



# **ASTHMA AND COPD IN NORTH WEST ADELAIDE: Results from a biomedical study**

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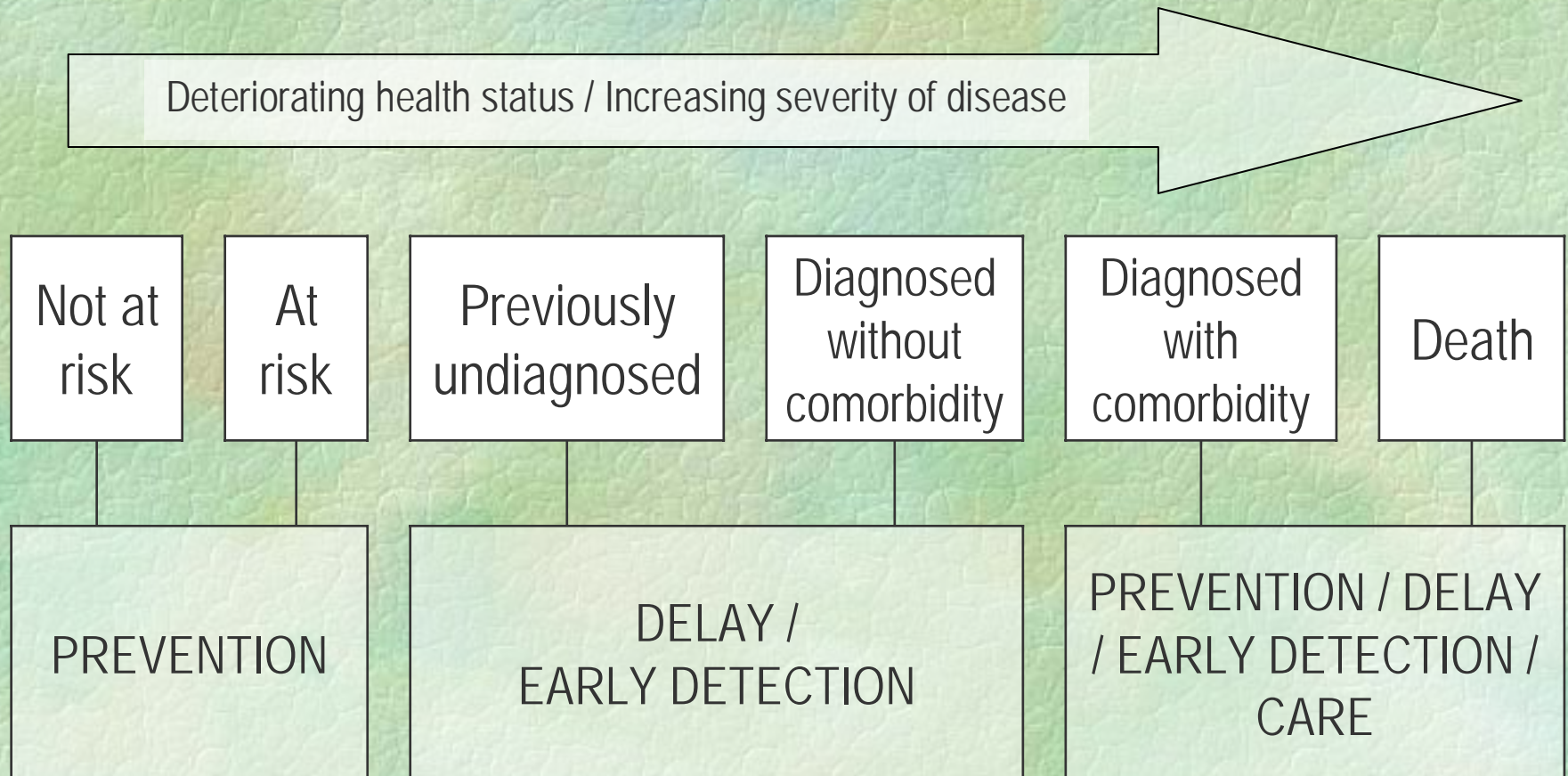
# Organisations involved

- SA Department of Human Services  
(Centre for Population Studies in Epidemiology)
- The Queen Elizabeth Hospital
- Lyell McEwin Health Service
- The University of Adelaide
- University of South Australia

# Aims

- Assess prevalence of priority health problems (diabetes, asthma and COPD), risk factors and their demographic distributions.
- Segment each chronic condition into subgroups along a continuum
  - More precise targeting.
  - More effective interventions and policy.
- Track cohort over time.

