



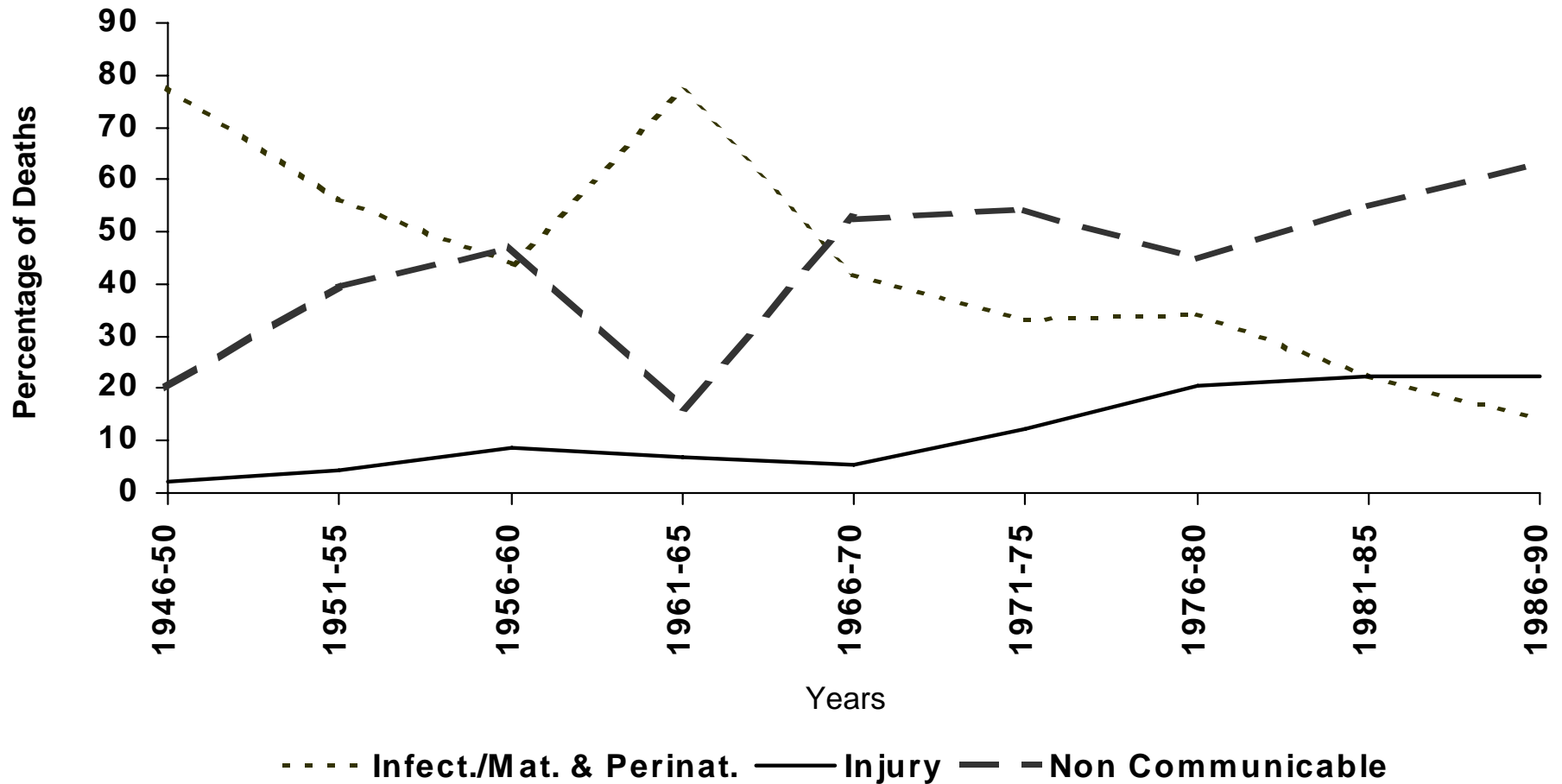
The health of young Indigenous women in north Queensland:

*Intergenerational implications of
obesity, diabetes, poor nutrition
and tobacco smoking*

