

# THE ORIGINS PROJECT: LEADING A NEW GENERATION OF INTERVENTIONAL BIRTH COHORTS



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## BACKGROUND

Non-communicable diseases (NCDs), pose the greatest threat to human health globally. The dramatic rise in these chronic inflammatory conditions - such as childhood obesity, the allergy epidemic and an increasing burden of neurodevelopmental disorders and mental ill health in young people - reflect the profound early impact of modern environments on developing systems. Many of these conditions are pre-programmed in pregnancy and early life.

## AIM

To create an extensive research platform in Western Australia which integrates and harmonises nested clinical studies, enabling cutting edge research into the origins of NCDs.



ORIGINS provides **real-time feedback** to participants if a health issue is identified and encourages early intervention.

## METHOD

The ORIGINS Project is a collaborative initiative establishing a birth cohort of 10,000 children born at Joondalup Health Campus. Families are followed from early pregnancy to when the child turns five years. While collecting biological samples and data across several timepoints, the ORIGINS governance structure provides a framework for the integration of sub-projects nested within the main observational cohort, including randomised controlled trials, interventions, mechanistic and observational studies.

## SNAPSHOT AT FIVE YEARS

- 16,205 Individuals in the current ORIGINS POPULATION
- 13 million+ Datapoints
- 300,000 Biological Samples
- 40 Nested Sub-Projects



## ORIGINS’ NESTED SUB-PROJECTS

### INTERVENTIONAL STUDIES

SYMBA	BENEFIT	TUMS
PrEggNut	ADAPTS	CASHEW
ENGAGE	NOSE	Respectful Parenting
The CUB Study	PLAN	Nature Play & Grow
ACE Infant Feeding	Breastmilk Allergy Prevention	
Mums Minds Matter		
Positive Family Foundations		

### DOMAINS

Brain & Behaviour	Environment & Lifestyle
Mental Health & Wellbeing	Nature Relatedness
Growth & Development	Nutrition & Metabolism
P4’ Omics & Systems Biology	Infections & Vaccines
Allergy, Inflammation & Immunity	Fathering
COVID-19	Oral Health
Microplastics	

### OBSERVATIONAL STUDIES

SunPreg	A Family Journey	AERIAL	Machine Learning
STORK	TALK	Kindy Readiness	Early Moves
Neuro-developmental Pathways	BioMood	COCOON	CARE Dads
FACE	Diabetes During Pregnancy	BEACHES	Dental Health
PEAPOD	ORBIT	Mast Cell	Time out for Wellbeing
	Plastic Compounds	Mediterranean Diet	SCREEN
	Exposures & Infant Lung Function	Dental Screening	Community Wellbeing
		Oral microbiota	PLANET Project

## KEY SUB-PROJECTS

**Early Moves:** Using home videos, researchers are investigating whether we can identify babies at risk of cognitive difficulties very early to provide critical support and intervention.

**BENEFIT & PrEggNut:** By age one, 10% of babies will develop a food allergy. These studies are investigating whether the amount of eggs and peanuts a mother eats during pregnancy and breastfeeding has an influence on reducing the chances her baby will develop an egg or peanut food allergy.

**SYMBA:** Giving mums a high fibre prebiotic supplement during pregnancy, and whilst breastfeeding, to explore the impact on reducing the risk of children developing allergic disease.

**AERIAL:** Studying the importance of the cells lining the airways in the nose and lungs at birth to help to understand the development of early-life airway conditions.

**CUB Study:** Video technology is helping researchers learn more about the early communication style of infants with a family history of autism, ADHD or intellectual disability.

## CONCLUSION

ORIGINS is an intervention cohort invested in making positive change—not only for children and their families, but for the wider community. It is our goal that ORIGINS will also serve an example of how The ORIGINS platform not only enables local and international research but provides pathways for prevention, early identification and treatment in vulnerable children.

