Cohort Profile: Australian Aboriginal Birth Cohort (ABC) study

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Pocket Profile

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Cohort purpose: Aboriginal Australians fare worse than other Australians on almost every measure of physical and mental health. The core objective of the Australian Aboriginal Birth Cohort (ABC) is to examine the effect of early life events and conditions on later health.

Cohort basics: The ABC is a prospective birth cohort of 686 babies born to Aboriginal mothers (a representative sample of the 1238 eligible babies) recruited at the Royal Darwin Hospital (RDH) between January 1987 and March 1990. This study is recognized as the largest and longest-running prospective birth cohort of Indigenous Australians.

Follow-up and attrition: Subsequent follow-up has occurred at Wave 2 (mean age 11.4 years: 85% of living participants), Wave 3 (mean age 18.2 years: 71% of living participants) and Wave 4 (mean age 25.4 years: 71% of living participants). To date there have been 39 deaths; therefore 647 people are available for future follow-up.

Design and measures: At birth details of birth measurements and maternal medical and obstetric history were obtained. Postnatal clinical estimation of gestational age was done as gestational ages were not readily available. At each follow-up, the same core data were collected with additional detail and markers added over time. Core data include anthropometry (weight, height, head, mid upper arm, waist circumferences and skinfold), socioeconomic measures, renal size and function and metabolic, cardiovascular and haematological biomarkers. At Wave 2, puberty stage and respiratory function were collected. Wave 3 saw expansion to include oral health, lifestyle and emotional status, iodine status with thyroid ultrasound, hepatitis B immunization and cognitive and novel cardiovascular markers. In Wave 4, nutritional intake, stress and inflammatory markers were added.

Unique features: The major strengths of the study are the availability of reliable gestational age, the direct standardized collection of comprehensive health data obtained via face-to-face health checks by a core group of trained researchers and excellent retention rates despite logistical challenges. Fetal growth restriction (FGR) rates were high (25%) and major risk factors were maternal smoking, undernutrition and age < 20 years. At 11, 18 and 25 years, participants who had been FGR at birth were still shorter and lighter than non-FGR babies. Although undernutrition is still predominant at 25 years in this population, the rates of overweight are rising. However, the high-risk combination of FGR with later obesity for chronic disease, was rare in this cohort. The prevalence of chronic disease markers at adolescence and young adulthood was low. In cross-sectional analyses, current weight and not birthweight has been the predominant determinant of biomarkers of chronic disease.

Reasons to be cautious: The relatively small cohort size is a limitation. Although the population is unique in many aspects, the findings may be generalizable to Indigenous populations living in remote locations or populations in nutritional transition.

Collaboration and data access: All data are stored confidentially and are not freely available in the public domain, but specific proposals for collaboration are welcomed.

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