

# Growing Up in New Zealand 4 Year External Data Release (DCW3, DCW4, DCW5)

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[www.growingup.co.nz](http://www.growingup.co.nz)



1. Study overview
2. Focus of current release – four year data
3. *Growing Up In New Zealand* external data
4. Applying for external data
5. Questions



# Overarching Aim of *Growing Up in New Zealand*

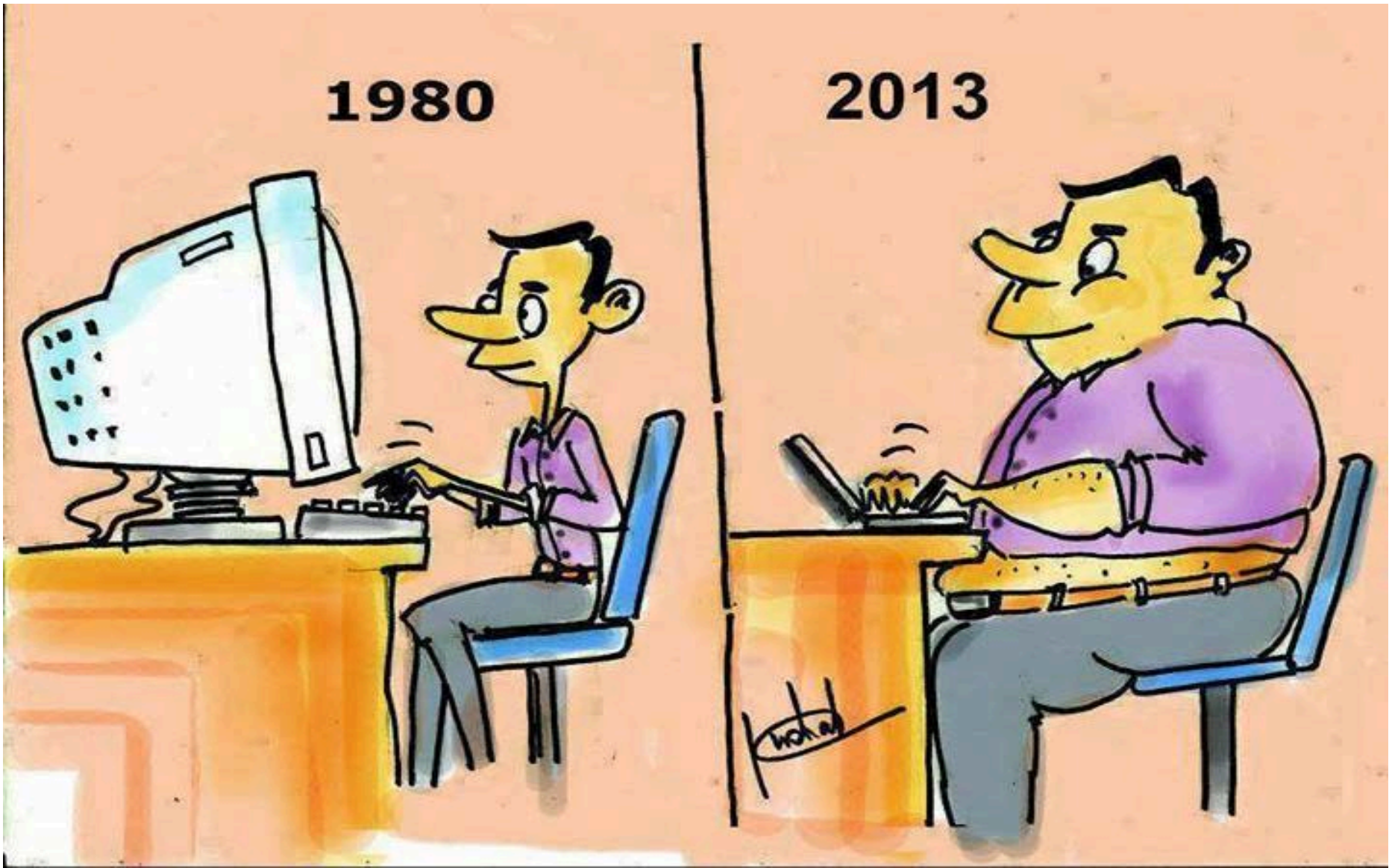
To provide contemporary **population relevant evidence** about the determinants of developmental trajectories for 21st century New Zealand children in the context of their families.



*“The Ministry of Social Development and the Health Research Council of New Zealand, in association with the Families Commission, the Ministries of Health and Education and the Treasury, wish to establish a new longitudinal study of New Zealand children and families, ....” to gain a better understanding of the causal pathways that lead to particular child outcomes (across the life course)*

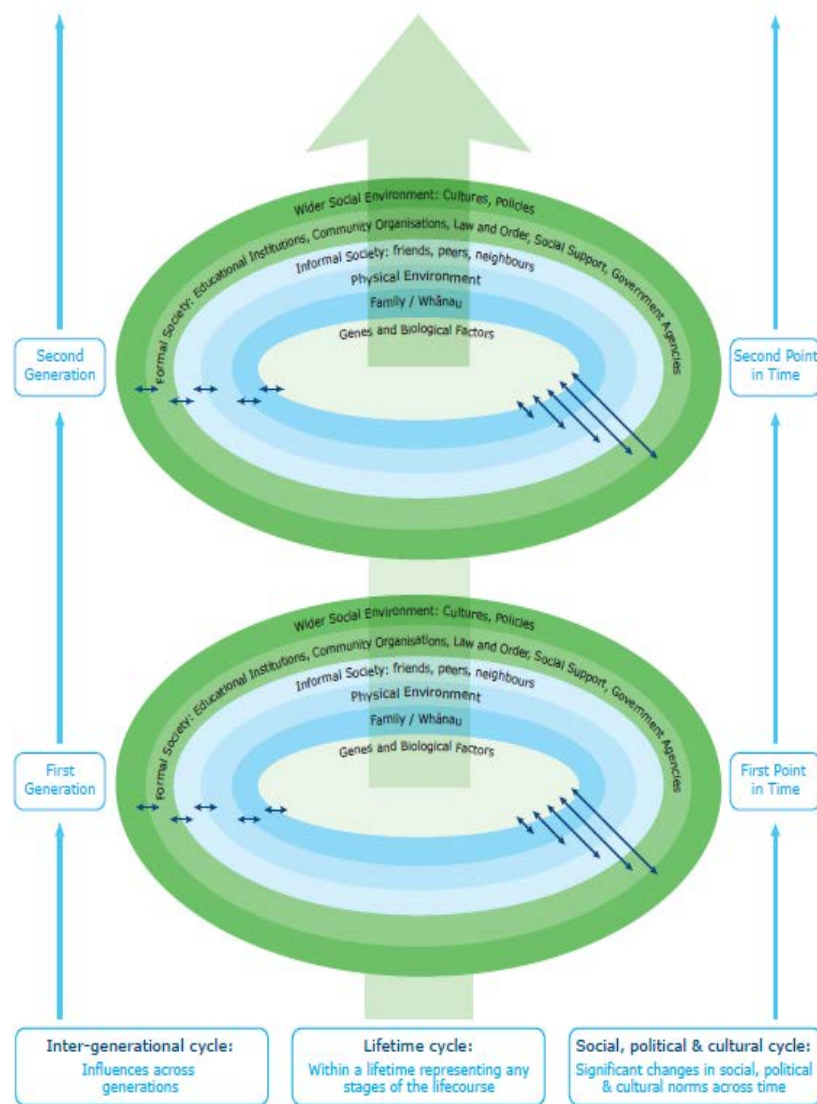
..... introduction to RFP in 2004.

