CVD risk identification & reduction in Primary Care

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How to register for Membership

**Annual Subscription**
GPs £40
Pharmacists, GP Registrars and Nurses £20

**How to Register**
To register for membership please follow this link
http://pccs.lcwmed.co.uk

Or call 01444 414264
Or email registrations@LCWmed.co.uk
Take aim!

• Aims of the session:
• Recognise why people living with diabetes are at increased risk of vascular complications
• Evaluate a tailored approach to assessing and reducing risk
• Implement lifestyle interventions to reduce risk
• Assess the impact of medication in reducing vascular risk
What happens?

**Macrovascular disease**
- Transient ischaemic attack
- Stroke
- Angina
- Myocardial infarction
- Cardiac failure

**Microvascular disease**
- Diabetic retinopathy
  - non-proliferative
  - proliferative
  - macular oedema
- Microalbuminuria
- Macroalbuminuria
- End-stage renal disease
- Erectile dysfunction
- Autonomic neuropathy
- Peripheral neuropathy
- Osteomyelitis
- Amputation
Why?

Cardiometabolic risk factors
High salt, rich fat and carbohydrate diet

Gut barrier alterations
Metabolic endotoxemia ↑
Illness fat tissue
Adipokines vasoactive peptides ↑

Metabolic abnormalities
Obesity
Insulin resistance
Type 2 diabetes

Inflammatory factor ROS
Endothelial dysfunction, atherosclerosis, vascular compliance ↓

Target organ damage
Metabolic hypertension

Neurohormonal disorders
Abnormal SNS & RAAS activation
GLP-1 ↓, DDP-4 activity ↑
Visceral Obesity

Low HDL-Cholesterol

High Triglycerides

Insulin Resistance

Hypertension

Metabolic Syndrome
Family history
Ethnicity
(Epi) Genetics

Obesity
Metabolic Syndrome
Atherosclerosis

PCOS
Low testosterone
Fatty Liver

GDM

Lifestyles
Infections
Urbanization

Prediabetes (impaired glucose tolerance or impaired fasting glycemia)

Type 2 Diabetes
So in effect...

- Obesity
- Metabolic syndrome
- Diabetes
- CVD
Risk assessment: all for one?
This calculator is only valid if you do not already have a diagnosis.

About you:
- Age (25-65): 55
- Sex: Male
- Ethnicity: White or not stated
- UK postcode: leave blank if unknown
  - Postcode: 

Clinical information:
- Smoking status: Heavy smoker (20 or over)
- Diabetes status: None
- Angina or heart attack in a 1st degree relative (age 60?): No
- Chronic kidney disease (stage 3, 4, or 5)? No
- Atrial fibrillation? No
- On blood pressure treatment? No
- Do you have arthritis? No
- Rheumatoid arthritis? No
- Systemic lupus erythematosus (SLE)? No
- Severe mental illness? No
- On any antipsychotic medication? No
- Are you on regular steroid tablets? No
- A diagnosis of or treatment for erectile dysfunction? No
  - Leave blank if unknown
  - Total cholesterol: 6.2
  - HDL cholesterol ratio: 2
  - Systolic blood pressure (mm Hg): 132
  - Standard deviation of at least two most recent systolic blood pressure readings (mm Hg): 10
  - Body mass index
    - Height (cm): 165
    - Weight (kg): 75

Calculate risk.

Your results:
Your risk of having a heart attack or stroke within the next 10 years is: 22.3%

In other words, in a crowd of 100 people with the same risk factors as you, 22 are likely to have a heart attack or stroke within the next 10 years.

Risk of a heart attack or stroke

Your score has been calculated using estimated data, as some information was left blank.

Your body mass index was calculated as 31.32 kg/m².
Lifestyle
Medication

• Triple whammy:
  • Glycaemic control
  • BP
  • Lipids
Newer glycaemic agents – the great HOPE?

• SGLT2 inhibitors:
  • Lower plasma glucose & HBA1c
  • Induce moderate natriuresis
  • Reduce blood pressure and
  • Reduce weight and
  • Exert cardio-protective properties on the heart

• GLP1- RAs & CVD
Choice of antihypertensive drug, monitoring treatment and BP targets

**Hypertension with type 2 diabetes**
- **Step 1:** ACEI or ARB
  - If ACEI, consider adding a thiazide-like diuretic
  - If ARB, consider adding a thiazide-like diuretic

**Hypertension without type 2 diabetes**
- **Step 2:** ACEI or ARB + CCB
- **Step 3:** ACEI or ARB + CCB + thiazide-like diuretic

**Monitoring treatment**
- Use clinic BP to monitor treatment.
- Measure standing and sitting BP in people with:
  - type 2 diabetes or
  - symptoms of postural hypotension or
  - aged 80 and over.
- Advise people who want to self-monitor to use HBPM. Provide training and advice.
- Consider ABPM or HBPM, in addition to clinic BP, for people with white-coat effect or masked hypertension.

**BP targets**
- Reduce and maintain BP to the following targets:
  - **Age <80 years:**
    - Clinic BP <140/90 mmHg
    - ABPM/HBPM <135/85 mmHg
  - **Age >80 years:**
    - Clinic BP <150/90 mmHg
    - ABPM/HBPM <145/85 mmHg

**Confirm resistant hypertension:**
- Confirm elevated BP with ABPM or HBPM, check for postural hypertension and discuss adherence.
- Consider seeking expert advice or adding a:
  - low-dose spironolactone if blood potassium level is <4.5 mmol/l
  - alpha-blocker or beta-blocker if blood potassium level is >4.5 mmol/l
- Seek expert advice if BP is uncontrolled on optimal tolerated doses of 4 drugs

1 For women considering pregnancy or who are pregnant or breastfeeding, see NICE’s guideline on hypertension in pregnancy. For people with chronic kidney disease, see NICE’s guidelines on chronic kidney disease. For people with heart failure, see NICE’s guideline on chronic heart failure.
2 See MHRPA drug safety update on ACE inhibitors and angiotensin II receptor antagonists: use during breastfeeding and clarification: ACE inhibitors and angiotensin II receptor antagonists. See also NICE’s guideline on hypertension in pregnancy.
3 Consider an ARB in preference to an ACE inhibitor in adults of African and Caribbean family origin.
4 at the time of publication (August 2019), not all preparations of spironolactone have a UK marketing authorisation for this indication.

Abbreviations: ABPM, ambulatory blood pressure monitoring; ACEI, ACE inhibitor; ARB, angiotensin II receptor blocker; BP, blood pressure; CCB, calcium-channel blocker; HBPM, home blood pressure monitoring.

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Lipids

LDL Cholesterol

NON-HDL CHOLESTEROL

HDL Cholesterol
In summary

• CVD risk is increased in populations of people living with diabetes
• Individual risk assessment remains important
• Treat multiple risk factors to reduce risk
• Treat to (individualised) targets
• Respect autonomy and balance beneficence and non-maleficence

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