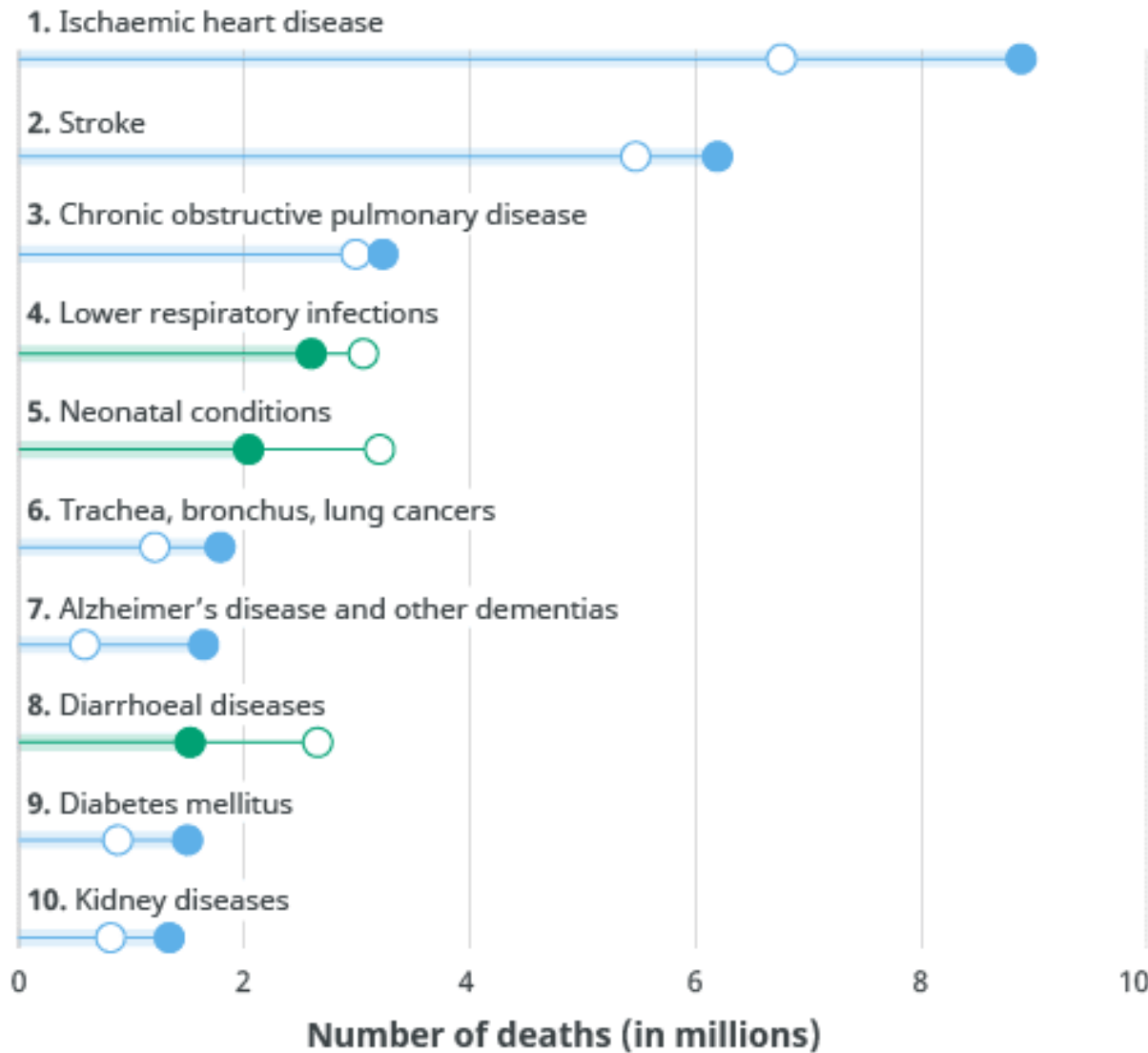


# AtheroSclerotic CardioVascular Disease

## Prevention

# Leading causes of death globally

○ 2000 ● 2019



● Noncommunicable ● Communicable ● Injuries

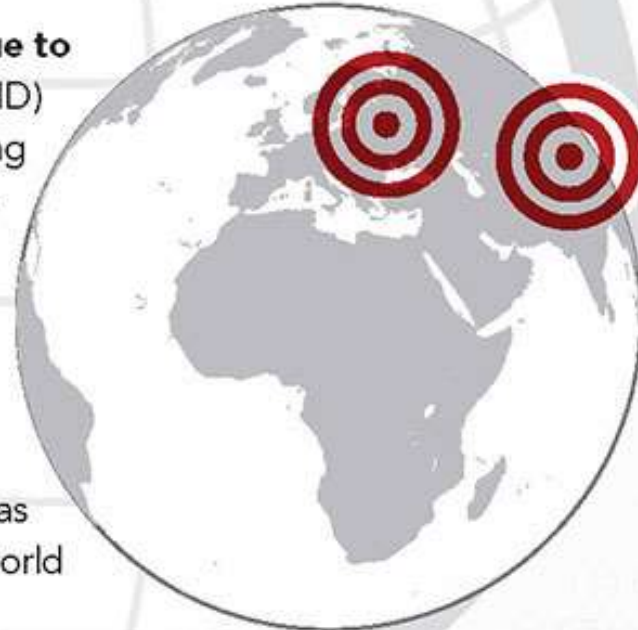






**8.92  
million**

The number of **deaths due to ischemic heart disease (IHD)** in 2015, making it the leading cause of death in the world. The highest IHD death rates were observed in Central Asia and Eastern Europe. IHD was the leading cause of all health loss globally as well as in each world region.



	Risk factor	Deaths (millions)	Percentage of total
<i>World</i>			
1	High blood pressure	7.5	12.8
2	Tobacco use	5.1	8.7
3	High blood glucose	3.4	5.8
4	Physical inactivity	3.2	5.5
5	Overweight and obesity	2.8	4.8
6	High cholesterol	2.6	4.5
7	Unsafe sex	2.4	4.0
8	Alcohol use	2.3	3.8
9	Childhood underweight	2.2	3.8
10	Indoor smoke from solid fuels	2.0	3.3





