

The Koori Growing Old Well Study Urban-Rural Aboriginal People

A life cycle approach to Aboriginal Health & Ageing
Tony Broe and the KGOWS Team



Background

Aboriginal Health and Ageing – 1960s to 2011

- From the 1960s Aboriginal infant mortality has been steadily falling – altho still 2-3 times non-Indigenous
- From the 1990s through 2000s Aboriginal life-span has been increasing **and** fertility is starting to fall
- There are growing numbers of old-old ‘survivors’ - 75 years and over (mortality x 1.3) in all Aboriginal groups from the *Remote* Kimberleys to *Urban* La Perouse
- The Australian Aboriginal population is both
 - Growing rapidly with a large young population (0-24 years)
 - Ageing rapidly – led by the young old (45-64 years)

What improved Aboriginal Health and Ageing?

Over the past 50 years

1. **50 Yrs access to basic rights & services?** *Citizenship 1967; Social services 1969; Land Rights 1960s on; Mabo '92 & Wik '96; NSW Freedom rides 1960s; Coombs 'Self determination' 1970s [Vs Assimilation, Protection & now Intervention]; Racial Discrim Act 1975; Full voting rights '83; Housing '80s+: **But Nutrition? Schooling?? Jobs??***
2. **20 Yrs improved health care & health services?** *In NT & Australia wide - from the '90s (N.T. - Thomas et al 2006; AIHW)*
3. **Opportunities for child brain development & early education???** *These have lagged behind other advances*

KGOW Study: How did we get started?

2000-08 Developing aged services in La Perouse with our Aboriginal Health Workers we saw

- Poor mid-life health and high death rates - **similar to remote**
- Lack of services, staff and service models - **similar to remote**
- Lack of information on **urban** Aboriginal health
- Many more studies on **remote** Aboriginal health (including **KICA 2008**)

Kimberley Indigenous Cognitive Assessment Study

KICA

- 6 Aboriginal Communities (90% Aboriginal people) and town of Derby (30% Aboriginal people) – A **remote** population with **low literacy and education** rates – 60% speaking English as a second language
- **2008 and 2011 KICA findings** (Smith K et al)

KICA - Findings on Dementia - 2008

Kimberley Indigenous Cognitive Assessment Study

- 363 Indigenous Australians \geq 45 years (oldest: 96 years)
- Prevalence of dementia: **12.4%** ($n = 45$)
 - 5 times overall Australian rate of 2.4%
 - At 65 yrs and over 27% Vs 5.2% non-Indigenous

Dementia types (DSM-IV)

- Alzheimer: 11 (24%)
- Vascular: 6 (13%)
- Alcohol: 2 (4%)
- Other medical conditions: 2 (4%)
- Not otherwise specified: 24 (53%)



Smith K et al. High prevalence of dementia and cognitive impairment in Indigenous Australians. Neurology 71: 1470 - 1473, 2008.

'Risk Factors' for Dementia -Kimberley Popn

	KICA Study (Smith K et al 2011)	Multivariate O.R. [CI]
Age	45 – 96 (54% <60yrs)	
Male	45% (165/363)	3.1 [1.4 – 6.8]
No formal education	40%	2.7 [1.1 – 6.7]
Previous stroke	9%	17.9 [5.9 – 49.7]
Head Injury	51%	4.0 [1.7 – 9.4]
Epilepsy	3%	33.5 [4.8 – 232.3]
Current smoker	35%	4.5 [1.1 – 18.6]
Currently drinks alcohol	37%	1.8 [0.5 – 6.5]

Koori Growing Old Well Study (KGOWS)

“No research without services” – Fred Hollows

- **Steps to KGOW Study:**

- 2000 on – Services set up with La Pa community
- 2006 on – Planning of KGOW Study/Workshops
- 2008 on – KICA Study outcomes



- **2008 NHMRC Project Grant (2008-2012): \$1.5M.**

- “What is the **burden of dementia** in **urban** dwelling Indigenous Australians?”
- Other **key questions** about Aboriginal health, ageing and dementia in 400 urban adults aged 60+
- **Capacity Building** in Aboriginal communities to develop services “The Koori Dementia Care and Education Project” (2011-12)

