

Top End Cohort Study



Aboriginal Birth Cohort study



Acknowledgement

We would like to acknowledge the traditional owners of this land; past, present and future.

We wish to also acknowledge the late Dr. Susan Sayers, founder of the ABC study, who dedicated her life to paediatric Indigenous health in the Top End.

This booklet has been produced by
Menzies School of Health Research
Life Course Team.

This work was supported by the National Health and Medical Research Council of Australia.

This booklet may contain references to Indigenous people who have passed away. Every effort has been made to ensure that images portraying recently deceased people have been removed.



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Remote landscape of Gunbalanya

Why are we doing this study?

Every experience that we have shapes our future.

We are interested in the impact of birth and early life on a person's health across their life time. We follow people from birth and conduct comprehensive health checks at set time intervals to track their health over time.

Findings from the health checks are linked to birth and previous experiences to see how these affect our health. In particular, we are looking for those factors which increase our risk of developing chronic diseases such as diabetes, heart disease, kidney disease and mental illness.

The Life Course Program consists of two unique but complementary studies: the Aboriginal Birth Cohort (ABC) and the Top End Cohort (TEC).

The original study, the ABC cohort, started 30 years ago. It is recognised as Australia's longest running and largest cohort study of Indigenous people.

Study History

Aboriginal Birth Cohort (ABC) recruitment
Dr Susan Sayers founded the study. She recruited 686 babies born in the Royal Darwin Hospital to Indigenous mothers.

1998 - 2001

ABC Adolescence
At an average age of 18 years, 469 adolescents were visited.

2007- 2009

ABC and TEC Young Adulthood
At an average age of 25 years, 459 ABC and 117 TEC were visited.

1987 - 1990

ABC Childhood
At an average age of 11 years, 572 children were visited.

2006 - 2008

Top End Cohort (TEC) recruitment
196 age-matched non-Indigenous adolescents (average age 18yrs) born in Darwin were recruited.

2013 - 2015



Dr Gurmeet Singh and Dr Sue Sayers



Meet the current team

The tireless research team of Gurmeet, Belinda, Joseph, Jennifer, Sarah, Katie, Methinee, Evan and Laura, travelled via commercial and small planes, on sealed and dirt roads, and even via boats, visiting a major proportion of people in the studies.

This study has only been possible with the enthusiasm and cooperation of the young adults from the study and help and support of the communities visited.

This booklet shows a snapshot of what we have found so far.