# Chronic disease continuum



# Methods - Overall

- Random, representative sample
- North West region of Adelaide
- n=2523, aged 18+
- CATI recruitment interview
- Self-administered questionnaire
- Attendance at clinic

# Methods - Questionnaire

- Self-reported diabetes, asthma, COPD (emphysema and bronchitis)
- Risk factors (smoking, physical activity, alcohol consumption, family history of diabetes, heart disease and stroke)
- Health service use
- Demographics
- SF-36

# Methods – Clinic assessment

- Blood pressure
- Height and weight measurements
- Waist and hip measurements
- Fasting blood sample (glucose, lipid profile, glycated haemoglobin)
- Allergy skin test (rye grass, cat, house dust mite, alternaria, feather and cockroach)
- Lung function tests (spirometry followed by ventolin inhalation and retesting)

# Definitions

## ASTHMA

- Self-reported current diagnosed asthma
- 15% increase in FEV1
- 12% increase in FEV1, if absolute difference in FEV1 > 200 ml.

## COPD

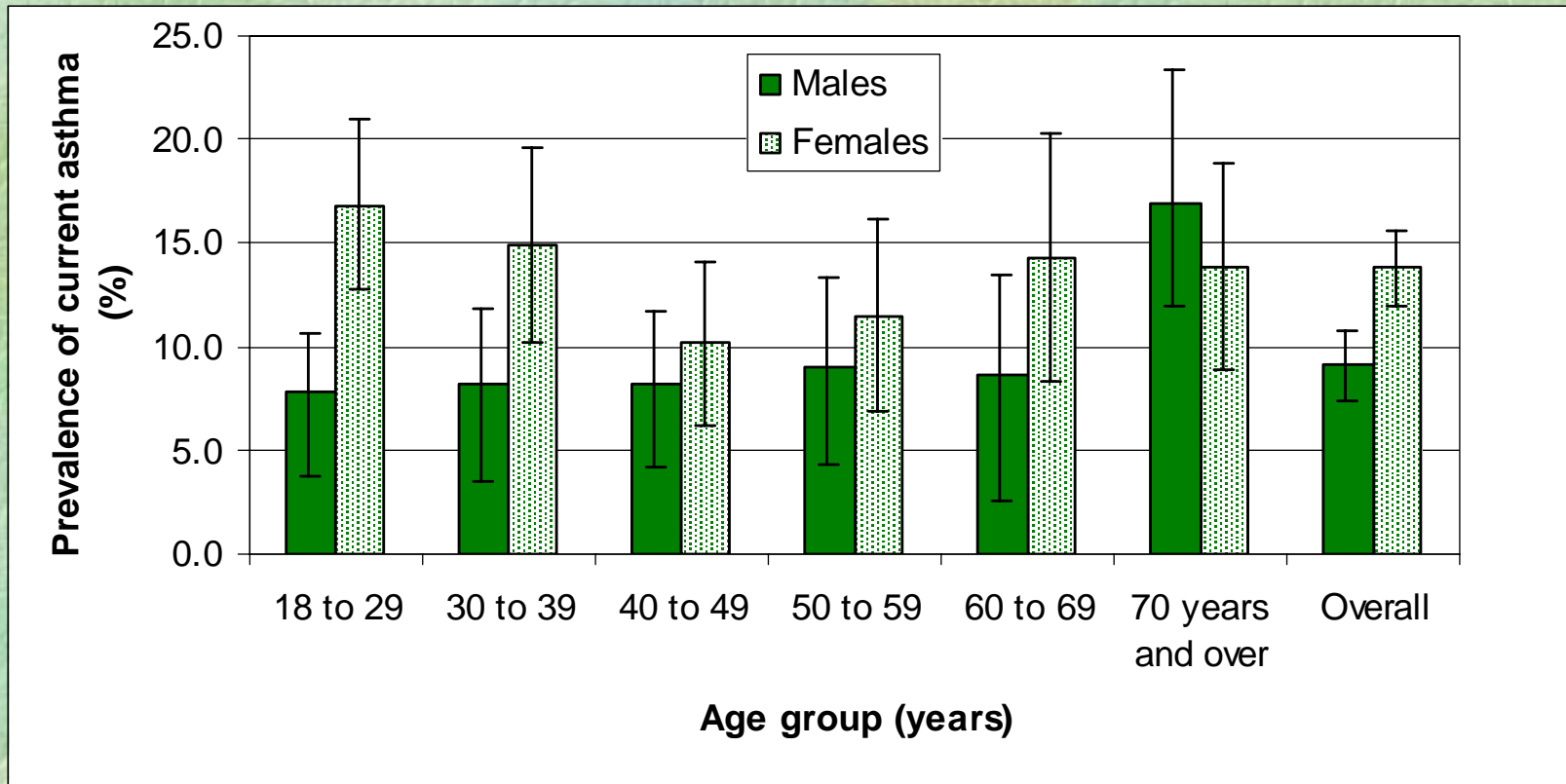
- Self-reported current diagnosed
- Males:  $FEV1:FEVC < (87.21 - 0.18 \times \text{age})$
- Females:  $FEV1:FEVC < (89.10 - 0.19 \times \text{age})$
- Have not been diagnosed with asthma