# New Zealand's contemporary longitudinal study



# Conceptual framework for child development

## *Growing Up in New Zealand*

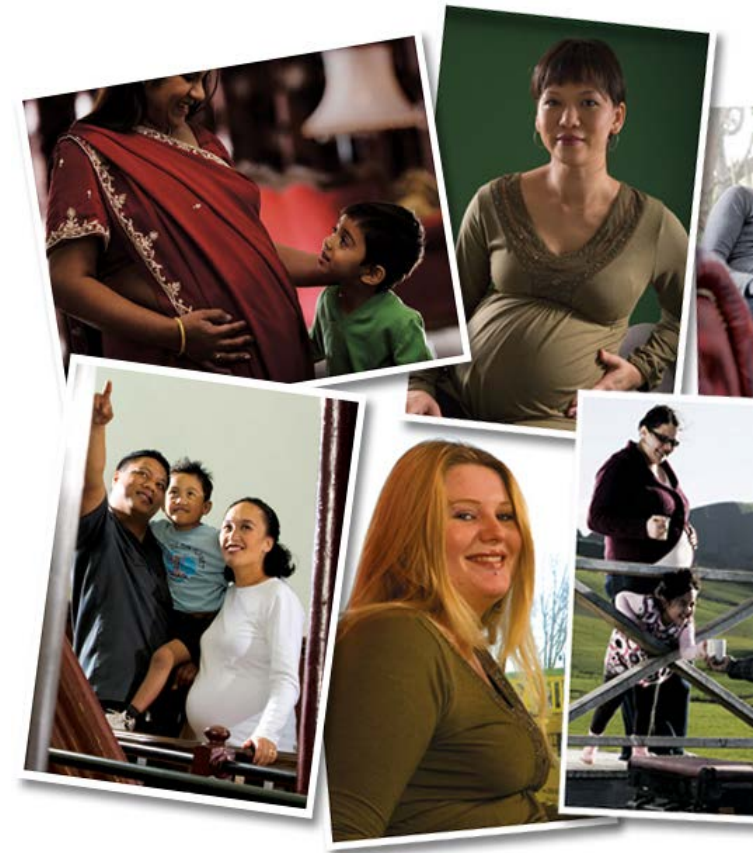


- Life course approach
- Child centred
- Multi-disciplinary
- Dynamic interactions
- Change over time
- Understanding trajectories
- Intergenerational
- Understanding environmental influences (proximal and distal)
- Biology and social contexts
- Putting the “environment into the epigenetic”























# The *Growing Up in New Zealand* cohort

- Recruited 6853 children before their birth - via pregnant mothers (6823)
- Partners recruited and interviewed independently in pregnancy (4401)
- Cohort has adequate explanatory power to consider trajectories for Maori (1 in 4), Pacific (1 in 5) and Asian (1 in 6) children, and to consider multiple ethnic identities (approx. 40%)
- Cohort broadly generalisable to current NZ births (diversity of ethnicity and family SES)
- Retention rates to 4 year DCW have been very high (over 90% of antenatal)



# Longitudinal Information during pre-school period

Child age	Ante-natal	Peri-natal	6 W	35 W	9 M	12 M	16 M	23 M	2 Y	31 M	45 M	54 M
Mother CAPI*												
Father CAPI*												
Mother CATI†												
Child‡												
Data linkage**												

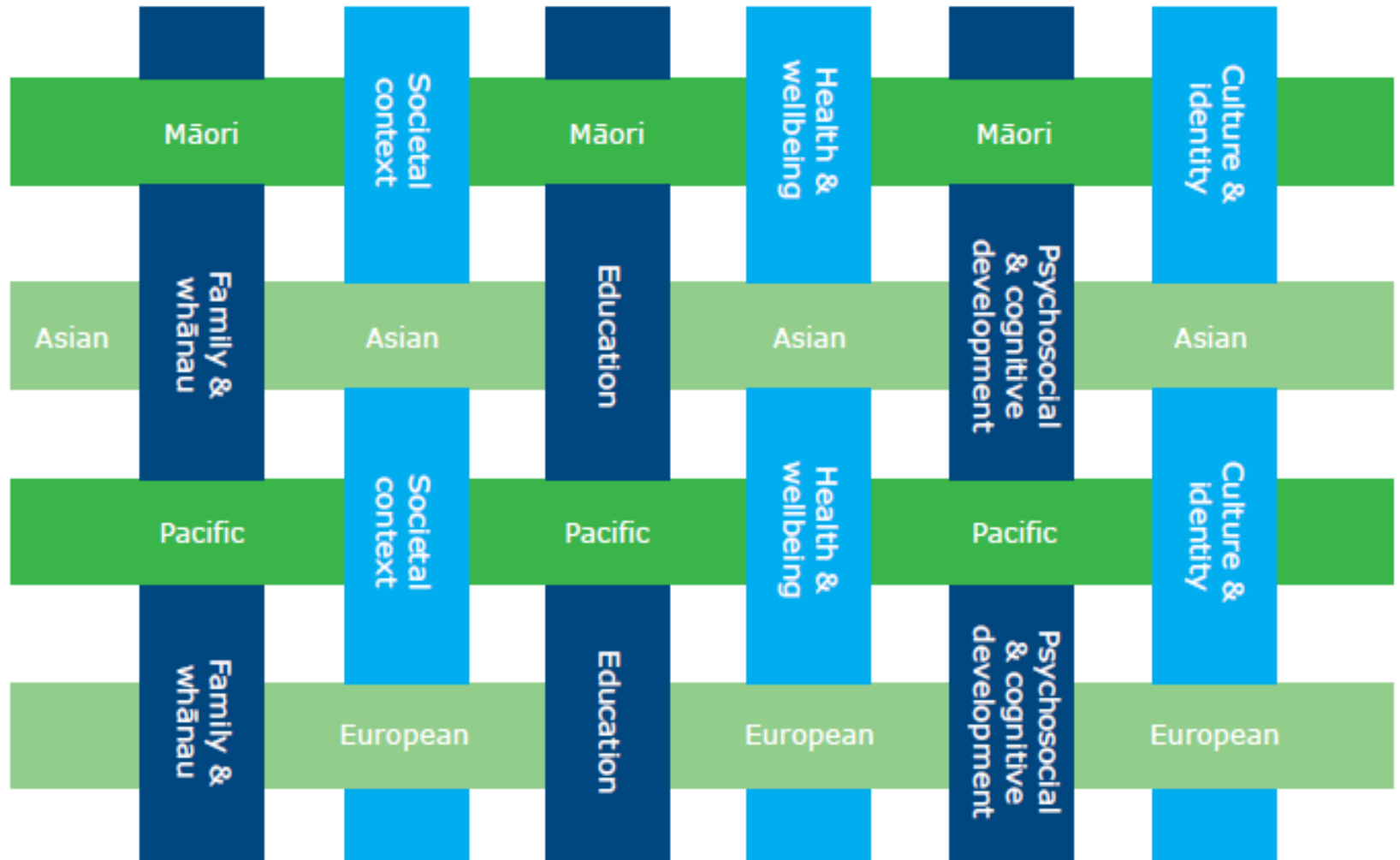
\* CAPI computer assisted personal interview