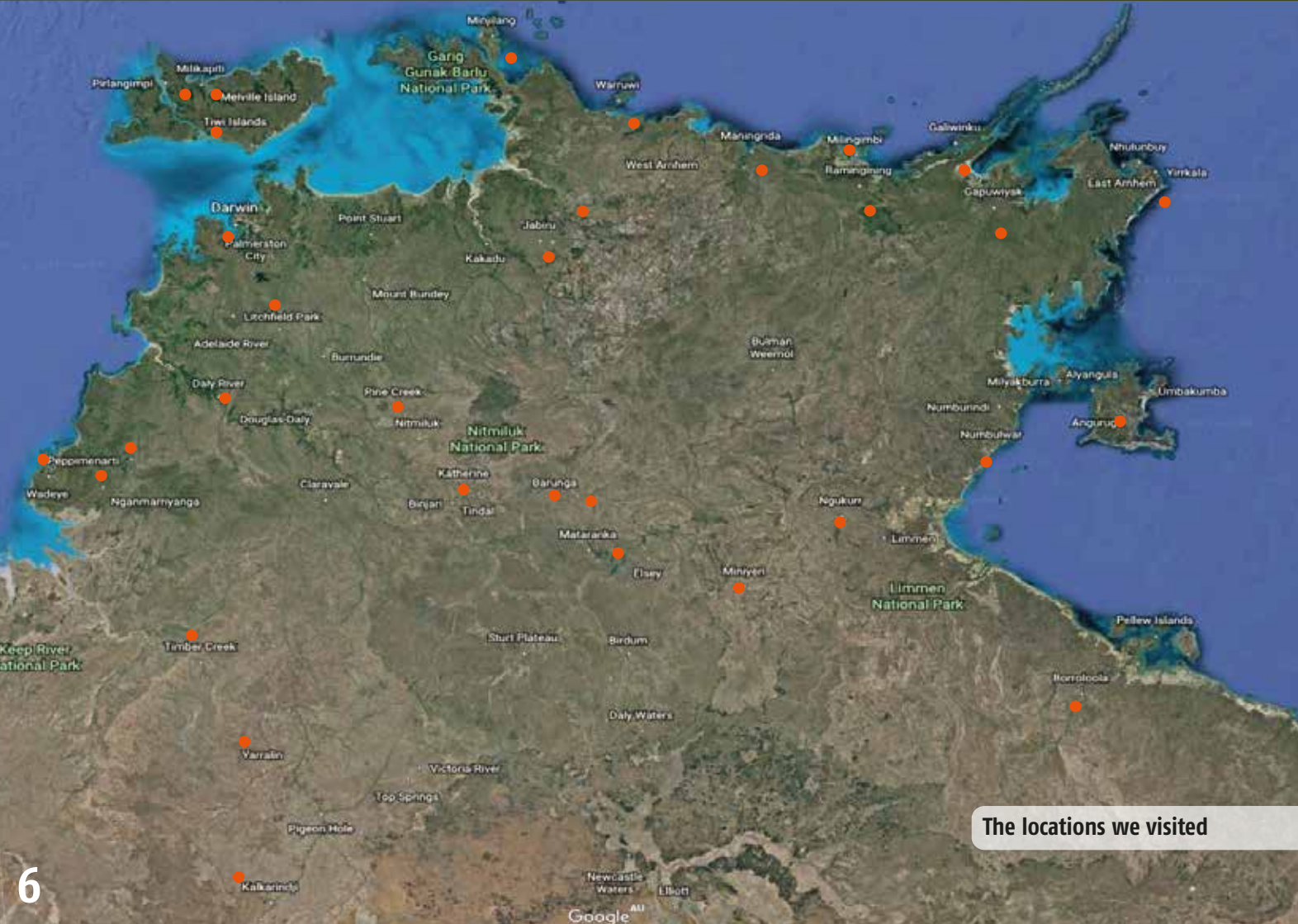
For updates check out our new website, findings will be posted here as they become available.

www.lifecoursemenzies.net.au

Top Left: Methinee Intarapanya Top Right: Sarah Whalan
Bottom: Barge on Tiwi



Study team travelling home from Arnhem



The locations we visited



Where did we go?

All of the people in the studies were born in Darwin. However, they now live across the Top End of Northern Territory, Australia, interstate and even overseas.

Between August 2013 and June 2015, the Life Course team travelled to over 40 remote and urban communities.

Study members were contacted and invited to continue participating and have a health check-up.

The team visited 459 of the ABC study members, as well as 117 of the TEC study members.

Left: Aerial view of a remote community
Above: Darwin including surrounds

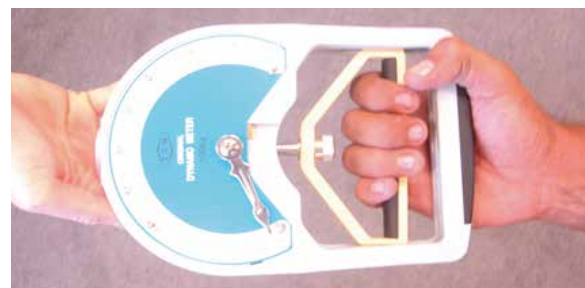
What did we do?

The check-up covered many aspects of health.



