



ESSENTIAL MESSAGES FROM ESC GUIDELINES

Committee for Practice Guidelines

To improve the quality of clinical practice and patient care in Europe



CVD PREVENTION

FIFTH JOINT EUROPEAN SOCIETIES' TASK FORCE ON
CARDIOVASCULAR DISEASE PREVENTION IN CLINICAL PRACTICE



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ESC ESSENTIAL MESSAGES

EUROPEAN GUIDELINES ON CARDIOVASCULAR DISEASE PREVENTION IN CLINICAL PRACTICE (VERSION 2012) *

The Fifth Joint Task Force on the European Society Cardiology and Other Societies on Cardiovascular Disease Prevention in Clinical Practice (Constituted by representatives of nine societies and by invited experts)

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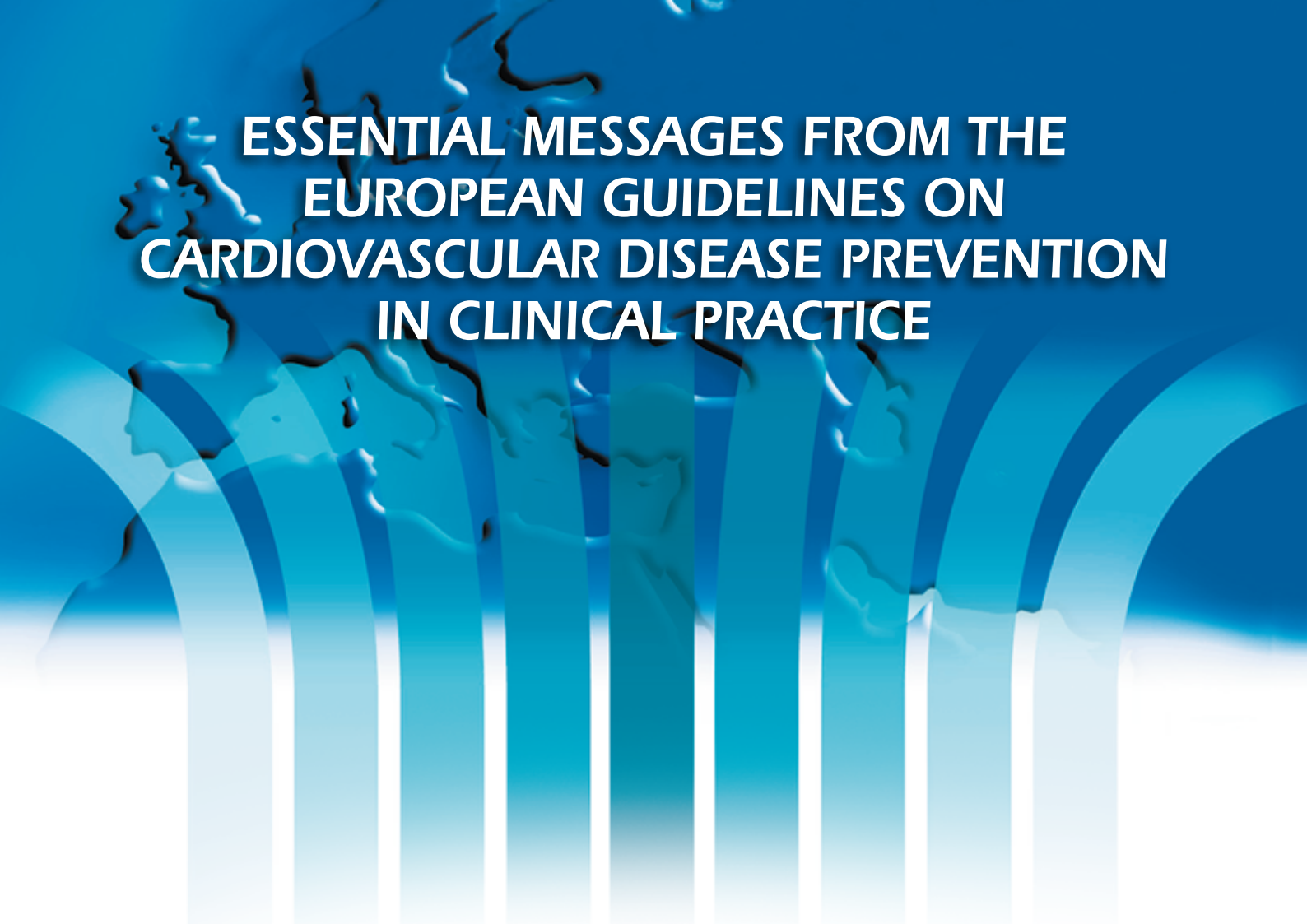
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Table of contents