† CATI computer assisted telephone interview

‡ Child measurement

\*\* Linkage to health and education records (eg National Minimum Dataset, National Immunisation Register, ECE participation)

# Each DCW represents a snapshot of development

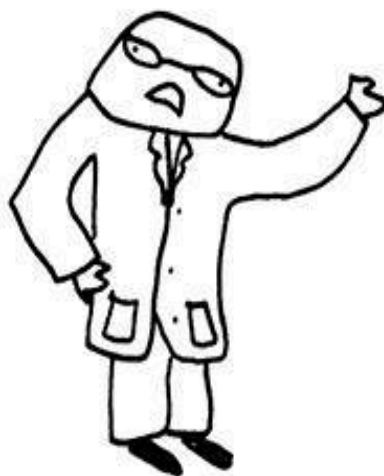




# Moving beyond “risk factorology”

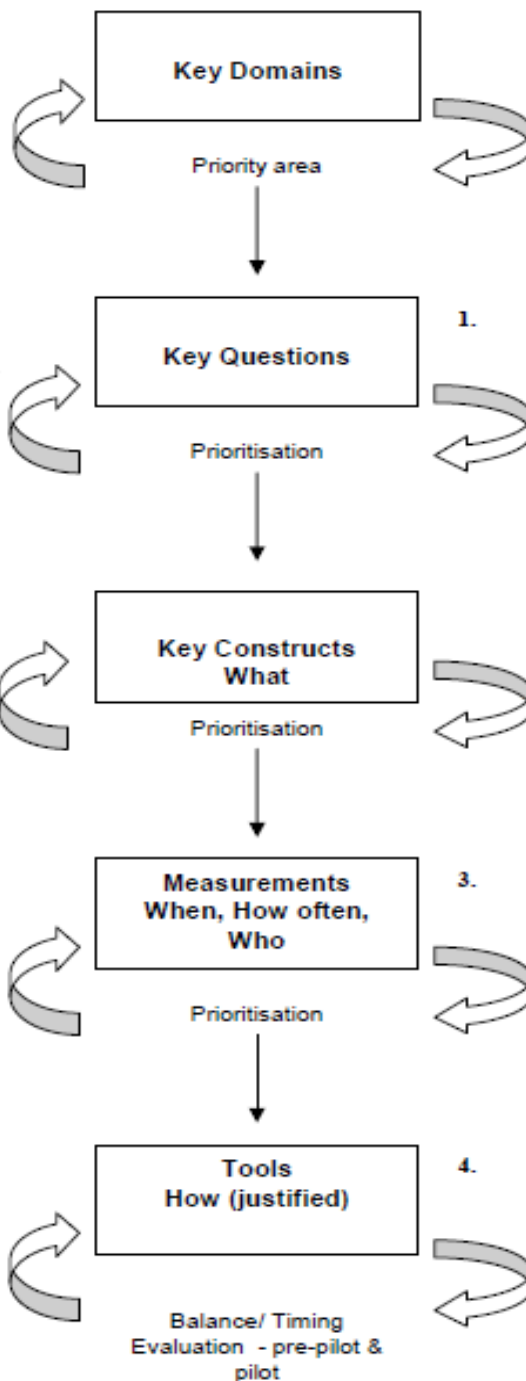
SCIENCE vs. THE PEOPLE!

correlation is  
not causation!



i dunno what  
those are but  
i disagree  
and i vote!

Hearing from the children and the families directly to understand  
WHY we see associations, WHAT WORKS, WHEN, and for WHOM.



#### Criteria Met

√ / X

1.

- Relevant?
- Measurable?
- Balanced?
- Innovative?

√ / X

2.

- Specific
- Measurable
- Acceptable/ attainable
- Realistic
- Timing

√ / X

3.

- Longitudinal nature
- Rapidity of change over time
- Prospective or retrospective measure
- Collection method (proxy)

√ / X

4.

- Validated, relevant and acceptable in NZ
- Useful for NZ & international comparisons
- New tool (fit for purpose)

## Partnerships to facilitate translation



## External Data Release – Preschool data collections



# Retention to 4



Parental antenatal  
interview

6 weeks

9 month interview

2 year interview

45 month call

54 month interview

Pregnant mothers N = 6822 \*  
Partners N = 4401

Child counts (N = 6853)  
Completed = 6843  
Skipped = 10

Child counts (N = 6795)  
Completed = 6476 (94%)  
Skipped = 310  
Lost to follow up = 9

Child counts (N = 6706)  
Completed = 6327 (92%)  
Skipped = 366  
Lost to follow up = 13

Child counts (N = 6670)  
Completed = 6207 (91%)  
Skipped = 442  
Lost to follow up = 21

Child counts (N = 6639)  
Completed = 6156 (90%)  
Skipped = 462  
Lost to follow up = 21

