

Guidelines for the assessment of absolute cardiovascular disease risk

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GP

Board Member, ACT Heart Foundation



Objectives for the day

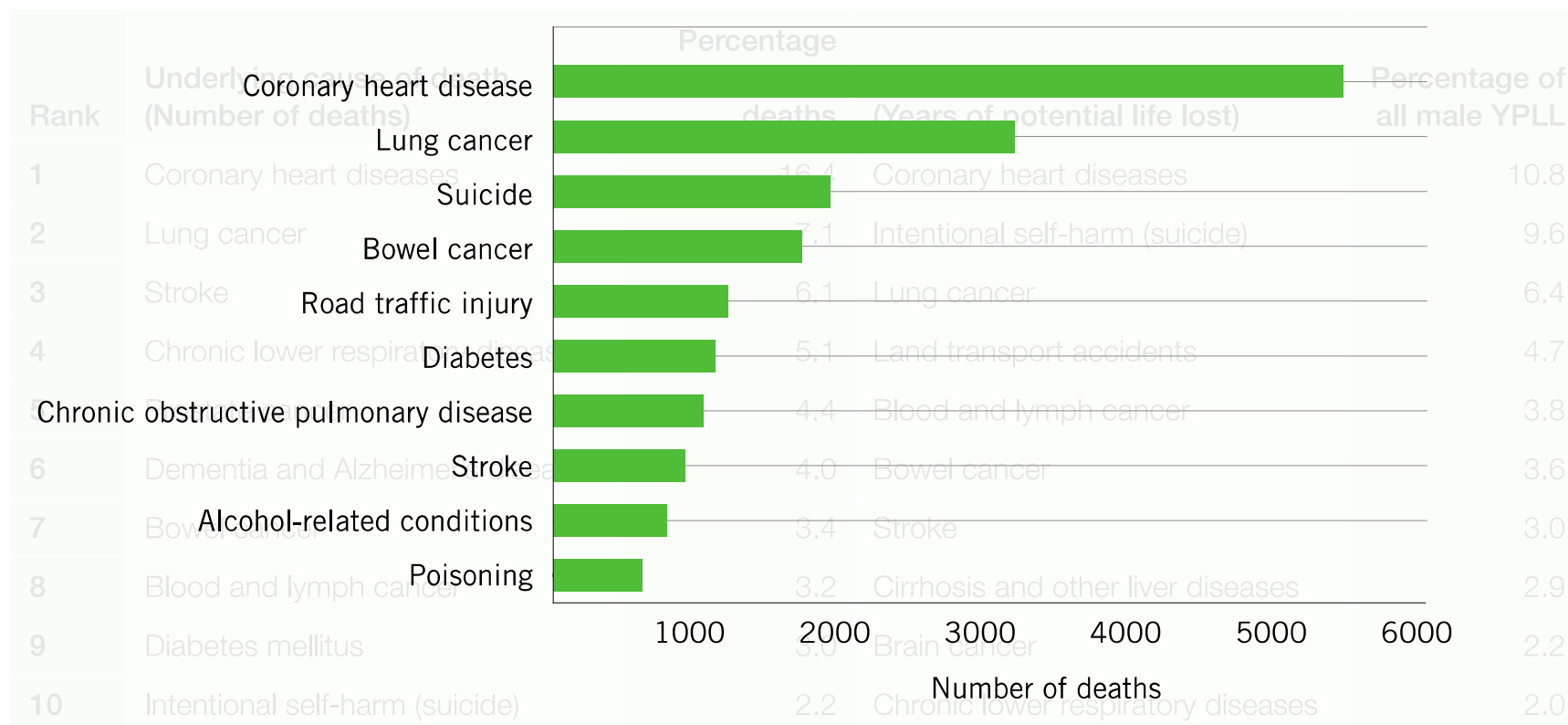
- Define the role of healthcare professionals in promoting Men's health.
- Develop greater awareness of a range of Men's health issues and improve knowledge of their management.
- Identify community services with the ACT that are available to enhance and promote Men's health and wellbeing from a biological, social and psychological perspective.
- Network with a range of different healthcare professionals to establish and improve multidisciplinary team working.