Robyn McDermott
HDA Diabetes Seminar,
17 July 2008

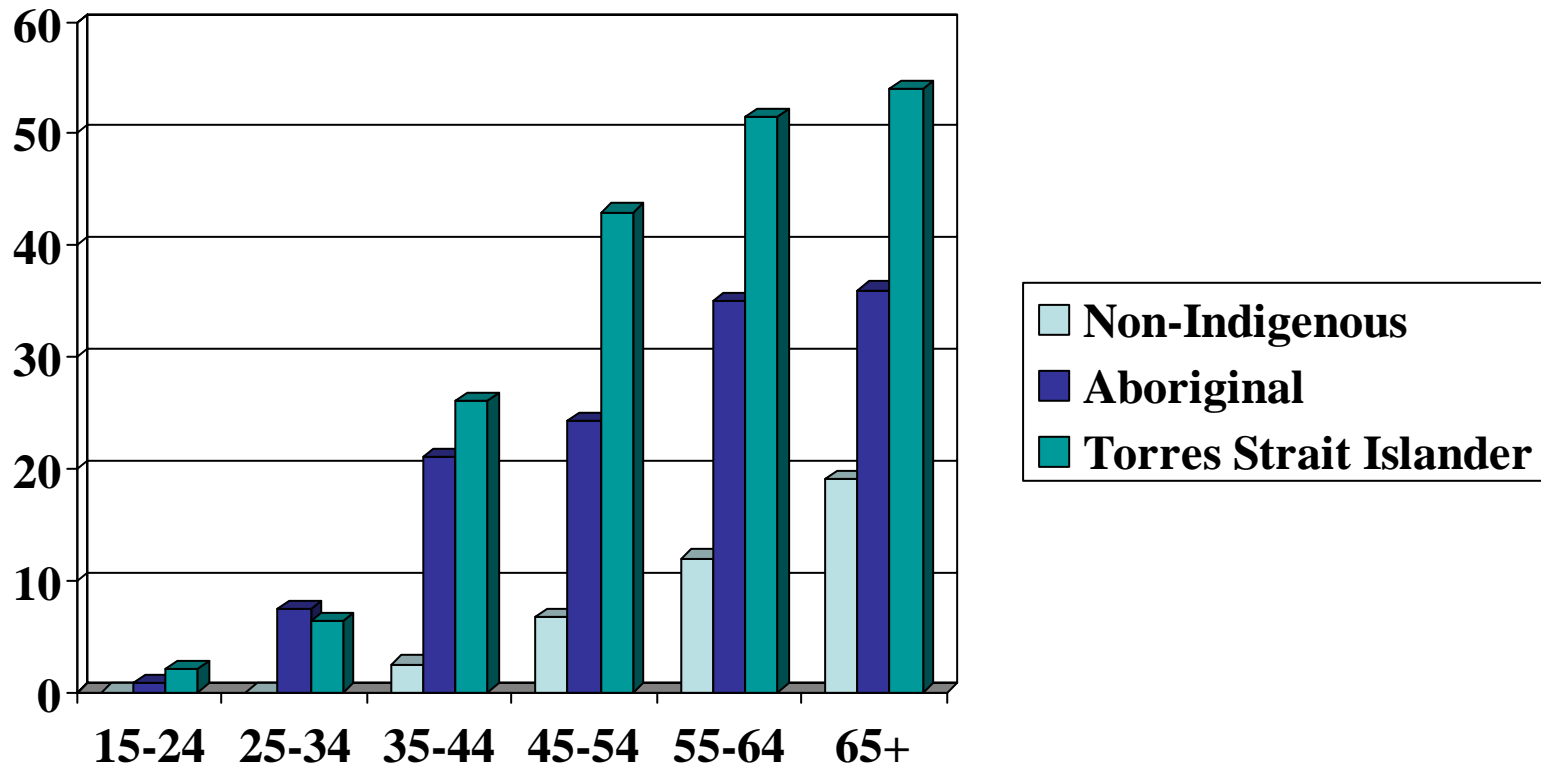
UniSA

Proportion of Deaths by Category in Community A, 1946 to 1990 (All Persons and All Ages)



*NB/ Infectious includes Maternity and Perinatal

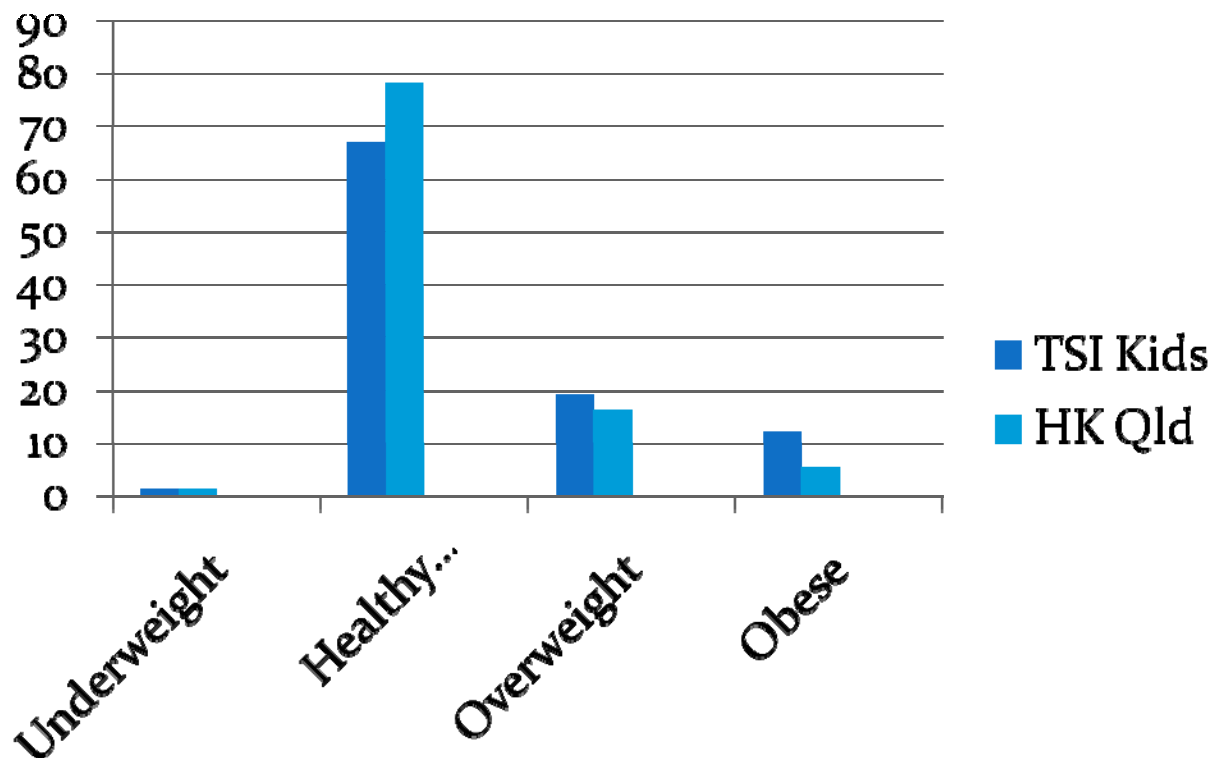
Prevalence of diabetes, Indigenous NQ (WPHC) and Australia (AusDiab), 1999-2000



BMI of TSI Children ages 5-10 compared to Queensland

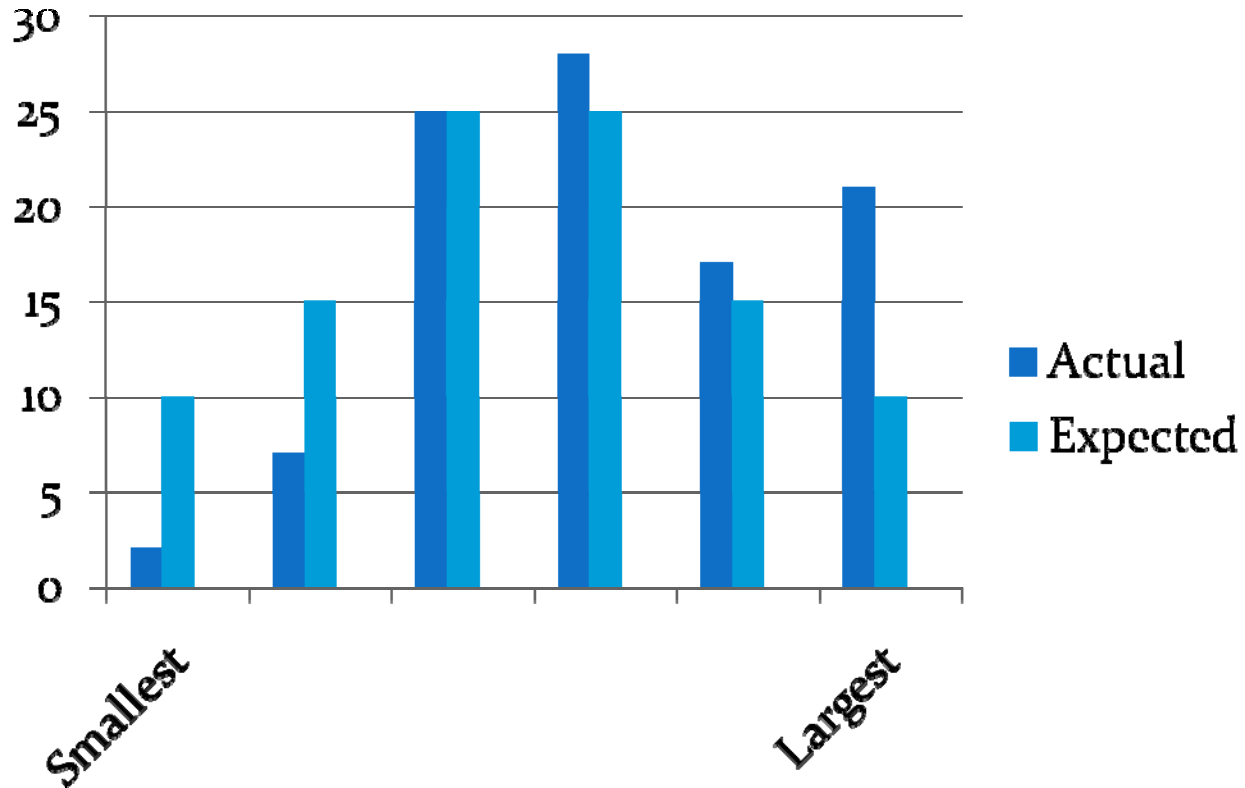
(n=146, 2007)