Opt out = 54  
Deceased = 4

Opt out = 88  
Deceased = 1

Opt out = 36

Opt out = 29  
Deceased = 2



# 4 year data collection - key measures

## Growing Up in New Zealand

Now We Are Four: Describing the preschool years  
2017



superu<sup>+</sup>

**Growing Up**  
in New Zealand

Household income  
Housing tenure  
Material hardship  
Housing stability  
Mothers' health  
Media use  
Child health  
Residential mobility  
Diet  
Area level deprivation  
Antibiotics  
ECE & care arrangements  
Social & emotional functioning  
GP visits  
Language & communication  
Parental work  
Recognising & understanding emotions  
Inter-parental relationship  
Sleep  
Home learning  
Parenting practices  
Physical activity  
Childhood illnesses  
Immunisation  
Self control  
Household structure  
B4 School Check  
Behaviour & conduct  
Ready for school  
Oral health  
Body weight & BMI  
Family & whānau  
Screen time

# Growing Up in New Zealand - Sources of data

- Questionnaires
- Child observation and tasks
- Individual items
  - Single choice or multiple choice
  - Numerical or free text responses
- Derived variables
- Each has a variable name [e.g. MTR61\_m54Cm]
  - Suffix corresponds to DCW and source of data



# Growing Up in New Zealand - sources of data

- Mother (M): information **about the GUiNZ child's mother** and her household
- Partner (P): information **about partner** of GUiNZ child's mother & their household
- Child Proxy Mother (CM): information **about the GUiNZ child provided by** their mother
- Child Proxy Partner (CP): information **about the GUiNZ child provided by** mother's partner
- Child Observation (CO): information **about the GUiNZ child collected by** the interviewer



# Growing Up in New Zealand - key resources

Growing Up in New Zealand » Research, findings & impact » **Current research with Growing Up data**

## Current research with GUiNZ data

The data collected by Growing Up in New Zealand is a rich resource for scientific research in our six domains: health and wellbeing, psychosocial and cognitive development, education, family/whānau, culture and identity, and societal context and neighbourhood environment.

Below are just a few examples of projects the GUiNZ team is currently working on. For completed papers, see our [publications page](#).

- » [Growing Up in New Zealand projects](#)
- » [Other research with the internal Growing Up in New Zealand data sets](#)
- » [Research with external Growing Up in New Zealand data sets](#)

Growing Up in New Zealand » Access to Growing Up data » **Questionnaires, technical documents and Data Collection Waves**

## Questionnaires, technical documents and Data Collection Waves

This page provides a full list of key technical and background documents, as well as links to all publicly available questionnaires for data users and other interested researchers.

**Please note:** The documents below are the copyright of *Growing Up in New Zealand*. Please apply in writing to the Data Access Coordinator for permission to use any questions, tables or other information contained in these documents. Email: [dataaccess@growingup.co.nz](mailto:dataaccess@growingup.co.nz)

- » [Key technical and background documents](#)
- » [Documents by Data Collection Wave \(DCW\)](#)

Growing Up in New Zealand » Research, findings & impact » **Research publications**

## Research publications

# Current external data release – key resources

## External Data Release 2017

## Reference and Process User Guide

## 54-month Data Collection Wave: Main Cohort

## Observations

## 2 Up to 54M Data Collection Wave Instruments

From DCW0 to the 54M DCW (DCW5) we have used several tools and scales taken or adapted from other studies for mother (M), partner (P) and in DCW2 and DCW5 directly from the study child (C). Table 2 outlines the dataset name, including where the tool can be found in the questionnaire (and in brackets the variable code name), the measurements taken, the domain and construct being addressed, how it was measured and the pertinent reference used to justify the tool/ method applied. Additional information is included in the 'Notes' if the tool has been adapted or modified, or if the user requires added technical information for the data to be analysed appropriately (see Appendix A) or where our team has published using a particular scale or tool (see numbered references in Appendix B) . For further guidance or to provide feedback on specific tools/scales please contact [dataaccess@growingup.co.nz](mailto:dataaccess@growingup.co.nz).

**Table 2: Up to 54M DCW tools, scales and references**

Data set	Question/ variable number	Tool or scale	Domain/construct	How applied/used	Key reference	Notes
DCW0 M/P	ACT1A-7	The International Physical Activity Questionnaire	Health and Wellbeing – activity and exercise	Mother and Partner administered questionnaire	Craig, C. L., Marshall, A. L., et al. (2003). International physical activity questionnaire: 12-country reliability and validity. <i>Medicine &amp; Science in Sports &amp; Exercise</i> , 35(8), 1381-1395.	11, 19
DCW0 M/P	GH1	Perceived General Health	Health and Wellbeing – health status	Mother and Partner administered questionnaire	Ware, J. E., Kosinski, M., & Keller, S. K. (1994). <i>SF-36 physical and mental health summary scales: A user's manual</i> . Boston, MA: The Health Institute.	16, 18



# Current data release – key resources

To PARENT - "I'd like to measure [NAME]'s height, weight and waist circumference. The height measurement involves asking [NAME] to stand up tall next to a wall and using a laser device to measure the child's height. The laser device is harmless. It shows a light which helps us to

need to touch the

To CHILD - "Now we are going to play a game with faces."

Showing clapping

To CHILD - "Ok, now we're going to do it a lot of times. Remember, when I clap, you clap too."

## SET 1 (1-20)

KEY: DK = Don't Know, E = Error, Green Box = Correct Response

Item	Plate	Response
5.1	1	
5.2	2	
5.3	3	
5.4	4	
5.5	5	
5.6	6	
5.7	7	
5.8	8	
5.9	9	
5.10	10	
5.11	11	
5.12	12	
5.13	13	
5.14	14	
5.15	15	
5.16	16	
5.17	17	
5.18	18	
5.19	19	
5.20	20	

SET 1: Total number of errors

If 7 - 14 errors: **END. Go to 5.41**

If 15 - 20 errors: **Administer SET 2**

If 0 - 6 errors: **Administer SET 3**

5.6 If the child's weight was recorded in units other than kilogram or pounds, please record the weight along with the unit of measurement.

How does [HE/SHE] feel? (link over only for each visit)

DIBELS® Letter Naming Fluency Grade K/Benchmark 1 materials used with permission from Dynamic Measurement Group

## Testing plates

Show testing Plate 1:  
Begin testing starting with the first item in Set 1, saying: "Point to/show me."  
DO record the response (1, 2, 3, 4 or "Don't Know") to each item into the CAPL. The CAPL will total the errors as testing proceeds.  
"Don't Know" responses are also counted by the CAPL as errors.  
If it is not possible to complete all the items in any Set once commenced (e.g. child refuses to continue), STOP and go to 5.41.

After Set 1, the CAPL will total the number of errors and decide whether to administer either Set 2 or Set 3, or end the test immediately. You will never administer both Set 2 and Set 3.

## Manual scoring

- If there are any technical difficulties with entering the responses into the CAPL, the PWT will need to be scored manually during the interview.
- Do not score the PWT manually under any circumstances, except for when there are technical difficulties preventing use of the CAPL.

