CHD Prevention and Risk Asssessment in Primary Care:
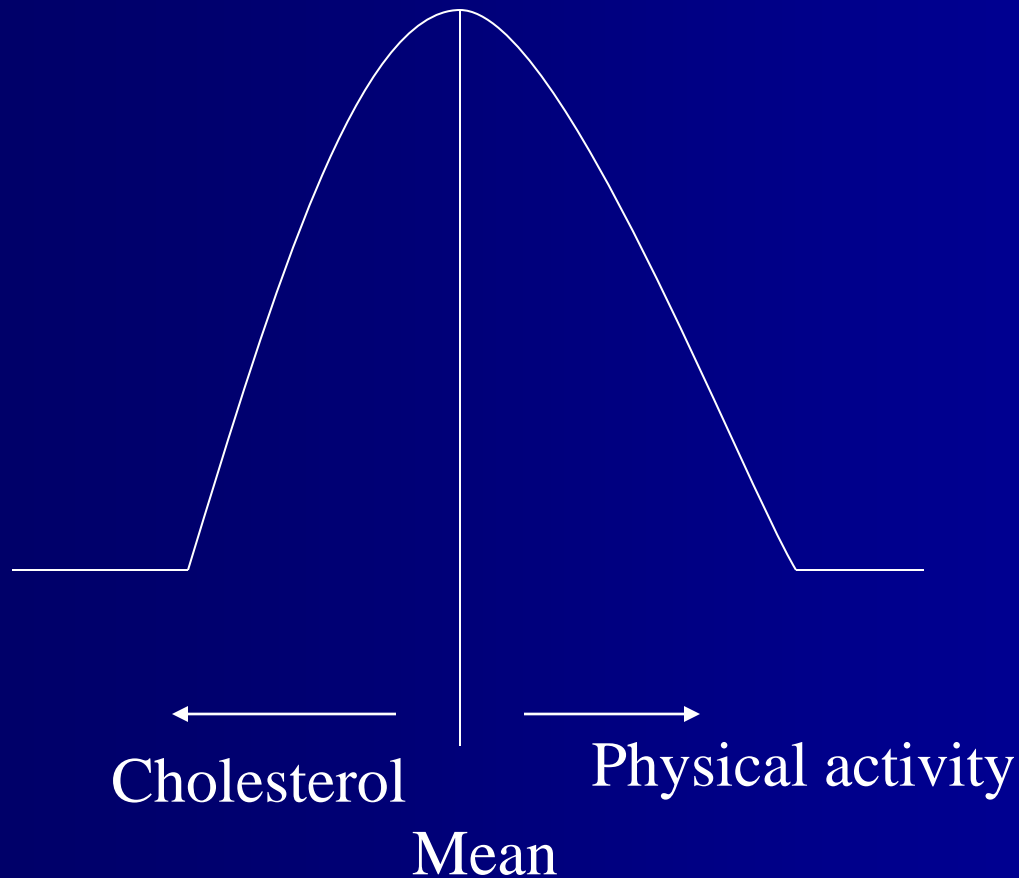
Dr Paul D MacIntyre

Consultant Cardiologist RHH
Chairman of Tasmanian Cardiac Network

Prevention of CHD

1. Secondary prevention
   - Step change in condition
   - Chronic stable disease
2. High risk primary prevention
3. Low risk primary prevention

Primary Prevention Population Risk

Primary Prevention Population risk

- Public Health policy
- Partnership working
    - Central government
    - Local authorities
    - Primary care
    - Voluntary sector
- Create environmental change
    - Smoking ban in public places
    - Healthy eating
    - Active commuting
- Social Determinants of Health
    - Employment
    - Education
    - Welfare

Have a Heart Paisley 1999-2006

- CHD is a national priority in Scotland
- CHD prevention programme
- "National CHD prevention demonstration project
    - Have A Heart Paisley
    - Scotland in microcosm
    - Robust multi sector bid
    - North Karelia Model
    - Population risk
    - Targeting low SES groups

Julian Tudor-Hart GP

Anticpatory Care

- Glyncorrwg in Wales
- Case finding hypertension
- Prof Graham Watt
  - Anticipatory care
- Inverse care law
- Lifestyle interventions exacerbate health inequalities

