

The University of Auckland Centre for Longitudinal Research – He Ara ki Mua

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Research and *Growing Up in New Zealand***

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Centre for Longitudinal Research – He Ara ki Mua

Established to provide a hub of academic expertise in design, methodology and translation of longitudinal research.

Vision

To provide relevant evidence to improve population health and development.

Mission

To foster excellence and build capacity in life course research: design, methodology, analysis and translation.

Goals of the Centre

- Support multi-disciplinary research excellence and collaboration
- Support a life course epidemiological research perspective
- Develop translational research expertise
- Contribute to New Zealand specific population relevant evidence to improve outcomes
- Academic capacity development and infrastructure to support career development

Objectives of the Centre

- To establish an environment where longitudinal research, and academic career development in related areas can flourish
- To design high quality protocols and procedures relevant to multidisciplinary life course epidemiological research
- To create a high quality research environment that will support post-graduate students engaged in population and policy relevant research
- To establish a successful academic infrastructure for it's current core project – *Growing Up in New Zealand*
- To develop statistical expertise in the analysis of longitudinal data that will be necessary for robust analyses of the *Growing Up* data, but will also provide a resource for other related population and longitudinal research

Deliverables and Outcomes

- A population based, multidisciplinary data source available to bona fide researchers via a Data Access Committee and Data Access Policy
- Development of a centre of expertise in longitudinal data analyses that provides methodological support for the *Growing Up in New Zealand* study but which will also have the capacity to support other research groups with longitudinal data.
- Enhance relationships between researchers and policy makers in terms of translating scientific evidence into evidence relevant to policy development and decisions
- Inform and involve the community in research relevant to improving their lives
- Contribute to the University's objectives related to research excellence and productivity by developing academic careers and publications in peer reviewed journals.

Current Projects

- **Growing Up in New Zealand**
 - 21st century longitudinal study of current New Zealand children and their families (UniServices, UoA, University of Otago, Massey and Victoria Universities with multiple ministries led by MSD and MoH, ADHB, CMDHB and Waikato DHB)
- **International Healthy Start to Life Project (IHSLP)**
 - a population-based study that aims to provide context-relevant evidence to policy makers both in NZ and internationally, to ensure that strategies designed to improve population health recognise the importance and cost-effectiveness of investment early in life (NRCGD, FMHS, Liggins, Business School, NZIER, AUT with MoH)
- **PhD Project (example)**
 - Nutritional status at birth and associations with early childhood respiratory tract infection (UoA, FMHS, CMDHB)

Growing Up in New Zealand

Overall study objective is to provide a robust, relevant evidence base to inform policy relevant to children and their families in 21st century New Zealand.

The study aims to create a valuable resource:

- for policy makers across sectors to inform strategies to optimise children's development
- for researchers to gain a better understanding of the causal pathways that lead to particular developmental outcomes
- for the children and families who take part in this study as well as for all future generations of New Zealanders.



Rationale for *Growing Up in New Zealand*

New Zealand has a rich history of longitudinal studies, but;

- there has been significant changes in scientific knowledge in the last three to four decades
- the global environment has changed dramatically in the last three decades
- the New Zealand environment and context has changed dramatically in the last three decades