Body size and shape

- Height
- Weight
- Muscle and fat distribution
- Head, mid-arm, waist and hip circumference



Muscle Strength

- Hand Grip strength
- Chair stands
- The balance test



Cardiac (Heart) Health

- Blood pressure
- Carotid artery ultrasound (main artery in our necks)
looking for fatty deposits
- Arterial stiffness (artery health)



Respiratory (Lung) Health

- Lung capacity and function



Renal (Kidney) Health

- Urine sample
- Ultrasound of the kidneys
- Blood tests



Lifestyle factors

- Physical activity level
- Diet over the past two weeks
- Substance use
- Emotional wellbeing (how people were feeling)

What did we find?





Body Size

A healthy weight is central to good health.

Having a healthy weight can lower your risk of heart disease, stroke, diabetes, and high blood pressure.

While being overweight is not good for your health, being too thin (underweight) is not necessarily healthy either. Particularly in women, as it can increase the risk of pregnancy complications or having a smaller baby.

We used BMI as the main measure of body size. This is calculated by dividing your weight in kilograms by your height in metres squared.*

E.g. a person who is 165 cm tall and weighs 64 kg would have a BMI of 23.5 ($64 \div 1.65^2 = 23.5$)

* Reference: www.heartfoundation.org.au



Body Shape

In addition to maintaining a healthy weight, it is also important to have a healthy amount of fat.

Too much fat is dangerous for long term health. Fat around the middle may be more dangerous for long-term health than fat around the hips and thighs.

To check this, we did various body shape measurements. Waist circumference is one of the most important of these measurements.

Other measurements included:

- Head, Mid upper arm and hip circumference
- Muscle and fat distribution

Disclaimer

The results on the following pages have been calculated from percentage estimates, which may have incurred small rounding errors.

Body size – BMI (Men)

Most men in young adulthood had a healthy weight.

For every 10 men visited, healthy weight was seen in
5 of the Remote ABC,
4 of the Urban ABC and
6 of the TEC.

These results are better than the Australian average where only
 3 out of 10 Indigenous and 4 out of 10 Non-Indigenous men
 had healthy weights.

However, a third of men were overweight or obese.

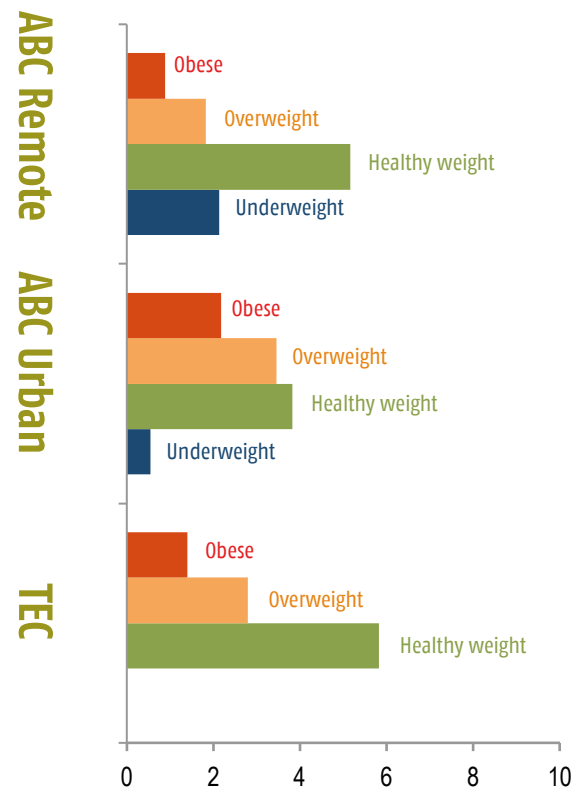
For every 10 men visited, overweight/obesity was seen in
3 of the Remote ABC,
6 of the Urban ABC and
4 of the TEC.

Overall this is lower than the national average where 6 out of 10
 men were overweight or obese.

Underweight was prevalent in men living remotely.

For every 10 men visited, underweight was seen in
2 of Remote ABC,
<1 of the Urban ABC and
0 of the TEC.

