SOP

Cardiovascular Risk Assessment in Adults Using WHO Cardiovascular Disease Risk Charts

Department of Public Health

Faculty of Medicine

UWUSL

Standard Operating Procedure (SOP) for Cardiovascular Risk Assessment in Adults Using WHO Cardiovascular Disease Risk Charts

(1) Title
Assessment of Cardiovascular Risk in Adults using WHO Cardiovascular Disease Risk Charts

(2) Issued by
Department of Public Health, Faculty of Medicine, Uva Wellassa University of Sri Lanka

(3) Purpose
To establish a standardized procedure for assessing cardiovascular disease (CVD) risk among adults in order to identify individuals at high risk, provide preventive interventions and reduce morbidity and mortality associated with cardiovascular diseases

(4) Scope
This SOP applies to:

- Medical students during clinical and Public Health appointments
- Medical officers and healthcare staff in outpatient clinics and community settings
- Non-communicable disease (NCD) screening programs
- Primary healthcare institutions and field clinics

(5) Responsibilities
(5.1) Medical Students / Healthcare Staff
(5.1.1) Obtain relevant cardiovascular risk history
(5.1.2) Measure anthropometric and clinical parameters accurately
(5.1.3) Identify modifiable and non-modifiable risk factors
(5.1.4) Calculate cardiovascular risk using approved risk charts/tools
(5.1.5) Educate patients regarding lifestyle modifications

(5.2) Supervising Medical Officers / Tutors
(5.2.1) Guide and supervise assessments
(5.2.2) Confirm cardiovascular risk categorization
(5.2.3) Provide clinical management advice and feedback
(5.2.4) Ensure ethical and professional conduct

(6) Ethical and Professional Considerations

(6.1) Maintain patient confidentiality
(6.2) Request informed consent before assessment
(6.3) Ensure privacy during examination
(6.4) Communicate respectfully and clearly
(6.5) Provide non-judgmental counselling
(6.6) Ensure patient comfort and safety

(7) Preparation

(7.1) Environment

- Quiet, private, and well-lit area
- Seating arrangement for patient comfort

(7.2) Materials Required

- Blood pressure apparatus (sphygmomanometer)