Koori Growing Old Well Study (KGOW) 2008-11

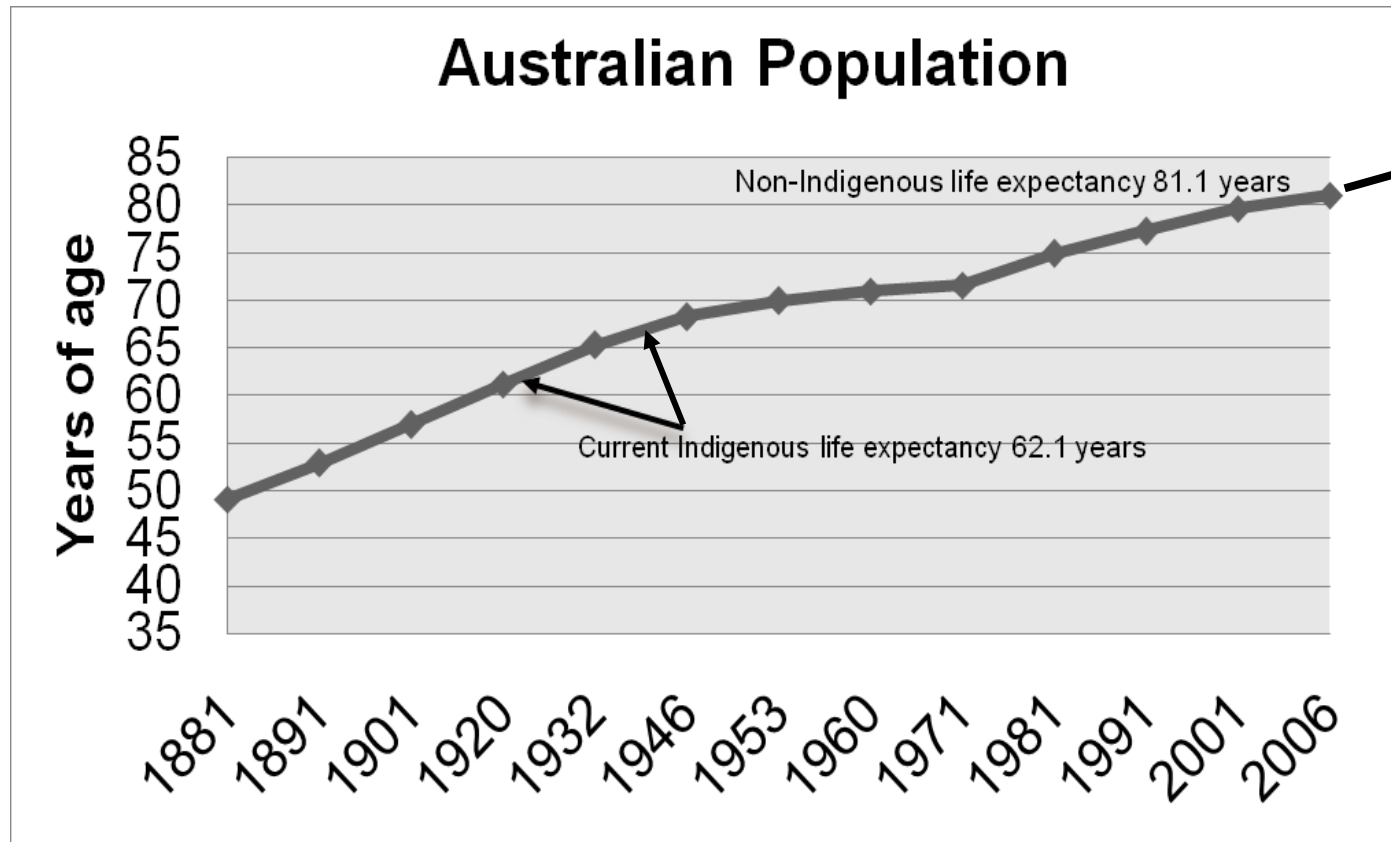
Urban-Rural Aboriginal People (70%)

