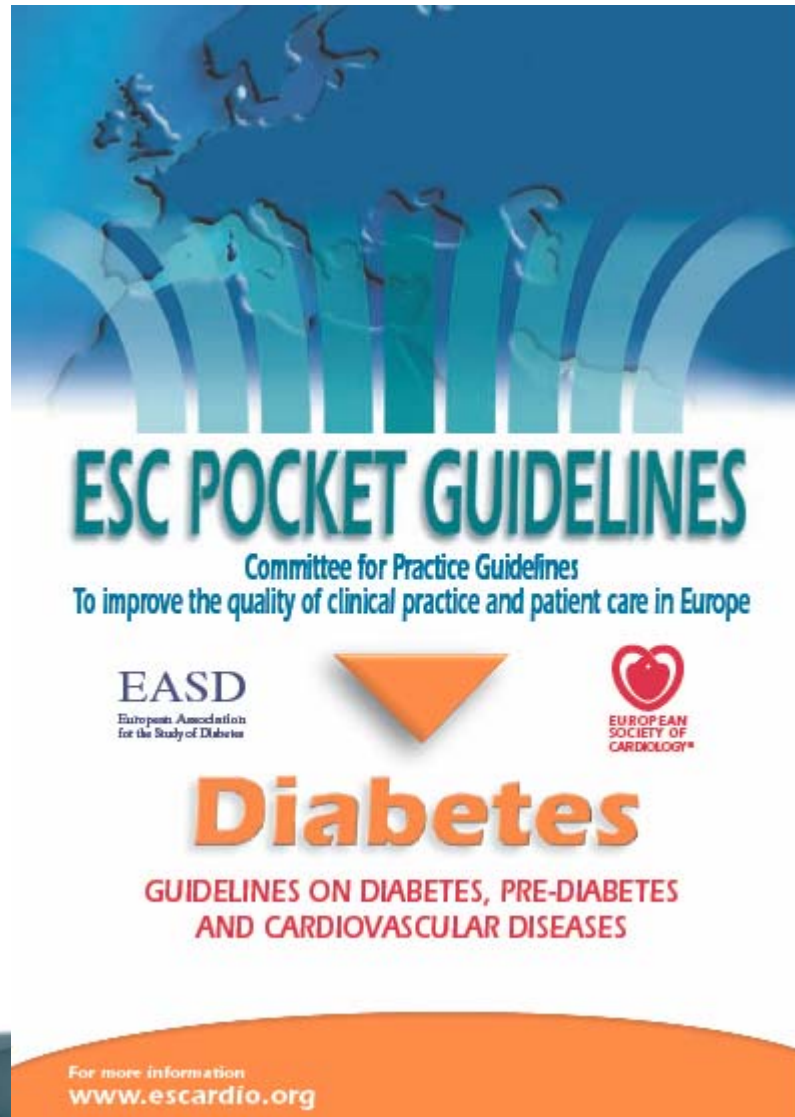


# ESC/EASD Pocket Guidelines

## Diabetes, pre-diabetes and cardiovascular disease



# ESC/EASD Pocket Guidelines

## Diabetes, prediabetes and cardiovascular disease

### ESC Pocket Guidelines

Diabetes, pre-diabetes, and cardiovascular diseases\*

The Task Force on Diabetes and Cardiovascular Diseases of the European Society of Cardiology (ESC) and of the European Association for the Study of Diabetes (EASD)

#### Co-Chairperson:

Lars Rydén

#### Representing ESC

Department of Cardiology

Karolinska University

Hospital Solna

SE-171 76 Stockholm, Sweden

**Phone: + 46 (8) 5177 2171**

**Fax: + 46 (8) 34 49 64**

**E-mail: lars.ryden@ki.se**

#### Co-Chairperson:

Eberhard Standl

#### Representing EASD

Diabetes Research Institute at GSF

D-85764 Neuherberg, Germany

**Phone: + 49 (89) 3081 733**

**Fax: + 49 (89) 3187 2971**

**E-mail:**

**eberhard.standl@lrz.uni-muenchen.de**

#### Task Force Members

- |                                       |                                 |
|---------------------------------------|---------------------------------|
| 1. Małgorzata Baran, Poland           | 7. Markku Laakso, Finland       |
| 2. Greet Van den Berghe, Belgium      | 8. Klas Malmberg, Sweden        |
| 3. John Betteridge, UK                | 9. Silvia Priori, Italy         |
| 4. Menko-Jan de Boer, The Netherlands | 10. Jan Ostergren, Sweden       |
| 5. Francesco Cosentino, Italy         | 11. Jaakko Tuomilehto, Finland  |
| 6. Bengt Jönsson, Sweden              | 12. Inga Thrafnadóttir, Iceland |