# Biomedically measured prevalence

	% (95% CI)	Estimated n in NW Adelaide
Asthma	11.6 (10.3 – 12.8)	44,000
COPD	21.3 (19.7 – 22.9)	82,000

# Prevalence of current asthma by sex and age group



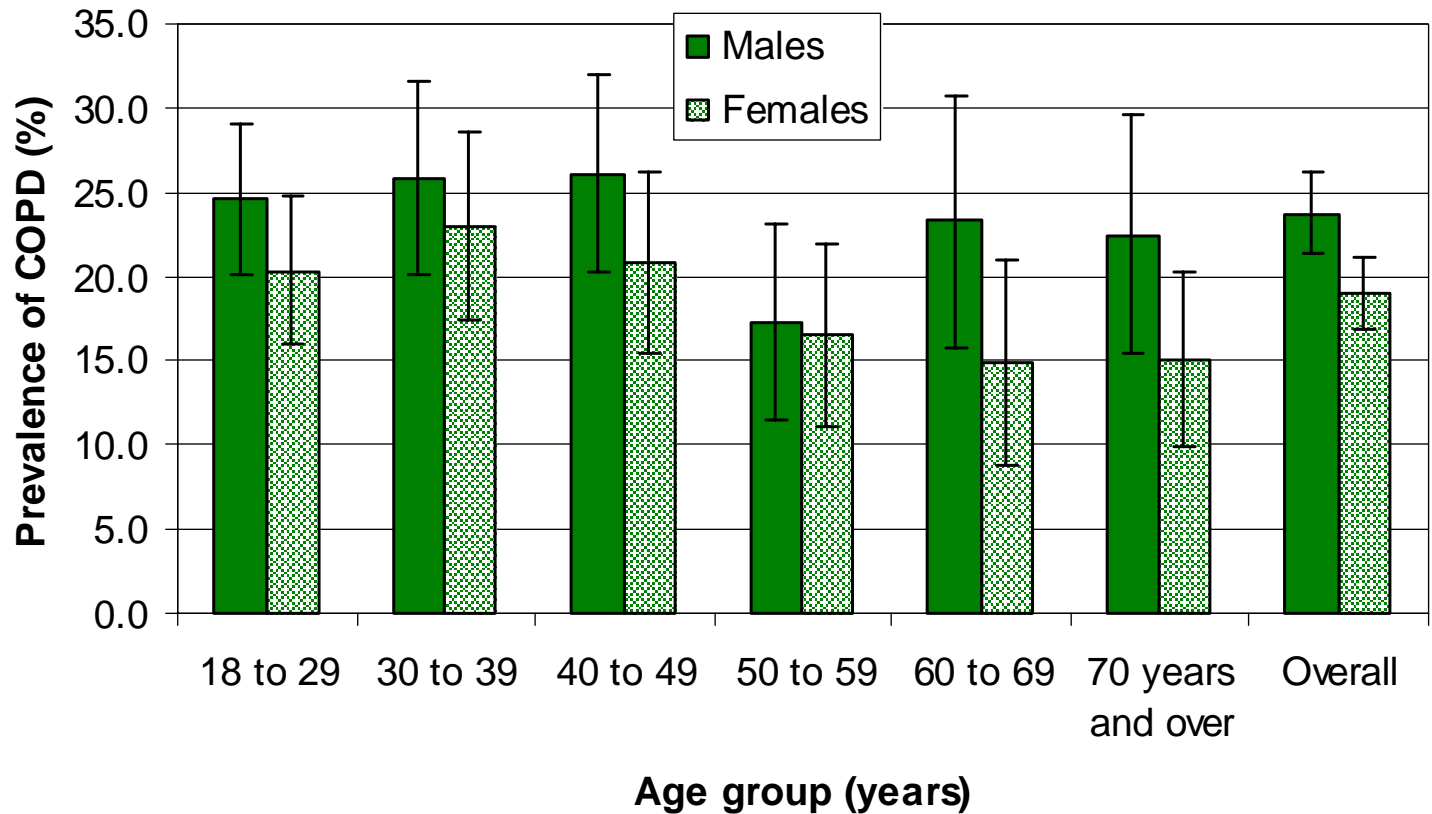
## Demographic and risk factor profile of people with current asthma