High risk primary prevention

- ?Already have the disease
  - ≥ 20% 10yr risk of CVD on Framingham score
  - Non modifiable risk factors
  - Modifiable risk factors for CVD
  - Social determinants of Health
    - Health inequalities
    - ASSIGN risk calculator for Scotland
    - Prof Hugh Tunstal-Pedoe
    - Social Deprivation and Family History
    - Statin and aspirin prescription
    - Lifestyle modification

Keep Well programme from 2006 to 2012

- Aim to reduce health inequalities
- Health Checks
- Anticipatory care
- 40-65 years of age
- Multifaceted one stop approach
- Evaluation difficult
- Not designed for reaearch

Risk Assessment

Risk Calculators

Absolute Risk

ASSIGN

assign-score.com

SHHEC ASSIGN
Cardiovascular Risk Assessment Score for Men and Women Aged 30-74 Years

To obtain the score enter the following information on the person under assessment:

Age last birthday: enter whole number of years	[　　　]	Years
Sex: enter "M" or "F"	Male ▼	
SIMD score*: enter two decimals; if not known, enter "20"	20	
Family history: enter "Y" or "N"†	No ▼	
Diabetes: enter"Y" or "N"†	No ▼	
Current cigarette smoker: enter "Y" or "N"§	No ▼	
If Yes: enter number of cigarettes per day	[　　　]	
Systolic blood pressure (SBP): enter in mmHg	[　　　]	mmHg
Total cholesterol (mmol/l): enter mmol/l and two decimals	[　　　]	mmol/l
HDL cholesterol (mmol/l): enter mmol/l and two decimals	[　　　]	mmol/l

[Calculate the scores]

Further Information

If you have any questions or comments relating to this website please email us at
contact@assign-score.com

Notes:

* SIMD is the Scottish Index of Multiple Deprivation. It is calculated for residential areas, such as postcodes, and ranges from 0.54 to 87.6. By population fifths from 1 (least deprived) to 5 (most deprived) the categories are: 1= 0.54 to 7.63; 2=7.64 to 13.49; 3= 13.50 to 21.16; 4= 21.18 to 33.93, and 5 = 33.94 to 87.60

† Enter N if answer is not known

†' Family history' is coronary heart disease or stroke in a parent or sibling below age 60 years OR other strong evidence of family or ethnic susceptibility, such as several close relatives affected when young.

§ Enter Y if smoking, on average, one or more per day, else N.

If values are unknown for some variables, an approximate score may be derived from using the following age/sex specific average values found for those without pre-existing cardiovascular disease, with no missing values, in the Scottish Health Survey of 2003:

Age (yrs)	Male	Female
Serum total cholesterol		
30-39	5.50	5.11
40-49	5.77	5.64
50-59	6.02	6.29
60+	5.72	6.37

HDL- Cholesterol		
30-39	1.35	1.58
40-49	1.37	1.64
50-59	1.40	1.71

Predict

CVD Risk Assessment
for people with type 2 diabetes in New Zealand

Age: [ ]

Duration of Diabetes: [ ] years

Sex: ○ Male
○ Female

Smoker: [Never smoked ◌]

Systolic BP: [ ] mmHg

HbA1c [ ] ○ mmol/mol ○ %

Ethnicity: [European ◌]

Total Cholesterol: [ ] mmol/L

HDL: [ ] mmol/L

Albuminuria: ○ Normo
○ Micro
○ Macro

BP lowering medication: ○ Yes
○ No
○ Unknown

[Calculate] [Reset]

OUTPUT

0%   10% 15% 20%   30%   100%

5 year CVD Risk: [0] %

5 year MI Risk: [0] %

[Copy] [Print]

THE UNIVERSITY OF AUCKLAND
FACULTY OF MEDICAL AND HEALTH SCIENCES

New Zealand Society
NZSSD
for the Study of Diabetes

hrc Health Research Council of New Zealand
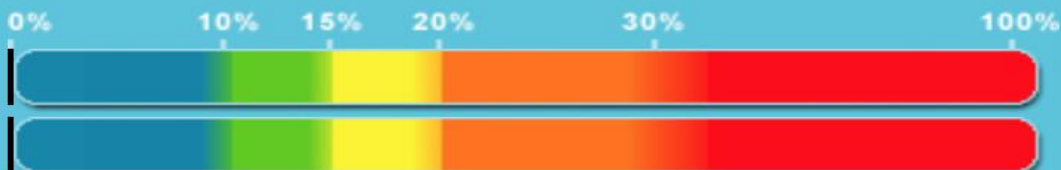
Australian CV Risk Calculator

Australian CVD Risk Calculator

Australian CVD Risk Calculator

What does your risk score mean?

