

MEDIA RELEASE

26 June 2025

NEW SINGAPORE STUDY TO ASSESS GROWING PREVALENCE AND IMPACT OF FOOD ALLERGIES

Landmark four-year joint study led by NUH and NUS Medicine, in collaboration with KKH, NUP and SSHSPH, is the first and largest to involve over 2,000 children in addressing food allergies

SINGAPORE — A group of clinicians and researchers from the National University Hospital (NUH), Yong Loo Lin School of Medicine, National University of Singapore (NUS Medicine), KK Women's and Children's Hospital (KKH), National University Polyclinics (NUP) and NUS Saw Swee Hock School of Public Health (SSHSPH) are embarking on a four-year joint study to determine the prevalence and impact of food allergies in Singaporean children this year.

Rising burden of food allergies

Food allergy is a condition with no definitive cure apart from natural outgrowing. Parents of children with food allergies may face significant challenges, including anxiety, hyper-vigilance, and stress. Accidental exposure to allergens is common and may lead to life-threatening reactions.

NUH and KKH have reported a steady rise in paediatric food allergy cases seen at their clinics, with common allergens being eggs, milk, and peanuts in younger children, and shellfish in adolescents and young adults. In both NUH and KKH, the number of day therapy sessions (food challenges¹) performed in children has risen by 60 per cent in 2022 to 2024. While this may reflect increasing awareness and concern among parents, it potentially highlights food allergy as an emerging condition in Singapore.

The Singapore Food Allergy Story: A two-phase study

The Singapore Food Allergy Story will be the first and largest study to provide a holistic overview of the burden of food allergies in Singapore. It aims to determine the current prevalence among Singaporean children, as well as the impact on nutrition, growth, metabolic and mental health outcomes, providing insights into the nutritional and psychosocial burden of food allergy.

This study will provide an update to existing data on food allergy prevalence, and for the first time, evaluate the impact, as well as the social and economic burden, of food allergies in Singapore. With these new insights, the hope is to bring greater social and infrastructural support for affected children and families. The study consists of two years of recruitment and two years of data analysis.

¹ Oral food challenges are clinical evaluations of food allergy status, where patients are exposed to specific allergens under the supervision of clinically trained staff.

The first phase, which began in February 2025, will survey at least 2,000 parents and caregivers of children aged 12 to 24 months attending routine developmental and immunisation visits at polyclinics under NUP. Parents will be asked to complete questionnaires and those reporting possible allergic reactions to food will be referred to NUH or KKH for further evaluation.

The second phase, beginning in July 2025, will involve approximately 400 children aged 0 to 18 years with diagnosed allergies to milk, egg, peanut and shellfish for at least six months. Participants from the first phase of the study and existing NUH and KKH patients will be invited to take part in this study phase, which will include questionnaires, growth and nutritional assessments, as well as blood and stool collection.

The study findings will help to identify nutrient deficiencies, growth and metabolic abnormalities, and feeding behavioural issues, which will inform future guidelines and educational materials on nutrition, dietary management, as well as mental health support for affected families.

The team is also working with parent support groups like the Singapore Parents of Eczema and Allergy Kids (SPEAK) to prioritise patient-relevant outcomes.

Creating a safer environment for individuals with food allergies

Associate Professor Elizabeth Tham, Lead Principal Investigator, said: "With this research, we hope to deepen our understanding of food allergies and their broader impact. Our goal is to create a safer environment for children with food allergies, enabling them to reach their fullest potential at school and work. Additionally, we aim to improve mental health and overall well-being, especially for older children and adolescents." A/Prof Tham is the Head & Senior Consultant, Division of Paediatric Allergy, Immunology & Rheumatology, Department of Paediatrics, Khoo Teck Puat – National University Children's Medical Institute, NUH.

Co-Investigator Dr Chong Kok Wee, Head and Senior Consultant, Allergy Service, Department of Paediatric Medicine, KKH, said: "At KKH, we have seen a concerning upward trend in food allergy cases in recent years, making this research a critical step to address the issue. As the first and largest study of its kind in Singapore, this study marks a significant milestone in our nation's approach towards understanding and managing the impact of food allergies in children. By examining the medical and psychosocial aspects of food allergies, the findings from this research will serve as an instrumental guide for us to establish evidence-based strategies to enhance the quality of life for children living with food allergies and provide better guidance for healthcare professionals managing these allergies."

Dr Abiramy D/O Anathan, Clinician Lead, Paediatrics, and Consultant, Family Physician, NUP, said: "As NUP embarks on this important research initiative with NUH and KKH, we are optimistic that the outcomes from the Singapore Food Allergy Story will play a crucial role in exploring viable solutions and ultimately improving the quality of life for children suffering from food allergies. The increased number of food challenge sessions we have witnessed in NUP reflects a growing recognition of the importance of effective management strategies. I believe that the findings from this study will be invaluable in shaping our approach to management, support, and education for families navigating the complexities of this chronic condition. We look

forward to seeing positive changes through our collective efforts in enhancing safety and support for these children.” Dr Abiramy is also Head of Clementi Polyclinic.

