

NON-LABORATORY BASED RISK SCREENING

BMI-BASED RISK ASSESSMENT

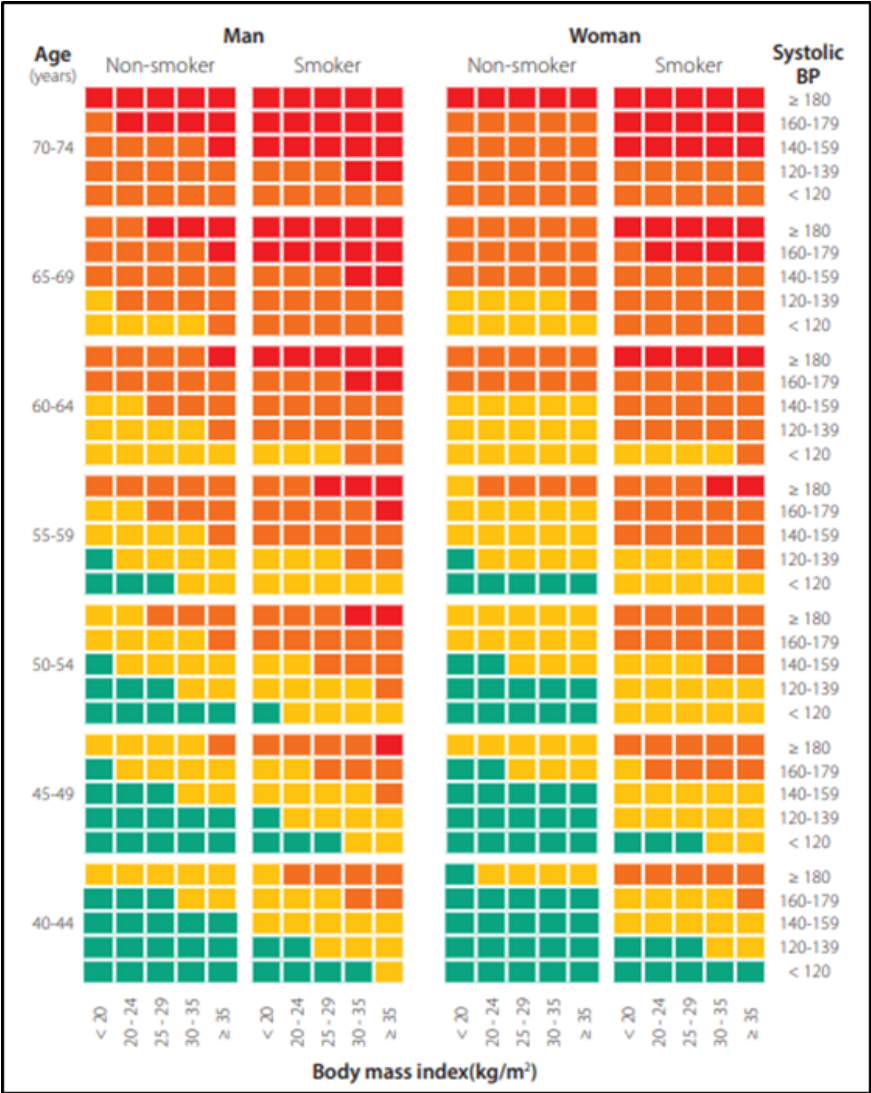
- » Measure body mass index (BMI): $BMI = \text{weight (kg)} / [\text{height (m)} \times \text{height (m)}]$
- » Measure blood pressure.
- » Calculate 10-year risk of a cardiovascular event using the BMI-based CVD risk tool below.

LoE: IIIb¹

- Use the patient's sex, age, BMI, systolic BP and smoking status to work out what colour block they fall into
- Explain to the patient what his/her risk of heart attack or stroke might be over the next 10 years

Colour code	CVD risk
	CVD risk < 5%: there is less than a 1 in 20 chance of a heart attack or stroke over the next 10 years
	CVD risk 5-10%: there is between 1 in 10 and 1 in 20 chance of a heart attack or stroke over the next 10 years
	CVD risk 10-20%: there is between 1 in 5 and 1 in 10 chance of a heart attack or stroke over the next 10 years
	CVD risk > 20%: there is more than a 1 in 5 chance of a heart attack or stroke over the next 10 years

- » Manage the risk as recommended in Section 4.1 Prevention of heart disease and atherosclerosis.