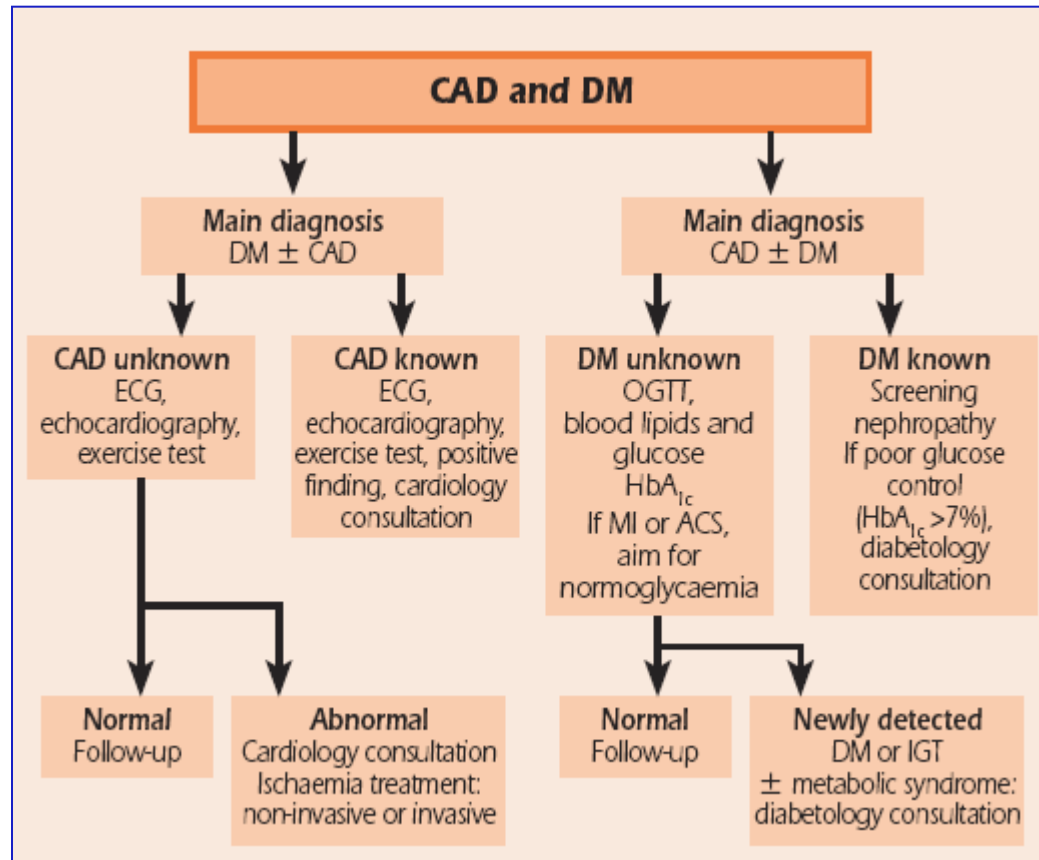
#### ESC Staff

1. Keith McGregor, Sophia Antipolis, France
2. Verónica Dean, Sophia Antipolis, France
3. Catherine Després, Sophia Antipolis, France

\*Adapted from the ESC Guidelines on Diabetes, Pre-diabetes, and Cardiovascular Diseases, Executive Summary (European Heart Journal (2007); 28: 88-136) and Full Text (European Heart Journal 2007; 9 (Suppl. C):1-74 and <http://www.easd.org>)

# ESC/EASD Pocket Guidelines

## Diabetes, pre-diabetes and cardiovascular disease



# ESC/EASD Pocket Guidelines

## Diabetes, pre-diabetes and cardiovascular disease

### Classes of recommendations

#### Class I

Evidence and/or general agreement that a given diagnostic procedure/treatment is beneficial, useful, and effective.

#### Class II

Conflicting evidence and/or a divergence of opinion about the usefulness/efficacy of the treatment or procedure.

#### Class IIa

Weight of evidence/opinion is in favour of usefulness/efficacy.

#### Class IIb

Usefulness/efficacy is less well established by evidence/opinion.

#### Class III

Evidence or general agreement that the treatment or procedure is not useful/effective and, in some cases, may be harmful.

### Levels of evidence

#### Level of Evidence A

Data derived from multiple randomized clinical trials or meta-analyses.

#### Level of Evidence B

Data derived from a single randomized clinical trial or large non-randomized studies.

#### Level of Evidence C

Consensus of opinion of the experts and/or small studies, retrospective studies, registries.

# ESC/EASD Pocket Guidelines

## Diabetes, pre-diabetes and cardiovascular disease

### Recommended treatment targets for patients with diabetes and CAD

	Variable	Treatment target		Variable	Treatment target
<b>Blood pressure</b>	Systolic/diastolic (mm Hg)	< 130/80	<b>Life style counselling</b>	Smoking cessation	Obligatory
	In case of renal impairment or proteinuria > 1 g/24 h	< 125/75		Regular physical activity (min/day)	> 30-45
<b>Glycaemic control</b>	HbA <sub>1c</sub> (%)*	≤ 6.5		Weight control BMI (kg/m <sup>2</sup> )	< 25
	Glucose (venous plasma; mmol/L) mg/dL			In case of overweight, weight reduction (%)	10
	Fasting	< 6.0 (108)		Waist circumference (optimum; ethnic specific; cm)	
	Post-prandial (peak)			Men (European)	< 94
	Type 1 diabetes	7.5-9.0 (135-160)		Women (European)	< 80
	Type 2 diabetes	< 7.5 (135)		Dietary habits	
<b>Lipid profile</b> (mmol/L) (mg/dL)	Total cholesterol	< 4.5 (175)		Salt intake (g/day)	< 6
	LDL cholesterol	≤ 1.8 (70)		Fibre intake	> 30 g per day
	HDL cholesterol			Liquid mono- and disaccharides	avoid
	Men	> 1.0 (40)		Fat intake (% of dietary energy)	≤ 30-35
	Women	> 1.2 (46)		Saturated	< 10
	Triglycerides**	< 1.7 (150)		Trans-fat	< 2
	Total/HDL cholesterol**	< 3		Polyunsaturated n-6	4-8
				Polyunsaturated n-3	2 g/day of linolenic acid and 200 mg/day of very long chain fatty acids



# ESC/EASD Pocket Guidelines

## Diabetes, pre-diabetes and cardiovascular disease

### Definition, classification and screening of diabetes and pre-diabetic glucose abnormalities

Recommendation	Class	Level
The definition and diagnostic classification of diabetes and its pre-states should be based on the level of the subsequent risk of cardiovascular complications.	I	B
Early stages of hyperglycaemia and asymptomatic type 2 diabetes are best diagnosed by an oral glucose tolerance test (OGTT) that gives both fasting and 2 h post-load glucose values.	I	B
Primary screening for the potential type 2 diabetes can be done most efficiently by using a non-invasive risk score, combined with a diagnostic OGTT in people with high score values.	I	A