- Koori Growing Old Well Study (KGOWS) in **Urban Sydney**: La Perouse; Campbelltown (Tharawal); Western Sydney **Rural NSW**: Kempsey (Durri), Nambucca (Daarimba Maara), Coffs Harbour (Galimbala)
- **English speaking** Aboriginal people with **high (primary) school, literacy and numeracy rates**
 - *Many differences to Remote people*

Differences in 'Risk Factor' exposure - Remote vs Urban

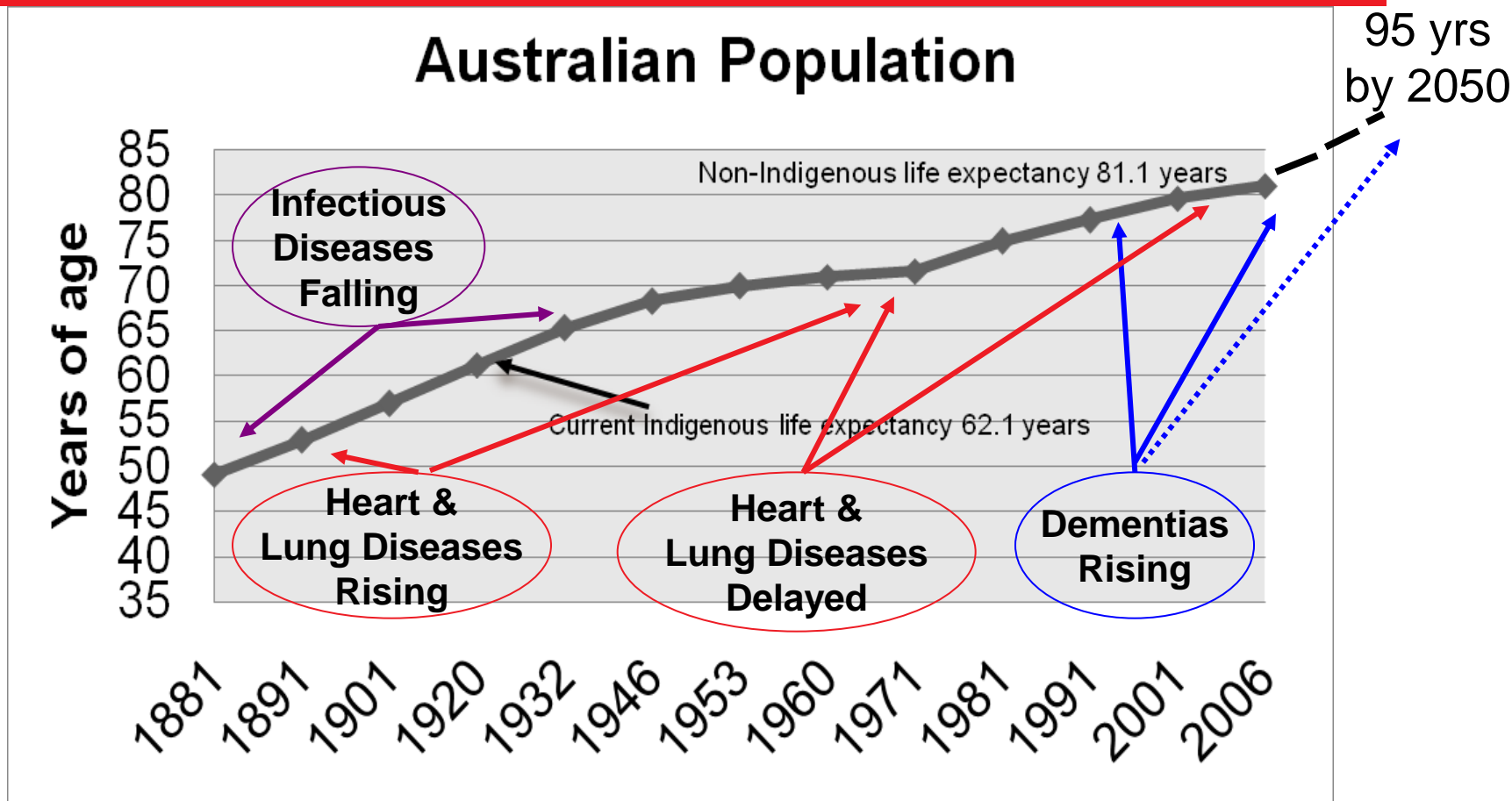
	KICA Study - Remote (Smith et al.)	KGOW Study - Urban (Broe Group)
Age	45 – 96 (54% <60yrs)	41 – 81 (36% <60yrs)
Male	45% (165/363)	30% (13/44)
No formal education	40%	0% (0/39)
Previous stroke	9%	15% (5/33)
Head Injury	51%	21% (7/34)
Epilepsy	3%	3% (1/34)
Current smoker	35%	34% (10/29)
Currently drinks alcohol	37%	64% (10/29)

