



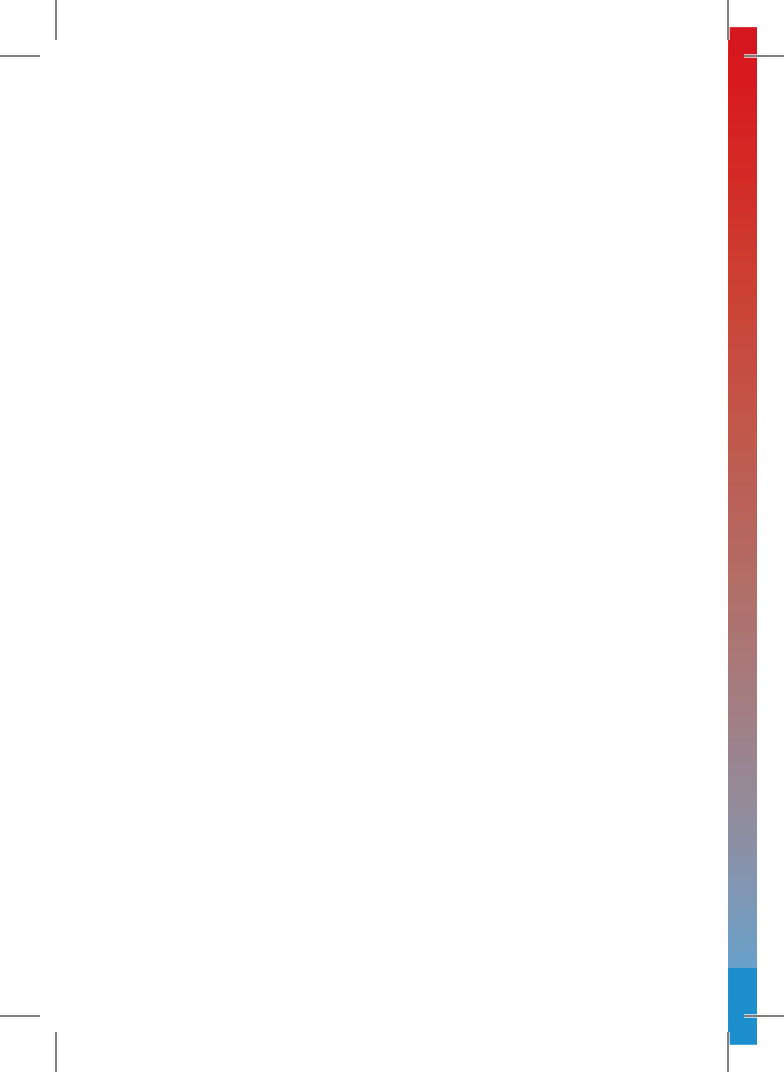
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Know Your Cardiovascular Disease Risk



Take Action!





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Know Your Cardiovascular Disease Risk: Take Action!

Name:

Age in years:

Gender:

History of hypertension: Yes/No

History of diabetes: Yes/No

Smoking: Yes/No

Weight:kg; Height:cm

BMI:

Blood pressure:

CVD risk:

Date:



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Multiple risk factors increase the risk of cardiovascular diseases

- Cardiovascular disease (CVD) risk factors when present together not only act in an additive way but help each other (synergize) to increase the total risk
 - For an example, if high blood pressure alone raises the risk of CVD by a certain x degree and high total cholesterol alone increases risk of CVD by a certain y degree, the total CVD risk when both are present together will be higher than simply $(x+y)$.
- Total CVD risk is the predisposition to developing any CVD event (both fatal and nonfatal) in the future.



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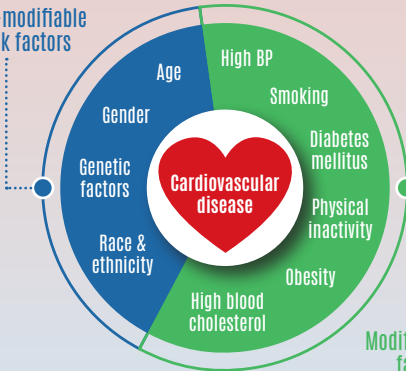


Cardiovascular Disease Risk

CVD risk prediction is the process of identifying individuals based on the probability that they might develop a CVD event/fatality in the next 10 years.

Total CVD risk is the probability of a CVD event (both fatal and nonfatal).