# ESC/EASD Pocket Guidelines

## Diabetes, pre-diabetes and cardiovascular disease

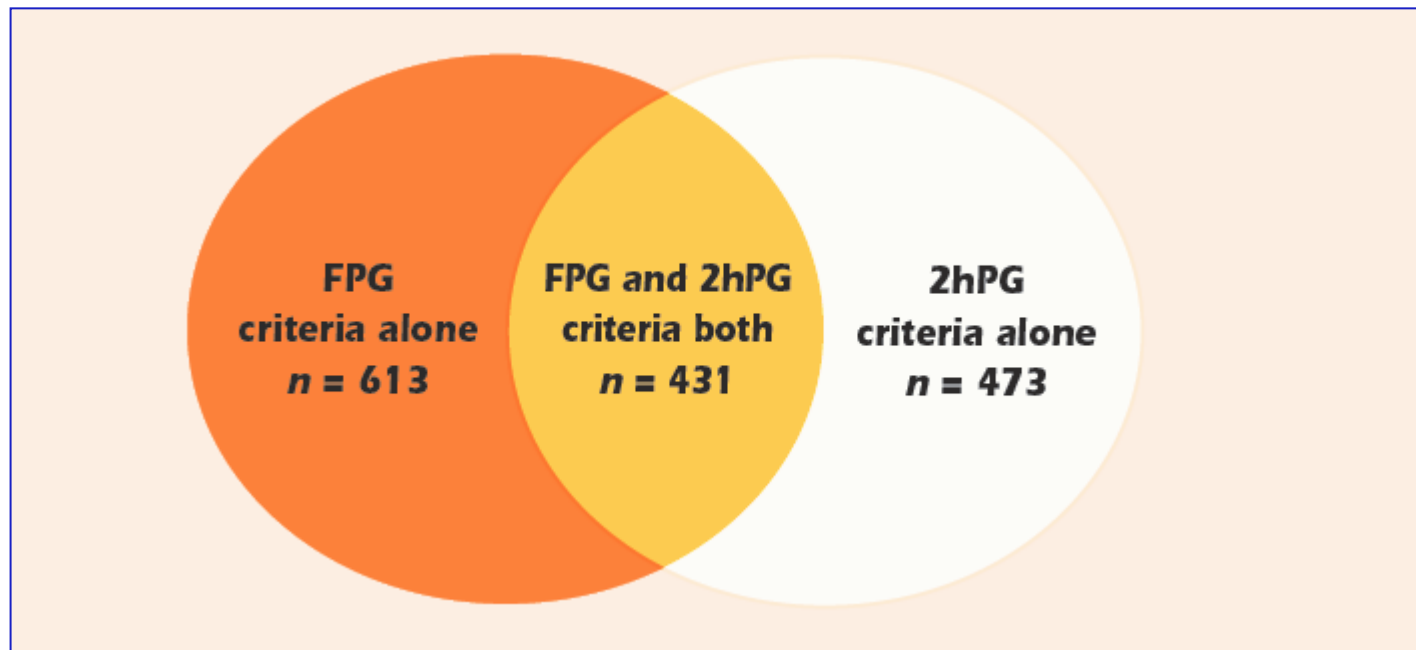
Criteria used for gluco-metabolic classification from WHO (1999) and ADA (1997 and 2003)

Glucometabolic category	Source	Classification criteria <small>Venous plasma glucose mmol/L (mg/dL)</small>
Normal glucose regulation (NGR)	WHO	FPG < 6.1 (110) + 2 h PG < 7.8 (140)
	ADA (1997)	FPG < 6.1 (110)
	ADA (2003)	FPG < 5.6 (100)
Impaired fasting glucose (IFG)	WHO	FPG ≥ 6.1 (110) and < 7.0 (126) + 2 h PG < 7.8 (140)
	ADA (1997)	FPG ≥ 6.1 (110) and < 7.0 (126)
	ADA (2003)	FPG ≥ 5.6 (100) and < 7.0 (126)
Impaired glucose tolerance (IGT)	WHO	FPG < 7.0 (126) + 2 h PG ≥ 7.8 and < 11.1 (200)
Impaired glucose homeostasis (IGH)	WHO	IFG or IGT
Diabetes mellitus (DM)	WHO	FPG ≥ 7.0 (126) or 2 h PG ≥ 11.1 (200)
	ADA (1997)	FPG ≥ 7.0 (126)
	ADA (2003)	FPG ≥ 7.0 (126)

# ESC/EASD Pocket Guidelines

## Diabetes, pre-diabetes and cardiovascular disease

Fasting and post-load glucose levels identify different individuals with asymptomatic diabetes





# ESC/EASD Pocket Guidelines

## Diabetes, pre-diabetes and cardiovascular disease

Appropriate methods for the early detection of people with high risk for diabetes

- 1) measuring blood glucose to determine prevalent impaired glucose homeostasis;
- 2) using demographic, clinical characteristics and previous laboratory tests to determine the likelihood of future incident diabetes;
- 3) collecting questionnaire based information on aetiological factors for type 2 diabetes.

# ESC/EASD Pocket Guidelines

## Diabetes, pre-diabetes and cardiovascular disease

FINnish Diabetes  
Risk Score (FINDRISC)  
to address 10 year risk  
of type 2 diabetes in  
adults.

Available  
[www.diabetes.fi/english](http://www.diabetes.fi/english)

### Type 2 diabetes risk assessment form

Circle the right alternative and add up your points.

