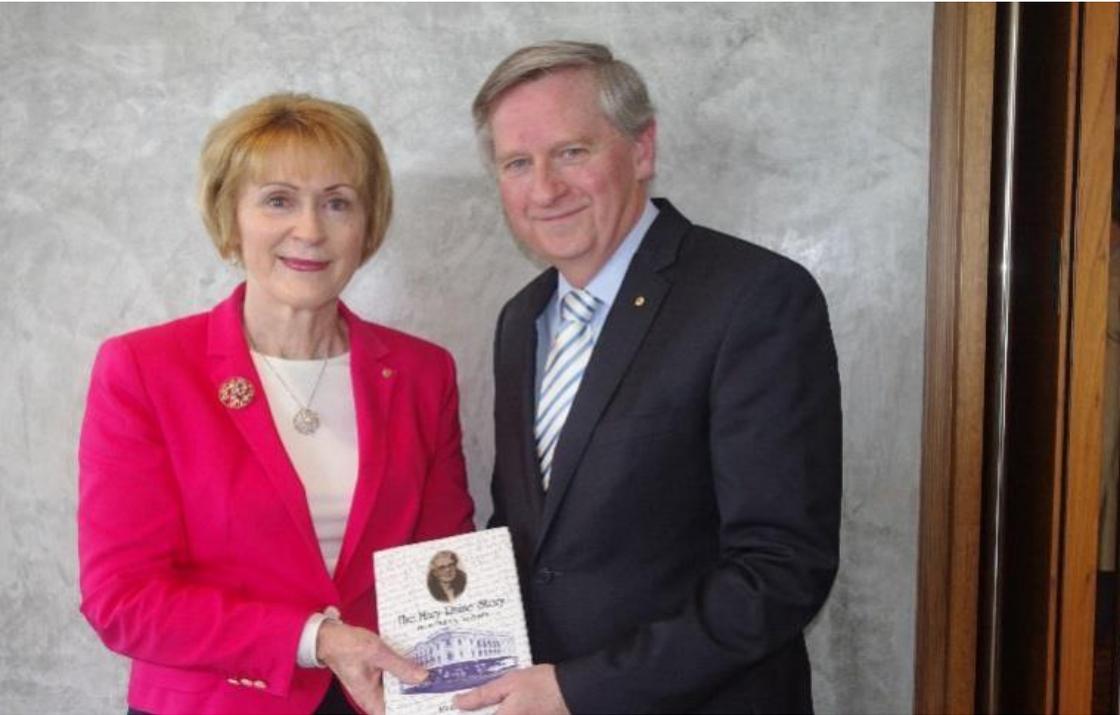


The Western Australian Pregnancy Cohort (Raine) Study

INFORMATION FOR RESEARCHERS



University of Western Australia
Curtin University
Telethon Kids Institute
Women and Infants Research Foundation
Edith Cowan University
Murdoch University
The University of Notre Dame Australia
Raine Medical Research Foundation



The Western Australian Pregnancy Birth Cohort (Raine) Study is one of the most comprehensive pregnancy birth cohort studies in the world. It is a rich resource for the study of environmental and genetic factors that affect health and development and can provide unique insights into the natural history of human diseases. Between May 1989 and November 1991, 2900 pregnant women were recruited into the study and their children have been assessed intensively over the past twenty seven years.

STUDY MANAGEMENT

The study is governed by the Unincorporated Joint Venture (UJV). The Director, Professor Peter Eastwood, and Scientific Director, Professor Leon Straker, provide leadership and scientific direction. Day to day management of the study is managed by the Operations Manager, Mrs Aggie Bouckley. Cohort participants are involved in many aspects of the study and have their own advisory group.

STUDY FUNDING

The Raine Study is available for access by all health and medical researchers. The project receives core funding from the University of Western Australia, Curtin University, Telethon Kids Institute, Women and Infants Research Foundation, Edith Cowan University, Murdoch University, The University of Notre Dame Australia and Raine Medical Research Foundation. Cohort follow-up studies and studies investigating specific research questions are funded mainly by research grants awarded to individuals and/or groups of researchers.

STUDY RESOURCE

Comprehensive and detailed information has been collected from the mother in early pregnancy and from the children since birth. Cohort follow-ups have been conducted at ages 1, 2, 3, 5, 8, 10, 14, 17, 18, 20, 22 and now 27 years of age. This includes questionnaire data, clinical assessment information and biological sample results.

Stored biological samples include antenatal blood, cord blood, placenta, milk teeth, blood, saliva, urine and DNA.

The Raine Study is now a multigenerational life-course study addressing a broad range of health and developmental issues in three generations. In addition to the original cohort (Generation 2), their parents (Generation 1) participated in assessments, providing information about their children and about themselves. Generation 1 has recently participated in assessments of sleep, obesity and activity. In addition, the offspring (Generation 3) of the original cohort (Generation 2) is currently participating in assessments of developmental ability and physical activity.

KEY FINDINGS

To date, data from the Raine Study has produced over 400 papers in international scientific and medical journals. Many novel discoveries have been reported across a range of disciplines and Raine Study findings are informing practice internationally.

Examples include:

- Normal fetal growth charts developed from Raine Study pregnancy data are used for all pregnancy scanning in Australia.
- Foetal and infant exposures influence metabolic risk, behaviour, language and emotional development.

The Raine cohort has provided normal ranges for biometric measurements such as height, weight and blood pressure throughout childhood and adolescence, as well as for biochemical measurements including serum glucose, lipid levels and inflammatory markers.

The Raine Study has shown that better mental health in teenagers is associated with healthy eating, less television and leisure computer use and less risk taking behaviour.

The Study has also shown that respiratory allergy is important to teenage asthma and exposure to environmental tobacco smoke increased the risk of wheeze.

The Study has also shown that early 50% of adolescents suffer from back pain with 10% having disabling back pain. Posture, obesity, drug use and mental health are related to back pain.

Raine Study GWAS data has contributed to the identification of new genetic loci influencing birth weight, age of menarche and lung function.

Longitudinal monitoring of cohort data has demonstrated that predictors of disease can change over time.

The combination and interaction of multiple risk factors and health related outcomes is complex. The rich longitudinal data of the Raine Study is helping to unravel pathways for health conditions that affect a large proportion of the population and have many and varied causes.

STRENGTHS of the Raine Study

- Richly characterised cohort of moderate size
- Longitudinal data at multiple timepoints over pregnancy, infancy, childhood, adolescence, young adulthood
- Broad multi-disciplinary data on physical, mental and social aspects of health and development, e.g. genetics, anthropometrics, lifestyle, medical history
- Multi-generational cohort
- Data linkage to publically held databases
- Engaged participants keen on ongoing participation
- Local, national and international researchers
- Strong track record of high quality research

WORKING WITH the Raine Study

The Raine Study is a supported access resource and enquiries are encouraged from researchers who wish to utilise data. Collaboration with existing Raine Study researchers is encouraged and facilitated by Raine Study management. Information on accessing the study is available via <https://www.rainestudy.org.au/index.php/for-researchers/ross-raine-online-submission-system/>



The Raine Study

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