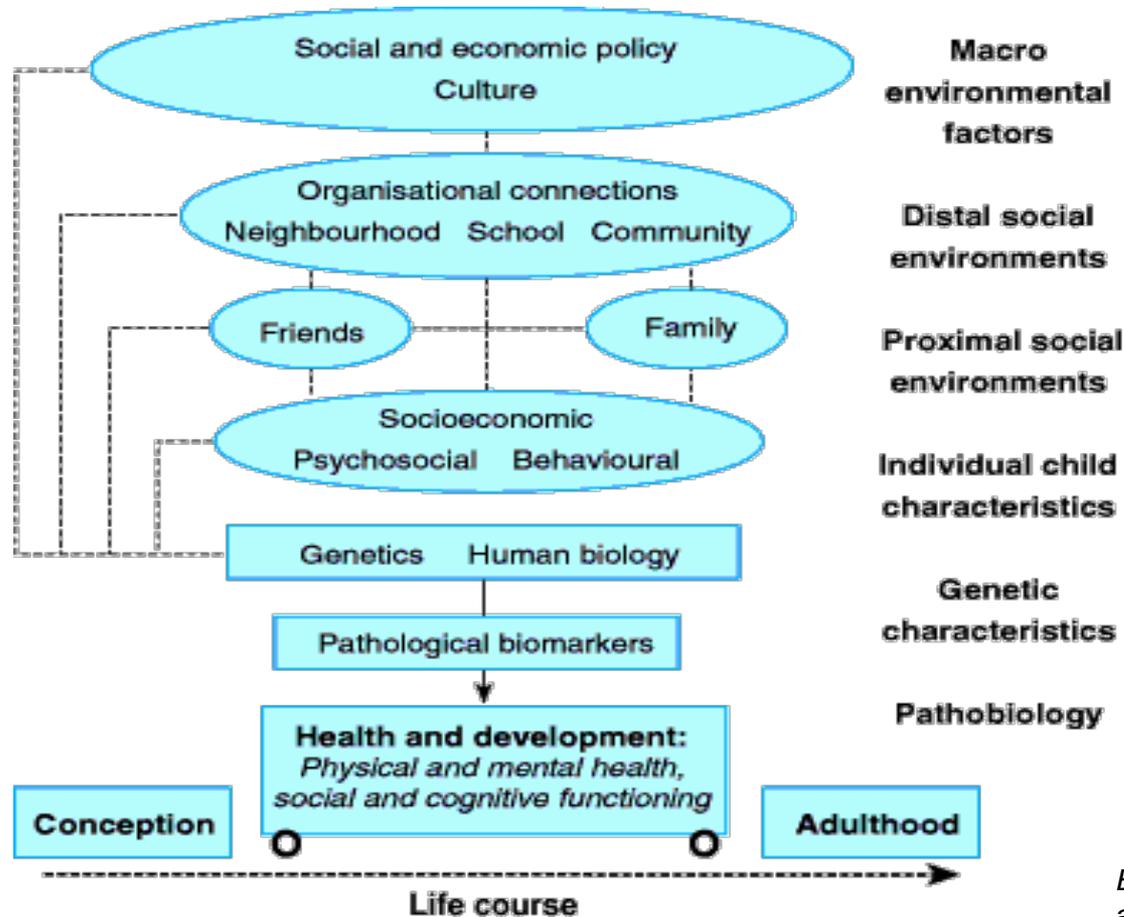
Any new longitudinal study needs to be relevant to our current population of births, scientifically up-to-date and be sufficiently well powered to examine outcomes in important sub-groups as well as across the entire cohort

Focus on Changes in Scientific Context



- Importance of early life (including pre-birth)
- Increasing need for multi-disciplinary research
- Emergence of the *life course approach*
- Recognition of *intergenerational* influences
- Epigenetic influences (“nature *versus* nurture”)
- Complexity of pathways leading to developmental outcomes
- Translational approach to policy utility of scientific evidence
- Complex entrenched population issues requiring a fresh inter-sectoral approach

A life course approach



Ecological model of health across the life-course (modified from Lynch, 2001)

Methodological challenges



- Repeated measures over time
- Highly correlated measures
- Missing data (not at random)
- Capturing the temporal dimension

“a life course approach is intuitively simple, but methodologically complex...”

Matt Gilman (2002)

Overarching longitudinal research questions

1. What determines developmental trajectories for children across multiple levels of influence throughout the life course?
2. How are New Zealand children faring developmentally across multiple domains at discrete points in the life course?
3. How are these developmental trajectories and outcomes associated with ethnicity across the life course?
4. What factors and trajectories, particularly across multiple levels of influence, confer resilience and optimise development for our New Zealand children?