#### 1. Age

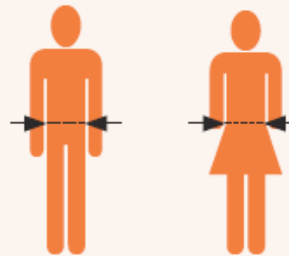
- 0 p. Under 45 years
- 2 p. 45-54 years
- 3 p. 55-64 years
- 4 p. Over 64 years

#### 2. Body mass Index

- 0 p. Lower than 25 kg/m<sup>2</sup>
- 1 p. 25-30 kg/m<sup>2</sup>
- 3 p. Higher than 30 kg/m<sup>2</sup>

#### 3. Waist circumference measured below the ribs (usually at the level of the navel)

- |      | MEN              | WOMEN           |
|------|------------------|-----------------|
| 0 p. | Less than 94 cm  | Less than 80 cm |
| 3 p. | 94-102 cm        | 80-88 cm        |
| 4 p. | More than 102 cm | More than 88 cm |



#### 4. Do you usually have daily at least 30 min of physical activity at work and/or during leisure time (including normal daily activity)?

- 0 p. Yes
- 2 p. No

#### 5. How often do you eat vegetables, fruit, or berries?

- 0 p. Every day
- 1 p. Not every day

#### 6. Have you ever taken anti-hypertensive medication regularly?

- 0 p. No
- 2 p. Yes

#### 7. Have you ever been found to have high blood glucose (e.g. in a health examination, during an illness, during pregnancy)?

- 0 p. No
- 5 p. Yes

#### 8. Have any of the members of your immediate family or other relatives been diagnosed with diabetes (type 1 or type 2)?

- 0 p. No
- 3 p. Yes: grandparent, aunt, uncle, or first cousin (but no own parent, brother, sister or child)
- 5 p. Yes: parent, brother, sister, or own child

#### Total risk score

 The risk of developing type 2 diabetes within 10 years is

Lower than 7 Low: estimated one in 100 will develop disease

7-11 Slightly elevated: estimated one in 25 will develop disease

12-14 Moderate: estimated one in 6 will develop disease

15-20 High: estimated one in three will develop disease

Higher than 20 Very High: estimated one in two will develop disease



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# ESC/EASD Pocket Guidelines

## Diabetes, pre-diabetes and cardiovascular disease

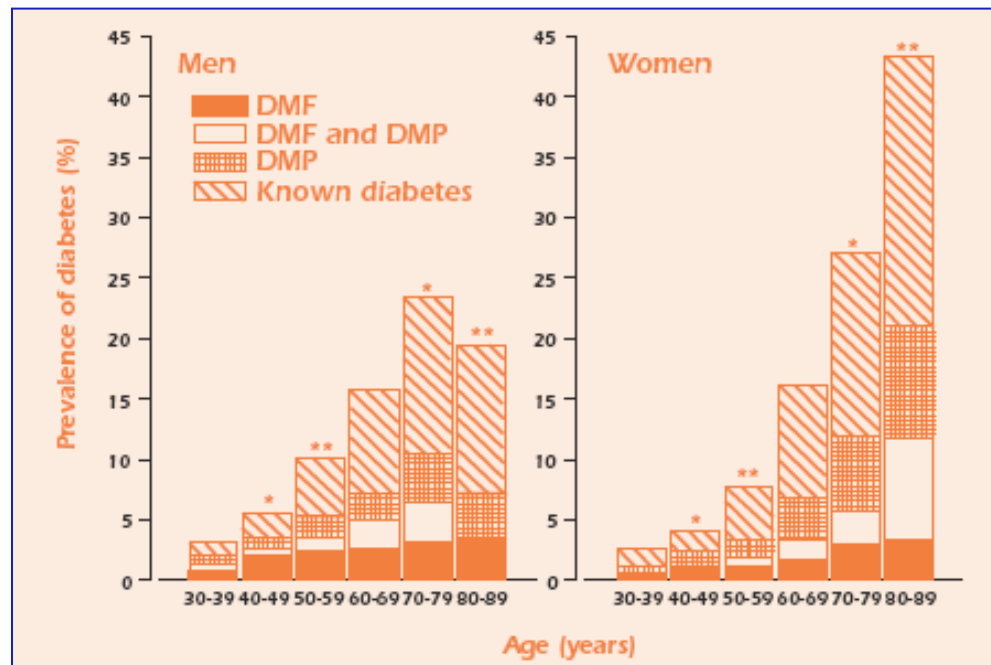
### Epidemiology of diabetes, IGH and cardiovascular risk

Recommendation	Class	Level
The relationship between hyperglycaemia and CVD should be seen as a continuum. For each 1% increase of HbA <sub>1c</sub> there is a defined increased risk for CVD.	I	A
The risk of CVD for people with overt diabetes is increased by two to three times for men and three to five times for women compared with people without diabetes.	I	A
Information on post-prandial (post-load) glucose provides better information about the future risk for CVD than fasting glucose, and elevated post-prandial (post-load) glucose also predicts increased cardiovascular risk in subjects with normal fasting glucose levels.	I	A
Glucometabolic perturbations carry a particularly high risk for cardiovascular morbidity and mortality in women, who in this respect need special attention.	Ila	B

# ESC/EASD Pocket Guidelines

## Diabetes, pre-diabetes and cardiovascular disease

Age and gender-specific prevalence of diabetes  
in 13 European population-based cohorts