If your risk score is **more than 15%**, you are thought to be at high risk of cardiovascular disease (CVD), that is heart, stroke or blood vessel disease, in the next five years. That means if everyone with a risk score of more than 15% was grouped together, about 1 in 7 would get CVD within the next five years.

If your risk score is **between 10–15%**, you are thought to be at moderate risk of CVD in the next five years.

If your risk score is **less than 10%**, you are thought to be at low risk of CVD in the next five years.

Whatever your risk score today, remember that it can change depending on what actions you take to lead a healthy life.

HIGH RISK
over 15%

MODERATE RISK
10-15%

LOW RISK
under 10%
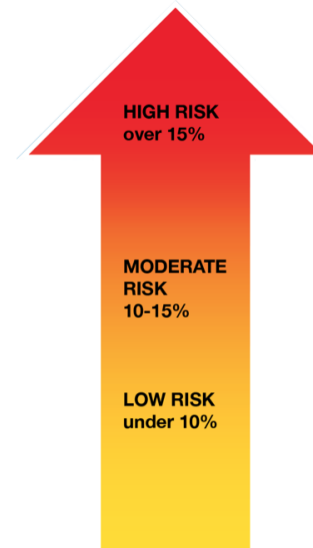
MESA addition of Ca Score
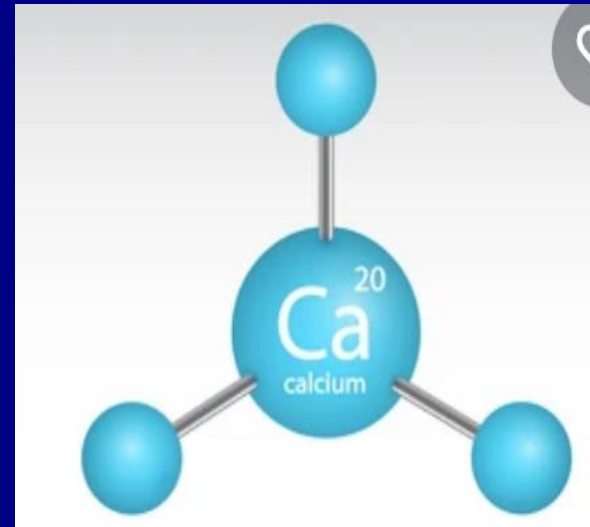
MESA 10-Year CHD Risk with Coronary Artery Calcification   [Back to CAC Tools]

1. Gender   Male ○   Female ○

2. Age (45-85 years)   [ ]   Years

3. Coronary Artery Calcification   [ ]   Agatston

4. Race/Ethnicity   **Choose One**

              Caucasian ○
              Chinese ○
              African American ○
              Hispanic ○

5. Diabetes   Yes ○   No ○
6. Currently Smoke   Yes ○   No ○
7. Family History of Heart Attack   Yes ○   No ○
(History in parents, siblings, or children)

8. Total Cholesterol   [ ]   mg/dL   or   [ ]   mmol/L

9. HDL Cholesterol   [ ]   mg/dL   or   [ ]   mmol/L

10. Systolic Blood Pressure   [ ]   mmHg   or   [ ]   kPa

11. Lipid Lowering Medication   Yes ○   No ○
12. Hypertension Medication   Yes ○   No ○

[Calculate 10-year CHD risk]

MESA Calculation

Agatston Calcium Score: 300

OPTIONAL (To obtain estimated Framingham 10-year CHD risk)

Age (over 45): 59

Gender: ○ Female ● Male

Total cholesterol (mg/dl): 250

HDL cholesterol (mg/dl): 70

Systolic BP (mmHg): 160

Current smoker: ○ No ● Yes

Use of meds for hypertension: ○ No ● Yes

Calculate

The estimated arterial age for a person with a CAC score of 300 is

80 years (95% CI 77 - 84 years).

The estimated Framingham 10-year Hard CHD Risk is **30 %** using observed age, and **30 %** using arterial age.

High risk primary prevention

- Case finding
- High risk registers
- Tiered approach
  - Structured
  - Opportunistic
  - outreach
- Social deprivation and indigenous
- Risk assessment
- Risk factor modification
- Medicalisation

Practice What You Preach