- Stethoscope

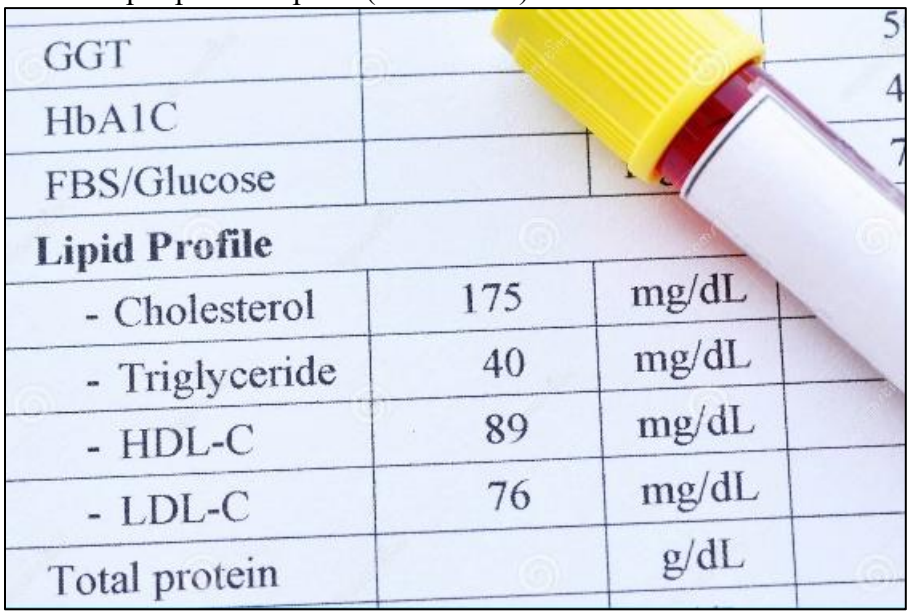
- Weight scale

- Height measuring scale/ stadiometer

- Measuring tape

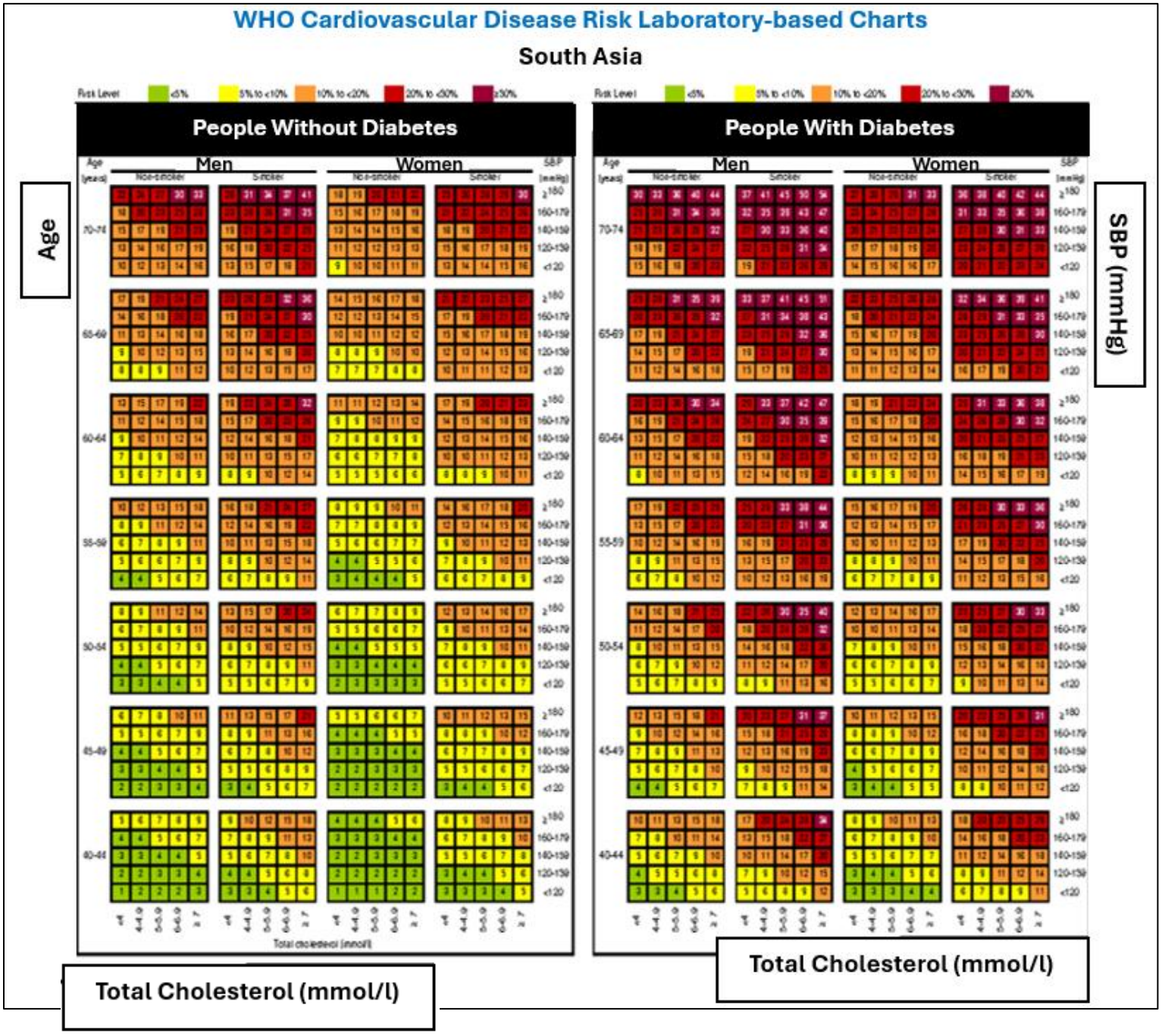
- Glucometer or laboratory results (if available)

- Lipid profile reports (if available)