-  Section 1 - Take home messages
-  Section 2 - Major gaps in evidence

Take home messages

1. What is CVD prevention?

- A coordinated set of actions, at public and individual level, aimed at eradicating, eliminating or minimizing the impact of cardiovascular diseases and their related disability. The bases of prevention are rooted in cardiovascular epidemiology and evidence-based medicine.

2. Why is CVD prevention needed?

- Atherosclerotic CVD, especially CHD, remains the leading cause of premature death worldwide.
- CVD affects men and women; of all deaths that occur <75 years old in Europe, 42% due to CVD in women and 38% in men.
- Prevention works: >50% of the reductions seen in CHD mortality relate to changes in risk factors, and 40% to improved treatments.
- Preventive efforts should be life-long, from birth (if not before) to old age.
- Population and high-risk preventive strategies should be complementary; an approach limited to high-risk persons will be less effective; population education programmes are still needed.

3. Who needs CVD prevention?

- In apparently healthy persons, CVD risk is most frequently the result of multiple interacting risk factors.
- A risk estimation system such as SCORE can assist in making logical management decisions, and may help to avoid both under- and over-treatment.
- Total risk estimation using multiple risk factors (such as SCORE) is recommended for asymptomatic adults without evidence of CVD.
- High-risk individuals can be detected on the basis of established CVD, diabetes mellitus, moderate to severe renal disease, very high levels of individual risk factors or a high SCORE risk.
- Low socio-economic status, lack of social support, stress at work and in family life, depression, anxiety, hostility and the type D personality, contribute both to the risk of developing CVD and the worsening of clinical course and prognosis of CVD.
- Novel biomarkers have only limited additional value when added to CVD risk assessment with the SCORE algorithm.
- High-sensitive CRP and homocysteine may be used in persons at moderate CVD risk.
- Measurement of carotid intima-media thickness and/or screening for atherosclerotic plaques by carotid artery scanning should be considered for cardiovascular risk assessment in asymptomatic adults at moderate risk. Measurement of ankle-brachial index and computed tomography for coronary calcium may also be considered.
- All persons with obstructive sleep apnoea and all men with erectile dysfunction should undergo medical assessment, including risk stratification and risk management.

4. How can CVD prevention be used?

Behavioural factors

- Established cognitive-behavioural strategies (e.g. motivational interviewing) to facilitate lifestyle change are recommended.
- All smoking including exposure to passive smoking is a strong and independent risk factor for CVD and has to be avoided.
- All smokers should be given advice to quit and be offered assistance.

Take home messages

- A healthy diet is recommended as being the cornerstone of CVD prevention:
 - ♦ Saturated fatty acids to account for <10% of total energy intake, through replacement by polyunsaturated fatty acids.
 - ♦ Trans unsaturated fatty acids: as little as possible, preferably no intake from processed food, and <1% of total energy intake from natural origin
 - ♦ <5 g of salt per day.
 - ♦ 30–45 g of fibre per day, from wholegrain products, fruits and vegetables.
 - ♦ 200 g of fruit per day (2-3 servings).
 - ♦ 200 g of vegetables per day (2-3 servings).
 - ♦ Fish at least twice a week, one of which to be oily fish.
 - ♦ Consumption of alcoholic beverages should be limited to 2 glasses per day (20 g/d of alcohol) for men and 1 glass per day (10 g/d of alcohol) for women.
- Weight reduction in overweight and obese people is recommended as this is associated with favourable effects on blood pressure and dyslipidaemia, which may lead to less CVD.
- Healthy adults of all ages have to spend 2.5-5 hours a week on physical activity of at least moderate intensity, or 1-2.5 hours a week on vigorous intense exercise. Sedentary subjects should be strongly encouraged to start light-intensity exercise programmes.
- Patients with previous acute myocardial infarction, CABG, PCI, stable angina pectoris or stable chronic heart failure should undergo moderate-to-vigorous intensity aerobic exercise training ≥ 3 times a week and 30 min per session.
- Multimodal behavioural interventions, integrating health education, physical exercise and psychological therapy for psychosocial risk factors and coping with illness, should be prescribed.