Source: QH TPHU 2007



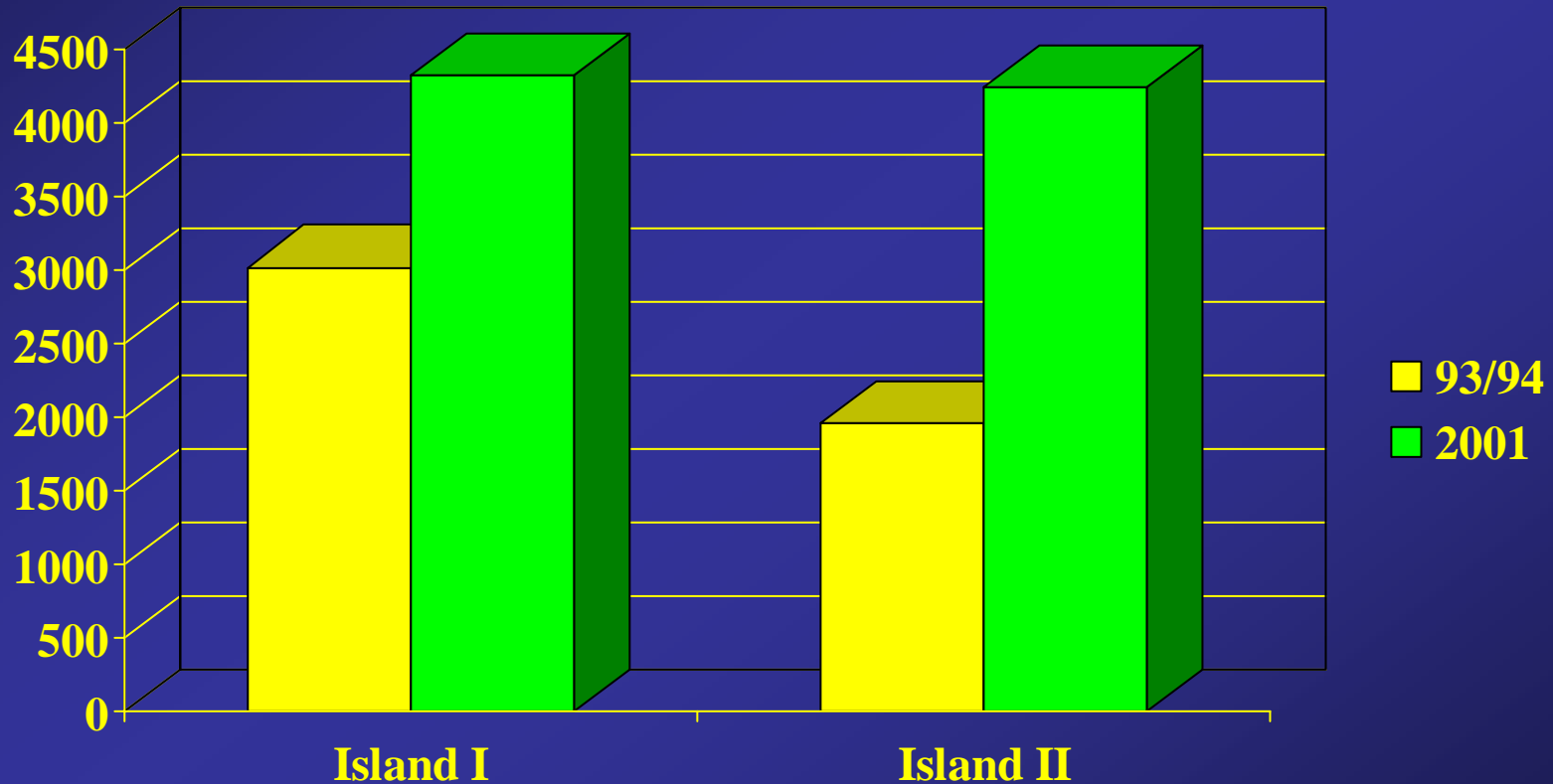
Waist distribution TSI children 5-10 years, Primary School Sample 2007

Source: TPHU 2007



Expected measures derived from: "Waist Circumference percentiles in nationally representative samples of African American, European-American and Mexican American Children and Adolescents". Fernandez JR, Redden DT, Pietroelli A, Allison DB J. *Pediatr* 2004;154:439-44

Store Turnover Study 2001 Soft Drink Supply Total litres over 3 months



Island I, 43% increase, Island II, 115% increase

**Torres Strait outer islands, store turnover 2007
(pop 3,529 in 2006, excluding TI, NPA)**

- 300,000 litres per year full sugar soft drinks
- 154,000 litres per year fruit juice/drink
- 61,000 litres concentrate