# Risk Factors for Cardiovascular Disease

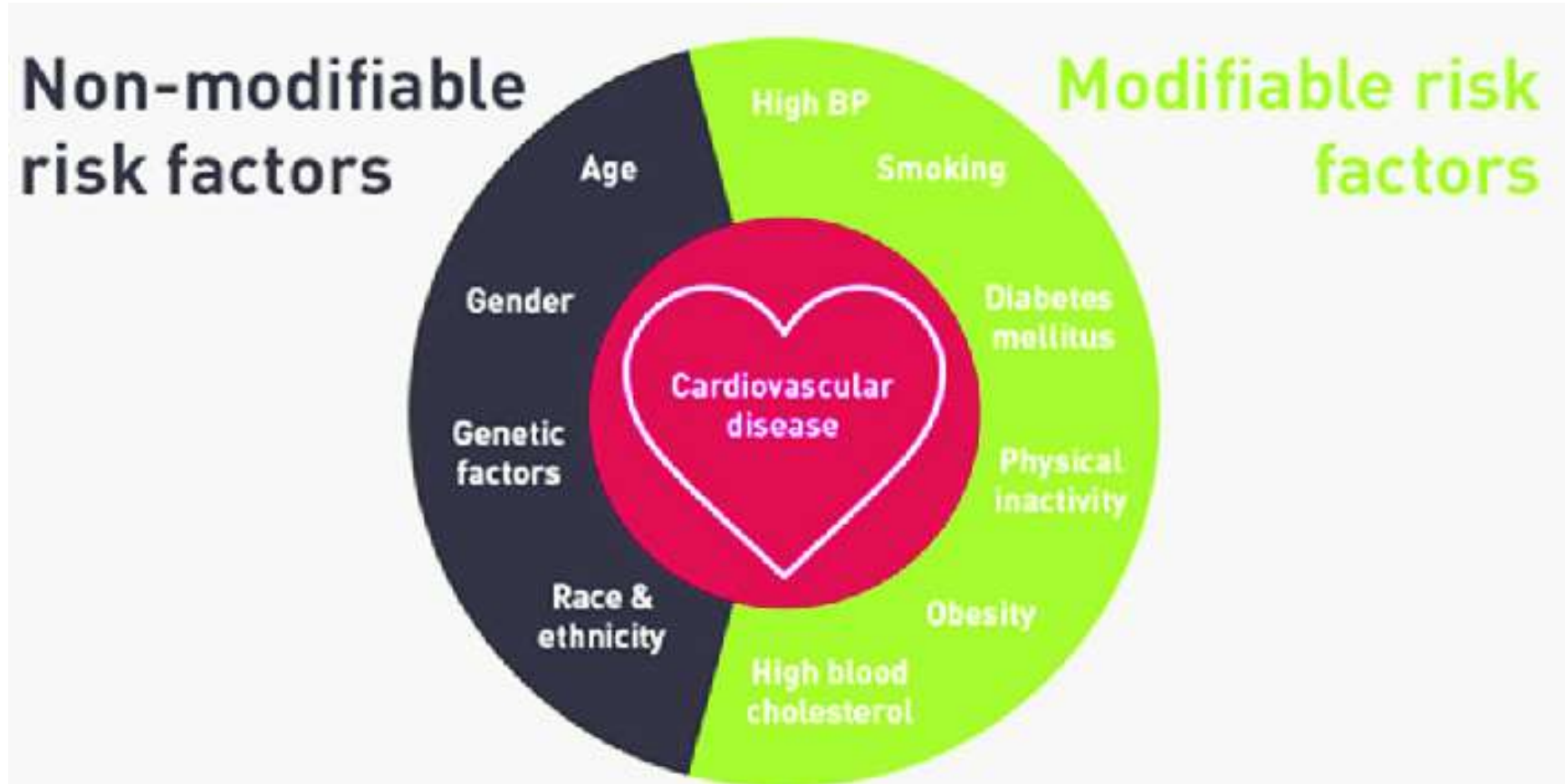
