Absolute Cardiovascular Disease Risk Assessment

Disclaimer

Key links

CVD Online Risk Calculator

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Background – About Absolute Cardiovascular Disease Risk Assessment

- CVD refers collectively to coronary heart disease, stroke, and other vascular diseases, including peripheral arterial disease and renovascular disease.
- Absolute risk is the numerical probability of an event occurring within a specified period, expressed as a percentage using the Framingham Risk Equation. For example, if your patient’s risk is 15%, there is a 15% probability that they will experience a cardiovascular event within 5 years.
- Risk assessment requires consideration of socioeconomic deprivation as an independent risk factor for CVD, as the calculated absolute CVD risk may be underestimated in this group.

Practice Point

Consider other factors

- Use clinical judgement when considering overall CVD risk.
- Consider risk factors not included in the Framingham Risk equation e.g:
  - family history
  - obesity
  - chronic kidney disease
  - socioeconomic status
  - psychosocial and emotional well-being.

Assessment

Who to assess for absolute cardiovascular risk

1. Identify target group for assessment:
   - All adults aged 45 to 74 years without existing CVD or not already known to be at increased risk of CVD.
   - Aboriginal and Torres Strait Islander adults aged ≥ 35 years.

2. Use absolute CVD risk assessment with caution in specific groups, including:
   - adults with diabetes aged 45 to 60 years. Risk may be underestimated in this group – use clinical judgement when assessing overall CVD risk.
   - adults who are overweight or obese. Predictive value has not been specifically assessed in this population.
   - adults with atrial fibrillation (AF) – are already at increased risk of CVD. Arrange thorough investigation of other CVD risk factors in this group.

3. Consider assessing for depression in patients with increased risk factors.

4. Adults with these conditions are already considered to be at high risk of CVD and do not require absolute CVD risk assessment using the Framingham Risk Equation. Treat preventatively in accordance with the high CVD risk category.
   - Diabetes and aged > 60 years

Adults known to be at increased absolute risk of CVD
• Diabetes with microalbuminuria (> 20 microgram/min or urinary albumin-to-creatinine ratio > 2.5 mg/mmol for males, > 3.5 mg/mmol for females)
• Moderate or severe chronic kidney disease (persistent proteinuria or estimated glomerular filtration rate < 45 mL/min/1.73 m²)
• A previous diagnosis of familial hypercholesterolaemia
• Systolic blood pressure ≥ 180 mmHg or diastolic blood pressure ≥ 110 mmHg
• Serum total cholesterol > 7.5 mmol/L

Risk category
• High risk (> 15%) – start blood pressure lowering and lipid lowering medication immediately.
• Moderate risk (10 to 15%) – if 3 to 6 months of lifestyle intervention does not reduce risk, consider blood pressure lowering and/or lipid lowering medication. Consider medication earlier if blood pressure is persistently ≥ 160/100 mmHg, family history of premature CVD, or high-risk cultural populations (as above) that underestimate risk.
• Low risk (< 10%) – medications are not routinely recommended unless blood pressure is persistently ≥ 160/100 mmHg.

What to include in CVD risk assessment

1. Cardiovascular risk assessment includes:
   • **modifiable risk factors**
     o Smoking status
     o Blood pressure
     o Serum lipids
     o Waist circumference and body mass index
     o Nutrition
     o Physical activity level
     o Alcohol intake

   • **non-modifiable risk factors**
     o Age and sex
     o Family history of premature CVD
       ▪ First degree relative aged < 55 years, with a history of cardiovascular disease
     o Social history, including cultural identity, ethnicity, socioeconomic status, and mental health

   • **related conditions.**
     o Diabetes
     o Kidney impairment (microalbumin with or without urinary protein, reducing eGFR)
     o Familial hypercholesterolaemia
     o Evidence of atrial fibrillation on history, examination, electrocardiogram

2. The Absolute Risk Calculator uses **smoking status**, blood pressure, serum lipids, age and sex, known diabetes status, and if available, left ventricular hypertrophy (determined by ECG). See also Enhanced Guidelines on how to use this calculator effectively.