# ESC/EASD Pocket Guidelines

## Diabetes, pre-diabetes and cardiovascular disease

### Identification of subjects at high risk for cardiovascular disease or diabetes

Recommendation	Class	Level
The metabolic syndrome identifies people at a higher risk of CVD than the general population, although it may not provide a better or even equally good prediction of cardiovascular risk than scores based on the major cardiovascular risk factors (blood pressure, smoking, and serum cholesterol).	II	B
Several cardiovascular risk assessment tools exist and they can be applied to both non-diabetic and diabetic subjects.	I	A
An assessment of predicted type 2 diabetes risk should be part of the routine health care using the risk assessment tools available.	II	A
Patients without known diabetes but with established CVD should be investigated with an OGTT.	I	B
People at high risk for type 2 diabetes should receive appropriate lifestyle counselling and, if needed, pharmacological therapy to reduce or delay their risk of developing diabetes. This may also decrease their risk to develop CVD.	I	A
Diabetic patients should be advised to be physically active in order to decrease their cardiovascular risk.	I	A



# ESC/EASD Pocket Guidelines

## Diabetes, pre-diabetes and cardiovascular disease

### Definition the metabolic syndrome according to International Diabetes Federation

**Central Obesity** (defined as waist circumference  $\geq 94$  cm for Europid men and  $\geq 80$  cm for Europid women, with ethnicity specific values for other groups)

**plus any two of the following four factors:**

- **Raised TG level:**  $\geq 1.7$  mmol/L (150 mg/dL), **or specific treatment for this lipid abnormality.**
- **Reduced HDL cholesterol:**  $< 1.03$  mmol/L (40 mg/dL) in males and  $< 1.29$  mmol/L (50 mg/dL) in females, **or specific treatment for this lipid abnormality.**
- **Raised blood pressure:** systolic BP  $\geq 130$  or diastolic BP  $\geq 85$  mmHg, **or treatment of previously diagnosed hypertension.**
- **Raised fasting plasma glucose (FPG)**  $\geq 5.6$  mmol/L (100 mg/dL), **or previously diagnosed type 2 diabetes.**

If above 5.6 mmol/L or 100 mg/dL, OGTT is strongly recommended but is not necessary to define presence of the syndrome.



# ESC/EASD Pocket Guidelines

## Diabetes, pre-diabetes and cardiovascular disease

Findings in lifestyle intervention studies aiming at prevention of type 2 diabetes in people with impaired glucose tolerance

Study	Cohort size	Mean BMI (kg/m <sup>2</sup> )	Duration (years)	RRR (%)	ARR (%)	NNT
Malmö	217	26.6	5	63	18	28
DPS	523	31.0	3	58	12	22
DPP	2161*	34.0	3	58	15	21
Da Qing	500	25.8	6	46	27	25

# ESC/EASD Pocket Guidelines

## Diabetes, pre-diabetes and cardiovascular disease

### Treatment to reduce cardiovascular risk

Recommendation	Class	Level
Structured patient education improves metabolic and blood pressure control.	I	A
Non-pharmacological life style therapy improves metabolic control.	I	A
Self-monitoring improves glycaemic control.	I	A
Near normoglycaemic control ( $\text{HbA}_{1c} \leq 6.5\%$ ).	I	A
reduces microvascular complications.	I	A
reduces macrovascular complications.	I	A
Intensified insulin therapy in type 1 diabetes reduces morbidity and mortality.	I	A
Early escalation of therapy towards predefined treatment targets improves a composite of morbidity and mortality in type 2 diabetes.	IIa	B
Early initiation of insulin should be considered in patients with type 2 diabetes failing glucose target.	IIb	C
Metformin is recommended as first line drug in overweight type 2 diabetes.	IIa	B

# ESC/EASD Pocket Guidelines

## Diabetes, pre-diabetes and cardiovascular disease

Suggested policy for the selection of glucose lowering therapy according to the glucometabolic situation

Glucometabolic situation	Policy
Post-prandial hyperglycaemia	Alpha-glucosidase inhibitors, short-acting sulphonylureas, glinides, short-acting regular insulin, or insulin analogs
Fasting hyperglycaemia	Biguanides, long acting sulphonylureas, glitazones, long-acting insulin or insulin analogs
Insulin resistance	Biguanides, glitazones, alpha-glucosidase inhibitors
Insulin deficiency	Sulphonylureas, glinides, insulin

# ESC/EASD Pocket Guidelines

## Diabetes, pre-diabetes and cardiovascular disease

Mean efficacy of pharmacological treatment options in patients with type 2 diabetes

Pharmacological agent	Mean lowering of initial HbA <sub>1c</sub> (%)
Alpha-glucosidase inhibitors	0.5–1.0
Biguanides	1.0–1.5
Glinides	0.5–1.5
Glitazones	1.0–1.5
Insulin	1.0–2.0
Sulphonylurea derivatives	1.0–1.5

# ESC/EASD Pocket Guidelines

## Diabetes, pre-diabetes and cardiovascular disease

Potential downsides of pharmacological treatment modalities in patients with type 2 diabetes

Potential problems*	Avoid or reconsider
Unwanted weight gain	Sulphonylureas, glinides, glitazones, insulin
Gastrointestinal symptoms	Biguanides, alpha-glucosidase inhibitors
Hypoglycaemia	Sulphonylureas, glinides, insulin
Impaired kidney function	Biguanides, sulphonylureas
Impaired liver function	Glinides, glitazones, biguanides, alpha-glucosidase inhibitors
Impaired cardio-pulmonary function	Biguanides, glitazones