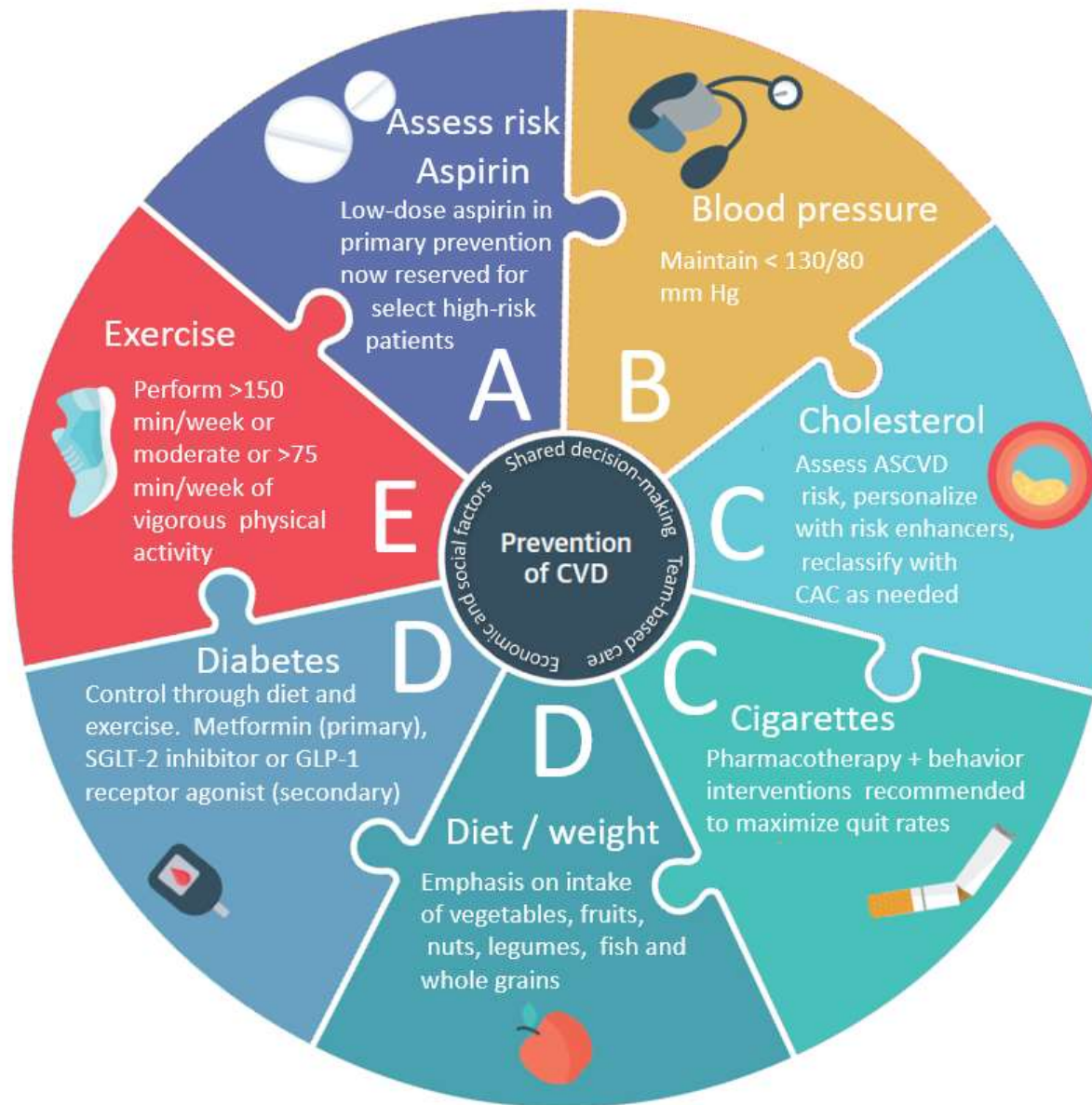