Australian Life Expectancy 1881-2006



Aboriginal life expectancy today equals non-Indigenous ~ 1940

What kills non-Indigenous people - 1881-2006?



A Delayed Aboriginal health transition

Three health transitions run together:

- 1. *Infectious Diseases*** have declined but important ones remain- (e.g., skin & ENT infections in kids with chronic kidney, heart, hearing, outcomes)
- 2. *Mid-life systemic diseases (heart, lung, vascular) are high*** but now starting to decline, fertility falling & lifespan rising (Thomas et al – 2006; Condon et al 2006)
- 3. *Dementias already rising - Rates at 60+*** are 5 x non-Indigenous (KICA Study 2008; KGOWS pilots; N.Q. Pilot)

Q? Why has Non-Indigenous lifespan risen?

Brain growth is a key to health & longevity

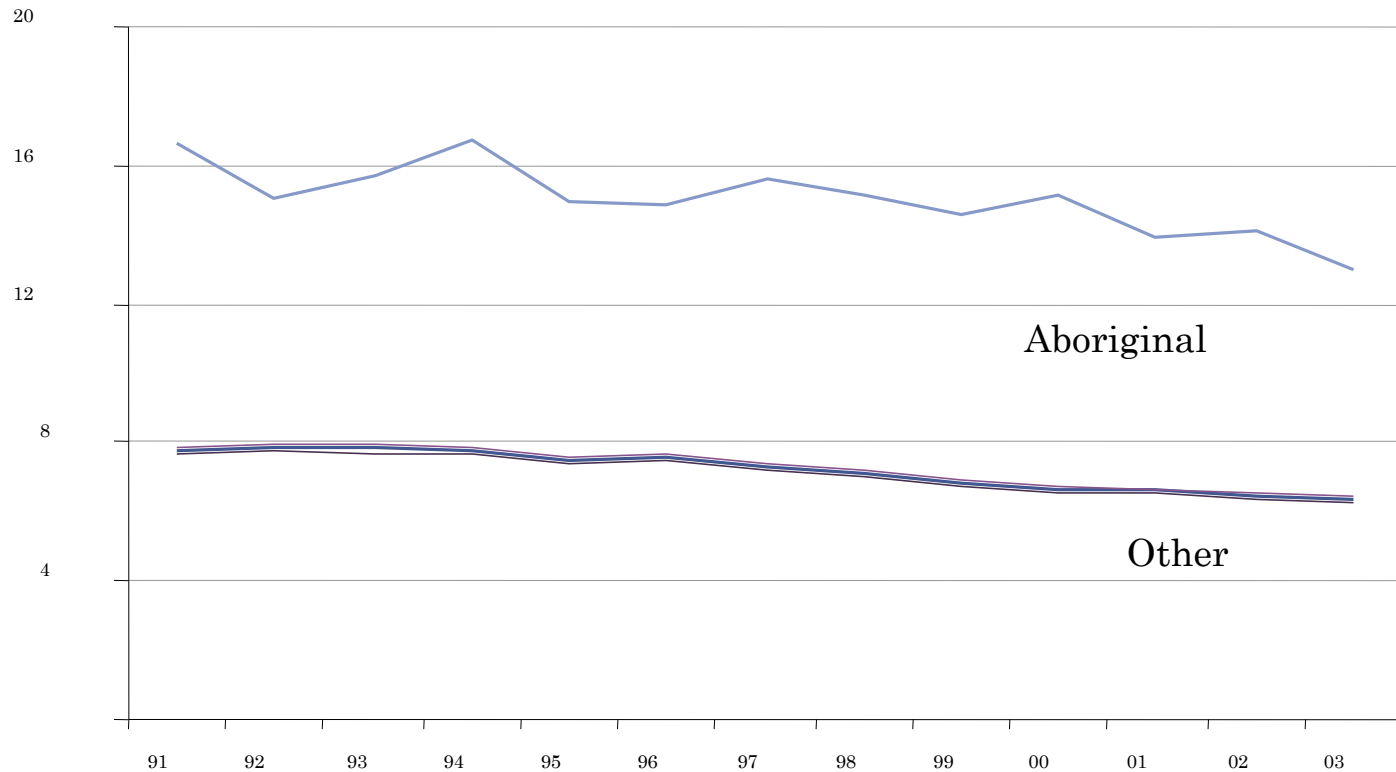
Brain and Mind Growth is a Key Factor - in creating wealth - in delaying diseases - in extending lifespan over the past 200 years (**Economists - Robert Lucas 2002; James Heckman 2006**)