Riskfactors

- Lifestyle measures such as weight control, increased physical activity, alcohol moderation, sodium restriction, and increased consumption of fruits, vegetables, and low-fat dairy products are recommended in all patients with hypertension and in individuals with high normal blood pressure.
- All major antihypertensive drug classes (i.e. diuretics, ACE inhibitors, calcium antagonists, angiotensin receptor antagonists and beta-blockers) do not differ significantly in their blood pressure-lowering efficacy and thus should be recommended for the initiation and maintenance of antihypertensive treatment.
- In patients with grade 1 or 2 hypertension and at moderate total cardiovascular risk, drug treatment may be delayed for several weeks, and in grade 1 hypertensive patients without any other risk factor, for several months while trying lifestyle measures.
- Drug treatment is recommended to be initiated promptly in patients with grade 3 hypertension, as well as in patients with grade 1 or 2 hypertension who are at high or very high total cardiovascular risk.
- Systolic blood pressure should be lowered to <140 mmHg (and diastolic blood pressure <90 mmHg) in all hypertensive patients.
- The target HbA1c for the prevention of CVD in diabetes of <7.0% (<53 mmol/mol) is recommended.
- Statins are recommended to reduce cardiovascular risk in diabetes.
- Blood pressure targets in diabetes are recommended to be <140/80 mmHg.

Take home messages

- In patients at very high CVD risk, the recommended LDL cholesterol target is <1.8 mmol/L ($<\sim 70$ mg/dL) or a $\geq 50\%$ LDL-cholesterol reduction when the target level cannot be reached.
- In patients at high CVD risk, a LDL-cholesterol goal <2.5 mmol/L ($<\sim 100$ mg/dL) is recommended.
- The recommended target levels are <5 mmol/L ($<\sim 190$ mg/dL) for total plasma cholesterol and <3 mmol/L ($<\sim 115$ mg/dL) for LDL cholesterol for subjects at low or moderate risk.
- In patients with an acute coronary syndrome statin treatment in high doses has to be initiated while the patients are in the hospital.
- In the acute phase of coronary syndromes and for the following 12 months, dual antiplatelet therapy with a P2Y₁₂ inhibitor (ticagrelor or prasugrel) added to aspirin is recommended.
- Clopidogrel (600 mg loading dose, 75 mg daily dose) is recommended for patients who cannot receive ticagrelor or prasugrel.
- Physicians must assess adherence to medication, and identify reasons for non-adherence in order to tailor further interventions to the individual needs of the patient or person at risk.

5. Where should CVD prevention be offered?

- Actions to prevent CVD should be incorporated into everyone's daily lives, starting in early childhood and continuing throughout adulthood and senescence.
- Risk factor screening including the lipid profile may be considered in adult men ≥ 40 years old and in women ≥ 50 years of age or postmenopausal.
- The physician in general practice is the key person to initiate, coordinate and provide long-term follow-up for CVD prevention.
- Nurse-coordinated prevention programmes should be well integrated into healthcare systems.
- The practising cardiologist should be the advisor if there is uncertainty over the use of preventive medication or when usual preventive options are difficult to apply.
- All patients with CVD must be discharged from hospital with clear guideline-orientated treatment recommendations to minimize adverse events.
- All patients requiring hospitalization or invasive intervention after an acute coronary syndrome should participate in a cardiac rehabilitation programme to improve prognosis by modifying lifestyle habits and increasing treatment adherence.
- Non-governmental organisations are important partners to health care workers in promoting preventive cardiology.
- The European Heart Health Charter marks the start of a new era of political engagement in preventive cardiology.