The burden of CVD

- CVD is Australia's number one killer for both men and women.
- CVD is responsible for 1 in 3 deaths in Australia every year.
- Approximately 7% of the Australian population have a disability associated with CVD.
- 1 in 4 Australians have 3 or more risk factors for CVD.
- CVD is the most expensive disease group in direct healthcare expenditure – 11% of spending.
- CVD is largely preventable.

CVD and Men's Health

Figure 1.1: Ten leading causes of avoidable mortality for Victorian for males (2002–06)⁸ and potential life-years lost⁶



Source: Men's Health and Wellbeing Strategy 2010-2014. DH Victoria.

Clinical example

- Consider a man aged 47, with a systolic blood pressure of 155. His cholesterol is 6.7 and HDL is 1.0.
 - What advice do you give and why?

Does your advice change if he is a smoker ?

Does your advice change if he has a raised fasting glucose of 7.2 ?

What about if he was South Asian origin?

What if he has a family history of premature CHD?

The concept of absolute risk

- Traditionally, risk factors e.g. blood pressure and cholesterol, have been treated individually.
- Guidelines are written accordingly.

But...

- Hypertension and hypercholesterolaemia are 'arbitrary' terms as risk continues to reduce at:
 - BP down to 110/70 mmHg and lower
 - cholesterol down to 4.0 mmol/L and lower

‘Risk’ versus ‘risk factors’

- Absolute risk is underpinned by the concept of ‘**clusters**’ of risk factors that interact cumulatively and synergistically.
- Moderate reductions in several risk factors may be more effective than a major reduction in a single risk factor to reduce a CVD event.
- Treatments based on single risk factors may result in either ‘over treatment’ or ‘under treatment’, as assessed by the potential to reduce CVD events.

Why do we treat risk?

- We treat risk to prevent a CVD event, such as heart attack or stroke.
- Our ability to do this is dependent on being able to predict ‘who’ is more likely to have an event (and so who will get the most benefit from treatment).
 - Single risk factors alone are a poor predictor of CVD events.
 - ‘Absolute risk’, which takes into account clusters of risk factors and their interactions, has better predictive ability for CVD events.

Treatment decisions based on absolute risk assessment are more likely to direct treatment to the people who can most benefit, and may prevent a CVD event.

Definition of absolute risk

Absolute risk: The probability that a patient will have a cardiovascular event in a defined period – i.e. 5 or 10 years.

- Absolute risk can vary more than 20 times in patients with the same BP or cholesterol, based on other predictors of risk, such as:
 - age and sex
 - past history of CVD
 - other modifiable lifestyle risk factors.



The guideline

Development background

- The guidelines were developed by the National Vascular Disease Prevention Alliance (NVDPA):



- Development included a systematic review (by Monash Institute for Health Services Research) and consensus process (key experts).
- Endorsed by **National Health and Medical Research Council.**
- Guidelines and resources launched 11 March 2009.

Implications for practice

- These are the first absolute risk guidelines adapted to Australian practice.
- They provide guidance for clinicians towards a more effective preventive approach (directing treatment to people who are most at risk).
- We are moving towards a **single preventive approach** to CVD in Australia.
 - The guidelines change the ‘prevention’ message by moving away from single risk factor assessment to an overall risk assessment.
 - Prevention strategies can then be based on a more informed indication of the patients risk level.

Guidelines key recommendation

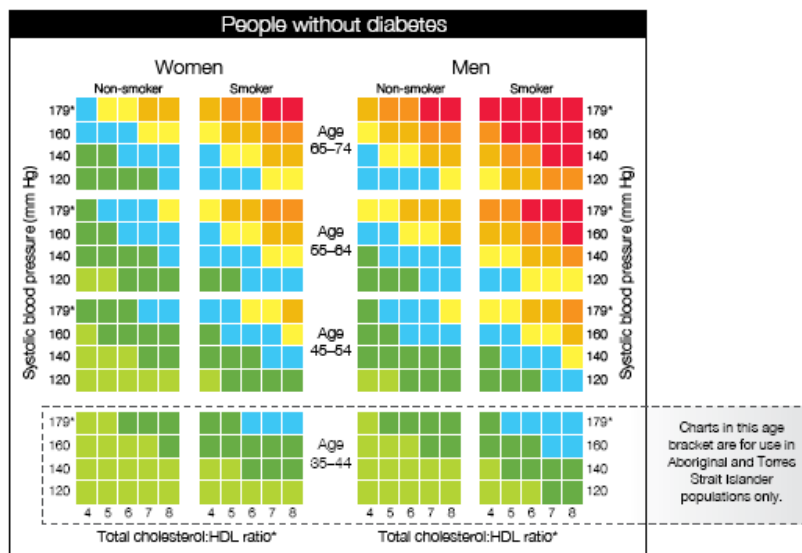
Absolute cardiovascular risk assessment, using the Framingham Risk Equation to predict risk of a cardiovascular event over the next 5 years, should be performed for **all adults aged 45–74 years, without existing CVD or already known to be at increased risk of CVD***. Commence assessment of Aboriginal and Torres Strait Islander adults at 35 years.