Non-modifiable
risk factors



Modifiable risk
factors



Assessment of total CVD risk is recommended for the following categories of people

- age >40 years
- smokers
- obesity
- known to have hypertension
- known to have diabetes
- history of premature CVD in first-degree relative
- history of diabetes or kidney disease in first-degree relative

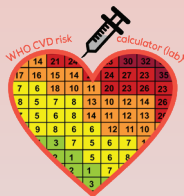


Types of CVD risk assessment and parameters needed

WHO lab based CVD risk

parameters

- Age in years
- Gender (Male/Female)
- Smoker/non-smoker
- Systolic blood pressure
- Presence or absence of diabetes
- Total cholesterol



WHO non-lab based CVD risk

Non-lab based (to be used when lab testing are not available and as a pre screening)

parameters

- Age in years
- Gender (Male/Female)
- Smoker/non-smoker
- Systolic blood pressure
- Body Mass Index (BMI)





Access the WHO CVD risk calculator



iOS users



Android users



<https://apps.apple.com/us/app/whopen/id1566338877>



https://play.google.com/store/apps/details?id=org.who.WHOPEN&hl=en_IN&gl=US



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Interpreting the CVD risk

	Green	<5%
	Yellow	5% to <10%
	Orange	10% to <20%
	Red	20% to <30%
	Deep red	$\geq 30\%$

Overall CVD risk of 15% means the probability of developing a fatal or a non-fatal CVD event in the individual in the next 10 years is 15%.



Non-lab based CVD risk

- WHO CVD risk (non-laboratory-based) charts can be considered for identifying a subset of the population who might benefit from laboratory-based risk assessment.
- Where laboratory testing may be available but extremely limited due to costs or distance, use of the non-laboratory charts could allow for a two-stage process that reduces the number of people at lower levels of risk who are subjected to unwarranted testing.
- The non-laboratory risk charts can be used for education and advocacy regarding total CVD risk in areas where lab testing remains currently unavailable.



Guidance for management based on lab-based CVD risk

TREATMENT BY LAB BASED RISK LEVEL



CVD risk < 5%

COUNSEL	Counsel on diet (which includes lipid-lowering diet), physical activity, smoking cessation and avoiding harmful use of alcohol
TREAT Antihypertensive drugs (CCB, Thiazide, ACEI, or ARB)	Consider drug treatment if persistent BP $\geq 140/90$ mmHg (consistent with national policy)
FOLLOW-UP	Follow up in 12 months if treatment not initiated

TREATMENT BY LAB BASED RISK LEVEL



CVD risk 5-10 %

COUNSEL	Counsel on diet (which includes lipid-lowering diet), physical activity, smoking cessation and avoiding harmful use of alcohol
TREAT Antihypertensive drugs (CCB, Thiazide, ACEI, or ARB)	Consider drug treatment if persistent BP $\geq 140/90$ mmHg (consistent with national policy)
FOLLOW-UP	Follow up every 3 months until targets are met, then 6-9 months thereafter



Consult your physician before initiating any treatment !!



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Guidance for management based on lab-based CVD risk

TREATMENT BY LAB BASED RISK LEVEL



CVD risk 10-20%

COUNSEL	Counsel on diet (which includes lipid-lowering diet), physical activity, smoking cessation and avoiding harmful use of alcohol
TREAT Antihypertensive drugs (CCB, Thiazide, ACEI, or ARB)	Consider drug treatment if persistent BP $\geq 140/90$ mmHg
FOLLOW-UP	Follow-up every 3-6 months

TREATMENT BY LAB BASED RISK LEVEL



CVD risk >20%

COUNSEL	Counsel on diet (which includes lipid-lowering diet), physical activity, smoking cessation and avoiding harmful use of alcohol
TREAT Antihypertensive drugs (CCB, Thiazide, ACEI, or ARB) Lipid-lowering drugs (Statins)	Consider drug treatment if persistent BP $\geq 130/80$ mmHg Give a statin
FOLLOW-UP	- Follow-up every 3 months - If there is no reduction in cardiovascular risk after 6 months of follow up, refer to the next level



Consult your physician before initiating any treatment !!



Body Mass Index (BMI)

BMI is a simple index of weight-to-height that is commonly used to classify underweight, overweight and obesity in adults. It is defined as the weight in kilograms divided by the square of the height in metres (kg/m^2).

For example, an adult who weighs 58 kg and has a height of 1.70 m will have a BMI of 20.1, where $\text{BMI} = 58 \text{ kg}/1.70 \text{ m}^2 = 20.1$.

BMI values indicate the following:

BMI <17.0	Thinness
BMI <18.5	Underweight
BMI 18.5-24.9	Normal weight
BMI ≥25.0	Overweight
BMI ≥30.0	Obesity

<https://www.who.int/data/nutrition/nlis/info/malnutrition-in-women#:~:text=BMI%20%3C18.5%3A%20underweight,BMI%20%E2%89%A530.0%3A%20obesity>.



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Criteria for diagnosis of hypertension



Hypertension is diagnosed with measurement on two visits on different days if,

- systolic blood pressure on both days is ≥ 140 mmHg and/or
- diastolic blood pressure on both days is ≥ 90 mmHg

<https://www.who.int/publications/i/item/9789240050969>



Criteria for diagnosis of diabetes



Measurement	Diagnostic cut-off value
Fasting venous or capillary** plasma glucose	≥ 7.0 mmol/L (126 mg/dL)
2-hour post-load venous plasma glucose	≥ 11.1 mmol/L (200 mg/dL)
2-hour post-load capillary** plasma glucose	≥ 12.2 mmol/L (220 mg/dL)
Random plasma glucose	≥ 11.1 mmol/L (200 mg/dL)
HbA1c***	6.5% (48 mmol/mol)

* Overnight fast of 8–14 hours.