Plus

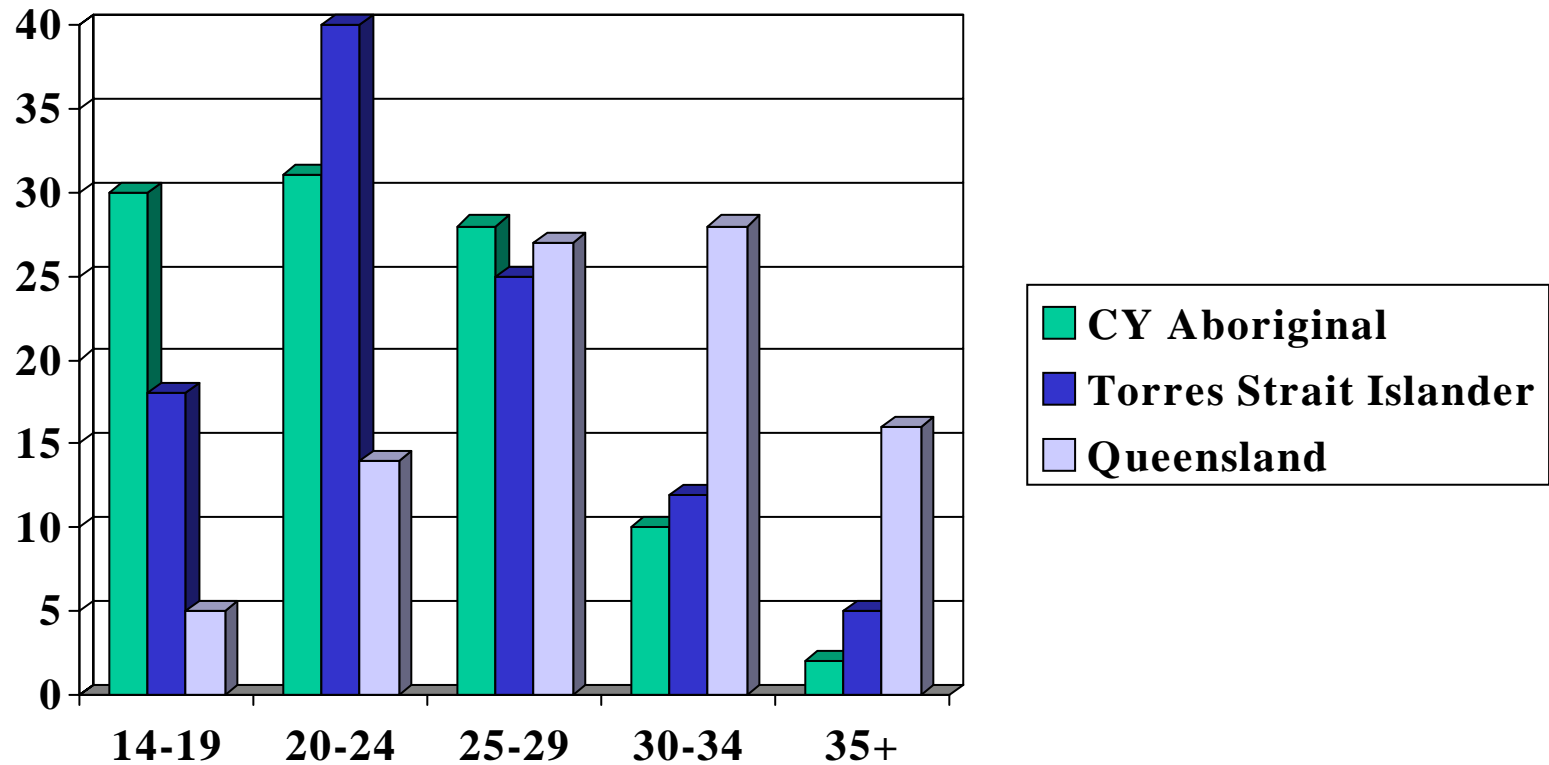
- >40 varieties of Sarah Lee

HFAB 2004 and basket components*

*Weighting proportional to Queensland population size by each ARIA+ category

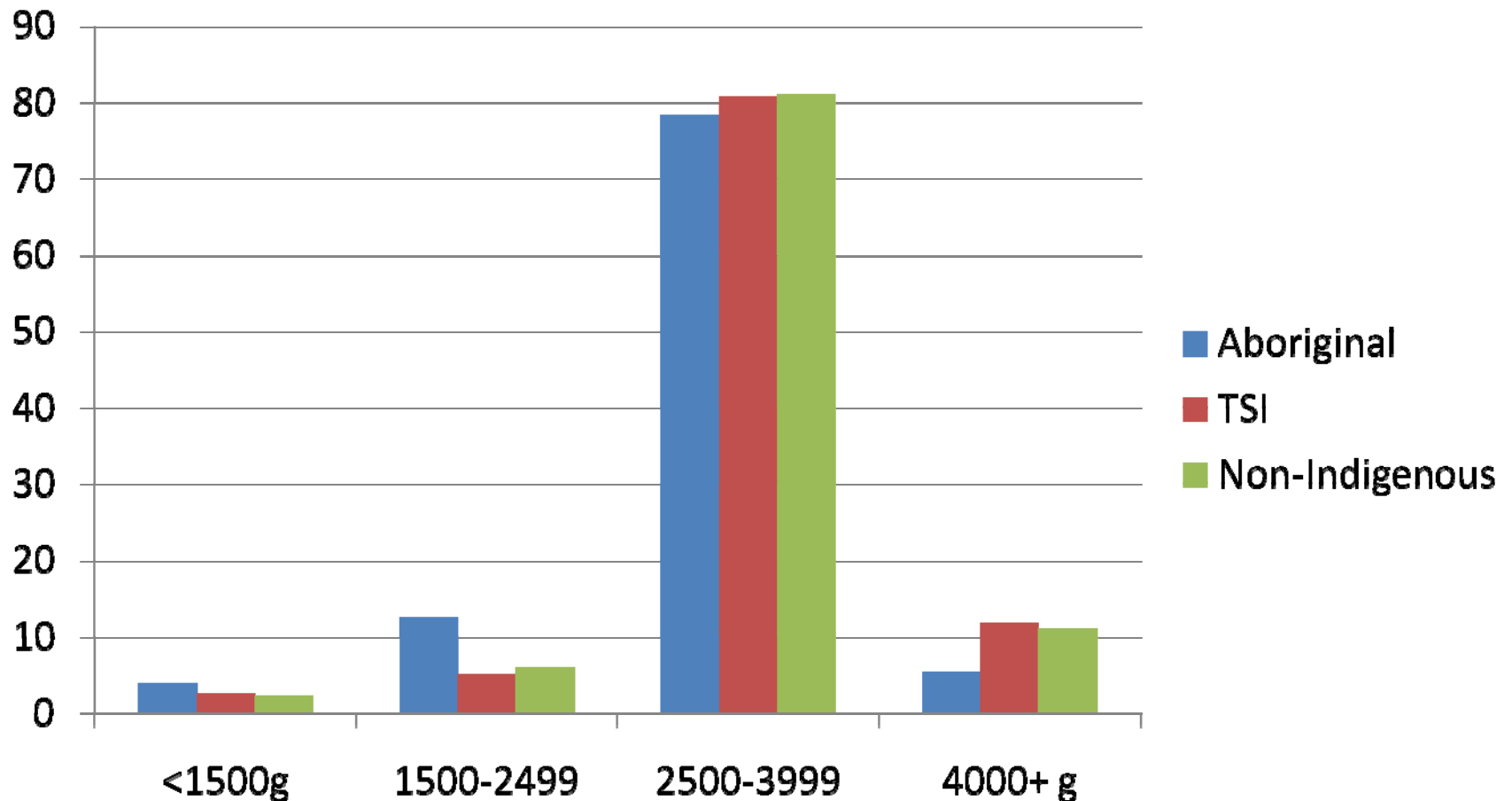
	HFAB 2004		Fruit, Vegetables & Legumes		HFAB no F,V&L		Tobacco & Takeaway	
Major City	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
Inner Regional	2 %	\$7.44	4 %	\$6.83	0.3 %	\$0.61	2 %	\$0.53
Outer Regional	7 %	\$27.28	9 %	\$14.93	5 %	\$12.35	5 %	\$1.62
Remote	13 %	\$56.47	11 %	\$18.45	14 %	\$38.02	9 %	\$3.23
Very Remote	23 %	\$113.89	17 %	\$32.34	27 %	\$81.54	12 %	\$4.47