BMI-based risk assessment

Adopted with permission from the Knowledge Translation Unit and authors of the Adult Primary Care guideline (2023). This tool is based on the WHO cardiovascular disease non-laboratory-based Southern Sub-Saharan Africa. From: HEARTS technical package for cardiovascular disease management in primary healthcare risk based CVD management. World Health Organisation, Geneva, 2020.

LABORATORY BASED RISK SCREENING

FRAMINGHAM RISK SCORE (CHOLESTEROL-BASED)

- » To derive the absolute risk as a percentage of patients who will have a cardiovascular event (i.e. death, myocardial infarction or stroke) over 10 years, add the points for each risk category (Section A). The risk associated with the total points is then derived from Section B.
- » Calculation of CVD risk using the table:
 - A risk of MI > 20% in 10 years equates to ≥ 15 points for men, and ≥ 18 points for women. It is important to score each patient individually, as there are many combinations of risk factors that can add up to those total points.
 - For example:
 - A male patient > 60 yrs old with systolic BP > 140 mmHg on treatment would score:
 - 11 points for his sex and age
 - 4 points for his on-treatment BP
 - Total: 15 points

A male patient > 50 yrs old with systolic BP > 130 mmHg on treatment who is a smoker would score:

- 8 points for his sex and age
- 3 points for his on-treatment BP
- 4 points for his smoking status
- Total: 15 points

A female patient > 70 yrs old with systolic BP > 160 mmHg on treatment would score:

- 11 points for her sex and age
- 7 points for her on-treatment BP
- Total: 18 points

**Calculation of risk of developing cardiovascular events over 10 years
(in the absence of cardiovascular disease or genetic disorders such as familial
hypercholesterolaemia)**

SECTION A

Age (years)	MEN	WOMEN
30–34	0	0
35–39	2	2
40–44	5	4
45–49	6	5
50–54	8	7
55–59	10	8
60–64	11	9
65–69	12	10
70–74	14	11
75–79	15	12

Total cholesterol (mmol/L)	MEN	WOMEN
<4.1	0	0
4.1–5.19	1	1
5.2 – 6.19	2	3
6.2–7.2	3	4
>7.2	4	5

HDL cholesterol (mmol/L)	MEN	WOMEN
>1.5	–2	–2
1.3–1.49	–1	–1
1.2–1.29	0	0
0.9–1.19	1	1
<0.9	2	2

	MEN	WOMEN
Smoker	4	3
Diabetic*	3	4

*Type 2 diabetics > 40 years of age qualify for statin therapy irrespective of risk score.

	MEN		WOMEN	
Systolic BP (mmHg)	Untreated	Treated	Untreated	Treated
<120	–2	0	–3	–1
120–129	0	2	0	2
130–139	1	3	1	3
140–149	2	4	2	5
150–159	2	4	4	6
≥160	3	5	5	7

SECTION B			
Total points			
MEN	10-year risk %	WOMEN	10-year risk %
≤-3	<1	≤-2	<1
-2	1.1	-1	1.0
-1	1.4	0	1.2
0	1.6	1	1.5
1	1.9	2	1.7
2	2.3	3	2.0
3	2.8	4	2.4
4	3.3	5	2.8
5	3.9	6	3.3
6	4.7	7	3.9
7	5.6	8	4.5
8	6.7	9	5.3
9	7.9	10	6.3
10	9.4	11	7.3
11	11.2	12	8.6
12	13.2	13	10.0
13	15.6	14	11.7
14	18.4	15	13.7
15	21.6	16	15.9
16	25.3	17	18.5
17	29.4	18	21.5
≥18	>30	19	24.8

Framingham risk score assessment

¹ BMI-based CVD risk assessment: D'Agostino RB Sr, Vasan RS, Pencina MJ, Wolf PA, Cobain M, Massaro JM, Kannel WB. General cardiovascular risk profile for use in primary care: the Framingham Heart Study. *Circulation*. 2008 Feb 12;117(6):743-53. <https://www.ncbi.nlm.nih.gov/pubmed/18212285>
 Klug, E., Raal, F., Marais, A., Taskinen, M., Dalby, A., Schamroth, C., Rapeport, N., Jankelow, D., Blom, D., Catsicas, R., & Webb, D. (2015). South African Dyslipidaemia Guideline Consensus Statement. *South African Family Practice*, 57(2), 9. doi:<https://doi.org/10.4102/safp.v57i2.4261>