People already known to be at increased risk:

- diabetes and age >60 years
- diabetes with microalbuminuria
- moderate or severe chronic kidney disease
- diagnosis of familial hypercholesterolaemia
- systolic BP > or equal to 180 mmHg or
- diastolic BP > or equal to 110 mmHg
- serum total cholesterol >7.5 mmol/L.

Risk charts

Australian cardiovascular risk charts



* In accordance with Australian guidelines, patients with systolic blood pressure ≥ 180 mm Hg, or a total cholesterol of > 7.5 mmol/L, should be considered at increased absolute risk of CVD.

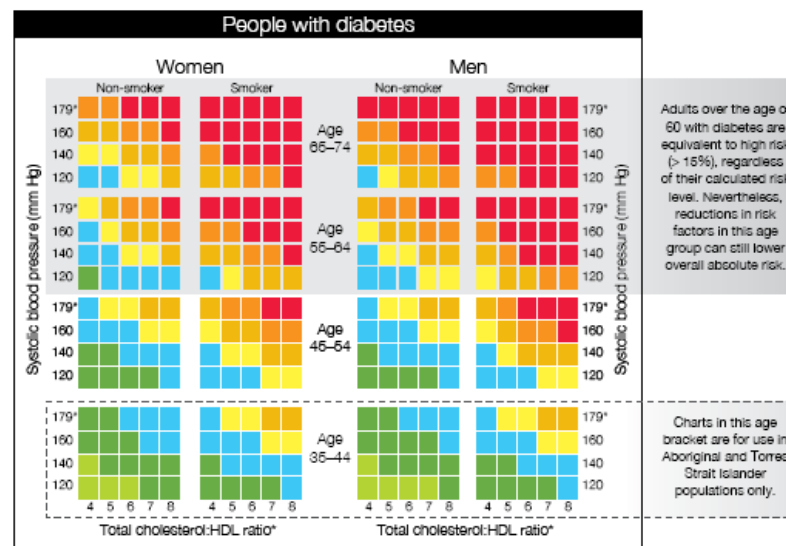
Risk level for 5-year cardiovascular (CVD) risk

High risk	Moderate risk	Low risk
<div style="display: flex; flex-direction: column; align-items: center;"> <div style="width: 10px; height: 10px; background-color: red; margin-bottom: 2px;"></div> <div style="width: 10px; height: 10px; background-color: orange; margin-bottom: 2px;"></div> <div style="width: 10px; height: 10px; background-color: yellow; margin-bottom: 2px;"></div> <div style="width: 10px; height: 10px; background-color: lightgreen; margin-bottom: 2px;"></div> </div>	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="width: 10px; height: 10px; background-color: lightblue; margin-bottom: 2px;"></div> </div>	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="width: 10px; height: 10px; background-color: green; margin-bottom: 2px;"></div> <div style="width: 10px; height: 10px; background-color: lightgreen; margin-bottom: 2px;"></div> </div>
<p>≥ 30%</p> <p>25-29%</p> <p>20-24%</p> <p>16-19%</p>	<p>10-15%</p>	<p>5-9%</p> <p>< 5%</p>

How to use the risk charts

1. Identify the chart relating to the person's sex, diabetes status, smoking history and age. The charts should be used for all adults aged 45-74 years (and all Aboriginal and Torres Strait Islander adults aged 35 years or older) without known history of CVD or already known to be at high risk.
2. Within the chart, choose the cell nearest to the person's age, systolic blood pressure (SBP) and total cholesterol

- (TC):HDL ratio. For example, the lower left cell contains all non-smokers without diabetes who are 35-44 years and have a TC:HDL ratio of less than 4.5 and a SBP of less than 130 mm Hg.
3. The colour of the cell that the person falls into provides their 5-year absolute cardiovascular risk level (see legend above for risk category). People who fall exactly on a threshold between cells are placed in the cell indicating higher risk.