To score manually:

- All children are administered Set 1 (Plates 1 - 20).
- For each item:
  - Circle the child's response (1, 2, 3, 4 or "Don't Know") on the score sheet.
  - If the response is incorrect or "Don't Know", indicate the error by also circling the "E" on the score sheet next to the item. (The correct response to each item is green).
  - Do NOT leave any rows unscored.

4.2 Total score  (range 0-110)

96 DK  
98 Not

Go to 5.8

5.6 Record weight of child at the last time they were weighed. (link over only)

1. Kilograms    (0-99.9)

2. Pounds    (0-220.0)

97 Other (Please specify)

4.2 Tally the total number of correct letters and enter the total in 4.2.

# Technical documentation

- **Linkage**
  - Immunisation information (DCW1)
  - Respiratory hospitalisation & admission information (DCW1)
- **Questionnaires**
  - Child Behaviour Questionnaire (DCW5)
  - Strengths & Difficulties Questionnaire (DCW5)
- **Child observation**
  - Anthropometry (DCW2 & DCW5)



- **Child tasks**

- Stack and Topple (DCW2)
- Gift Wrap Task (DCW5)
- Affective Knowledge Task (DCW5)
- DIBELS Letter Naming Fluency (DCW5)
- Luria 'hand clap' task (DCW5)
- Name and Numbers task (DCW5)
- Parent-Child Interaction (party invitation) (DCW5)



# Growing Up in New Zealand – Using the data

- Research question(s)
- Design
  - Cross-sectional/Longitudinal?
- Focus
  - Child/mother/partner/family?
- Measures and variables
- Analysis plan



# Current data release – using the data

## 3.2 Further considerations when analysing the data

- **Data preparation**
  - Coding
  - Missing data
- **Exploratory data analysis**
  - Missing data
  - Distribution of responses
  - Transforming scale variables into categorical variables
  - Collapsing categorical variables
  - Colinearity





# Current data release – using the data

- **Longitudinal data**
  - Which time point?
  - Combining longitudinal items
  - Missing data across time points
  - Different denominators
  - Change in informant



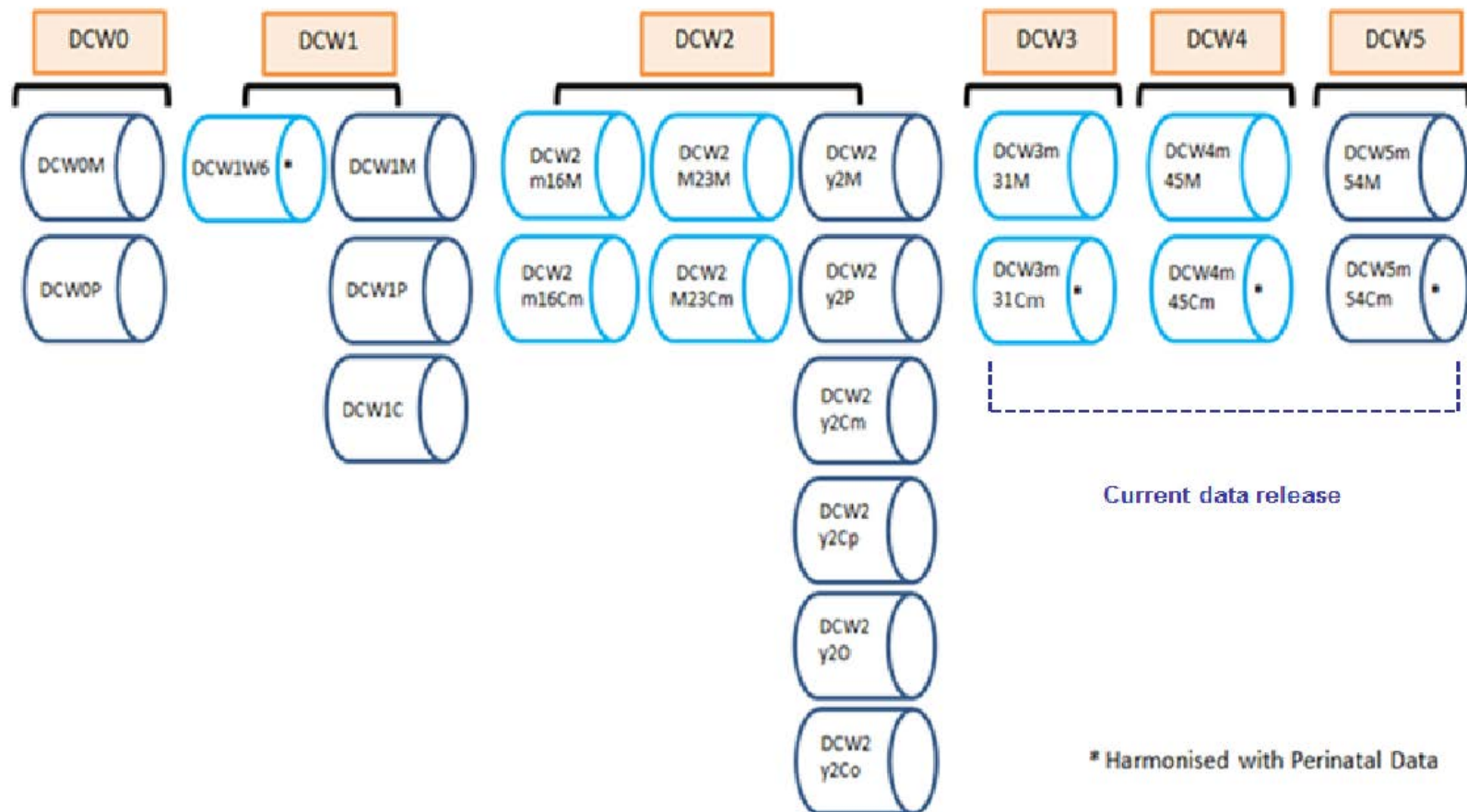
# Additional user information

## 3.2 Further considerations when analysing the data

- Early Childhood Education (ECE) variables
- Peabody Picture Vocabulary Test (PPVT)
- Strengths & Difficulties Questionnaire (SDQ)
- Contact with agencies