This research is supported by the Singapore Ministry of Health through the National Medical Research Council (NMRC) Office, MOH Holdings Pte Ltd, under the NMRC Population Health Research Grant (MOH-001637).

Chinese Glossary

National University Hospital (NUH)	国立大学医院 (国大医院)
Yong Loo Lin School of Medicine, National University of Singapore (NUS Medicine)	新加坡国立大学杨潞龄医学院
KK Women's and Children's Hospital (KKH)	竹脚妇幼医院
National University Polyclinics (NUP)	国立大学综合诊疗所 (国大综合诊所)
NUS Saw Swee Hock School of Public Health	新加坡国立大学苏瑞福公共卫生学院
The Singapore Food Allergy Story	新加坡食物过敏研究计划
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Dr Abiramy D/O Anathan Clinician Lead, Paediatrics Consultant, Family Physician Head, Clementi Polyclinic National University Polyclinics	Abiramy D/O Anathan 医生 儿科咨询小组主任 家庭顾问医生 主任, 金文泰综合诊疗所 国立大学综合诊疗所

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About the National University Hospital (NUH)

The National University Hospital (NUH) is Singapore's leading university hospital. While the hospital at Kent Ridge first received its patients on 24 June 1985, our legacy started from 1905, the date of the founding of what is today the NUS Yong Loo Lin School of Medicine. NUH is the principal teaching hospital of the medical school.

Our unique identity as a university hospital is a key attraction for healthcare professionals who aspire to do more than practise tertiary medical care. We offer an environment where research and teaching are an integral part of medicine, and continue to shape medicine and transform care for the community we care for.

We are an academic medical centre with over 1,200 beds, serving more than one million patients a year with over 50 medical, surgical and dental specialties. NUH is the only public and not-for-profit hospital in Singapore to provide trusted care for adults, women and children under one roof, including the only paediatric kidney and liver transplant programme in the country.

The NUH is a key member of the National University Health System (NUHS), one of three public healthcare clusters in Singapore.

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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/>

About KK Women's and Children's Hospital

KK Women's and Children's Hospital (KKH) is Singapore's largest tertiary referral centre for obstetrics, gynaecology, paediatrics and neonatology. The academic medical centre specialises in the management of high-risk conditions in women and children.

Driven by a commitment to deliver compassionate, multidisciplinary care to patients, KKH leverages research and innovation to advance care. In 2021, the hospital launched the SingHealth Duke-NUS Maternal and Child Health Research Institute (MCHRI) to support the growth of every woman and child to their fullest potential, and transform national health in Singapore and the region.

Some of the hospital's breakthroughs include uSINE[®], a landmark identification system for the administration of spinal epidural, the discovery of new genetic diseases like Jamuar Syndrome, and a series of guidelines for women and children to improve population health in the region.

The academic medical centre is also a major teaching hospital for Duke-NUS Medical School, Yong Loo Lin School of Medicine and Lee Kong Chian School of Medicine. In addition, KKH runs the largest specialist training programme for Obstetrics and Gynaecology, and Paediatrics in Singapore.

Founded in 1858, KKH marked its centenary as a maternity hospital, and welcomed its 1.6 millionth baby in 2024. For more information, visit www.kkh.com.sg

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About the National University Polyclinics (NUP)

The National University Polyclinics (NUP) is a member of the National University Health System (NUHS), a leading academic health system and one of three public healthcare clusters in Singapore.

NUP provides primary care treatment for acute illnesses, management of chronic diseases, women and children health services, and dental care at its network of polyclinics at Bukit Batok, Bukit Panjang, Choa Chu Kang, Clementi, Jurong, Pioneer, and Queenstown (with Taman Jurong, Tengah and Yew Tee to come).

As part of an integrated academic health system, NUP collaborates with the hospitals and national specialty centres within NUHS as well as partners in the community, such

as general practitioners, grassroots, and social care agencies, to provide patient-centred care for the population. For more information, please visit www.nup.com.sg.

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About NUS Saw Swee Hock School of Public Health

Building upon decades of experience in research, training and practice in epidemiology and public health, the Saw Swee Hock School of Public Health (SSHSPH), under the National University of Singapore (NUS), was established in October 2011 as Singapore's national school of public health. The School is also a member of the National University Health System (NUHS).

The School aims to continually foster healthier communities in Singapore and the region, and impact public health programmes and policies through its robust educational programmes and translational cross-disciplinary research work on cohort studies and life course epidemiology, infectious disease research, health technology assessments, health promotion, workplace safety and health, health systems evaluation and health services research. An interdisciplinary approach, augmented by rigorous training, applicable research and regional partnerships, places SSHSPH at the forefront of public health knowledge discovery and practice in Asia.

