

ESC Clinical Practice Guidelines on  
**Cardiovascular  
Disease Prevention  
in Clinical Practice:  
What Patients  
Need to Know**



# What Are Clinical Practice Guidelines?

Clinical Practice Guidelines are written by a team of healthcare providers and scientists and are mainly intended for healthcare providers. They provide diagnosis and treatment recommendations based on medical and scientific evidence to ensure that patients receive appropriate care.

This document is for people with cardiovascular disease or at risk of developing cardiovascular disease and is based on the longer European Society of Cardiology (ESC) Clinical Practice Guidelines for the prevention of cardiovascular disease in clinical practice<sup>1</sup>.

## What Will This Document Tell Me?

This guide for patients aims to provide you with an overview of the latest evidence-based recommendations for the prevention of cardiovascular disease. In particular, it should help you to understand:

- how cardiovascular disease risk is assessed
- the importance of lifestyle modifications for prevention of cardiovascular disease
- treatments and treatment goals that may be considered appropriate based on your risk profile

This document is not intended as a guide on how the heart works, nor can it be exhaustive. People seeking more general information about cardiovascular disease prevention should visit [www.healthy-heart.org](http://www.healthy-heart.org)

If you are a healthcare provider, the ESC hopes that this document, translated into the language of your patients, will provide them and their caregivers with an understanding of the prevention of cardiovascular disease. Please disseminate it widely.

## How Will This Document Help Me?

This document is intended to contribute to your understanding of how cardiovascular disease risk is assessed and ways in which cardiovascular disease may be prevented, and to give you the knowledge and confidence to be involved in a shared decision-making process with your healthcare providers regarding treatment and other aspects of your health. It also provides suggestions on ways to look after yourself, which is essential in the prevention of cardiovascular disease.

<sup>1</sup> <https://www.escardio.org/Guidelines/Clinical-Practice-Guidelines/2021-ESC-Guidelines-on-cardiovascular-disease-prevention-in-clinical-practice>

## Targets for all

- Stop smoking
- Follow lifestyle recommendations
- Systolic blood pressure <160 mmHg



People **without** known cardiovascular disease



People **with** known cardiovascular disease



People with specific health conditions, such as diabetes or chronic kidney disease

## Risk estimation



Your healthcare provider will **estimate your cardiovascular disease risk**, using appropriate models and calculations, and **considering several risk factors** (age, blood pressure, cholesterol levels, smoking) **and other conditions** (potential 'risk-modifiers') that may change your risk profile

## Informed discussion about cardiovascular disease risk and treatment benefits



Your healthcare provider will discuss with you **what your risk profile means**, and how you may **benefit from recommended treatment**

## Treatment decisions tailored to your risk profile, needs and preferences



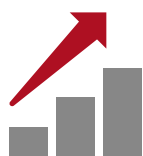
Your healthcare provider will advise you on:

- **Lifestyle changes** (nutrition, physical activity, body weight, smoking)
- **Medications**, if required (to lower blood pressure, cholesterol or blood sugar levels as appropriate)

A **'shared decision-making'** process between you and your healthcare provider should take place

# 12 Key Messages from the 2021 ESC Cardiovascular Disease Prevention Guidelines

1. Assessment of cardiovascular disease (CVD) risk (the likelihood of experiencing a cardiovascular event, such as heart attack or stroke) is the first step to guide recommendations on prevention. CVD risk can be calculated in people without CVD (**'primary prevention'**) or with known CVD (**'secondary prevention'**), and in people with certain conditions who are at higher risk of CVD (e.g., those with diabetes or chronic kidney disease).



2. For people without known CVD, risk can be classified as **low, moderate, high** or **very high** and can be assessed based on a person's age, blood pressure, cholesterol levels and smoking status. Other factors (e.g., ethnicity, psychosocial, socioeconomic or environmental factors) and health conditions may change your CVD risk ('risk-modifiers'). The CVD risk is **very high** for **all people with known CVD**.

3. An **informed discussion** with your healthcare provider about CVD risk and treatment benefits tailored to your needs is recommended. Treatment decisions should be based on a **shared decision-making process** between you and your healthcare provider.



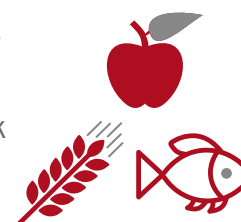
4. The Guidelines recommend that **everyone follow certain recommendations**, no matter their CVD risk. These include:

- stopping smoking
- following a healthy lifestyle in terms of nutrition, body weight and physical activity
- achieving a systolic blood pressure of at least  $<160$  mmHg



5. Adults of all ages should aim for at least 150-300 minutes per week of moderate intensity or 75-150 minutes per week of high intensity **physical activity**. Even if you cannot achieve these time recommendations, **stay as active as possible** - some activity is better than no activity!