** If laboratory measurement is not available, point of care, (“finger stick”) devices can be used (they report glucose values in capillary plasma).

*** Plasma glucose is preferred in people with symptoms who are suspected of having type 1 diabetes.

<https://www.who.int/publications/i/item/who-ucn-ncd-20.1>



Waist circumference

WHO cut-off points and risk of metabolic complications

Indicator	Cut off points	Risk of metabolic complications
Waist circumference	>94 cm (M); >80 cm (W)	Increased risk
Waist circumference	>102 cm (M); >88 cm (W)	Substantially increased risk

<https://www.who.int/publications/i/item/9789241501491>



You can reduce your CVD risk

Being healthy is as easy as ABCDE





Quit Tobacco

WHO QuitTobacco App: Quit Tobacco, Save Lives



World Health Organization

WE HELP YOU QUIT TOBACCO

STEP 1
Identify the causes that stimulate you to use tobacco

STEP 2
Identify the motivations that will help you to quit tobacco usage

STEP 3
Set your own Quit Date

STEP 4
Manage your cravings and keep a diary

STEP 5
Stay focused and motivated! Reach your goals and enjoy the rewarding benefits

NO TOBACCO
Watch your health improve within minutes of your quitting tobacco

LUNGS
Within 30 minutes, your heart rate and blood pressure drop

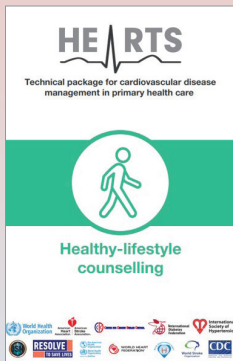
CO
CARBON MONOXIDE LEVEL
Within 12 hours, the carbon monoxide level in your blood drops to normal

O₂
OXYGEN LEVEL
Within 3-12 weeks, your blood circulation and lung function improve



**For more information on
CVD risk assessment**

HEARTS: Technical package for cardiovascular disease management in primary health care

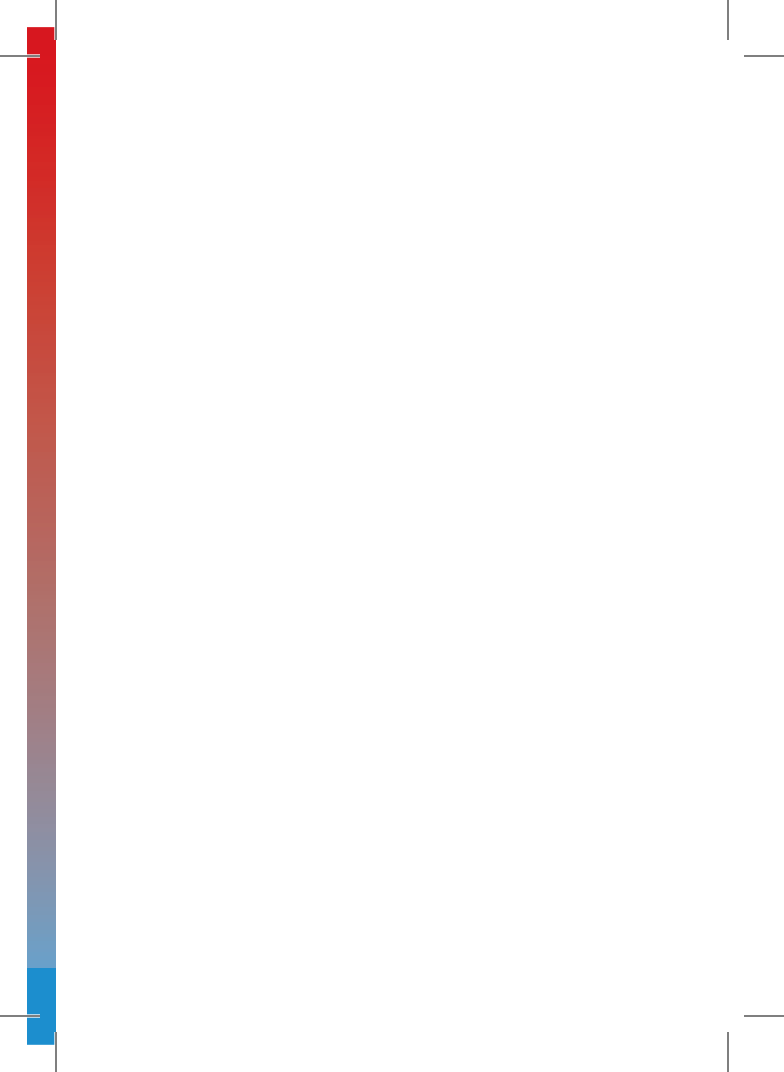


<https://www.who.int/publications/i/item/9789240001367>

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**My Heart
Health is in
My Hands**

SEA HE RTS



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