# ESC/EASD Pocket Guidelines

## Diabetes, pre-diabetes and cardiovascular disease

### Dyslipidemia

Recommendation	Class	Level
Elevated LDL and low HDL cholesterol are important risk factors for CVD in people with diabetes.	I	A
Statins are first-line agents for lowering LDL cholesterol in diabetic patients.	I	A
In diabetic patients with CVD, statin therapy should be initiated regardless of baseline LDL cholesterol, with a treatment target of < 1.8–2.0 mmol/L (< 70–77 mg/dL).	I	B
Statin therapy should be considered in adult patients with type 2 diabetes, without CVD, if total cholesterol > 3.5 mmol/L (> 135 mg/dL), with a treatment targeting an LDL cholesterol reduction of 30–40%.	IIb	B
Given the high lifetime risk of CVD, it is suggested that all type 1 patients over the age of 40 years should be considered for statin therapy. In patients 18–39 years (either type 1 or type 2), statin therapy should be considered when other risk factors are present, e.g. nephropathy, poor glycaemic control, retinopathy, hypertension, hypercholesterolaemia, features of the metabolic syndrome, or family history of premature vascular disease.	IIb	C
In diabetic patients with hypertriglyceridaemia > 2 mmol/L (177 mg/dL) remaining after having reached the LDL cholesterol target with statins, statin therapy should be increased to reduce the secondary target of non-HDL cholesterol. In some cases, combination therapy with the addition of ezetimibe, nicotinic acid, or fibrates may be considered.	IIb	B



# ESC/EASD Pocket Guidelines

## Diabetes, pre-diabetes and cardiovascular disease

Diabetic patients in major secondary prevention trials with statins and risk reduction in patients with and without diabetes

Variables			Proportion of events (%)		Relative risk reduction (%)	
Trial	Type of event	Treatment	Diabetes present		type of patients	
			No	Yes	All	Diabetes
4S Diabetes <i>n</i> = 202	CHD death or non-fatal MI	Simvastatin Placebo	19 27	23 45	32	55
4S Reanalysis Diabetes <i>n</i> = 483	CHD death or non-fatal MI	Simvastatin Placebo	19 26	24 38	32	42
HPS Diabetes <i>n</i> = 3050	Major coronary event, stroke, or revascularization	Simvastatin Placebo	20 25	31 36	24	18
CARE Diabetes <i>n</i> = 586	CHD death or non-fatal MI	Pravastatin Placebo	12 15	19 23	23	25
LIPID Diabetes <i>n</i> = 782	CHD death, non-fatal MI, revascularization	Pravastatin Placebo	19 25	29 37	24	19
LIPS Diabetes <i>n</i> = 202	CHD death, non-fatal MI, revascularization	Fluvastatin Placebo	21 25	22 38	22	47
GREACE Diabetes <i>n</i> = 313	CHD death, non-fatal MI, UAP, CHF, revascularization, stroke	Atorvastatin Standard care	12 25	13 30	51 -	58 -

# ESC/EASD Pocket Guidelines

## Diabetes, pre-diabetes and cardiovascular disease

### Blood pressure and diabetes

Recommendation	Class	Level
In patients with diabetes and hypertension, the recommended target for blood pressure control is <130/80 mm Hg.	I	B
The cardiovascular risk in patients with diabetes and hypertension is substantially enhanced. The risk can be effectively reduced by blood pressure-lowering treatment.	I	A
The diabetic patient usually requires a combination of several anti-hypertensive drugs for satisfactory blood pressure control.	I	A
The diabetic patient should be prescribed a renin-angiotensin-system inhibitor as part of the blood pressure-lowering treatment.	I	A
Screening for microalbuminuria and adequate blood pressure-lowering therapy including the use of ACE-inhibitors and angiotensin receptor II blockers improves micro-and macrovascular morbidity in type 1 and type 2 diabetes.	I	A

# ESC/EASD Pocket Guidelines

## Diabetes, pre-diabetes and cardiovascular disease

### Management of cardiovascular risk

#### Coronary artery disease

Recommendation	Class	Level
Early risk stratification should be part of the evaluation of the diabetic patient after ACS.	Ila	C
Treatment targets, as listed in Table 1, should be outlined and applied in each diabetic patient following an ACS.	Ila	C
Patients with acute MI and diabetes should be considered for thrombolytic therapy on the same grounds as their non-diabetic counterparts.	Ila	A
Whenever possible, patients with diabetes and ACS should be offered early angiography and mechanical revascularization.	Ila	B
Beta-blockers reduce morbidity and mortality in patients with diabetes and ACS.	Ila	B
Aspirin should be given for the same indications and in similar dosages to diabetic and non-diabetic patients.	Ila	B
Adenosine diphosphate (ADP) receptor dependent platelet aggregation inhibitor (clopidogrel) may be considered in diabetic patients with ACS in addition to aspirin.	Ila	C
The addition of an ACE-inhibitor to other therapies reduces the risk for cardiovascular events in patients with diabetes and established CVD.	I	A
Diabetic patients with acute MI benefit from tight glucometabolic control. This may be accomplished by different treatment strategies.	Ila	B

# ESC/EASD Pocket Guidelines

## Diabetes, pre-diabetes and cardiovascular disease

### Treatment options based on accumulated evidence

Revascularization

Anti-ischaemic medication

Anti-platelet agents

Anti-thrombin agents

Secondary prevention by means of

- Lifestyle habits including food and physical activity

- Smoking cessation

- Blocking the renin–angiotensin system

- Blood pressure control

- Lipid-lowering medication

Blood glucose control

- Acute if needed by means of insulin infusion

- Long term as demanded

# ESC/EASD Pocket Guidelines

## Diabetes, pre-diabetes and cardiovascular disease

### Risk assessment of patients with diabetes and acute coronary syndromes

Variable	Examination tools
Peripheral, renal and cerebrovascular disease	Case history, clinical examination
Traditional risk factors	
Eating and exercise habits	Case history
Smoking	Case history
Blood lipids	Blood chemistry
Blood pressure	Record (including ankle)
Previous or ongoing diseases	
Autonomic dysfunction	Case history and clinical examination supplemented by special examinations as indicated (exercise testing, holter monitoring, echo-doppler examination, magnetic resonance imaging, myocardial scintigraphy, ST-segment monitoring, stress echo)
Hypotension	
Heart failure	
Arrhythmias	
Ischaemic heart disease	