6. A **healthy diet** is a cornerstone of CVD prevention: adopt a Mediterranean or similar diet; replace saturated (e.g., fast food, red meat) with unsaturated fat (e.g., olive oil, avocado); reduce salt intake; eat more whole grains, fruits, vegetables and nuts; eat fish at least once a week; and reduce added sugar intake. It is also advised to drink no more than 100 g of alcohol per week - how this translates into number of drinks depends on portion size, the standards of which differ by country, but there are usually between 8 and 14 g of alcohol per drink.



7. The use of **medications to treat CVD risk factors** (e.g., blood pressure, cholesterol) depends on CVD risk. Medication is **recommended** for everyone with known CVD or people without CVD but at very high risk. Medication **should be considered** for people without CVD who are at high risk. However, there is no lower limit of CVD risk that stops you from having treatment and no upper limit of CVD risk that means treatment is mandatory. Starting treatment should be decided on an **individual basis** as a result of a **shared decision-making process** between you and your healthcare provider.



8. Treatment goals for risk factors (how low blood pressure or cholesterol levels should be) also depend on CVD risk. In general, the **higher the CVD risk, the more intensive the recommended treatment** and the **lower the treatment goals**.

9. Treatment goals for risk factors should be achieved in a **stepwise** approach. The first step is to achieve **recommended** goals for blood pressure and cholesterol levels through lifestyle recommendations and medication if needed. Once the first step is achieved, proceeding to the second step (even lower blood pressure and cholesterol levels) should follow, based on additional considerations (estimated 10-year and lifelong risk, other medical conditions you may have) as well as your personal preferences. The ultimate aim of the second step is to achieve the **following optimal goals**:

- systolic blood pressure **<130 mmHg** (for **people on medication**)
- low-density lipoprotein cholesterol (LDL-C) **<1.8 mmol/L** (for people at **high risk**) or **<1.4 mmol/L** (for people at **very high risk**)



In this stepwise process, the entire approach (both steps) has to be considered.



10. Statins are the first-line treatment for **people requiring medication to lower their LDL-C** levels. If the treatment goal (based on an individual's CVD risk) is not reached with the maximum tolerated dose of a statin, combination with a non-statin, lipid-lowering medication is recommended.

11. For people who require medication to **lower their blood pressure**, the ultimate treatment goal for systolic blood pressure is **120-130 mmHg** for most adults aged <70 years, and **<140 mmHg** (down to 130 mmHg if tolerated) for those aged ≥70 years. For diastolic blood pressure, a goal of **<80 mmHg** is recommended for all people on medication. Antihypertensive treatment (medications that lower your blood pressure) in a **two-medicine combination** is recommended for most people.



12. For people with **diabetes**, a treatment goal of **glycated haemoglobin (HbA1c) <7.0%** is recommended for most adults. **Metformin** is the first-line treatment for most people with diabetes without CVD, whereas newer medications (glucagon-like peptide-1 receptor agonists [GLP-1RA] and sodium-glucose transport protein 2 [SGLT-2] inhibitors) are recommended for people with diabetes and CVD.



