

Press release

Nuttall Women's Health Awards Researchers from Sheba Medical Center \$6 Million Grant to Launch OASIS, a First-of-Its-Kind Study on How Ovarian Aging Shapes Women's Health

Women's health declines sharply after menopause; yet scientists still don't fully understand what happens to the ovary when it runs out of eggs, or how that change cascades through the rest of the body. A new study from Sheba aims to close that gap.

Researchers from Sheba Medical Center have received a \$6 million research grant from Nuttall Women's Health for a period of three years to launch OASIS – Ovarian Secretome and Integrated Health Span, a comprehensive, first-of-its-kind study examining how ovarian aging during the menopausal transition affects women's overall health and the functioning of multiple systems throughout the body over time.

The study is led by Prof. Lauren Petrick, Director of the Center for Metabolomics and Molecular Phenotyping at Sheba, and Dr. Abigail Goshen, Director of the Healthy Longevity Research Institute and Co-Founder of the Sheba Longevity Institute.

Sheba Medical Center is the largest and most comprehensive medical facility in the Middle East, globally recognized as one of the world's best and smartest hospitals and ranked #7 globally on Newsweek's World's Best Hospitals list. Located in Israel, it seamlessly integrates top-tier specialized clinical care with cutting-edge medical innovation through its virtual hospital systems and advanced digital health hubs.

The Challenge: Understanding Ovarian Aging and Its Impact on the Entire Body

Women live longer, on average, than men. However, beginning in their 40's, in parallel with gradual ovarian decline, women face a rising risk of chronic disease and functional decline across multiple body systems compared with men. Following menopause, the risk of cardiovascular disease, bone loss, dementia and certain types of cancers all increase.

Research suggests that the declining state of the ovaries may serve as a kind of “early warning system” for changes occurring throughout the body. However, scientific understanding of how the ovaries change during the menopausal transition remains limited and so does the ability to identify at-risk women early and develop interventions for them.

The Study: Following 650 Women Through the Menopausal Transition

As part of the OASIS study, researchers will follow 650 women aged 40–75 through Sheba's Longevity Center.

Unlike previous studies that have focused on individual health outcomes before or after menopause, OASIS will focus on the transition itself, tracking biological changes before, during, and after the menopausal transition.

The study will examine the impact of menopause across seven areas of women's health: cognitive health, sleep, metabolic health, body composition, physical function, bone health, and cardiovascular health. OASIS treats menopause not as a single gynecological event, but as a biological process that drives changes across all of these systems at once.

By combining comprehensive clinical follow-up with advanced molecular analyses, the study aims to identify:

- When biological changes associated with ovarian aging begin;
- How these changes are associated with the health of other systems in the body; and
- Whether at-risk women can be identified before functional decline or disease develop.

By mapping the process of ovarian aging, the researchers aim to provide three practical tools:

1. **Develop tools for the early identification** of women at risk for early menopause.
2. **Develop tools to assess and predict women's overall health** across the lifespan.
3. **Identify key biological mechanisms** that could become targets for new treatments to extend the time women spend in more optimal health.

This study draws on exceptional interdisciplinary leadership. Systems biology and aging dynamics expert Prof. Uri Alon and proteomics expert Prof. Tamar Geiger contribute core scientific expertise from the Weizmann Institute of Science. Clinical execution and translational oversight are led by Sheba Medical Center's Prof. Jaron Rabinovici, lead gynecologist, and Prof. Tzipora Strauss, Director and Founder of the Sheba Longevity Institute.

Through this ground-breaking research, OASIS aims to pave the way for targeted early interventions and transform how we support healthy aging and longevity in women worldwide.

Michal Elovitz, MD, CEO of Nuttall Women's Health: "A major limitation in improving women's health is the lack of understanding of female biology. Women's health declines dramatically with menopause, and yet we still do not know what the ovary actually produces once it is

devoid of eggs. Understanding ovarian aging and its systemic effects will create new opportunities for therapies that could positively impact women for a significant portion of their lives. We are proud to support Drs. Petrick and Goshen's OASIS study and are eager to see its impact".

Prof. Lauren Petrick, Director of the Center for Metabolomics and Molecular Phenotyping at Sheba:

"While every woman goes through menopause, our understanding of the biological changes that unfold during ovarian aging remains strikingly limited. By combining artificial intelligence with advanced multi-omics, we are building non-invasive tools to predict ovarian aging and identify key biomarkers that signal rapid decline. This research lays the foundation for targeted interventions that can protect and support women's health long before age-related symptoms appear".

Dr. Abigail Goshen, Director of the Healthy Longevity Research Institute and Co-Founder of the Sheba Longevity Institute:

"One of the unique strengths of OASIS is the depth of the clinical phenotyping. By combining measures of ovarian aging, including ovarian ultrasound, with detailed longitudinal assessment of cognition, sleep, bone, cardiovascular and metabolic health, body composition and physical function, we can study ovarian aging as a whole-body process rather than an isolated reproductive event. Our goal is to identify the earliest measurable changes in women's health and ultimately create tools that allow us to recognize women at risk before significant functional decline or disease develops".

About Nuttall Women's Health:

Nuttall Women's Health (NWH), founded by Amie and Scott Nuttall, is a philanthropic organization dedicated to accelerating scientific discovery and innovation in women's health. NWH funds large-scale, high-impact research that addresses the largest gaps in women's health science with a model built for speed, flexibility and catalytic impact, allowing the best ideas to move from concept to reality faster. Learn more at nuttallwomenshealth.org.