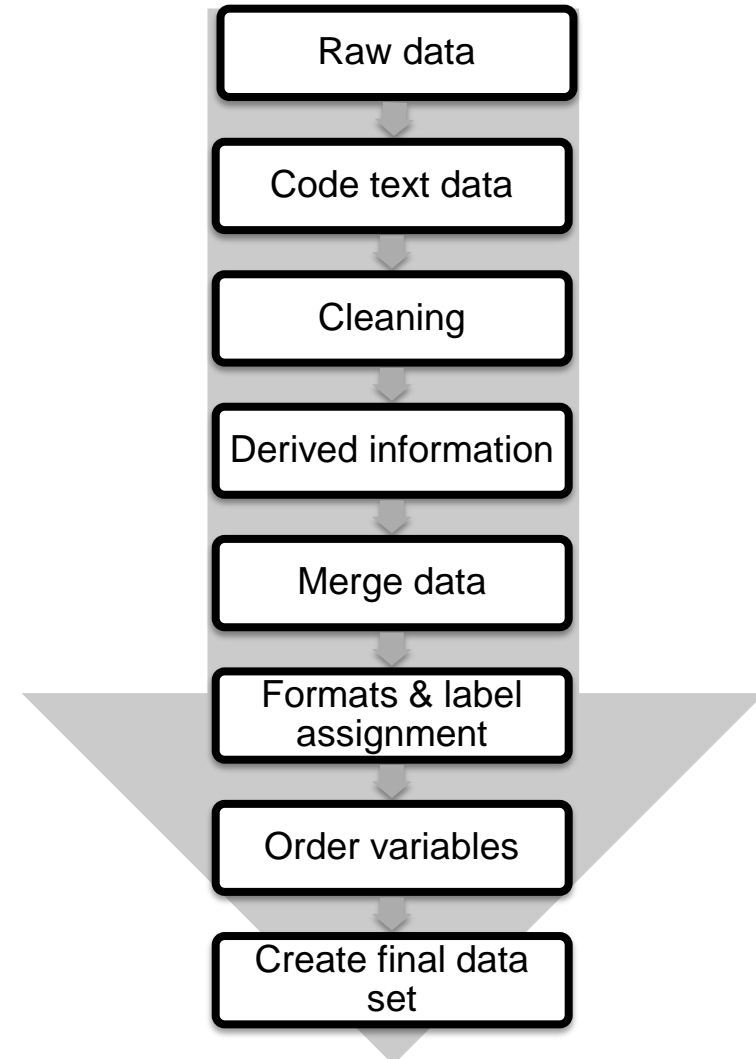
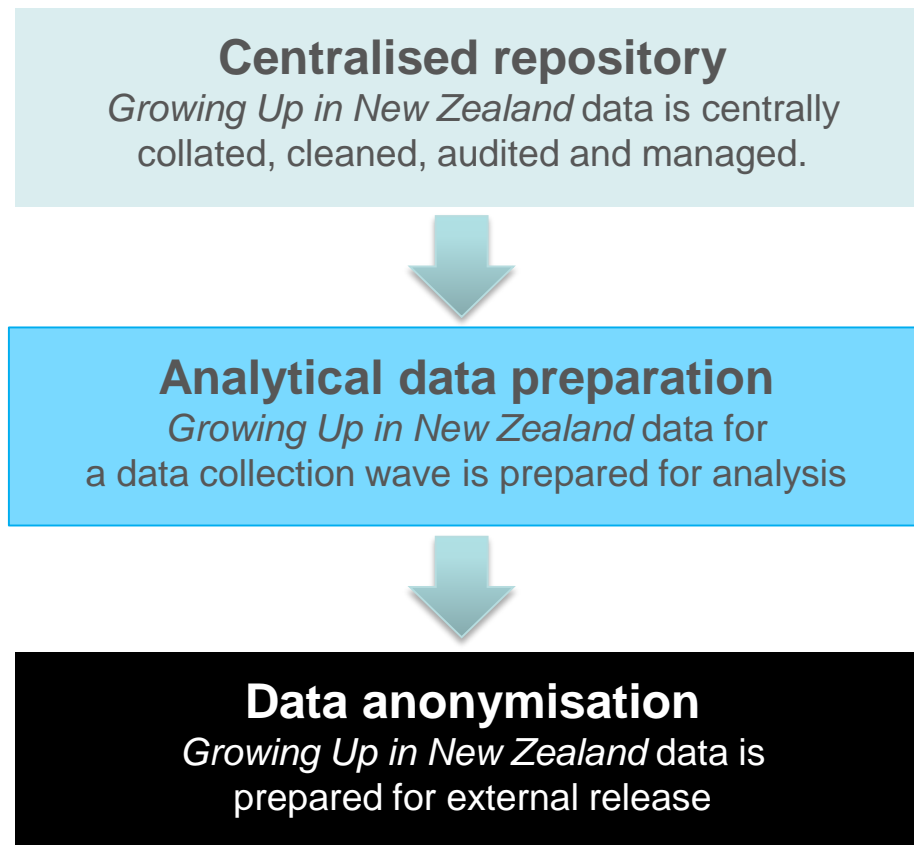
# Growing Up in New Zealand longitudinal datasets



# Growing up in New Zealand dataset naming convention

Data collection wave	Full dataset name	Short name for the dataset	Variable suffix	Reference for variable suffix
DCW0	Antenatal Mother	DCW0M	_AM	Antenatal Mother
	Antenatal Partner	DCW0P	_AP	Antenatal Partner
DCW1	Nine month child dataset	DCW1C	_W6	Six week call
			_PDL	Perinatal
			_M9CM	Nine month child
	Nine month mother dataset	DCW1M	_M9M	Nine month mother
	Nine month partner dataset	DCW1P	_M9P	Nine month partner
DCW2	Two year child dataset	DCW2C	_M16CM	Sixteen month child
			_M23CM	Twenty three month child
			_Y2CM	Two year child
	Two year mother dataset	DCW2M	_M16M	Sixteen month mother
			_M23M	Twenty three month mother
			_Y2M	Two year mother
	Two year partner dataset	DCW2P	_Y2P	Two year partner
DCW3	31M child & mother dataset	DCW3C	_M31CM	31 month child
			_M31M	31 month mother
DCW4	45M child dataset	DCW4C	_M45CM	45 month child
	45M mother dataset	DCW4M	_M45M	45 month mother
DCW5	54M child dataset	DCW5C	_M54CM	54 mother child
	54M mother dataset	DCW5M	_M54M	54 month mother

# Growing Up in New Zealand Data Life Cycle





## ❑ External working datasets

(publically available datasets that do not contain identifying information)