* In accordance with Australian guidelines, patients with systolic blood pressure ≥ 180 mm Hg, or a total cholesterol of > 7.5 mmol/L, should be considered at increased absolute risk of CVD.

Risk level for 5-year cardiovascular (CVD) risk

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Notes: The risk charts include values for SBP alone, as this is the most informative of conventionally measured blood pressure parameters for cardiovascular risk. For certain groups CVD risk may be underestimated using these charts; please see page 3 of Absolute cardiovascular disease risk assessment - quick reference guide for health professionals for recommendations.

CVD refers collectively to coronary heart disease (CHD), stroke and other vascular disease including peripheral arterial disease and renovascular disease.

Charts are based on the NZDPA's Guidelines for the assessment of absolute cardiovascular disease risk and adapted with permission from New Zealand Guidelines Group. New Zealand Cardiovascular Guidelines Handbook: A Summary Resource for Primary Care Practitioners. Second edition. Wellington, NZ: 2009. www.nzgg.org.nz

Web-based calculator

www.cvdcheck.org.au

Australian Absolute Cardiovascular Disease Risk Calculator

Enter Patient Information Below

Sex: ☐ Female ☐ Male


Age: Years (35-74)

Systolic Blood Pressure: mmHg (75-250)




Smoking Status: ☐ Yes ☐ No smoker is defined as currently smoking or quit within last year



Total Cholesterol: mg/dl lub mmol/l

HDL Cholesterol: mg/dl lub mmol/l (jednostka j.w.)

Diabetes: ☐ Yes ☐ No 

ECG LVH: ☐ Yes ☐ No ☐ Not Known

 **COMPARE**  **RESET**  **GO**

 Adjust your risk factors and compare  Calculate your 5 year risk


Risk Score: 5 year Probability of CVD

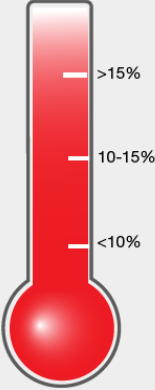
Your heart and stroke risk is

15%

The target risk level for a person of your age is ..

This puts you at **high risk** of cardiovascular disease (CVD).

Please speak to your Doctor for further advise.
[View Guidelines and Resources](#) 



An initiative of the National Vascular Disease Prevention Alliance

Tools and resources

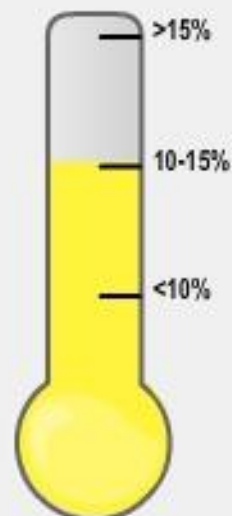
- Online absolute risk calculator
 - Simple calculator that can be accessed at www.cvdcheck.org.au
- Consumer booklet – 8 pages
 - Web-based access only
- Consumer summary sheet – 1 page
 - Web-based access only

What don't the guidelines include?

- These are guidelines for the **assessment** of absolute risk.
- Once risk is calculated, the management of individual risk factors (e.g. blood pressure and lipids) is currently contained within separate guidelines.
- The NVDPA is currently developing a single preventive management guideline to integrate recommendations on both assessment and management (to be published in 2011).

Clinical example

Result 2



Your heart and stroke risk score is

15%

This means you are at moderate (medium) risk of getting cardiovascular disease in the next 5 years.

[Click here](#) if you would like to have a look at the information on this website that explains what your risk score means.

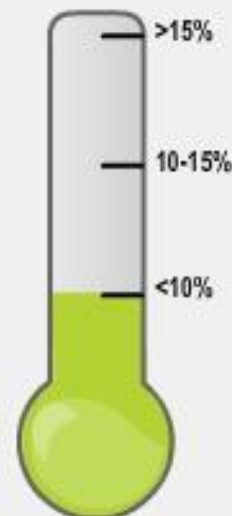
The next step is to talk to your doctor about what steps you can take to lower your chance of getting cardiovascular disease.

Please note: the absolute risk calculator score is only a guide to your heart and stroke risk score. Print out this page and take it to your doctor for further information on your personal risk.