Major gaps in evidence

Why and for whom is CVD prevention needed?

- Our understanding of the reasons for changes in the behaviour of both populations and individuals remains incomplete and the mechanisms whereby such changes in behaviour translate into changes in disease patterns are incompletely understood.
- It is uncertain whether CVD is merely deferred by preventive efforts or if it can be avoided completely.
- Current systems of grading evidence give most weight to randomised controlled trials. While this is appropriate, many lifestyle measures are less amenable to such assessment than are drug treatments, which will therefore tend to receive a higher grade. While the GRADE system attempts to address this issue, more debate is needed.
- There are no recent randomised controlled trials of a total risk approach to risk assessment or risk management.
- Clinical investigation to aid treatment decisions in younger people with high levels of risk factors requires further evaluation.
- For both biomarkers that are already well-established and for novel biomarkers that arise in the future there is a need to redefine specific subgroups (intermediate, undefined or unusual CVD risk) that would benefit most from the use of these biomarkers, particularly in early primary prevention.
- There is limited evidence that routine screening for psychosocial risk factors contributes to fewer future cardiac events, as screening has not yet translated into improved healthcare models.
- The role of computed tomography scanning for screening in asymptomatic patients needs further investigation and prospective studies proving the value of coronary scanning do as yet not exist.
- Magnetic resonance imaging for detection of vascular plaque may be of interest for cardiovascular risk assessment in asymptomatic adults but studies are still not convincing.

How can CVD prevention be used?

- There is a need of more efficient, safe and cost-effective smoking cessation aids.
- The biggest challenge in dietary CVD prevention is to develop more effective strategies to help people to change their diet (both quantitatively and qualitatively) and to maintain that healthy diet and a normal weight.
- Research into the substances in foods that underlie the protective effects is ongoing.
- Evidence is lacking that some functional foods with a lipid-lowering effect can reduce the risk of CVD.
- Whether measurements of regional adiposity add value to the predictive ability of BMI in identifying those at risk of future CVD remains unanswered.
- It remains to be established whether prognostic gains can be achieved with less (duration/intensity) physical activity, in groups that are not able to meet the recommendations (elderly, deconditioned, patients with advanced chronic heart failure).
- It remains to be proven whether regular physical activity yields a long-term prognostic gain in patients with chronic heart failure.
- Evidence that treatment of clinically significant depression and anxiety will improve cardiac endpoints is still inconclusive.
- Should drugs be prescribed to all individuals with grade 1 hypertension, even when their total cardiovascular risk is low or moderate?
- Should drugs be prescribed to the elderly with grade 1 hypertension, and should their blood pressure goal be set <140/90 mmHg?

Major gaps in evidence

- Are lifestyle measures known to reduce blood pressure also capable of reducing morbidity and mortality in hypertension?
- The most appropriate way of reaching the target HbA1c without excessive weight gain or hypoglycaemia has not been established.
- There is still insufficient evidence for any triglyceride or HDL cholesterol value to be considered as the target for therapy that would reduce CVD events and mortality.
- There is not sufficient evidence that non-HDL-C and apo B are better markers than calculated LDL-C and a better index of the adequacy of LDL lowering than LDL-C.

Where should CVD prevention be offered?

- Application of risk scoring in general practice versus individual risk factor treatment has not yet been shown to reduce CVD morbidity or mortality.
- The use of risk scoring based on electronic patient records is promising but needs to be tested in a general practice setting.
- The optimal (and most cost-effective) intensity and duration of individual components of nurse-based intervention need to be established to achieve sustained risk reduction in patients at high risk or with vascular disease.
- Research is also needed to determine the knowledge and skills needed for effective prevention programmes, and the education required to ensure competence.
- The optimal length of a cardiac rehabilitation programme remains unknown
- There is a need for greater engagement of health workers in the public health debate, both at a local and on a broader political scale.



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To read the full report as published by the European Society of Cardiology, visit our Web Site at:

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