Age distribution of mothers, Cape York Aboriginal, TSI and Queensland (1996-99)



Birth weight by ethnicity, far north Queensland, 1995-2006

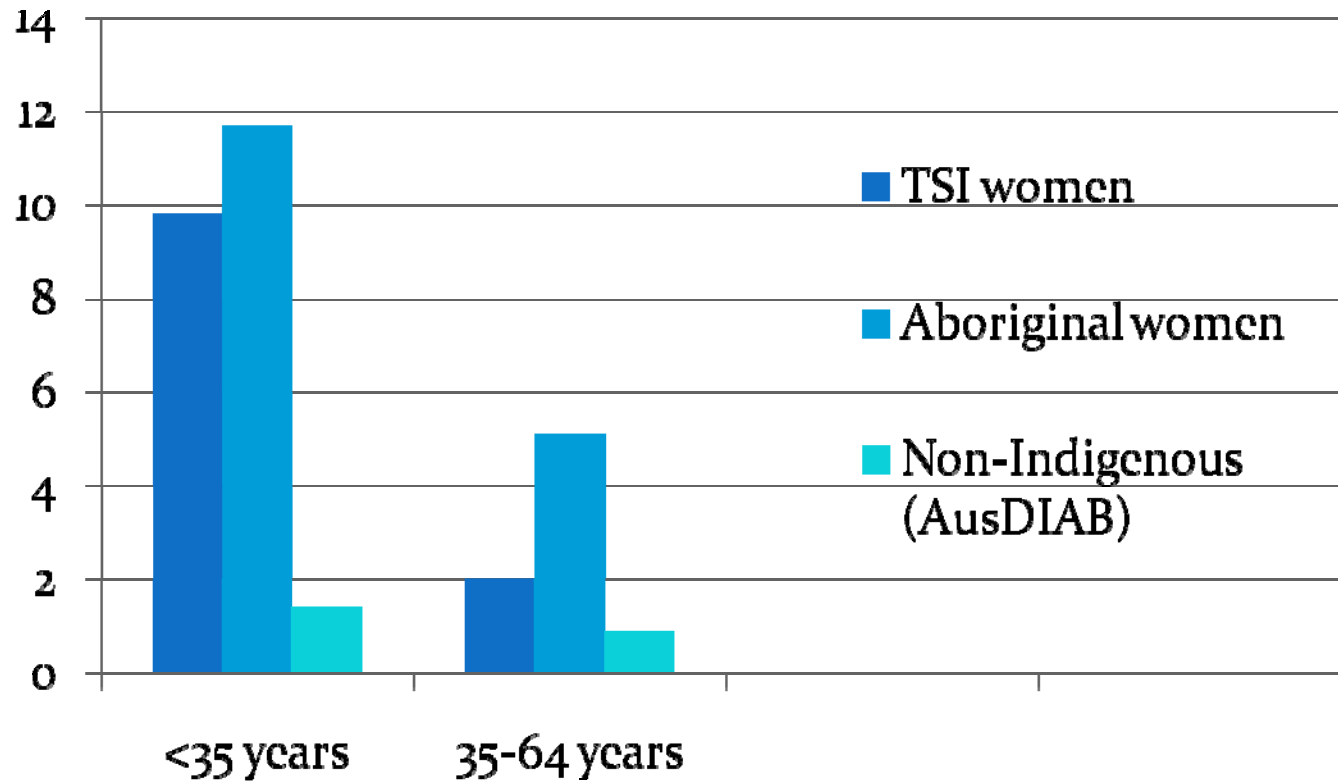
Source: TPHU, QH perinatal collection: (n=5,637)



Comparison baseline measures for Indigenous women aged 15-34 in north Queensland rural communities, 1999-2001

	Aboriginal (n=424)		TSI (n=232)	
	Mean or No.	95% CI	Mean or No.	95% CI
Age in years (SD)	24.5 (5.8)	24.0-25.1	25.1 (5.1)	24.4- 25.7
WC *	86.5 (15.8)	85.0- 88.0	98.5 (15.9)	96.4-100.5
BMI (SD)	25.0 (6.4)	24.2- 25.4	30.7 (6.9)	29.8-31.6
Smokers N (%)	269 (63.9)	59.3-68.5	139 (60.0)	53.6-66.2
Alcohol drinkers N (%)	291 (70.6)	66.2-75.0	160 (70.8)	64.8-76.7
Risky drinking#	187 (55.9)	51.2-60.6	81 (65.1)	58.9-71.2
Mean RCF (SD)*	373.9 (159.0)	358.5-389.4	450.8 (170.9)	428.5-473.1
RCF <295 N (%)*	134 (31.6)	27.2-36.0	36 (15.5)	10.8-20.2
Mean GGT (SD)*	30.3 (29.7)	27.4-33.2	24.5 (19.3)	22.0-27.0
GGT >50 N (%)*	68 (16.0)	12.5-19.5	19 (8.2)	4.6-11.7