[View guidelines and resources](#)

RESTART

Result 1



Your heart and stroke risk score is

8%

This means you are at low risk of getting cardiovascular disease in the next 5 years.

[Click here](#) if you would like to have a look at the information on this website that explains what your risk score means.

The next step is to talk to your doctor about what steps you can take to make sure you stay at low risk for getting cardiovascular disease.

Please note: the absolute risk calculator score is only a guide to your heart and stroke risk score. Print out this page and take it to your doctor for further information on your personal risk.

[View guidelines and resources](#)

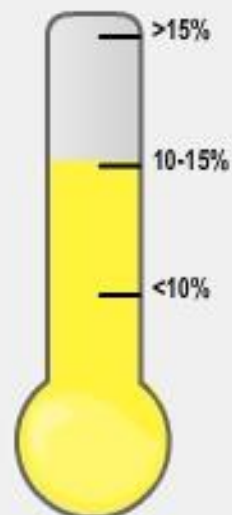
What about if he was South Asian origin

What if he had a family history of premature CHD?

Smoker

Clinical example

Result 2



Your heart and stroke risk score is

13%

This means you are at moderate (medium) risk of getting cardiovascular disease in the next 5 years.

[Click here](#) if you would like to have a look at the information on this website that explains what your risk score means.

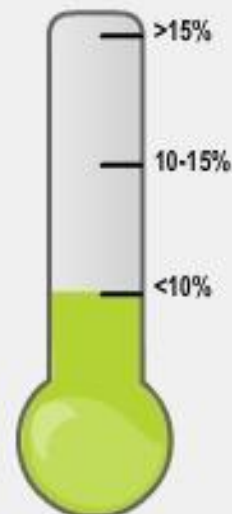
The next step is to talk to your doctor about what steps you can take to lower your chance of getting cardiovascular disease.

Please note: the absolute risk calculator score is only a guide to your heart and stroke risk score. Print out this page and take it to your doctor for further information on your personal risk.

[View guidelines and resources](#)

RESTART

Result 1



Your heart and stroke risk score is

8%

This means you are at low risk of getting cardiovascular disease in the next 5 years.

[Click here](#) if you would like to have a look at the information on this website that explains what your risk score means.

The next step is to talk to your doctor about what steps you can take to make sure you stay at low risk for getting cardiovascular disease.

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[View guidelines and resources](#)

What about if he was South Asian origin

What if he had a family history of premature CHD?

Diabetes

Smoking + Diabetes

Sex

☒ Male ☐ Female


Age

years

Systolic blood pressure

mmHg

Smoking status

☒ Yes ☐ No 


Total cholesterol

mmol/L

HDL cholesterol

mmol/L

Diabetes

☒ Yes ☐ No 

ECG LVH

☐ Yes ☒ No ☐ Unknown

COMPARE

RESET

>15%

10-15%

<10%

Your heart and stroke risk score is

22%

This means you are at high risk of getting cardiovascular disease in the next 5 years.

[Click here](#) if you would like to have a look at the information on this website that explains what your risk score means.

The next step is to talk to your doctor about what steps you can take to lower your chance of getting cardiovascular disease.

Please note: the absolute risk calculator score is only a guide to your heart and stroke risk score. Print out this page and take it to your doctor for further information on your personal risk.

[View guidelines and resources](#)

Summary

- Think ‘risk’ rather than ‘risk factor’.
 - Single risk factors provide a poor estimate of CVD risk.
 - The ‘absolute risk’ method has better predictive ability.
- The first Australian guidelines for assessing absolute risk are now available with accompanying resources:
 - full guidelines
 - quick reference guide with risk charts
 - web calculator www.cvdcheck.org.au
 - consumer booklet and summary sheet
 - technical report.
- A management guideline (a ‘single preventive guide’) is in development.

For more information and questions

- Contact:
 - Stacy Leavens, Heart Care Coordinator, Heart Foundation +61 (0)2 6269 2641
 - Practice Support Team (Qi Data) – Capital Health Network
 - (Paresh Dawda – dr.paresh.dawda@gmail.com)
- See Heart Foundation website, General Practice page
www.heartfoundation.org.au
- To order copies of the quick reference guide, or for more information, contact our Health Information Service:
1300 36 27 87 or
health@heartfoundation.org.au