Within the Australian population, almost no underweight men
 were seen.



Body size – BMI (Women)

Just under half of the women in young adulthood had a healthy weight.

For every 10 women visited, healthy weight was seen in
3 of the Remote ABC,
4 of the Urban ABC and
6 of the TEC.

This is similar to across Australia with 3 out of 10 Indigenous and
 6 out of 10 Non-Indigenous women.

A quarter of the women were overweight or obese.

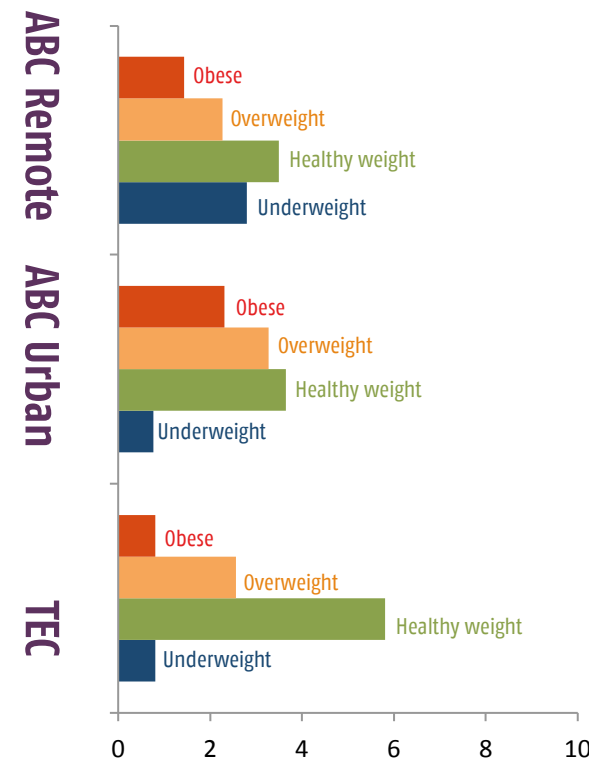
For every 10 women visited, overweight/obesity was seen in
4 of the Remote ABC,
5 of the Urban ABC and
3 of the TEC.

This is slightly better compared to across Australia with 6 out of
 10 Indigenous and 4 out of 10 Non-Indigenous women.

Few women were underweight in young adulthood.

For every 10 women visited, underweight was seen in
3 of the Remote ABC,
1 of the Urban ABC and
1 of the TEC.

Very few Australian women were underweight, which was
 similar to the urban ABC and TEC.



Did location affect body size? (Men)

With three quarters of the ABC participants living in remote areas of the Northern Territory, we wanted to see if location made a difference to body size.

About half of men in young adulthood had a **healthy weight**.

For every 10 men visited, healthy weight was seen in
5 in Urban Areas (ABC and TEC),
4 in Daly Shire,
5 in East Arnhem and
6 in Tiwi.

The rates of **overweight** or **obesity** varied across the different regions.

For every 10 men visited, overweight/obesity was seen in
5 in Urban areas,
2 in Daly Shire,
3 in East Arnhem and
4 in Tiwi.

Underweight rates were very different depending on location.

For every 10 men visited, underweight was seen in
<1 in Urban Areas,
4 in Daly Shire,
2 in East Arnhem and
<1 in Tiwi.



Did location affect body size? (Women)

And the answer was yes. Where you lived made a difference for both men and women.

For women in young adulthood less than half had **healthy weights**.

For every 10 women visited, healthy weight was seen in
5 in Urban Areas (ABC and TEC),
3 in Daly Shire,
3 in East Arnhem and
4 in Tiwi.

About a quarter were **overweight** or **obese** across the shires.

For every 10 women visited, overweight/obesity was seen in
4 in Urban Areas,
3 in Daly Shire,
4 in East Arnhem and
4 in Tiwi.

Few were **underweight** across the shires.