Mean women's waist change over 5 years (cm), 1999-2005

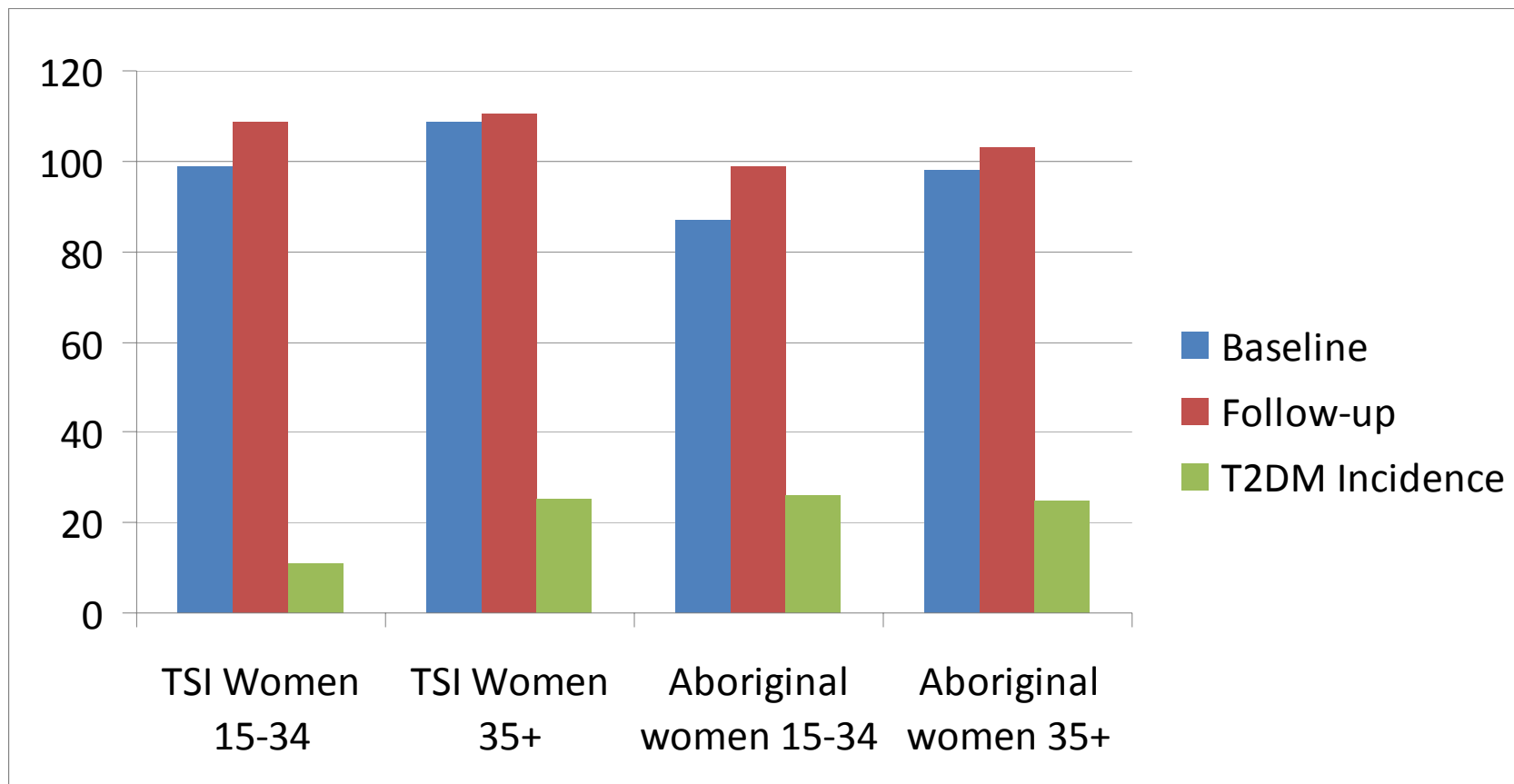


Follow-up measures of young (non-diabetic) Indigenous women in NQ, 1999-2006.

	Aboriginal (n=53)		TSI (n=79)	
	Mean (SD)	95% CI	Mean (SD)	95% CI
Mean interval weight change per year (kg)*	1.5 (1.4)	1.1-1.9	1.2 (1.5)	0.8-1.5
Mean interval BMI change/year*	0.5 (0.5)	0.4-0.7	0.4 (0.6)	0.3-0.6
Mean interval waist circumference change/year (cm)*	1.6 (1.8)	1.0-2.1	1.2 (1.7)	0.9-1.6
Incidence of diabetes per 1,000 p/y	29.1	14.0-52.8	13.9	5.6-28.5

**No difference in mean weight gain, mean BMI gain, and mean waist circumference gain between groups using ranksum test.*

Waist circumference (cm) and incidence of diabetes (per 1,000 py), NQ Indigenous women's cohort, 1999-2007



What to do?

Immediately

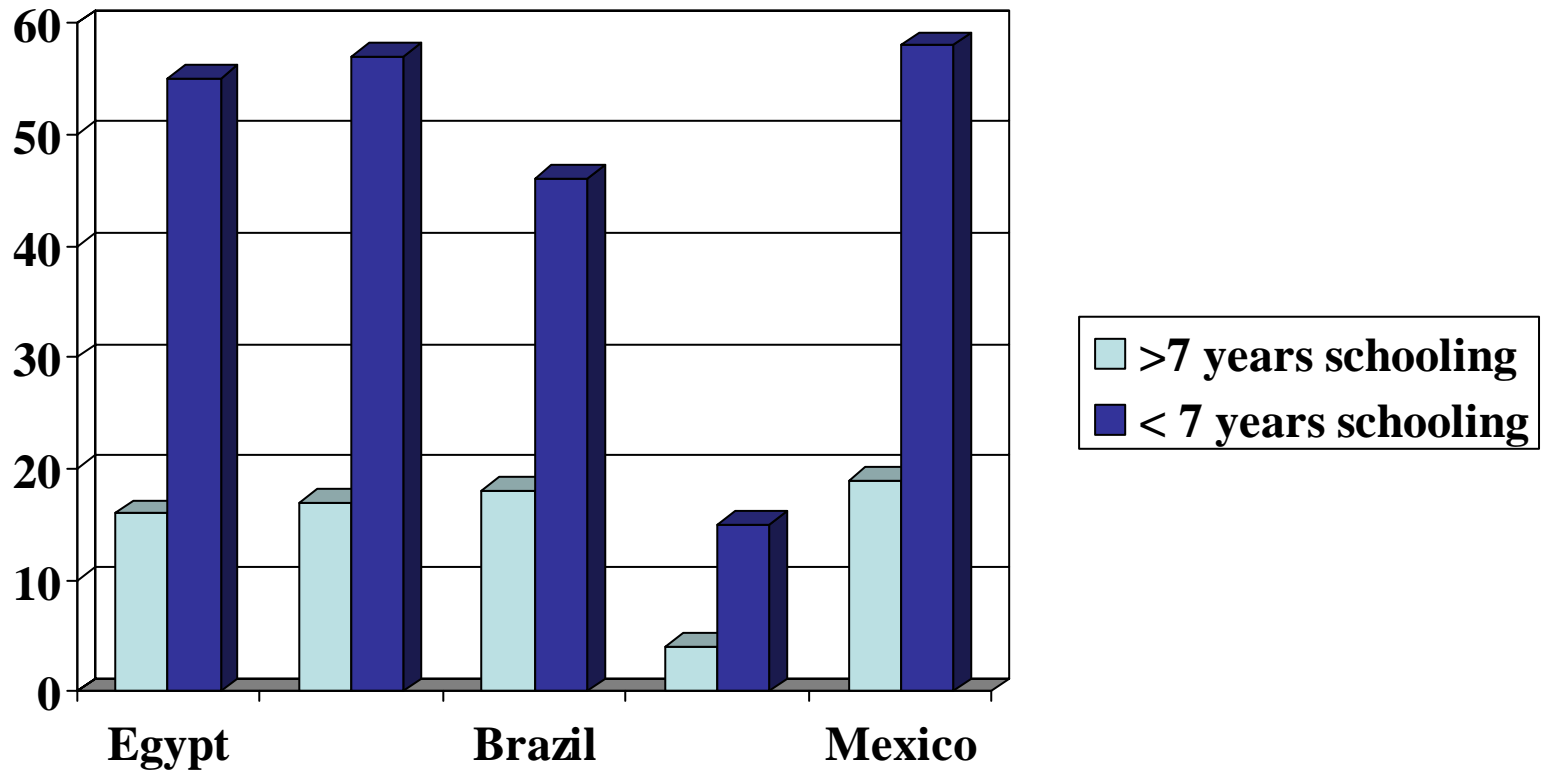
- Quality and cost of food: large-scale supply-side intervention (current negotiations with large food chains)
- Tobacco control: locally adapted evidence-based strategies (Campbell, Ivers)
- Education of girls: value in staying at school
- Physical activity – culture and opportunity (Karla Fell)

