinnadurai A, Saw SM, Rajadurai VS, Kwek K, Meaney MJ, Godfrey KM, Gluckman PD, Yap FK, Chong YS, Lee YS. Effect of maternal glycemia on neonatal adiposity in a multiethnic Asian birth cohort. *J Clin Endocrinol Metab.* 2014 Jan;99(1):240-7.

National Archives of Singapore

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About KK Women's and Children's Hospital (www.kkh.com.sg)

KK Women's and Children's Hospital (KKH) is a leading healthcare centre for Obstetrics, Gynaecology, Paediatrics and Neonatology. Founded in 1858, the 830-bed hospital is a referral centre providing tertiary services to manage complex conditions in women and children. More than 600 specialists adopt a multi-disciplinary and holistic approach to treatment, and harness the latest innovations and technology for the best medical care possible.

Accredited by Joint Commission International as an Academic Medical Centre, KKH is a major teaching hospital for Duke-NUS Graduate Medical School, Yong Loo Lin School of Medicine and Lee Kong Chian School of Medicine. The Hospital also runs the largest specialist training programme for Obstetrics and Gynaecology and Paediatrics in Singapore. Both programmes are accredited by the Accreditation Council for Graduate Medical Education International (ACGME-I), and are highly rated for the high quality of clinical teaching and the commitment to translational research.

For more information, please visit www.kkh.com.sg

About the National University Health System (NUHS)

The National University Health System (NUHS) groups the National University Hospital, the NUS Yong Loo Lin School of Medicine, the NUS Faculty of Dentistry and the NUS Saw Swee Hock School of Public Health under a common governance structure to create synergies for the advancement of health by integrating clinical care, research and education.

The enhanced capabilities and capacity enable the NUHS to deliver better patient care, train future generations of doctors more effectively and bring innovative treatments to patients through groundbreaking research.

For more information, please visit www.nuhs.edu.sg

About National University of Singapore (NUS)

A leading global university centred in Asia, the National University of Singapore (NUS) is Singapore's flagship university, which offers a global approach to education and research, with a focus on Asian perspectives and expertise.

NUS has 16 faculties and schools across three campuses. Its transformative education includes a broad-based curriculum underscored by multi-disciplinary courses and cross-faculty enrichment. Over 37,000 students from 100 countries enrich the community with their diverse social and cultural perspectives.

NUS has three Research Centres of Excellence (RCE) and 26 university-level research institutes and centres. It is also a partner in Singapore's fifth RCE. NUS shares a close affiliation with 16 national-level research institutes and centres. Research activities are strategic and robust, and NUS is well-known for its research strengths in engineering, life sciences and biomedicine, social sciences and natural sciences. It also strives to create a supportive and innovative environment to promote creative enterprise within its community.

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



About the Singapore Institute for Clinical Sciences (SICS)

Established in 2007, the Singapore Institute for Clinical Sciences (SICS) is a research institute within the Agency for Science, Technology and Research (A*STAR), and its mission is to develop disease-oriented clinical and translational research programmes in key disease areas.

SICS is distinguished by its focus on clinical sciences and the use of innovative approaches and technologies that enable the efficient and effective study of human health and diseases. The clinical scientists in SICS conduct the full spectrum of “bench to bedside” research activities in metabolic diseases (including diabetes, obesity and insulin resistance), pathways to normal growth and development (including cognitive and behavioural development), nutritional sciences as well as in certain viral infectious diseases such as chronic viral diseases.

The institute aims to attract, train and nurture clinician-scientists and to develop joint programs with universities, academic medical centres, government hospitals and research institutes.

For more information, please visit www.sics.a-star.edu.sg

About the Agency for Science, Technology and Research (A*STAR)

The Agency for Science, Technology and Research (A*STAR) is Singapore's lead public sector agency that spearheads economic oriented research to advance scientific discovery and develop innovative technology. Through open innovation, we collaborate with our partners in both the public and private sectors to benefit society.

As a Science and Technology Organisation, A*STAR bridges the gap between academia and industry. Our research creates economic growth and jobs for Singapore, and enhances lives by contributing to societal benefits such as improving outcomes in healthcare, urban living, and sustainability.

We play a key role in nurturing and developing a diversity of talent and leaders in our Agency and Research Institutes, the wider research community and industry. A*STAR oversees 18 biomedical sciences and physical sciences and engineering research entities primarily located in Biopolis and Fusionopolis.

For more information, please visit www.a-star.edu.sg