# ESC/EASD Pocket Guidelines

## Diabetes, pre-diabetes and cardiovascular disease

### Management of cardiovascular risk acute coronary syndromes

Recommendation	Class	Level
Treatment decisions regarding revascularization in patients with diabetes should favour coronary artery bypass surgery over percutaneous intervention.	Ila	A
Glycoprotein IIb/IIIa inhibitors are indicated in elective PCI in a diabetic patient.	I	B
When PCI with stent implantation is performed in a diabetic patient, drug-eluting stents (DES) should be used.	Ila	B
Mechanical reperfusion by means of primary PCI is the revascularization mode of choice in a diabetic patient with acute MI.	I	A



# ESC/EASD Pocket Guidelines

## Diabetes, pre-diabetes and cardiovascular disease

### Trials addressing diabetes and revascularisation for multivessel disease

Trial	Patients (n)	Follow-up(years)	Mortality (%)		p-value
			CABG	PCI	
BARI	353	7	23.6	44.3	<0.001
CABRI	124	4	12.5	22.6	ns
EAST	59	8	24.5	39.9	ns
BARI registry	339	5	14.9	14.4	ns

# ESC/EASD Pocket Guidelines

## Diabetes, prediabetes and cardiovascular disease

### Revascularisation of diabetic patients with multivessel disease in the stent area

Trial	Patients (n)	Follow-up (years)	Mortality (%)		Repeat revascularization (%)		Mortality p-value
			CABG	PCI	CABG	PCI	
ARTS	208	3	4.2	7.1	8.4	41.1	0.39
SoS	150	1	0.8	2.5			ns
AWESOME	144	5	34	26			0.27

# ESC/EASD Pocket Guidelines

## Diabetes, pre-diabetes and cardiovascular disease

### Heart failure and diabetes

Recommendation	Class	Level
ACE-inhibitors are recommended as first-line therapy in diabetic patients with reduced left ventricular dysfunction with or without symptoms of heart failure.	I	C
Angiotensin-II receptor blockers have similar effects in heart failure as ACE-inhibitors and can be used as an alternative or even as added treatment to ACE-inhibitors.	I	C
BBs in the form of metoprolol, bisoprolol, and carvedilol are recommended as first-line therapy in diabetic patients with heart failure.	I	C
Diuretics, in particular loop diuretics, are important for symptomatic treatment of diabetic patients with fluid overload owing to heart failure.	IIa	C
Aldosterone antagonists may be added to ACE-inhibitors, BBs, and diuretics in diabetic patients with severe heart failure.	IIb	C

# ESC/EASD Pocket Guidelines

## Diabetes, pre-diabetes and cardiovascular disease

### Arrhythmias, atrial fibrillation and sudden death

Recommendation	Class	Level
Aspirin and anticoagulant use as recommended for patients with atrial fibrillation should be rigorously applied in diabetic patients with atrial fibrillation to prevent stroke.	I	C
Chronic oral anticoagulant therapy in a dose adjusted to achieve a target international normalized ratio (INR) of 2–3 should be considered in all patients with atrial fibrillation and diabetes, unless contra-indicated.	Ila	C
Control of glycaemia even in the pre-diabetic stage is important to prevent the development of the alterations that predispose to sudden cardiac death.	I	C
Microvascular disease and nephropathy are indicators of increased risk of sudden cardiac death in diabetic patients.	Ila	B

# ESC/EASD Pocket Guidelines

## Diabetes, pre-diabetes and cardiovascular disease

### Peripheral and cerebrovascular disease

Recommendation	Class	Level
All patients with type 2 diabetes and CVD are recommended treatment with low-dose aspirin.	Ila	B
In diabetic patients with peripheral vascular disease, treatment with clopidogrel or low molecular weight heparin may be considered in certain cases.	IIb	B
Patients with critical limb ischaemia should, if possible, undergo revascularization procedures .	I	B
An alternative treatment for patients with critical limb ischaemia, not suited for revascularization, is prostacyclin infusion.	I	A

# ESC/EASD Pocket Guidelines

## Diabetes, pre-diabetes and cardiovascular disease

### Investigation of the peripheral circulation in diabetic patients

#### At the physician's office (regularly)

Inspection	Dependent rubor Pallor with elevation Absence of hair growth Dystrophic toenails Ulcers or gangrenes
Palpation	Decreased pulses Dry and cool skin Impaired sensibility
Pressure measurement	Ankle and arm blood pressure

#### At the vascular laboratory (if appropriate)

Distal and/or segmental pressure measurements  
Oscillography  
Treadmill testing (with or without distal pressure after exercise)  
Duplex sonography  
*For evaluation of the microcirculation*  
Transcutaneous oxygen pressure  
Vital capillaroscopy