**Smoking status**
Smoker is defined as currently smoking or quit within the last year.
Consider using the Compare function to demonstrate to the patient how change e.g., becoming a non-smoker, can reduce risk. This can help with motivation to change.

3. Another version of the **Absolute Cardiovascular Risk Calculator** can now be accessed directly from Medical Director and Best Practice

**Medical Director risk assessment calculator**
- In the latest updates for Medical Director (versions later than 3.15.3a) the absolute cardiovascular disease (CVD) risk calculator has been incorporated in the Tool Box on the CV Risk tab.
- To access, click the Absolute CVD Risk Calculator button (not Relative CVD Risk Calculator).

**Best Practice risk assessment calculator**
- To access, open the patient record, then click on Clinical, then Cardiovascular Risk.

4. Other cardiology investigations such as CT coronary angiogram and CT coronary calcium scoring are available for risk stratification. See cardiology investigations for indications, pros and cons of these tests.

### Management

1. Consider use of MBS items (699 and 177) for conducting a heart health assessment and implementing a relevant management plan. See MBS online.

2. Classify absolute CVD risk level using CVD risk charts or **Absolute CVD Risk Calculator**:

<table>
<thead>
<tr>
<th>Risk Level</th>
<th>% risk of CVD within the next 5 years</th>
<th>Frequency of Review</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>&gt; 15%</td>
<td>More frequent review according to clinical context.</td>
</tr>
<tr>
<td>Moderate</td>
<td>10 to 15%</td>
<td>Monitor and review in 6 to 12 months.</td>
</tr>
<tr>
<td>Low</td>
<td>&lt; 10%</td>
<td>Monitor and review in in 2 years.</td>
</tr>
</tbody>
</table>

3. Provide appropriate lifestyle advice regarding **diet** and **physical activity** and encourage weight loss to achieve targets for blood pressure, HbA1c and lipid lowering.

**Diet**

**Limit:**
- foods containing saturated and trans fats.
- salt to < 2300 mg per day.
- alcohol to < 2 standard drinks per day and encourage 2 alcohol-free days per week.

**Physical activity**

At least 30 minutes moderate intensity physical activity on most days of the week, preferably every day.
4. Encourage and support smoking cessation advice, and consider pharmacotherapy.

5. Manage blood pressure and lipids according to **CV risk category**.

6. Aim to achieve these **blood pressure** and **lipid targets**:
   - Blood pressure $\leq 140/90$ mmHg in general.
   - Blood pressure $\leq 130/80$ mmHg in all people with diabetes or if micro or macro albuminuria.

**Lipid targets:**

<table>
<thead>
<tr>
<th>Lipid targets</th>
<th>Optimal lipid values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total cholesterol (TC)</td>
<td>$&lt; 4.0$ mmol/L</td>
</tr>
<tr>
<td>LDL Cholesterol (LDL)</td>
<td>$&lt; 2.0$ mmol/L</td>
</tr>
<tr>
<td>HDL Cholesterol (HDL)</td>
<td>$&gt; 1.0$ mmol/L</td>
</tr>
<tr>
<td>Triglycerides</td>
<td>$&lt; 2.0$ mmol/L</td>
</tr>
</tbody>
</table>

7. Review response to management every 6 to 12 weeks until sufficient improvement. Adjust medications as required.

8. Review absolute risk:
   - according to clinical context for high risk
   - every 6 to 12 months for moderate risk
   - every 2 years for low risk


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**Information**

**For health professionals**

**Further information**
- CVD Check Australia – [Australian Absolute Cardiovascular Disease Risk Calculator](#)
- National Heart Foundation – [Absolute Risk Resources for Health Professionals](#)
- RACGP – [General Practice Management of Type 2 Diabetes 2016-2018: Managing Cardiovascular Risk](#)

**For patients**
- Heart Foundation – [Know your risks](#) [available in 11 languages]
- NHMRC – [Australian Dietary Guidelines](#)
References


Disclaimer

Last updated: August 2020