The School actively collaborates with many partners including the London School of Hygiene & Tropical Medicine, Karolinska Institutet, Harvard School of Public Health and University of Michigan School of Public Health. Its flagship programme, the Master of Public Health degree, attracts students from a wide range of disciplines from within Singapore and throughout the region.

For more information, please visit <https://sph.nus.edu.sg>

About the National Medical Research Council (NMRC)

The NMRC was established in 1994 to oversee research funding from the Ministry of Health (MOH) and support the development and advancement of biomedical research in Singapore, particularly in the public healthcare clusters and medical schools. NMRC engages in research strategy and planning, provides funding to support competitive research grants and core research enablers, and is responsible for the development of clinician scientists through awards and fellowships. The council's work is supported by the NMRC Office which is part of MOH Holdings Pte Ltd. Through its management of the various funding initiatives, NMRC promotes healthcare research in Singapore, for better health and economic outcomes.

Annex A – Background on the prevalence of food allergies in Singapore

Previous clinical cohort studies in Singapore established more than 10 years ago indicated that food allergy prevalence was low at that time. One of the earliest studies in 2008 found that peanut anaphylaxis was mostly seen only in expatriate patients in Singapore, and that adrenaline autoinjectors prescribed for anaphylaxis was very uncommon (0.01%).² Bird's nest was also the top trigger for food anaphylaxis in Singapore and peanut/treenut allergies were extremely uncommon.³ There were no population studies on FA prevalence during that period.

Subsequently, the Growing Up in Singapore Towards Healthy Outcomes (GUSTO) study (recruited between 2009 to 2011) reported an overall prevalence of parent-reported food allergies of 2.9% (26 of 902) at 12 months and 2.7% at 18 months. Egg was the predominant allergen below 2 years and peanut allergy was still uncommon. Another cross-sectional study of 4,115 children aged 11 to 30 months recruited from polyclinics and well-baby clinics between 2011-2013 (completed data collection in 2015) showed that the self-reported prevalence of cow's milk, hen's egg, and peanut allergy were 0.51%, 1.43%, and 0.27% respectively at that time.⁴

In a 2016 KKH study, food triggers were found to be the most common cause of anaphylaxis across all age groups, but particularly in children.⁵

² Tham EH, Tay SY, Lim DL, et al. Epinephrine auto-injector prescriptions as a reflection of the pattern of anaphylaxis in an Asian population. *Allergy Asthma Proc* 2008; 29: 211-215. 2008/04/24. DOI: 10.2500/aap.2008.29.3102.

³ Shek LP and Lee BW. Food allergy in children-the Singapore story. *Asian Pac J Allergy Immunol* 1999; 17: 203-206. 2000/03/04.

⁴ Lee AJ, Tham EH, Goh AEN, et al. Prevalence of IgE-mediated cow milk, egg, and peanut allergy in young Singapore children. *Asia Pac Allergy* 2022; 12: e31. 2022/08/16. DOI: 10.5415/apallergy.2022.12.e31.

⁵ Ganapathy S, Lwin Z, Ting DH, et al. Anaphylaxis in Children: Experience of 485 Episodes in 1,272,482 Patient Attendances at a Tertiary Paediatric Emergency Department from 2007 to 2014. *Ann Acad Med Singap* 2016; 45: 542-548. 2017/01/08.

Annex B – Posters on the Singapore Food Allergy Story

Poster for patients and public information regarding first phase of the study

SFAS Aim 1 - Poster_V1_13 Sep 2024

The Singapore Food Allergy Story

We are looking for volunteers to join our research study!

You may be eligible if you are:



Parents of children aged 12 to 24 months (inclusive), attending well-child visit in Polyclinics

This research study involves:



1 study visit at Polyclinic (~30 mins)



Questionnaire



Skin Prick Tests
(Those who report Food Allergy reactions)

There will be no costs charged to participants. You will be reimbursed for your time and transport.

Study visits will be conducted at the Polyclinic where your child is seen for well-child appointments.

To find out more:

 **8444 3163**  **allergy_study@nuhs.edu.sg**

 **National University Polyclinics**

 **National University Hospital**
A member of the NUHS

 **KK Women's and Children's Hospital**
SingHealth

Poster for patients and public information regarding second phase of the study

SFAS Aim 2_NUH Poster_V1_10 Feb 2025

The Singapore Food Allergy Story

We are looking for volunteers to join our research study!

You/your child may be eligible if you/your child are:



- Between ages 0 – 18 years old
- Diagnosed with food allergy

This research study involves:



Questionnaires



Growth Assessment



Blood and Stool Collection

You will be reimbursed for your time and transport.

Study visits will be conducted at
National University Hospital (NUH),
5 Lower Kent Ridge Road, Singapore 119074

To find out more:

 8444 3162  allergy_study@nuhs.edu.sg