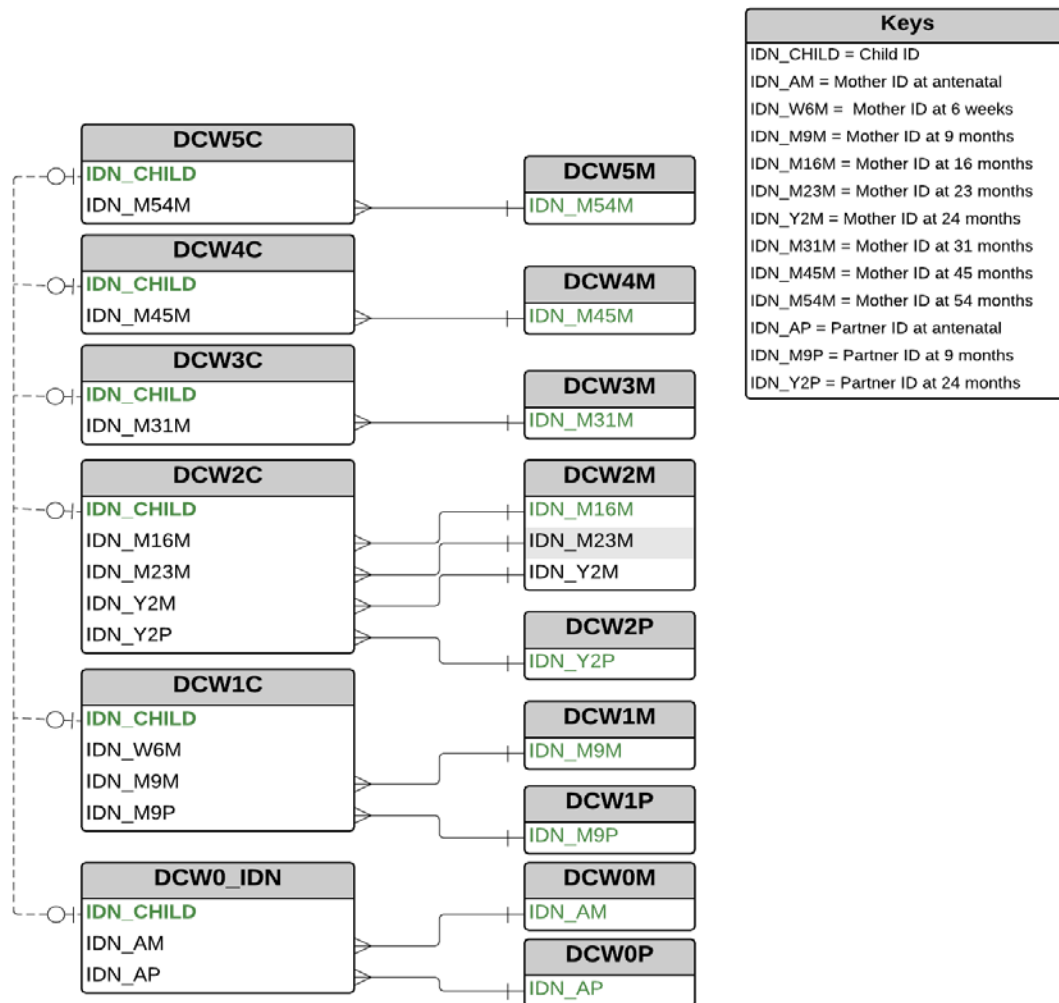
## ❑ Internal working datasets

(available to accredited researchers working with the research team)

- All researchers applying to use either working data set must be familiar with the Data Access Protocol.
- Participants consented to be part of the study on the understanding that their involvement in the study is kept confidential and that they cannot be identified.
- The process of keeping the participant data anonymous whilst also providing data that can be used to drive robust, contemporary, population relevant evidence is managed via the Growing Up in New Zealand Data Access Protocol and overseen by the Data Access Committee.



# Focus of current release



---○+ One to zero/one relationship  
 >+ Many to one relationship

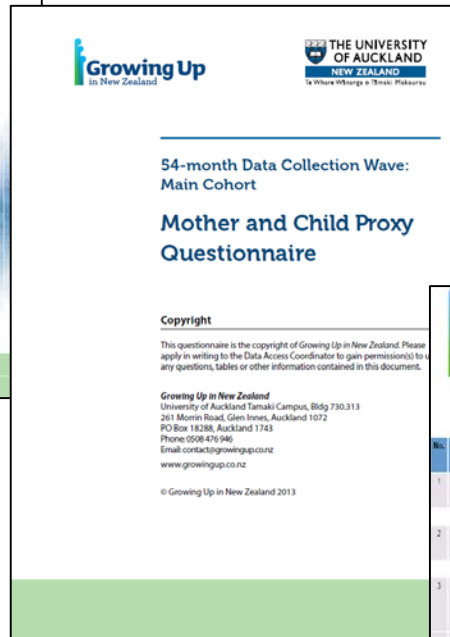
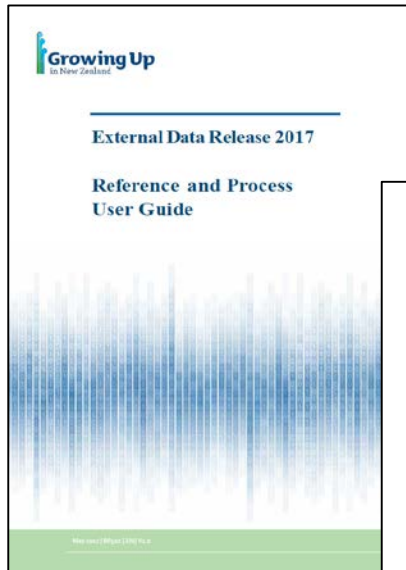
## Focus of current release

- Individual data not aggregated data
- Data storage security considerations
- Software considerations
  - Access to datasets
  - Merging/ linking of datasets
- Identification keys provide the relationships between the datasets
  - Child to Child relationships
  - Child to Mother/ Partner relationships
  - Mother to Partner relationships



# Data documentation

## Reference and Process User Guide Questionnaires Data Dictionaries



DCWSC Data Dictionary									
No.	Research domain	Subdomain	Questionnaire number	Question	Variable name	Formatted data values	Value labels	Variable type	Notes
1				Child ID at 54 month interview	IDM_CHILD			Verification key	Randomly generated child ID at 54 month interview. Allows linking to other datasets
2				Mother ID at 54 month interview (Linkable to other datasets)	IDM_M54M	-		Verification key	Randomly generated mother ID at 54 month interview. Allows linking to other datasets
3				Child's age at 54 month interview	CHILD_AGE_M54M	20	<=20	Derived	Child's age in months at 54 month interview (Child proxy by mother). Categorized the full cell counts at 20 or less and 50 or more
						50	>=50		
4				Child's age at 54 month interview (Child's observation)	CHILD_AGE_M54MO	-		Derived	Child's age in months at 54 month interview (Observation data)
5		0.1	Relationship to child		POB3_M54M	1	Biological mother	Categorized	Mothers other than Biological mother grouped as 'Other (Please specify)'
						9?	Other (Please specify)		
6		0.2	Child's usual country of residence		COUNTRY_M54M	1	New Zealand	Categorized	Countries other than New Zealand grouped as 'Other countries'
						2	Other countries		

❖ Growing Up in New Zealand Questionnaires and Data dictionaries are/ will be available online