Brain and mind growth - or 'Human Capital Formation' (economists' definition) - require

- *Good parenting & low childhood trauma rates*
- *Good “education” - pre-school, school, adult & continuing*
- *Better, brainier jobs*

Aboriginal people are losing their cultural skill sets while missing many “non-Indigenous” avenues of brain growth

Aboriginal life span is improving But the Gap stays the same?



Aboriginal Health & Ageing

Koori Growing Old Well Study

Questions our Study will address

1. What is the rate of dementia in Urban Aboriginal people?
2. What are the determinants of Urban Aboriginal health, ageing, dementia and the gap in lifespan?
3. *How may childhood experiences determine Aboriginal health and improve Aboriginal ageing?*

What Mid-life Factors cause Premature Aboriginal deaths? disability? dementia?

We measure:

- Obesity - Blood Pressure – Cholesterol – Diabetes
- Cardio-Vascular diseases
- Social isolation
- Mental illness
- Smoking - Alcohol - Drugs



All Known causes of early death/disability

All Known risk factors for early dementia

Koori Growing Old Well Studies

Is Childhood Brain Growth the important link

- To these mid-life diseases?
- To premature ageing & dementia?
- Therefore - To closing the gap?

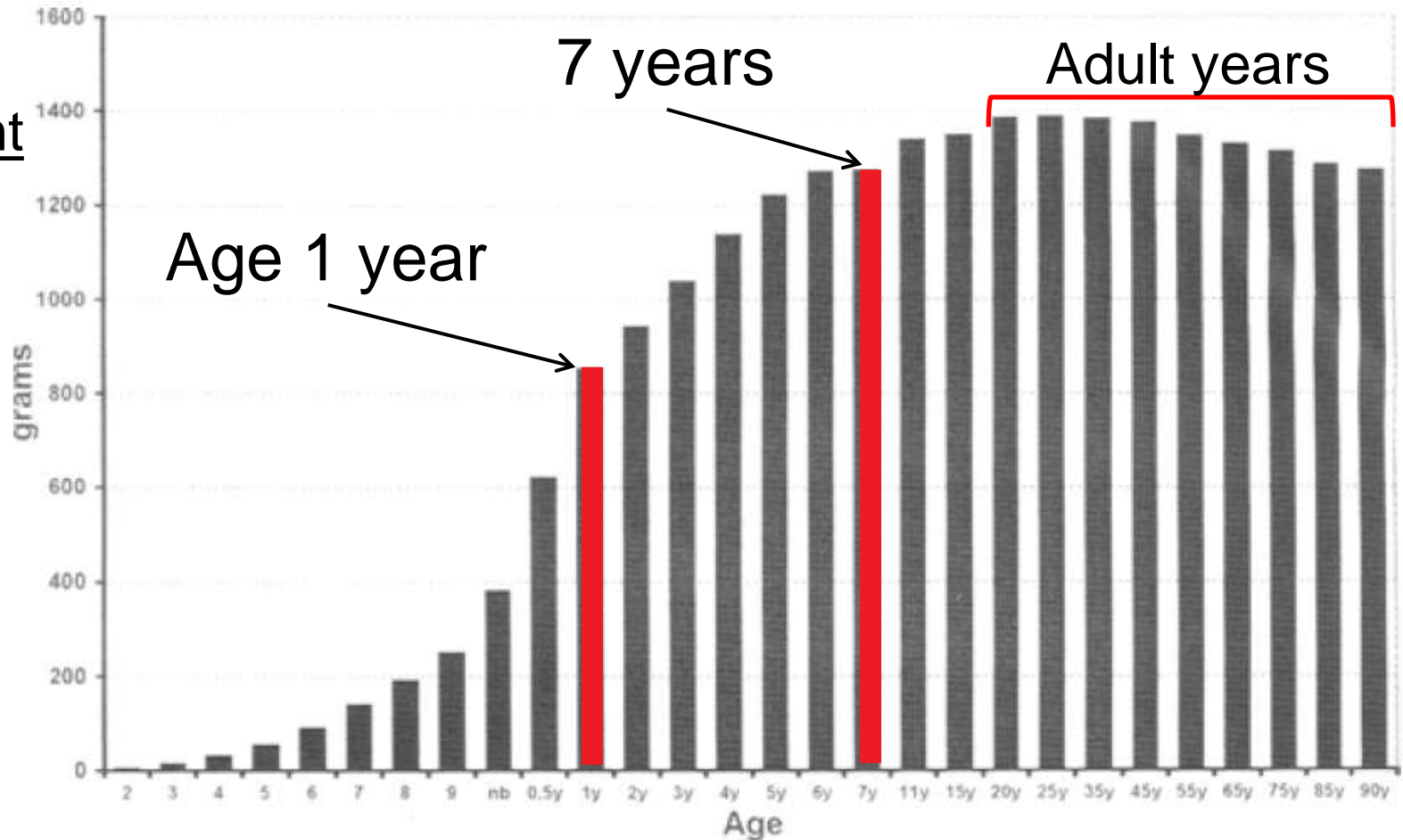


Aboriginal Artist LeAnne
Hunter

Q: When does the Mind-Brain Grow?

All our lives but **MOSTLY IN CHILDHOOD**

Brain weight



From: Peña-Melian (2000). *Human Neurodevelopment* 15: 99-112.

Q: How does the Mind-Brain Grow?

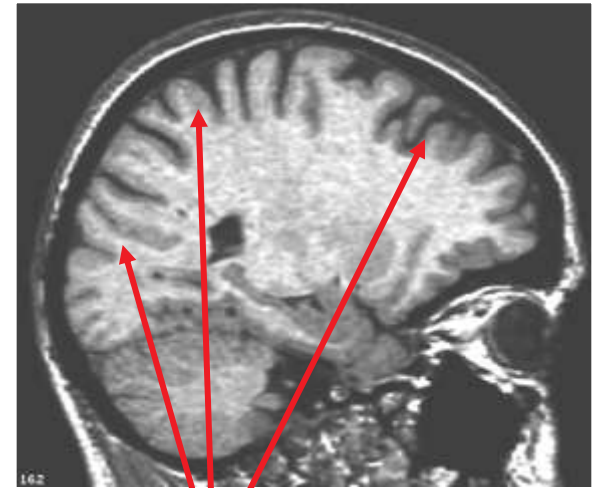
Mothers, family, environment, genes – grow it

MRI Brain Scan
Normal Neonate



A thin strip of
Cortex

MRI Brain Scan
Normal Adult



Masses of 'gyri' =
Complex Cortex

How can childhood brain development predict Adult Health and Ageing?

- Mothers, parents, teachers, peers – working with genes - **grow** children's minds & brains
- Adverse Childhood Events - *stress, trauma, absent parenting etc* – **impact neurodevelopment** causing **defects in neural structure & function** i.e., *Attention, Social, Emotional, Learning deficits & PTSD*
- **Childhood neural defects** – plus added **social and educational disadvantage** - determine poor adult health outcomes? And accelerate dementia onset in older Aboriginal survivors?