Growing Up in New Zealand - longitudinal design

- Cohort broadly generalisable to all current NZ births, in particular to capture the ethnic and socioeconomic diversity of our population
- Repeated measures of children's development over time, in the context of their families (mother and partner) and their wider neighbourhood and social environment, to understand pathways of development
- Understand better the multi-level influences on their life long developmental pathways to provide a robust evidence base to inform policy across sectors
- Sufficient statistical power to examine trajectories in subgroups as well as overall (especially to understand pathways to inequalities)
- Cohort of approximately 7,000 children and their families followed from before birth (living in the Auckland and Waikato regions in pregnancy)

Research domains and themes for *Growing Up in New Zealand*

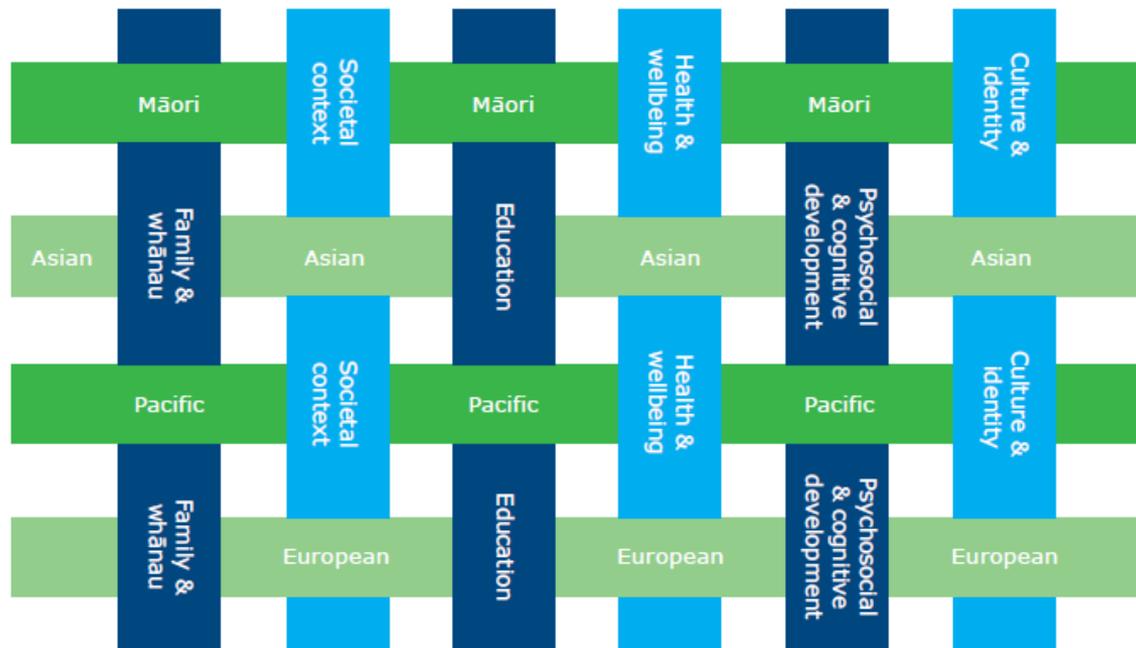


Figure 02. Domains and Themes informing *Growing Up in New Zealand*

Conceptual framework for *Growing Up in New Zealand*

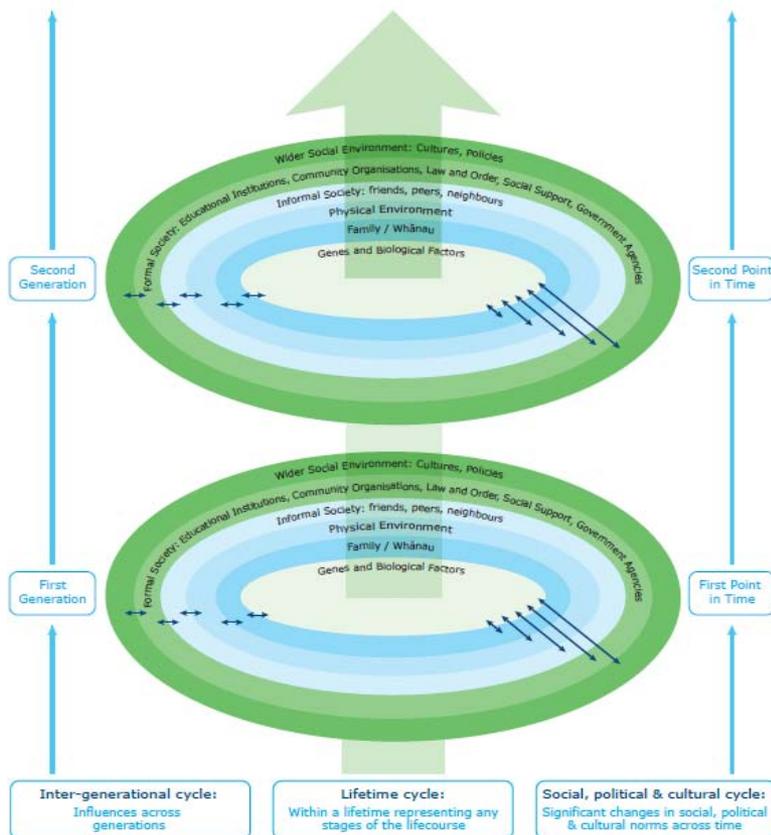


Figure 01. Conceptual framework for understanding child development in *Growing Up in New Zealand*

Conceptual Model

Key aspects:

- Child centred
- Multi-dimensional
- Dynamic interactions
- Life course approach
- Change over time
- Intergenerational
- Epigenetic component

Longitudinal data collection – first 2 years

	Ante-natal	Birth	6-weeks	35-weeks	9-months	12-months	16-months	23-months	Two-years
Mother	✓		✓	✓	✓		✓	✓	✓
Partner	✓				✓				✓
Child-proxy					✓				✓
Child									✓
Household Grid	✓			✓				✓	✓
Data Linkage		✓				✓			

Key:

face to face

external source

telephone

Focus on the Antenatal Data Collection Wave

The antenatal data collection wave had the dual purpose of:

1. recruiting and engaging the parents of the participants (mothers and partners)
2. gathering baseline data on the family and environment before the child was born

The antenatal data collection wave:

- has been planned in the context of the longitudinal design