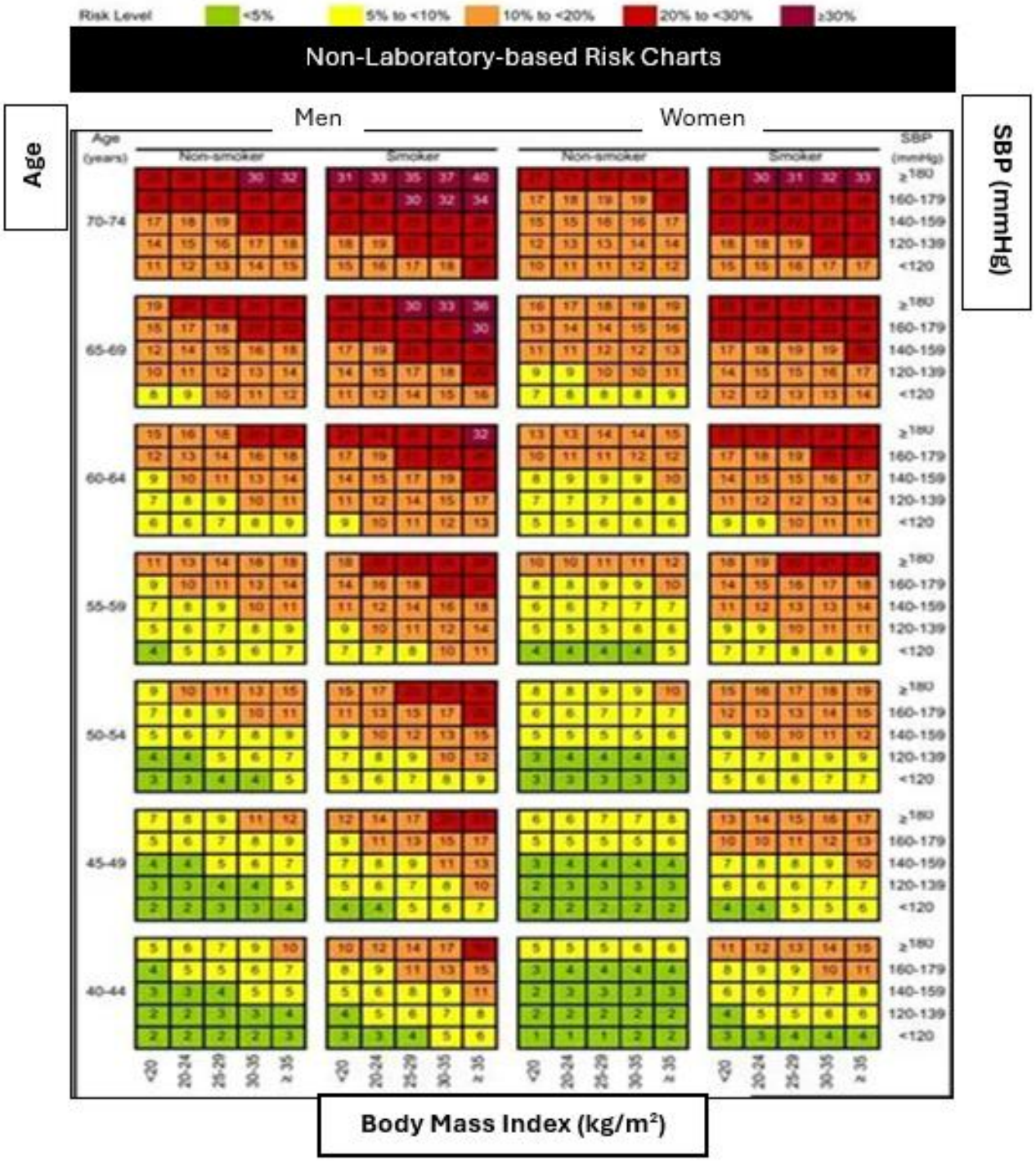
GGT			5
HbA1C			4
FBS/Glucose			7
Lipid Profile			
- Cholesterol	175	mg/dL	
- Triglyceride	40	mg/dL	
- HDL-C	89	mg/dL	
- LDL-C	76	mg/dL	
Total protein		g/dL	

- WHO (World Health Organization) Cardiovascular Disease Risk Carts



WHO Cardiovascular Disease Risk Non-laboratory-based Charts

South Asia



(7.3) Preparation of Patient

(7.3.1) Explain procedure to patient
(7.3.2) Request consent
(7.3.3) Ensure patient has rested for at least 5 minutes before BP measurement
(7.3.4) Advise removal of tight clothing affecting measurements

(8) Procedure for Cardiovascular Risk Assessment

(8.1) History Taking

Assess the following risk factors:

Non-modifiable Risk Factors

- Age
- Sex
- Family history of premature cardiovascular disease (Premature Cardiovascular diseases in first degree relatives – male relatives <55 years, female relatives <65 years)

Modifiable Risk Factors

- Smoking/tobacco use within 1 year duration
- Regular alcohol consumption
- Physical inactivity (whether patient engages in physical activity ≥30 minutes per day at least 5 days per week or not)
- Unhealthy diet
- Hypertension
- Diabetes mellitus
- Dyslipidaemia
- Obesity
- Psychosocial stress

Past Medical History

- Ischemic heart disease (IHD)
- Stroke/TIA (Transient Ischaemic Attack)
- Chronic kidney disease
- Peripheral vascular disease

Medication History

- Medication for hypertension, diabetes mellitus or dyslipidaemia.
- Medication for established CVD such as IHD, stroke, TIA, and peripheral vascular disease.