Medium term

- Education and jobs
- Housing, infrastructure and the social environment

Mothers' education and delayed childbearing: percentage of women aged 20-24 who gave birth by 20

Source: Alan Guttmacher Institute, NY, 1997



Pilot Project (April – June 2007)

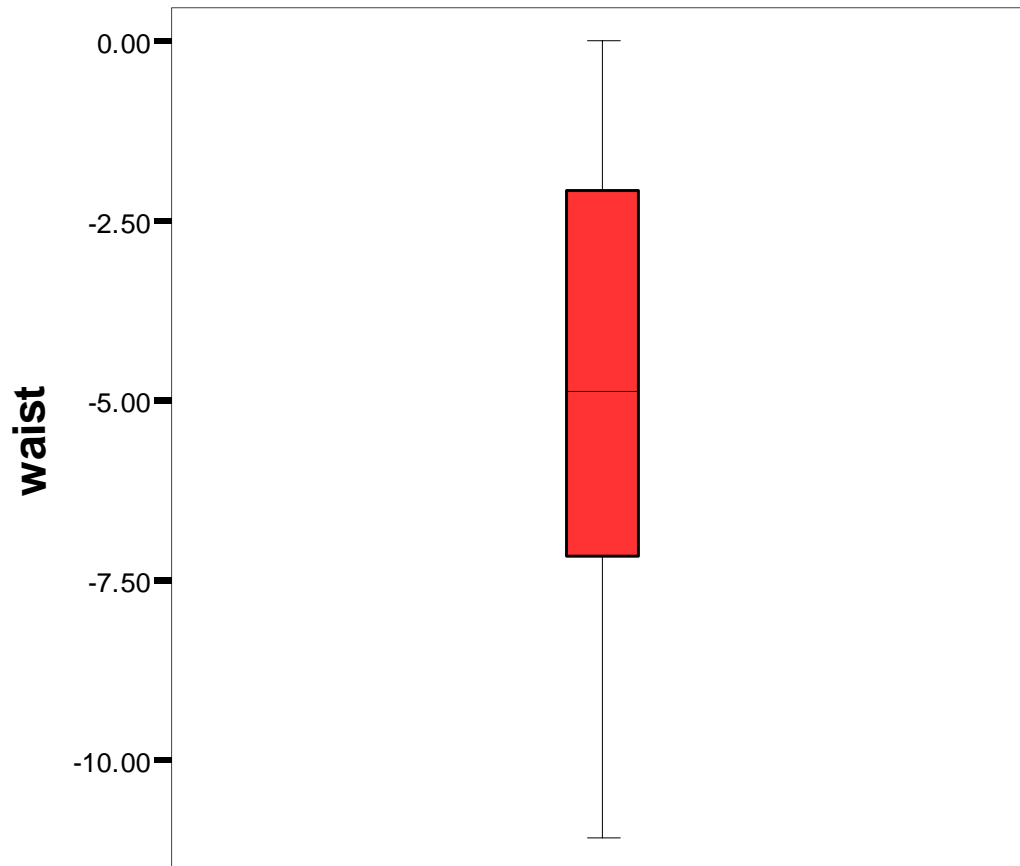
Karla Fell, PhD student, Thursday Island

“Women’s Fitness Challenge 2007”

- 8-week physical activity program for women.
- Women registered in teams of 3.
- Pre and post assessments (including weight & waist).
- Program included weekly circuit training and aqua classes.
- Participants were given pedometers to monitor daily steps.
- Program Booklets (included nutrition & exercise tips)