Figure 1. ABCDE of Primary Prevention: Lifestyle Changes and Team-Based Care







## When to assess total cardiovascular risk?

Recommendations	Class	Level
Systematic CV risk assessment is recommended in individuals at increased CV risk, i.e., with family history of premature CVD, familial hyperlipidemia, major CV risk factors (such as smoking, high BP, DM or raised lipid levels) or comorbidities increasing CV risk.	I	C
It is recommended to repeat CV risk assessment every 5 years, and more often for individuals with risks close to thresholds mandating treatment.	I	C
Systematic CV risk assessment may be considered in men >40 years of age and in women >50 years of age or post-menopausal with no known CV risk factors.	IIb	C
Systematic CV risk assessment in men <40 of age and women <50 years of age with no known CV risk factors is not recommended.	III	C



# How to estimate total cardiovascular risk?

## ASCVD Risk Estimator Plus App



Estimate a patient's initial 10-year ASCVD risk using the pooled cohort equation



## ESC CVD Risk Calculation App



The SCORE system estimates the 10 year risk of a first fatal atherosclerotic event

# Primary prevention: 10-year ASCVD risk



## ASCVD Risk Estimator Plus

Estimate Risk

Therapy Impact

Advice

...

Current Age ⓘ \*

Age must be between 20-79

Sex \*

Male

Female

Race \*

White

African American

Other

Systolic Blood Pressure (mm Hg) \*

Value must be between 90-200

Diastolic Blood Pressure (mm Hg) \*

Value must be between 60-130

Total Cholesterol (mg/dL) \*

Value must be between 130 - 320

HDL Cholesterol (mg/dL) \*

Value must be between 20 - 100

LDL Cholesterol (mg/dL) ⓘ ○

Value must be between 30-300

History of Diabetes? \*

Yes

No

Smoker? ⓘ \*

Current ⓘ

Former ⓘ

Never ⓘ

On Hypertension Treatment? \*

Yes

No

On a Statin? ⓘ ○

Yes

No

On Aspirin Therapy? ⓘ ○

Yes

No



# SCORE 10 Year CV risk Categories

Very high risk	People with any of the following:
	<p><b>Documented CVD, either clinical or unequivocal on imaging.</b></p> <ul style="list-style-type: none"><li>● <b>Clinical CVD</b> includes acute myocardial infarction, acute coronary syndrome, coronary or other arterial revascularization, stroke, TIA, aortic aneurysm, and PAD</li><li>● <b>Unequivocal documented CVD on imaging</b> includes significant plaque (i.e. <math>\geq 50\%</math> stenosis) on angiography or ultrasound; it does not include increase in carotid intima-media thickness</li><li>● <b>Diabetes mellitus with target organ damage</b>, e.g. proteinuria or a with a major risk factor such as grade 3 hypertension or hypercholesterolaemia</li><li>● <b>Severe CKD</b> (eGFR <math>&lt; 30</math> mL/min/1.73 m<sup>2</sup>)</li><li>● <b>A calculated 10 year SCORE of <math>\geq 10\%</math></b></li></ul>
High risk	People with any of the following:
	<ul style="list-style-type: none"><li>● <b>Marked elevation of a single risk factor</b>, particularly cholesterol <math>&gt; 8</math> mmol/L (<math>&gt; 310</math> mg/dL), e.g. familial hypercholesterolaemia or grade 3 hypertension (BP <math>\geq 180/110</math> mmHg)</li><li>● <b>Most other people with diabetes mellitus</b> (except some young people with type 1 diabetes mellitus and without major risk factors, who may be at moderate-risk)</li></ul>
	<b>Hypertensive LVH</b>
	<b>Moderate CKD eGFR 30-59 mL/min/1.73 m<sup>2</sup>)</b>
	<b>A calculated 10 year SCORE of 5-10%</b>



# 10 Year CV risk Categories

Moderate risk	<p>People with:</p> <ul style="list-style-type: none"><li>• A calculated 10 year SCORE of <math>\geq 1</math> to <math>&lt;5\%</math></li><li>• Grade 2 hypertension</li><li>• Many middle-aged people belong to this category</li></ul>
Low risk	<p>People with:</p> <ul style="list-style-type: none"><li>• A calculated 10 year SCORE of <math>&lt;1\%</math></li></ul>