(8.2) Physical Examination

(8.2.1) Blood Pressure Measurement

- Measure BP using standard technique (refer figure 1)
- Record systolic and diastolic blood pressure

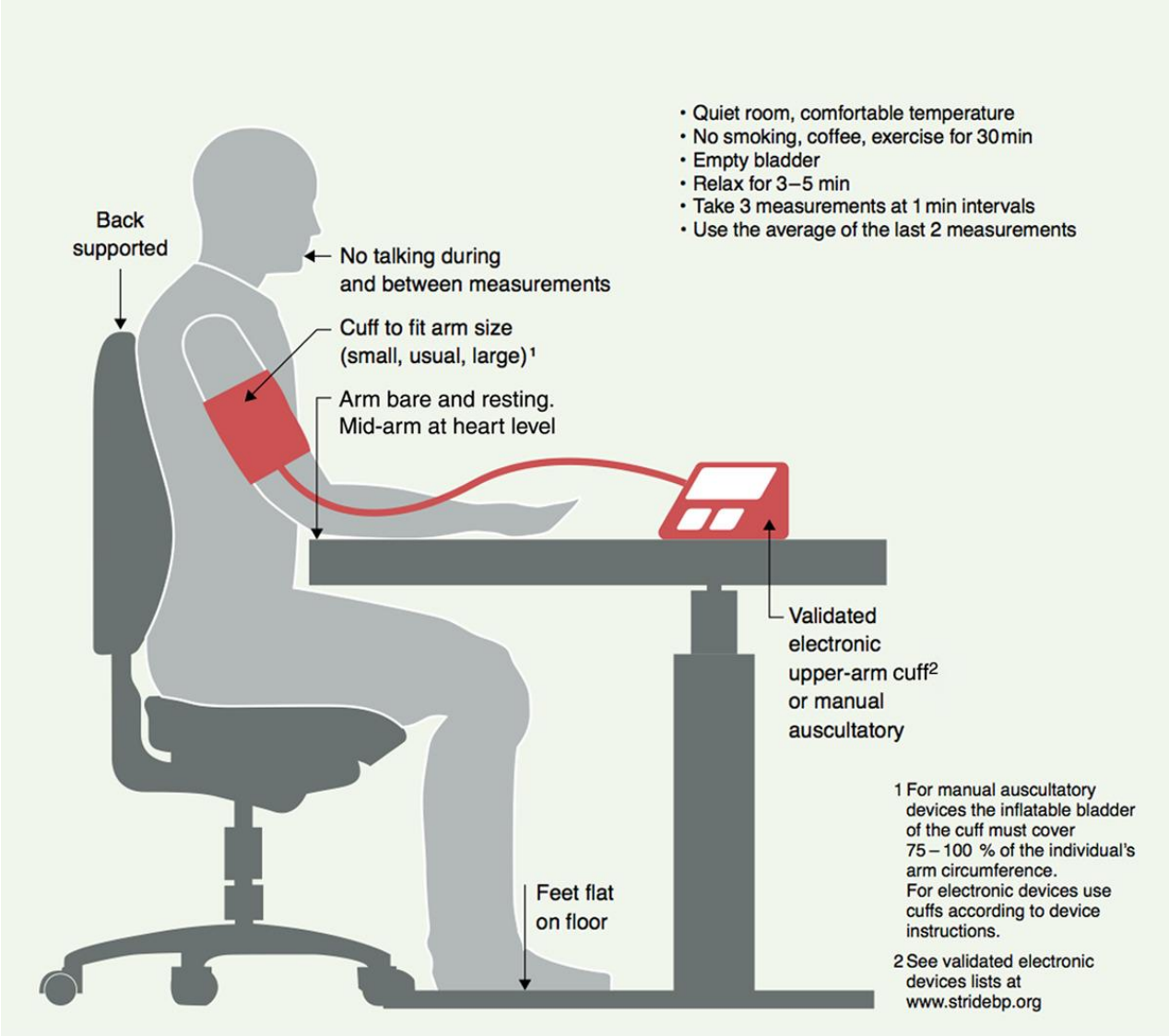


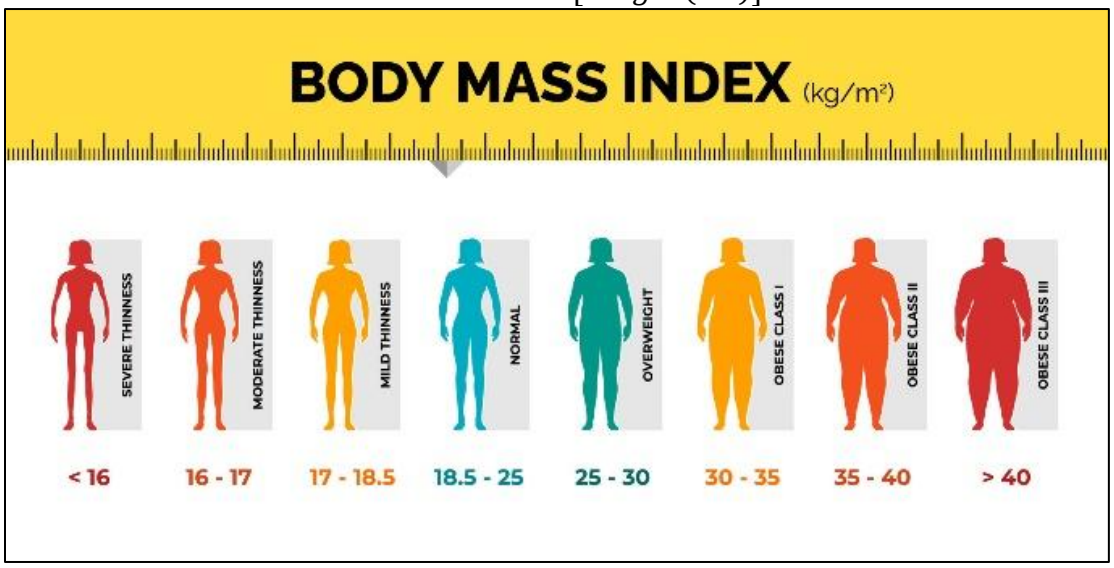
Figure 1

(8.2.2) Anthropometric Measurements

(8.2.2.1) Body Mass Index (BMI*)*

- Measure height and weight accurately