Primary Outcome of the WFC



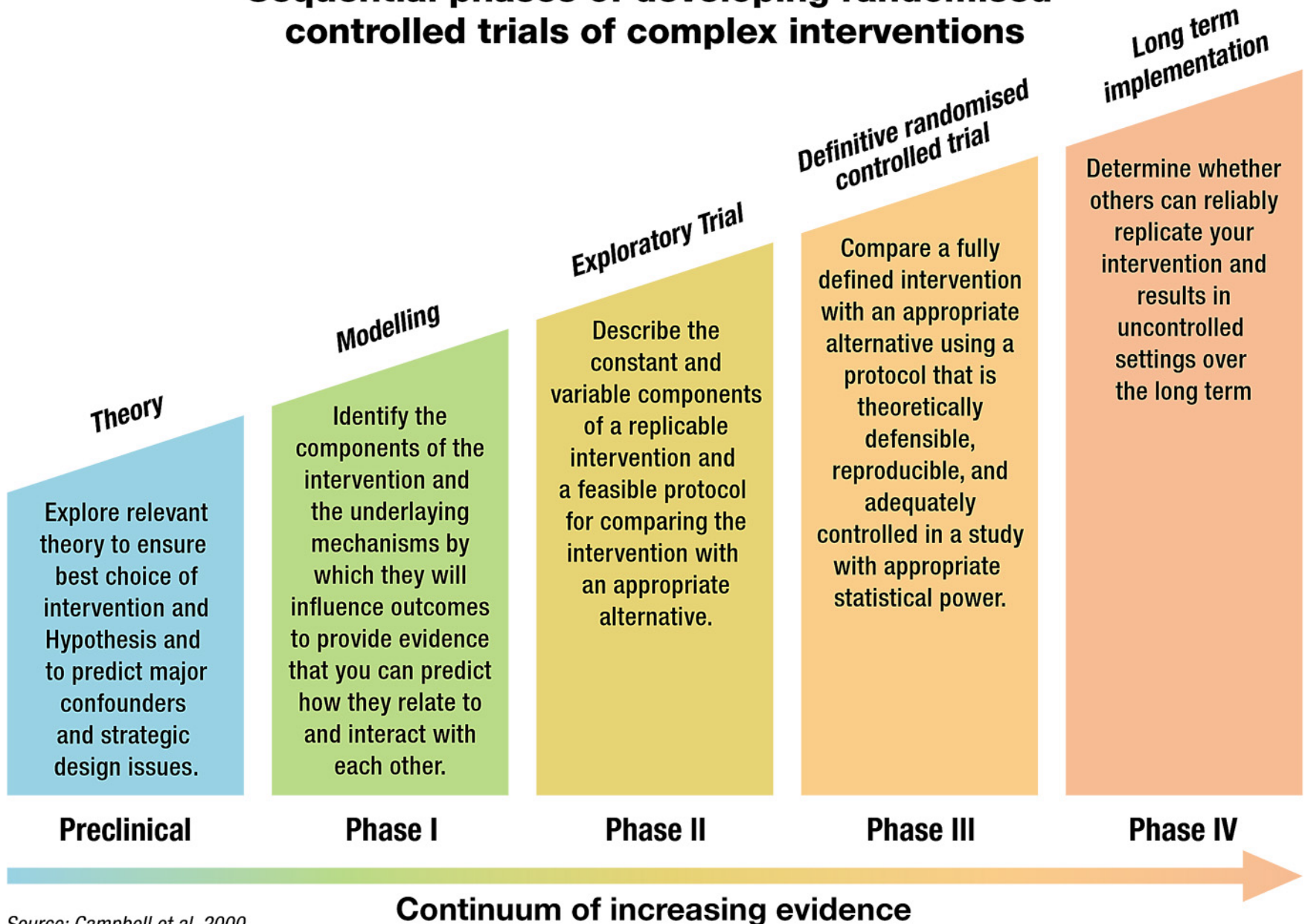
- No one increased their waist circumference;

- average loss was 4.93cm ($p=0.002$);

- 95% confidence interval = 2.44 – 7.42cms.

NB. Weight loss was not significant (mean of only 0.03kg $p=0.965$).

Sequential phases of developing randomised controlled trials of complex interventions



Translational research

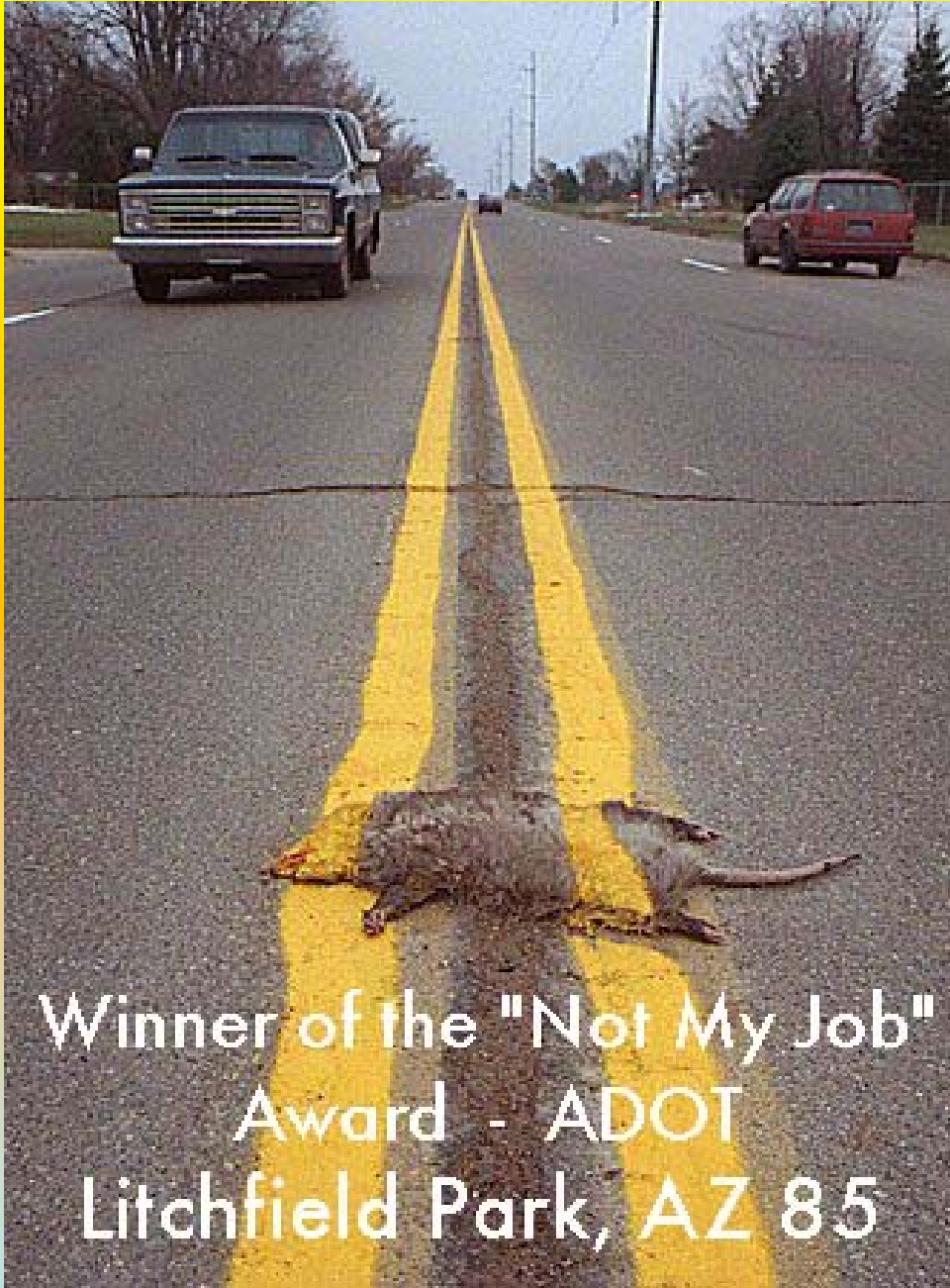
UniSA Indigenous PhD program

Sandy Campbell

- Tobacco control: Cluster randomised trial of locally adapted evidence-based strategies in FNQ (2005-7)
- Follow-up of 223 babies born to the 719 young women

Karla Fell

- Physical activity – RCT women's fitness and nutrition program + ecological analysis of social and physical environment



Whose job?

- Health services
- Education
- Community organisations
- Local government
- Transport
- Food, tobacco, alcohol industries
- Others