For every 10 women visited, underweight was seen in
1 in Urban Areas,
4 in Daly Shire,
2 in East Arnhem and
2 in Tiwi.



Change in Body size (Men)

We wanted to see if the results in young adulthood were the same as when we saw them in adolescence.

Similar to that in young adulthood, half of the men had healthy weights in adolescence.

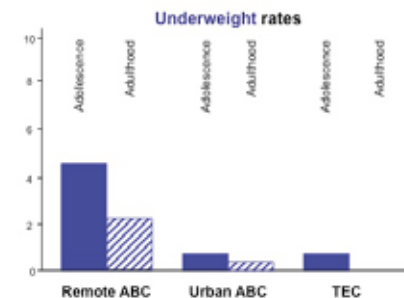
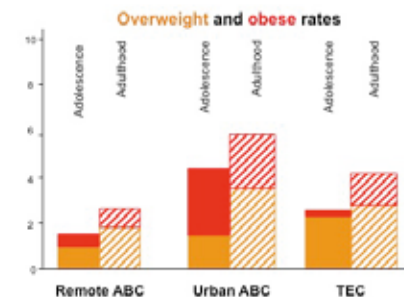
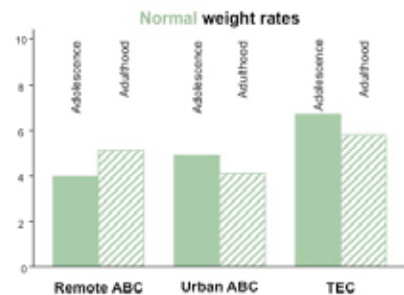
For every 10 men visited, healthy weight was seen in
4 of the Remote ABC,
5 of the Urban ABC and
7 of the TEC.

Fewer men were overweight or obese in adolescence.

For every 10 men visited, overweight/obesity was seen in
1 of the Remote ABC,
4 of the Urban ABC and
2 of the TEC.

More men were underweight during adolescence.

For every 10 men visited, underweight was seen in
5 of the Remote ABC,
1 of the Urban ABC and
1 of the TEC.



Change in Body size (Women)

Similar to that in young adulthood, half of the women had healthy weights in adolescence.

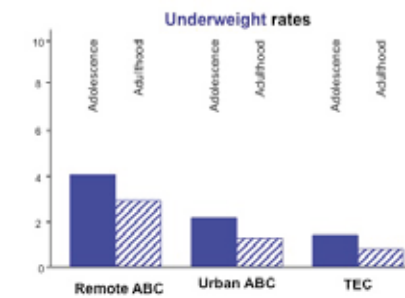
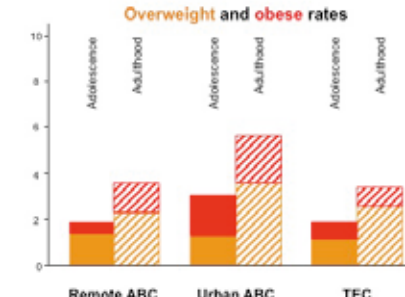
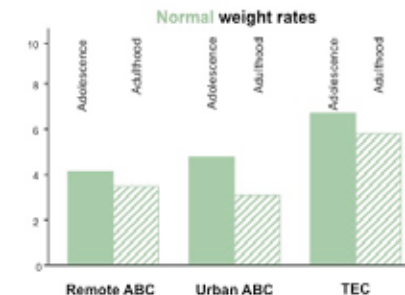
For every 10 women visited, healthy weight was seen in
4 of the Remote ABC,
5 of the Urban ABC and
7 of the TEC.

Fewer women in adolescence were overweight or obese.

For every 10 women visited, overweight/obesity was seen in
2 of the Remote ABC,
3 of the Urban ABC and
2 of the TEC.

More women were underweight in adolescence.

For every 10 women visited, underweight was seen in
4 of the Remote ABC,
2 of the Urban ABC and
1 of the TEC.



Body Shape – Waist size (Men)

For young men a waist bigger than 94cm is becoming too big*.