- Statistically significantly *higher* prevalence of asthma among
  - ◆ females,
  - ◆ retired, home duties or student,
  - ◆ low educational level,
  - ◆ low income groups,
  - ◆ born in Australia or the United Kingdom or Ireland,
  - ◆ ex-smokers,
  - ◆ low alcohol risk drinkers,
  - ◆ high waist-hip ratio,
  - ◆ Allergies,
  - ◆ Insufficient physical activity.

## Asthma - health service use

- People with asthma were statistically significantly more likely to have used health services in the past 12 months
  - ◆ general practitioner,
  - ◆ hospital accident and emergency,
  - ◆ hospital clinic,
  - ◆ eye specialist or ophthalmologist,
  - ◆ podiatrist.

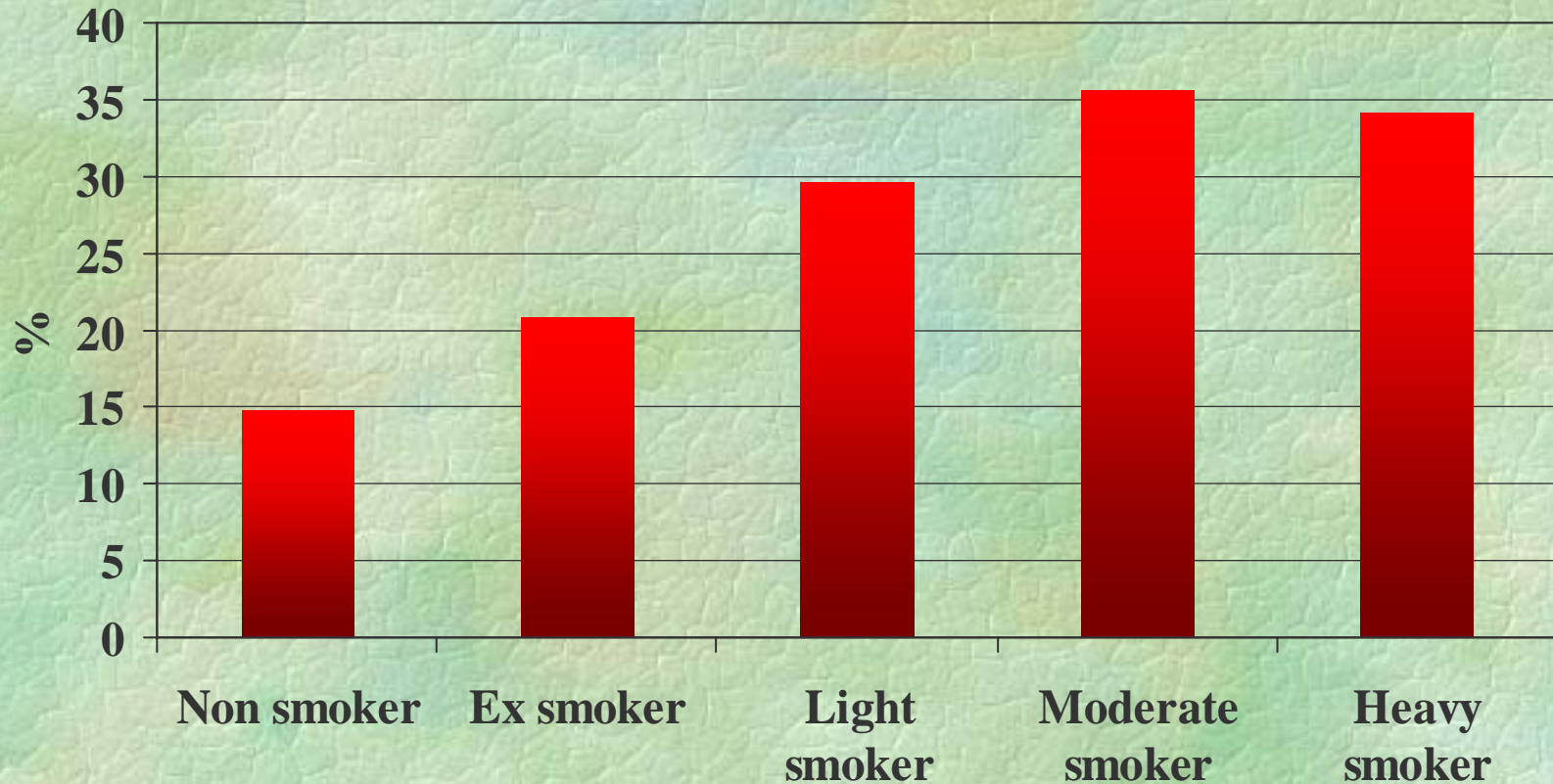
## Prevalence of COPD by sex and age group



## Demographic and risk factor profile of people with COPD

- Statistically significantly *higher* prevalence of COPD was seen among
  - ◆ males,
  - ◆ Western suburbs of Adelaide,
  - ◆ unemployed
  - ◆ education level of trade, apprenticeship, certificate or diploma,
  - ◆ intermediate to very high alcohol risk drinkers,
  - ◆ ex-smokers and current smokers.