- Categorize BMI according to standard guidelines

$$Body\ Mass\ Index = \frac{Weight(Kg)}{[Height(m^2)]^2}$$

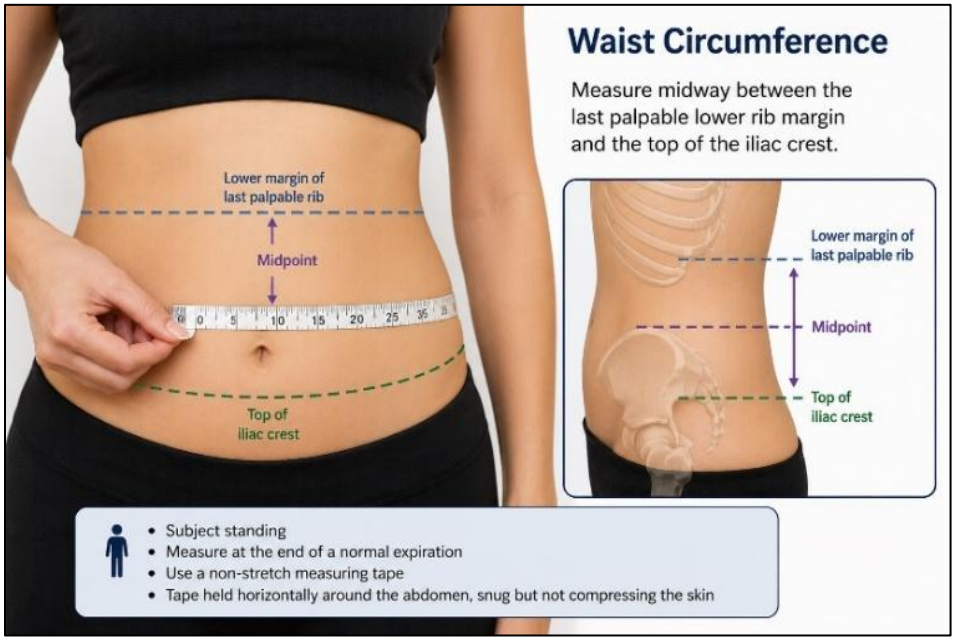


(8.2.2.2) Waist Circumference

- Measure midway between last palpable lower rib margin and top of the iliac crest
- Identify central obesity

  Men ≥ 90 cm

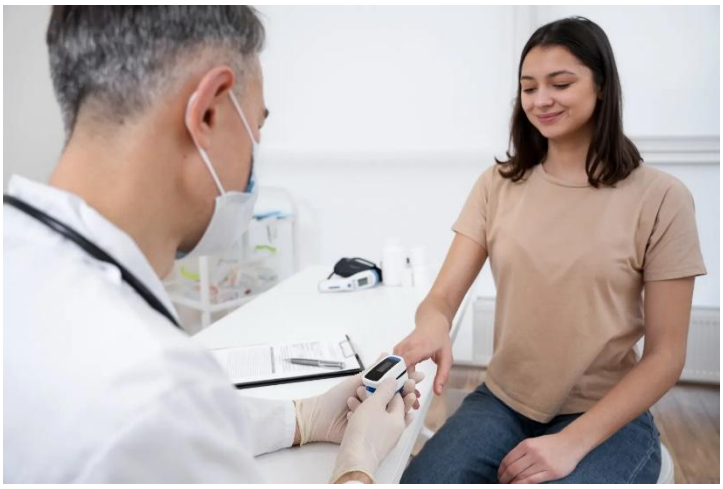
  Women ≥80cm



(8.3) General Examination

Assess for:

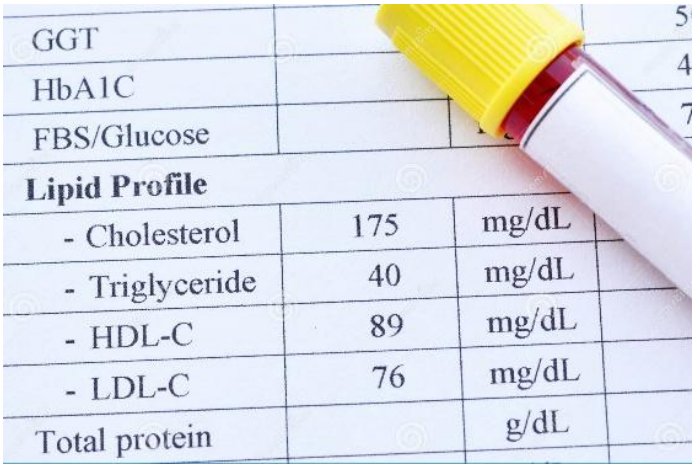
- Xanthelasma/xanthomas
- Pedal oedema
- Signs of established vascular disease



(8.4) Laboratory Assessment

If available, assess:

- Random blood sugar
- Fasting blood glucose or HbA1c (if facilities are available)
- Serum total cholesterol or
- Lipid profile (if facilities are available
- Urine albumin



GGT		
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- Cholesterol	175	mg/dL
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Total protein		g/dL

(8.5) Cardiovascular Risk Calculation

(8.5.1) Use WHO Cardiovascular Disease Risk Charts **(laboratory based** or **non-laboratory based)**

(8.5.2) Information needed

- Presence or absence of diabetes
- Sex
- Smoker or non-smoker
- Age
- Systolic blood pressure (SBP)
- Total blood cholesterol (if in mg/dl divide by 38 to convert to mmol/l)
- BMI

(8.5.3) Assess the eligibility for using the Cardiovascular Risk Charts

WHO CVD risk charts are intended for estimating 10-year cardiovascular risk in adults aged 40–74 years who do not already have established cardiovascular disease or conditions that place them in a high or very high cardiovascular risk category.

Do not use the risk chart for:

- Adults aged below 40 years or 75 years and above
- Patients with established cardiovascular disease
- Patients with clinical conditions that already indicate high or very high cardiovascular risk

Treatment decisions can be made without risk stratification using risk charts in individuals with high or very high cardiovascular risk, such as:

- Documented ASCVD: stroke, TIA, myocardial infarction or peripheral vascular disease
- Total cholesterol >8 mmol/L or ≥309 mg/dL
- Diabetes with target-organ damage, such as nephropathy, retinopathy or neuropathy
- Systolic blood pressure ≥160 mmHg
- Hypertension-mediated organ damage (HMOD)
- Chronic kidney disease stage 3–5

(8.5.4) Steps of cardiovascular risk assessment using WHO Cardiovascular Disease Risk Charts **(Laboratory based)**

Step 1 – Select the appropriate chart depending on the presence or absence of diabetes
Step 2 – Select male or female tables
Step 3 – Select smoker or non-smoker boxes

- All current smokers and those who have smoked within the last year from assessment are considered as smokers.
- Smoking includes cigarettes, beedi, cigar, pipe, etc.)