For every 10 men visited, a large waist was seen in
2 of the Remote ABC,
4 of the Urban ABC and
2 of the TEC.

These rates have increased slightly since the men were visited in adolescence where very few had a big waist.

Across Australia slightly more adult men had big waists compared to the men in the study with, 4 out of 10 Indigenous and 3 out of 10 Non-Indigenous having big waists.

*Reference: www.heartfoundation.org.au

Body Shape – Waist size (Women)

For young women a waist bigger than 80cm is becoming too big*.

For every 10 women visited, a large waist was seen in
6 of the Remote ABC,
8 of the Urban ABC and
4 of the TEC.

These rates have increased since the women were visited in adolescence.

Compared to adult women across Australia this rate is similar with 7 out of 10 Indigenous and 4 out of 10 Non-Indigenous had big waists.



Why is blood pressure important? (Men)

Having a healthy blood pressure is key to good heart health.

An unhealthy blood pressure (hypertension) means that the heart has to work harder, increasing the risk of stroke and heart disease.

Unlike the common cold, hypertension doesn't show any symptoms, which is why it's important to have our blood pressure checked.

In young adulthood, for every 100 men visited, high blood pressure was seen in
2 of the Remote ABC,
15 of the Urban ABC and
2 of the TEC.

These rates are low, but have increased from adolescence.

Across Australia more adult men had high blood pressure where 11 out of 100 Indigenous and 9 out of 100 Non-Indigenous Australian men were hypertensive.

*Reference: www.heartfoundation.org.au



Why is blood pressure important? (Women)

In young adulthood, for every 100 women visited, high blood pressure was seen in
1 of the Remote ABC,
4 of the Urban ABC and
3 of the TEC.

These rates are low, but have increased from adolescence when nearly no women had high blood pressure.

Across Australia, more adult women had high blood pressure, with 10 out of 100 Indigenous and 9 out of 100 Non-Indigenous women being hypertensive.



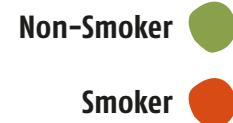
Tobacco Smoking (Men)

Smoking tobacco is a well-known cause of many diseases such as cancer, stroke, and heart disease.

In young adulthood, for every 10 men visited, **smoking tobacco** was seen in **8** of the Remote ABC, **7** of the Urban ABC and **2** of the TEC.

These rates were nearly the same as when the men were visited in adolescence.

Whereas across Australia, 5 out of 10 Indigenous and 2 out of 10 Non-Indigenous adult men smoke.



ABC Remote



ABC Urban



TEC



Tobacco Smoking (Women)

In young adulthood, for every 10 women visited, **smoking tobacco** was seen in **7** of the Remote ABC, **5** of the Urban ABC and **1** of the TEC.

These rates were nearly the same as when they were visited in adolescence.

Across Australia these results were similar for the urban ABC and TEC; where 5 out of 10 Indigenous and 1 out of 10 Non-Indigenous adult women smoked.



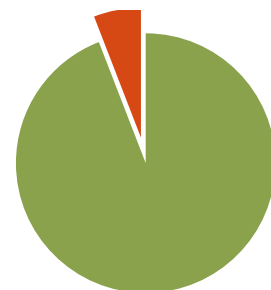
ABC Remote



ABC Urban



TEC



Drinking Alcohol (Men)



Alcohol is another well-known drug which causes harm; excessive use increases risk of injury, some cancers and stroke.

In young adulthood for every 10 men visited, **drinking alcohol** at least once a week was seen in
5 of the Remote ABC,
6 of the Urban ABC and
6 of the TEC.

This has increased since adolescence when very few men drank alcohol.

*Reference: www.drinkwise.org.au

DrinkWise.

Non-Drinker 
 Drinker 

ABC Remote



ABC Urban



TEC



Drinking Alcohol (Women)

In young adulthood for every 10 women visited, **drinking alcohol** at least once a week was seen in
1 of the Remote ABC
3 of the Urban ABC
5 of the TEC

These rates have increased slightly since visited in adolescence where very few drank alcohol.