## Prevalence of COPD by smoking status



## Demographic and risk factor profile of people with COPD

- Statistically significantly *lower* prevalence of COPD was seen among
  - ◆ age group 50-59 years,
  - ◆ retired or undertaking home duties,
  - ◆ overweight or obese,
  - ◆ high waist-hip ratio,
  - ◆ high blood pressure,
  - ◆ an allergic reaction to alternaria,
  - ◆ taking any Ventolin or respiratory medication.



## COPD - health service use

- People with COPD were statistically significantly more likely to have used health services in the past 12 months
  - ◆ hospital accident and emergency,
  - ◆ eye specialist or ophthalmologist,
  - ◆ podiatrist.

# Undiagnosed asthma

	<b>% of Total</b>	<b>% of current asthma</b>	<b>Ratio</b>
<b>Diagnosed</b>	9.3	80.9	4.2
<b>Undiagnosed</b>	2.2	19.1	1.0
<b>No asthma</b>	88.4		
<b>Total</b>	100.0	100.0	

## Demographic and risk factor profile of people with *undiagnosed* asthma

- People with previously undiagnosed asthma were statistically significantly more likely to:
  - ◆ Be aged over 50 years,
  - ◆ Be born in the United Kingdom, Ireland, Europe or the USSR and the Baltic States,
  - ◆ Be widowed,
  - ◆ Be retired or home duties,
  - ◆ Have high blood pressure.