#### At the radiology department (if appropriate)

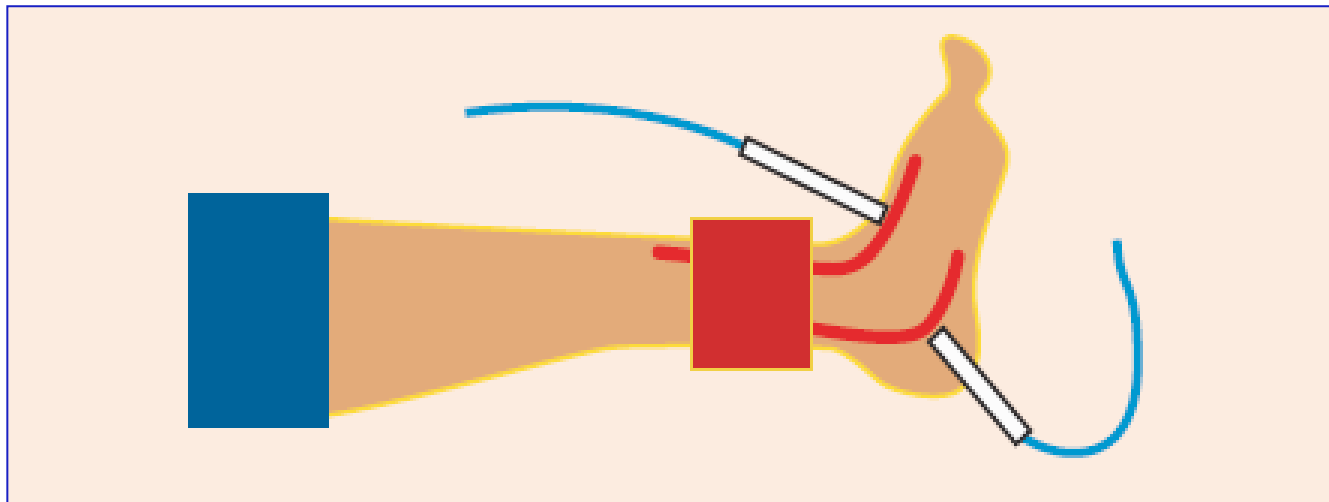
Magnetic resonance imaging  
Angiography



# ESC/EASD Pocket Guidelines

## Diabetes, pre-diabetes and cardiovascular disease

### Measurement of ankle blood pressure



# ESC/EASD Pocket Guidelines

## Diabetes, pre-diabetes and cardiovascular disease

### Stroke

Recommendation	Class	Level
For stroke prevention, blood pressure lowering is more important than the choice of drug.	IIa	B
Inhibition of the renin–angiotensin–aldosterone system may have additional benefits beyond blood pressure lowering <i>per se</i> .		
Patients with acute stroke and diabetes should be treated according to the same principles as stroke patients without diabetes.	IIa	C

# ESC/EASD Pocket Guidelines

## Diabetes, pre-diabetes and cardiovascular disease

### Intensive care

Recommendation	Class	Level
Strict blood glucose control with intensive insulin therapy improves mortality and morbidity of adult cardiac surgery patients.	I	B
Strict blood glucose control with intensive insulin therapy improves mortality and morbidity of adult critically ill patients.	I	A

# ESC/EASD Pocket Guidelines

## Diabetes, pre-diabetes and cardiovascular disease

### Published trials on intensive insulin therapy in intensive care

Patient population <sup>a</sup>	Surgical	Medical	Surgical and medical	Surgical	Heart surgery in diabetes
Number of patients	1548	1200/767 <sup>b</sup>	1600	61	4864
Randomized study	Yes	Yes	No	Yes	No
Target glucose (mmol/L)	< 6.1	< 6.1	< 7.8	< 6.7	< 8.3
Mortality-	↓	↓	↓		↓
Critical illness polyneuropathy	↓				
Bacteraemia/ severe infections	↓	-	-	↓	
Acute renal failure	↓	↓	↓		
Red blood cell transfusions	↓		↓		
Duration of mechanical ventilation	↓	↓			
Length of stay	↓	↓	↓		↓
Deep sternal wound infections					↓

# ESC/EASD Pocket Guidelines

## Diabetes, pre-diabetes and cardiovascular disease

### Health economy and diabetes

Recommendation	Class	Level
Lipid-lowering provides a cost-effective way of preventing complications.	I	A
Tight control of hypertension is cost-effective.	I	A

# ESC/EASD Pocket Guidelines

## Diabetes, pre-diabetes and cardiovascular disease

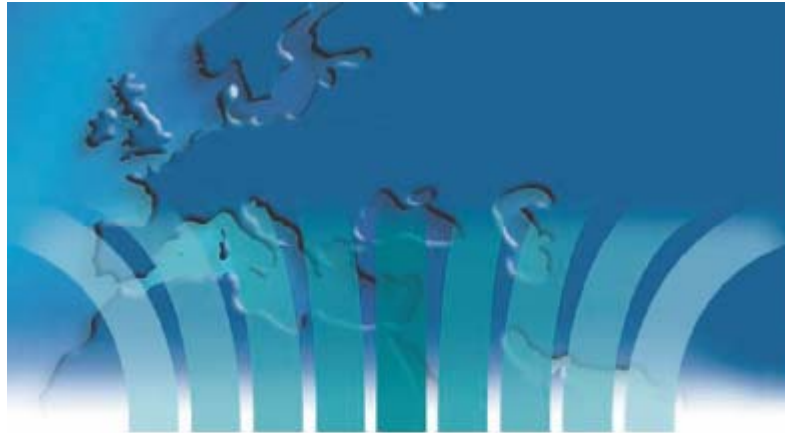
Direct medical costs and percentage of health care costs for patients with type 2 diabetes in eight European countries

Country	Total costs (million €)	Cost per patient (€)	Cost of healthcare expenditure (%)
Belgium	1 094	3295	6.7
France	3 983	3064	3.2
Germany	12 438	3576	6.3
Italy	5 783	3346	7.4
The Netherlands	444	1889	1.6
Spain	1 958	1305	4.4
Sweden	736	2630	4.5
UK	2 608	2214	3.4
All countries	29 000	2895	5.0



# ESC/EASD Pocket Guidelines

## Diabetes, pre-diabetes and cardiovascular disease



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EUROPEAN SOCIETY OF CARDIOLOGY  
2035, ROUTE DES COLLES  
LES TEMPLIERS - BP 179  
06903 SOPHIA ANTIPOLIS CEDEX - FRANCE  
PHONE: +33 (0)4 92 94 76 00  
FAX: +33 (0)4 92 94 76 01  
E-mail: [guidelines@escardio.org](mailto:guidelines@escardio.org)

For more information  
[www.escardio.org](http://www.escardio.org)

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