ABC Remote





ABC Urban



TEC



Non-Drinker 
 Drinker 

DrinkWise.

How are people feeling?

Being mentally healthy is important as it can affect many aspects of our day to day lives.

When asked to describe how healthy they were, the majority said they had very good or good health.

For every 10 people visited, the following rated their health good or very good,
9 of the Remote ABC,
7 of the Urban ABC and
7 of the TEC.

Overall it was very good to hear that most people across all groups said they were happy all or most of the time.

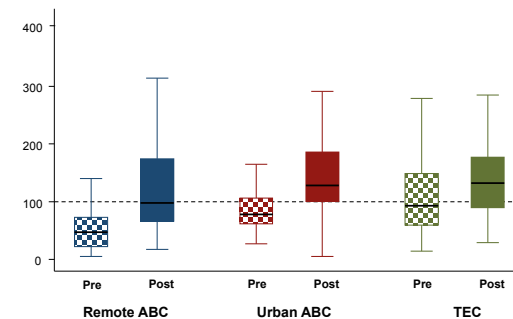
For every 10 people visited, the following said they were happy most or all of the time,
8 of the Remote ABC,
9 of the Urban ABC and
9 of the TEC.

Most people liked the area/community which they lived in, rating it very or mostly good.

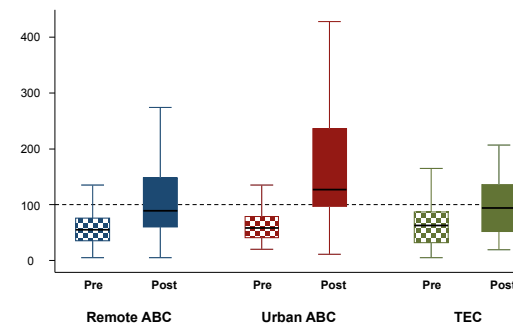
For every 10 people visited, the following rated the place they lived as very or mostly good,
7 of the Remote ABC,
7 of the Urban ABC and
9 of the TEC.



Men



Women



Additional Study: Iodine

This study also provides an opportunity to assess important national health issues.

The National Iodine and Nutritional Survey (2003–2004) showed iodine deficiency was reappearing in the south east of Australia. However, NT was not included.

During adolescence (2005–2009) we checked the iodine levels of men and women. The levels were low. This information was used in the 2010 decision to introduce mandatory fortification of bread with iodised salt on a national level

During young adulthood (2013–2015), we again checked iodine levels. There was an improvement in iodine levels of men and women, with levels close to the recommended 100µg/L. These are promising results. However these levels may not be adequate for pregnant and breast feeding women whose requirement is higher (150µg/L).

Healthy young adults

We were pleased to see 70% of the study participants. The majority of young adults in both the ABC and TEC studies remained healthy in young adulthood.

It is important that these healthy young people maintain healthy lifestyles to maintain their health.

While rates of smoking decreased slightly in urban ABC and TEC, the ongoing high rates in remote ABC are of concern.

We look forward to seeing everyone again in 2019–2020 to monitor their health.



Thank you to all involved

Whilst travelling across the NT we were welcomed and helped by many communities. We also employed over 50 community members who were invaluable to the studies.

We would like to thank everyone involved for their hard work and support. Without this we would not have visited as many people as we did. Thank you.

A special Thank you to all of those who have been part of the studies

Without the participation and enthusiasm of the young people involved in both the ABC and TEC studies, the Life Course program would not be possible. We are grateful to you for continuing to be part of these important studies and taking part in the health assessments.

We look forward to seeing you all again soon.

The Life Course Team



Contact information



For more information please visit the website
www.lifecoursemenzies.net.au



We are on Facebook. If you are part of the ABC or TEC,
and want to join the group please contact us below..



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