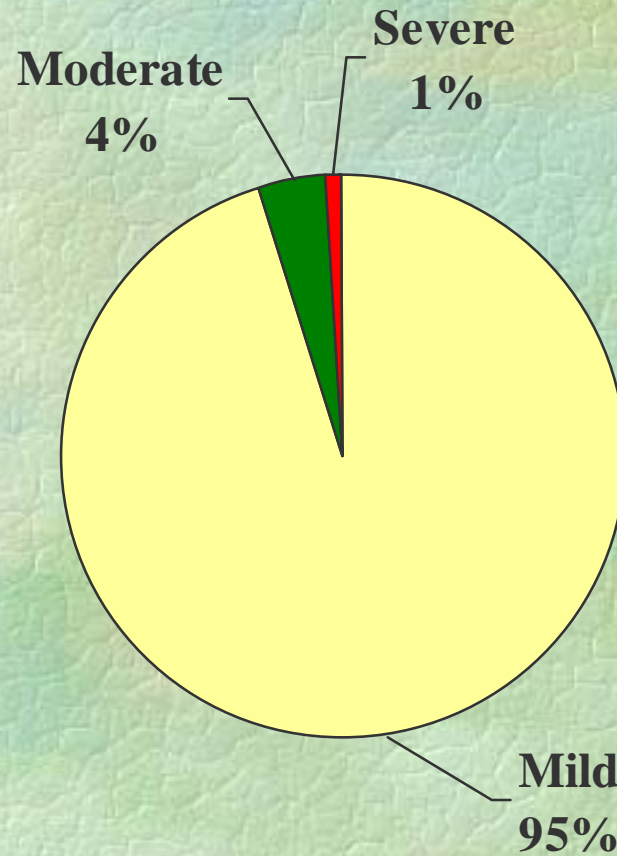
## Demographic and risk factor profile of people with *undiagnosed* asthma

- People with previously undiagnosed asthma were statistically significantly less likely to:
  - ◆ Have an annual income between \$40,000 and \$60,000,
  - ◆ Be never married,
  - ◆ Have an allergy to rye grass, house dust mites or alternaria,
  - ◆ Have taken anti-histamines, Ventolin or other respiratory medication,
  - ◆ Have used general practitioners, and hospital accident and emergency departments.

# Undiagnosed COPD

	<b>% of Total</b>	<b>% of current COPD</b>	<b>Ratio</b>
<b>Diagnosed</b>	1.6	7.2	1
<b>Undiagnosed</b>	19.7	92.8	13
<b>No COPD</b>	78.6		
<b>Total</b>	100.0	100.0	

## Distribution of *undiagnosed* COPD by severity



## Demographic and risk factor profile of people with *undiagnosed* COPD

- People with previously undiagnosed COPD were statistically significantly more likely to be:
  - ◆ younger,
  - ◆ living in the western suburbs,
  - ◆ an education level of trade, apprenticeship, certificate or diploma,
  - ◆ overweight.
  
- People with previously undiagnosed COPD were statistically significantly less likely to:
  - ◆ be home duties, retired, student, or 'other',
  - ◆ be taking Ventolin, or any other respiratory medication.

# Conclusions

- Early detection:
  - ◆ Of the North West Adelaide adult population, 19.1% have undiagnosed asthma, and 19.7% have undiagnosed COPD.
- Anti-smoking and quit campaigns to reduce the prevalence of smoking.
- A large proportion of people with COPD have mild COPD. Programs need to be developed to prevent these people progressing along the continuum.



# Contact details

- North West Adelaide Health Study website:  
<http://www.nwadelaidehealthstudy.org>
- Centre for Population Studies in Epidemiology:  
<http://www.health.sa.gov.au/pehs/cpse.html>