# Data dictionary fields

(DCW3, DCW 4, DCW 5)

- No.
- Research Domain
- Subdomain
- Questionnaire number
- Question
- Variable name in external dataset
- Formatted data values
- Variable Type
- Notes



1. Identification key
2. Raw Variables
3. Categorical Variables
4. Re-classified Variables
5. Derived Variable

# Data dictionary fields (DCW3, DCW 4, DCW 5)

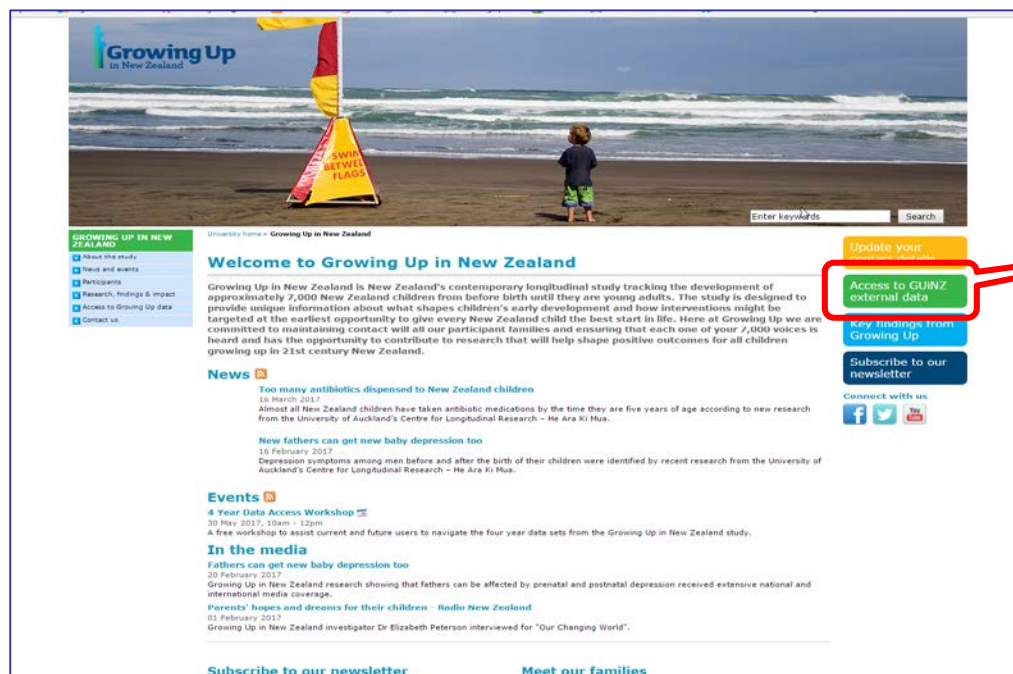
## DCW5M Data Dictionary

No.	Research domain	Subdomain	Questionnaire number	Question	Variable name	Formatted data values	Value labels	Variable type	Notes
1				Mother ID at 54 month interview (Linkable to other datasets)	IDN_M54M	.		Identification key	Randomly generated mother ID at 54 month interview. Allows linking to other datasets
2				Mother's age at 54 month data collection	AGE_M54M	20	<=20	Derived	Mother's age in years at 54 month interview. Categorised the low cell counts at 20 or less and 50 or more
						50	>=50		
3				Mother's country of residence	COUNTRY_M54M	1	New Zealand	Categorised	Countries other than New Zealand grouped as 'Other countries'
						2	Other countries		
4				Mother's gender	GENDER_M54M	1	Female	Raw	
						2	Male		
5	Family and Whanau	Parent-Child Interactions and Media Interaction	12.15	In your household are there rules for your {child/children} about the amount of computer, TV, or DVD time they are allowed?	TU23_M54M	0	No	Raw	
						1	Yes		
						98	Ref		
						99	DK		
6			12.16	How often does someone in your household make sure that your {child/children} follow these rules?	TU24_M54M	0	Never	Raw	
						1	Less Than Half The Time		
						2	About Half The Time		
						3	Most Of The Time		
						4	All Of The Time		
						98	Ref		
						99	DK		

# Applying for Access to External Data

## Where do I find information?

Go to our website [www.growingup.co.nz](http://www.growingup.co.nz)



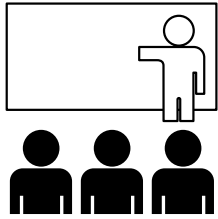
Click on the green box  
“Access to  
GUINZ external  
data”

From there you will be taken to the page  
“Growing Up in New Zealand data access guide”

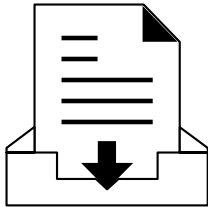


# Data access application process

## Applicant



Attend a data access workshop



Complete the data access application form  
Send to the Data Access Coordinator

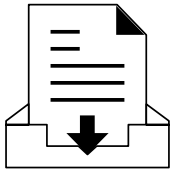


# Data access application process

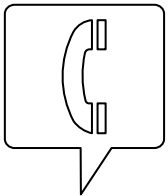
## GUINZ



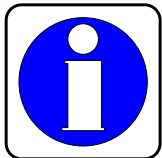
Review the application



Submit application to DAC for review and decision



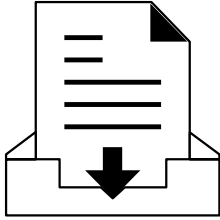
Inform the applicant of the outcome



Send out information pack

# Data access application to publish

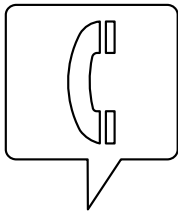
## Applicant



Complete the Application to Publish form  
Send to the Data Access Coordinator along  
with the draft publication



DAC reviews the application and makes a final  
decision



Inform applicant of the outcome



# Remote Data Access Platform

Create  
account

- Go to <https://iam.auckland.ac.nz/register>

Log into  
portal

- <https://guinz.auckland.ac.nz/>
- Log in with your new credentials

Remote  
access server

- Log on to the remote data access platform



# Purpose of the Data Access Protocol

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## Data Access Protocol



- Governance of data access
- Applying for data access
- Safeguarding the privacy of study participants and their families
- Long-term sustainability of the study
- Role and function of the Data Access Committee
- Authorship decisions and publication of papers produced under the protocol.



# Acknowledgements

- **Participants and their families**
- *Growing Up* team
- University of Auckland/UniServices
- C4LongR Advisory Board
- Superu and Families Commission
- Ministry of Social Development
- Multiple other government agencies
- Collaborative partners
- Policy Forum members
- Advisory and Stakeholder groups (DAC, ESAG, PF)
- GUiNZ Executive Board