# Appendix

## Example of Calculation for Total CVD Risk

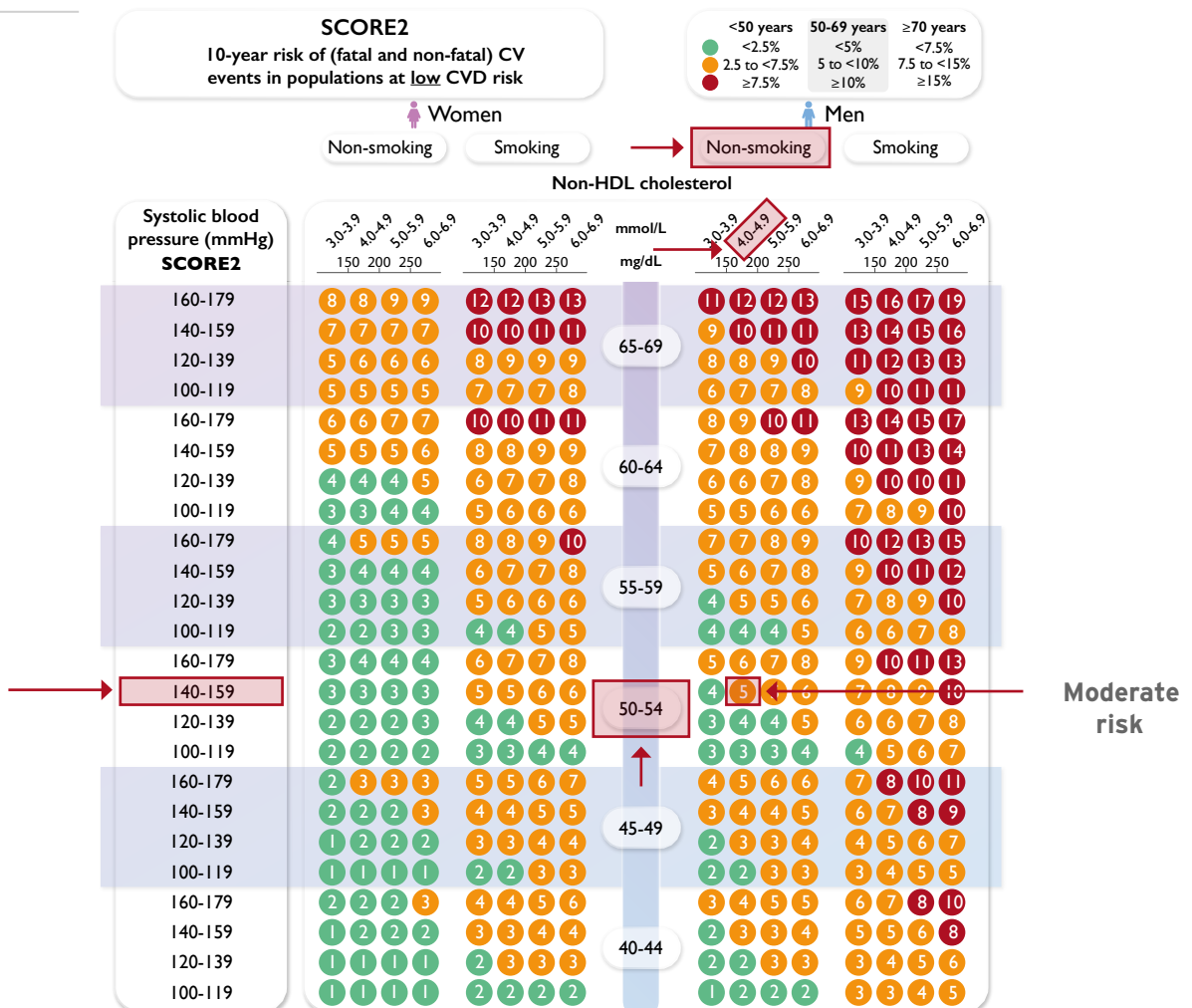
Here, we use an example of a man without known CVD who visits his general practitioner in France.

This man is 53 years old and is not taking any medications. His blood pressure is 146 (systolic)/87 (diastolic) mmHg. According to the most recent laboratory results, his non-high-density lipoprotein (non-HDL) cholesterol level is 4.3 mmol/L. He is a non-smoker.

The version of SCORE2 for populations at low CVD risk is used as the patient is <70 years old and he lives in France, which is a country with low CVD risk.

The illustration below shows the appropriate chart. First, the correct **age** group is identified (50-54 years), then the **systolic blood pressure** group (140-159 mmHg) and **non-HDL cholesterol group** (4.0-4.9 mmol/L).

According to this calculation, the patient has an estimated likelihood of 5% of experiencing a fatal or non-fatal cardiovascular event (such as heart attack or stroke) in the next 10 years. As such, this person has a **moderate** CVD risk.



This guide for patients is a simplified version of the ESC Clinical Practice Guidelines on Cardiovascular Disease Prevention in Clinical Practice. The full guidelines are available in English on the ESC website (<https://www.escardio.org/Guidelines/Clinical-Practice-Guidelines/2021-ESC-Guidelines-on-cardiovascular-disease-prevention-in-clinical-practice>); your healthcare provider will be familiar with its content and recommendations. Online translator tools may be able to translate the text and present it in an alternative language, with limitations. If you are interested in more information about cardiovascular disease prevention or the terms used in this document, the Healthy-Heart.org website (<https://www.healthy-heart.org/>) is a good place to start.

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#### Disclaimer

This material was adapted from the ESC Guidelines on Cardiovascular Disease Prevention in Clinical Practice (European Heart Journal 2021 - doi: 10.1093/eurheartj/ehab484) as published on 30 August 2021.

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