Q: What is the evidence that early life experiences Predict adult outcomes? **A fair bit**

- 1996 - *Linguistic ability in early life and later onset of Alzheimers disease – The Nun Study* (Snowden... JAMA)
- 2000 - *Mental ability at 11 yrs & health and dementia at 70+ yrs – Scottish School Children Study* (Starr... Age & Ageing; Whalley.. Neurology)
- 2002 - *Adverse Childhood Experiences & Adult Health Risks – Kaiser-Permanente Study* (Felliti.. Permanente J; Anda... Psychiat Services)
- 2009 - *Adverse Childhood Experiences - adult depression & metabolic risk – A 34 Year Prospective Study* (Danese...Arch Pediat Adolesc Med)
- 2010 - *Mother's affection at 8 months predicts emotional distress in adulthood – A 32 Year Prospective Study* (Maselko...Journal. Epi Comm Health)

What Early Life Stressors (ELS) *Predict adverse Mid-life Outcomes?*

We examine the following early life factors:

- Racial discrimination
- Separation/out of home care
- Lack of parenting or p. skills
- Adverse Childhood Events
 - *Violence towards women/mothers*
 - *Childhood emotional trauma, violence & abuse*
 - *Childhood exposure to Alcohol/Drug abuse and to Mental Illness*
 - *Childhood/youth entry to Criminal Justice system (x 12 non-Indigen)*



What child factors lead to normal development, And good brain growth?

We examine the following early life factors:

- Supportive, secure family
- Parenting skills
- Informal learning
- Early childhood education
- Access to schools/further education



Q: Are Aboriginal children - Urban & Remote Still disadvantaged?

- Low birth weight – 2 times non-Indigenous
- Out-of-home-care – 6 times non-Indigenous
- Criminal Justice Sentence - **21 times non-Indigenous**
- Family violence
 - To children – 3 times non-Indigenous
 - To women – 6 times non-Indigenous
- Education -Year 9 or less - 5 times non-Indigenous
- Bachelor plus Degree - 1/4 non-Indigenous

Closing the Lifespan Gap

Implications for Policy Development

- Continue to address **adult medical** risks (smoking, alcohol, obesity etc) & diseases (heart, lung, renal, diabetes etc)
- Continue to address **adult socio-economic** risk factors (housing, training, jobs, discrimination etc)
- **Addressing Brain Growth in Aboriginal children is crucial**
 - **Tackle** the early risk factors (separation, poverty, childhood stress....)
 - **Stop** the use of the Criminal Justice System to segregate Aboriginal kids
 - **Intensively treat** kids with existing structural/functional brain deficits
 - **Provide up-market** Aboriginal early education, schooling and jobs
- And provide universal, Aboriginal controlled & staffed, Aged Care & Health Services with **equal access** to the mainstream

Partners - Koori Growing Old Well Studies

- **KGOWS Funders:** NHMRC, Ageing Well Network, Primary Dementia Collaborative Research Centre, Alzheimers Aust., AAG, DoHA Dementia Grants, RW&JG
- **KGOWS CIs:** Bob Cumming, Lisa Jackson Pulver, Simon Chalkley, Dave Grayson, Brian Draper: **KGOWS AIs:** Gail Daylight, Vicki Wade, Tim Agius, Leon Flicker, Jeff Rowlands, Martin Prince
- **KGOWS Study Team:** Study Manager Holly Mack: Project Officers – Wendy Hampshire, Kylie Radford, Cecilia Minogue, Jennifer Japhet, Natalie Johnson: Aboriginal Researchers - Michelle Stewart, Bridget Jarrett, Garth Fatnowna, Heidi Sainsbury,
- **KGOWS NSW Aboriginal Community Partners:**
Aboriginal AIs Gail Daylight, Vicki Wade, Tim Agius, Colleen Cawood, Darryl Wright
Metropolitan - La Perouse Aboriginal Land Council, Tharawal ACMS , Western Sydney AMS - and AHMRC
Rural - Durri ACMS Kempsey, Darrimmba Maarra AHC Nambucca, Galambila AMS Coffs Harbour