- provides a cross-sectional “look” or description of the diversity of families having children in New Zealand in the 21st century
- addresses policy issues relevant to pregnancy and the immediate perinatal period
- sets the foundations for understanding broad trajectories of child development from before birth in 21st century New Zealand

Report 1: “Before we are born”



- Increasing diversity of families
- Families are highly mobile
- Home ownership less common
- Patterns of pregnancy behaviours
- Intentions for postnatal feeding and care
- Common aspirations for children
- New generation of New Zealanders
- Policy opportunities and challenges
- Inequities begin before birth

Current Focus – *Growing Up*

- Scientific publications – in depth analyses
- Dissemination of results to key stakeholders
- 2 year interviews with families in field
- Perinatal and infancy data linkage
- Collation of longitudinal dataset
- Methodological planning
- Second report planned late 2011
- Provision of baseline dataset for Data Access
- National and international comparisons
- Ongoing funding and sustainability



Maintaining the Momentum: the Research Centre



- Regular seminars and workshops to develop academic expertise
- Forum for discussions about common research issues
- Academic hub and support for current projects and outputs
- PhD and post doctoral career development opportunities

Acknowledgements

- **Participants and their families (*Growing Up in New Zealand*)**
- The University of Auckland and UniServices
- Faculties of Education, FMHS, Science and Business School, Liggins Institute, NRCGD
- IHSLP and *Growing Up in New Zealand* teams (including all other Universities and Institutes)
- Ministry of Social Development (Growing Up)
- Ministry of Health, Ministry of Education, Ministry of Justice, Dept of Labour, Ministry of Pacific Island Affairs, Te Puni Kokiri, Office of Ethnic Affairs, Statistics NZ, Families Commission, Children's Commission
- NZ and International Advisory and all Stakeholder groups
- Research Centre Board and SAG