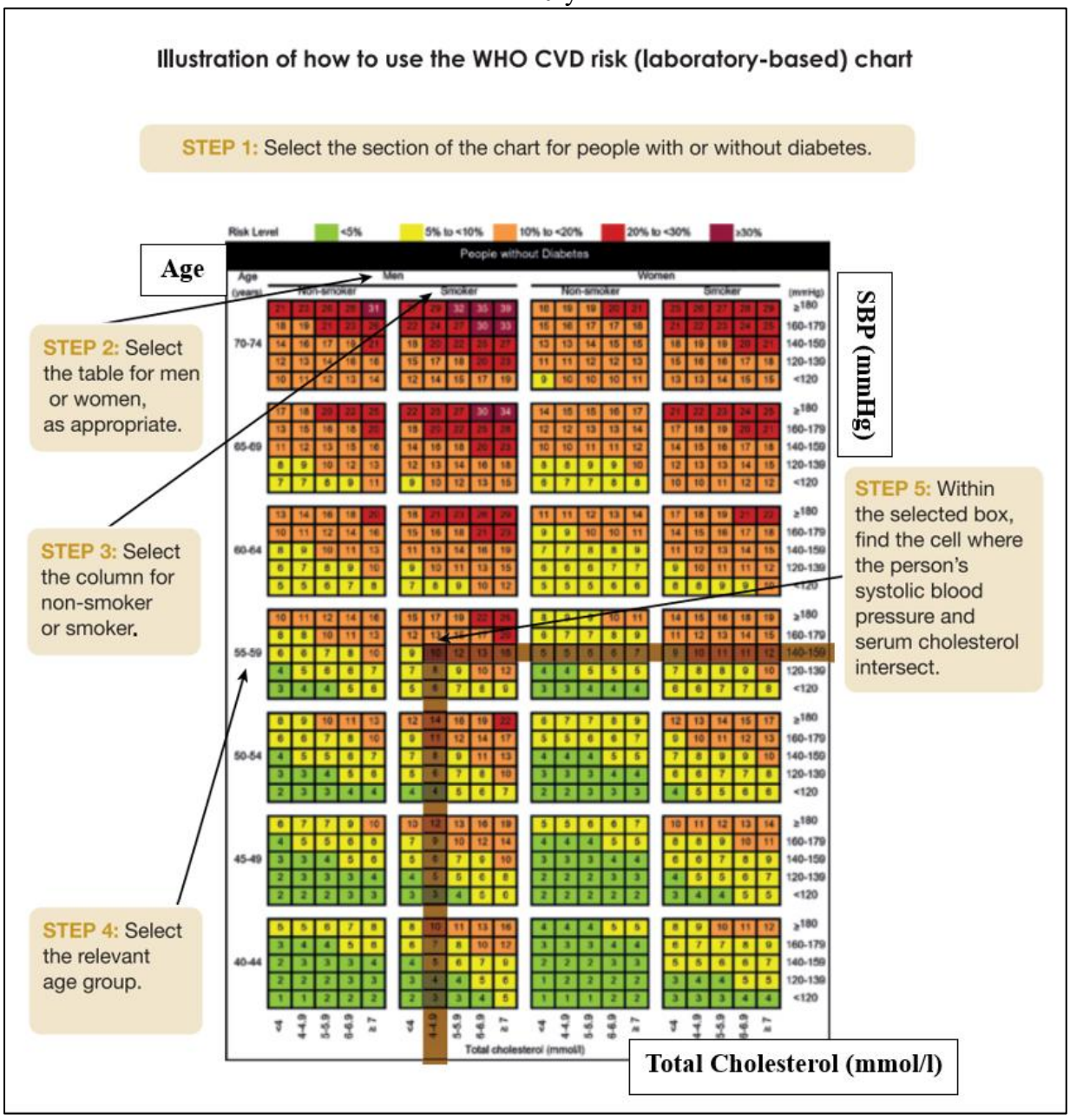
Step 4 – Select age group box.

Step 5 – Find the box indicating the serum cholesterol level

The total cholesterol level is indicated in the WHO risk prediction chart in mmol/l.

Therefore, convert the participant's cholesterol level in mg/dl to mmol/l.

Step 6 – Within the selected box (after following step 1-4), find the cell where the individual's systolic blood pressure (SBP) and total blood cholesterol intersect. The colour of this cell determines the 10-year cardiovascular risk



