



PRESS RELEASE

26 APRIL 2024 | FOR IMMEDIATE RELEASE

The Quest for Longevity Starts In the Ovaries

The NUS Bia-Echo Asia Centre for Reproductive Longevity & Equality (ACRLE) at the NUS Yong Loo Lin School of Medicine accelerates efforts to unlock the workings of ovaries and delay ovarian ageing.

Singapore, 26 April 2024— While we know ovaries are one of the first organs to age in women, we do not know why and how fast. Women live a significant portion of their lives in the post-reproductive state and yet, there is little understanding on why menopause occurs. In fact, aside from fertility, the reproductive health of women is often overlooked and neglected. With more research indicating reproductive health as a marker of women’s health¹, there is huge impetus to advance our understanding of the intricacies and workings of the female ovary.

The NUS Bia-Echo Asia Centre for Reproductive Longevity & Equality (ACRLE) at the Yong Loo Lin School of Medicine, National University of Singapore (NUS Medicine) was set up in 2021 to study a vital aspect of women’s health that to date, remains a huge mystery. One of ACRLE’s key mission is to lead the charge in unearthing the science and changing the narrative of female reproductive longevity and equality through research and advocacy.

Conference on ‘The Art and Science of Reproductive Ageing’

Since its establishment, ACRLE has made tremendous headway, especially in uncovering the determinants of the reproductive health and life span in Asian women. As part of ACRLE’s work to raise awareness on the impact of reproductive ageing on women’s health, ACRLE held a two-day conference during National Infertility Awareness Week, from 25 – 26 April, gathering experts from various disciplines to explore ‘The Art and Science of Reproductive Ageing’. The conference featured ten plenary sessions that delved into topics such as ovarian biology and ageing, ways to advance women’s reproductive health and lifespan, including a panel discussion featuring top women leaders like Chief Executive Officer of The American Chamber of Commerce, **Dr Hsien-Hsien Lei** and President of United Women Singapore, **Ms Georgette Tan**. The panel highlighted the profound impact reproductive longevity can have on women’s health and underscored the importance of empowering women to take charge of their reproductive health. They discussed ways to increase education and advocacy efforts on

¹ Lockhart PA, Martin P, Johnson MA, Shirtcliff E, Poon LW. The Relationship of Fertility, Lifestyle, and Longevity Among Women. *J Gerontol A Biol Sci Med Sci.* 2017 Jun 1;72(6):754-759

Christensen MW, Kesmodel US, Christensen K, Kirkegaard K, Ingerslev HJ. Early ovarian ageing: is a low number of oocytes harvested in young women associated with an earlier and increased risk of age-related diseases? *Hum Reprod.* 2020 Oct 1;35(10):2375-2390.

pertinent reproductive issues as well as strategies to overcome some of the challenges in the reproductive health space.

Keynote speaker **Professor Yousin Suh**, Director of Reproductive Ageing in Obstetrics and Gynecology in the Vagelos College of Physicians and Surgeons at Columbia University, outlined her detailed study of the mechanisms of ovarian ageing, describing the molecular, cellular, and genetic changes to the ovaries when they age. Her research is critical as it contributes to the understanding of the ovarian ageing process, paving the way for the identification of targets and pathways to delay the ageing of ovaries. **Professor William Ledger**, Head of Discipline of Women's Health, Faculty of Medicine at the University of New South Wales, Director of Reproductive Medicine and Senior Staff Specialist at the Royal Hospital for Women and a fertility specialist at City Fertility in Sydney, spoke about using artificial intelligence and new serum biomarkers to predict 'egg quality' and the search for effective intervention to improve the chances of human eggs becoming a healthy embryo, which will potentially increase the chances of older women having a healthy pregnancy in his keynote.

Underscoring the important role ovaries play in extending women's health span, the conference had an entire session dedicated to the exploration of the link between reproductive health and longevity. **Professor Zhang Culin**, Director of the Global Centre for Asian Women's Health (GloW) at NUS Medicine and Lead of the Population Health Study program at ACRLE discussed the relevance of reproductive health and pregnancy outcomes for promoting healthy longevity for young, middle-aged, and future elderly women, as well as the next generations, highlighting the critical need for the promotion of healthy longevity to start at a young age.

Professor Jean Yeung, Director of the Centre for Family and Population Research at NUS and a Professor at the Department of Paediatrics, Yong Loo Lin School of Medicine (NUS Medicine) also presented findings on the changing attitudes and behaviour in family formation from her multi-country study and her policy recommendations for increasing marriage and fertility rates in Singapore.

Accelerating the progress towards reproductive longevity

ACRLE is also intensifying efforts to build a strong science community and network to progress reproductive longevity research, and will be embarking on several major endeavours including the establishment of a Reproductive Research Network with Temasek Life Sciences Laboratory Limited, as well as working with local and overseas fertility centres to unravel biomarkers predictive of reproductive senescence and longevity. The centre will also be looking more deeply into the impact of drugs targeting ageing pathways and other geroprotective interventions to optimise women's reproductive healthspan.

"Ongoing research by the Centre already suggests that the rate of ovarian ageing in women differs. One of the key things that we are trying to do at ACRLE is to determine the true ovarian life and healthspan of women. With this knowledge, we will be able to help every woman maximise their reproductive window, and more importantly, it will be a huge step towards progressing our quest in advancing women's health and wellbeing," said **Dr Huang Zhongwei**, Deputy Director of ACRLE and Consultant at the National University Hospital's Department of Obstetrics & Gynaecology.

Professor Chong Yap Seng, Lien Ying Chow Professor in Medicine, Dean of NUS Medicine, said, "With global birth rates declining and a rapidly ageing world population, the impetus to improve healthspan is pressing and the pursuit of healthy longevity is one of the most important healthcare challenges of our time. ACRLE's work on reproductive longevity is critical

and timely - by extending the healthspan of women, we are already extending the healthspan of half the population, and in time to come, the healthspan of all.”

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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 16 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 more than 20 NUS Overseas Colleges entrepreneurial hubs 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, research centres of excellence, corporate labs and more than 30 university-level research institutes 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.

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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 2024 by subject and the Quacquarelli Symonds (QS) World University Rankings by subject 2024).

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