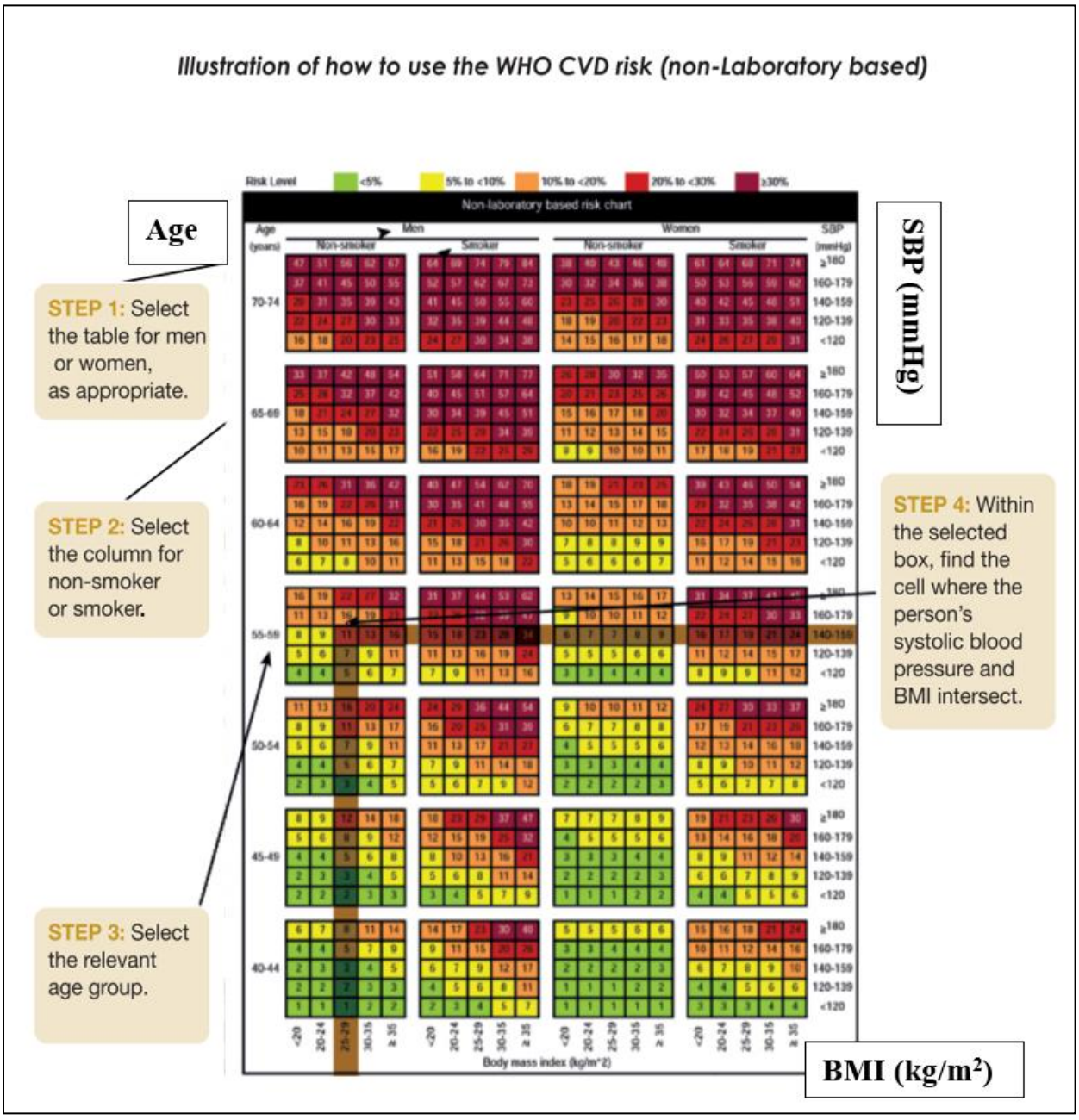
(8.5.5) Steps of cardiovascular risk assessment Using WHO Cardiovascular Disease Risk Charts **(non - Laboratory based)**

Step 1 - Select the table for men or women, as appropriate

Step 2 - Select the column for non-smoker or smoker

Step 3: Select the relevant age group

Step 4 - Within the selected box, find the cell where the person's systolic blood pressure and BMI intersect.



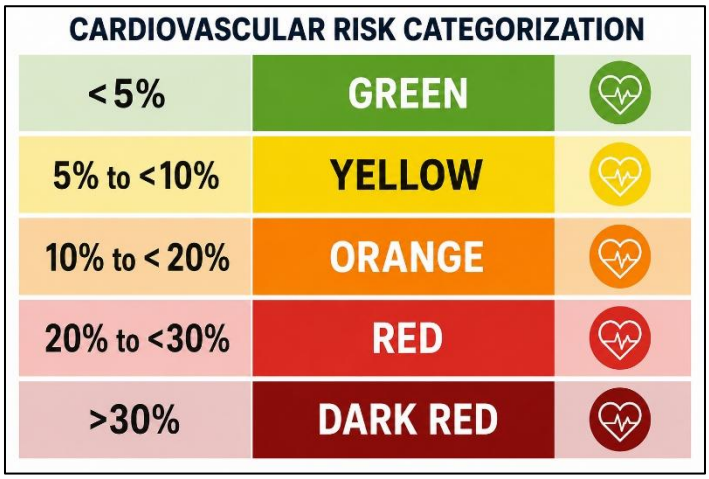
(8.5.6) Predict the 10-year cardiovascular risk

WHO CVD risk prediction charts indicate 10-year risk of a fatal or non-fatal major cardiovascular event (Myocardial Infarction or stroke), according to age, sex, blood pressure, smoking status, total cholesterol and presence or absence of diabetes mellitus.

(8.5.1) Document (record under risk category) and communicate to the patient his/her cardiovascular risk status.

(8.5.2) Categorize cardiovascular risk as,

- <5% Green
- 5% to <10% Yellow
- 10% to < 20% Orange
- 20% to <30% Red
- >30% Dark Red



(8.5.3) Communicate to the patient the benefits of minimising the risk and what could be done to minimise the risk to <5%.

Reference

National Guideline for Cardiovascular Risk Management for Primary Health Care Providers

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