

Macleod Diabetes & Endocrine Centre

Royal Devon & Exeter Hospital

Metformin

Metformin is first-line drug therapy for type 2 diabetes, particularly in overweight patients. It is the only glucose-lowering drug that has been shown to reduce mortality in diabetes.

Starting metformin

- Start 500mg od
- Increase by 500mg/week (or after a week without significant side effects).
- Take with or immediately after food, to reduce side effects.
- Usual maximum dose is 2000mg daily in divided doses, e.g. 1g bd.
- Larger doses are reasonable in larger patients if tolerated, e.g. 1g tds, or 850mg tds.

Side effects

- Predominantly gastro-intestinal, e.g. flatulence, diarrhoea. Side effects may require dose to be increased more gradually than above. In some cases, it may be necessary to reduce to 250mg or even 125mg per day and increase very slowly.
- May increase risk of vit. B12 deficiency, or thyroxine requirement in hypothyroidism.

Modified release metformin

- Anecdotally worth a try if cannot tolerate conventional metformin.
- Same dose, can be administered once a day

Contraindications

- Metformin is associated with lactic acidosis (though this is probably extremely rare, and metformin is a highly beneficial drug).
- Avoid in conditions that would increase risk of lactic acidosis:
 - Renal impairment: caution with eGFR<45, avoid or stop if eGFR<30 (but note that metformin does not **cause** renal impairment).
 - Cardiac failure: avoid if significant cardiac failure with risk decompensation.
 - Alcoholism and hepatic failure (jaundice, raised INR, or very abnormal LFTs - mildly abnormal LFTs are often due to fatty liver and metformin should help).
- Can be used in pregnancy and breastfeeding on specialist recommendation.

Precautions for patients

- Omit metformin with dehydrating illnesses such as diarrhoea & vomiting.
- Avoid metformin for 48 hours before and after X-ray contrast, e.g. CT scans.

Driving

- Group 1 (normal) licence: no need to notify DVLA unless disabling hypos (very unlikely with metformin).
- Group 2 licence: notify DVLA, but should not affect licence, and can continue driving while waiting DVLA assessment. No obligation from DVLA to monitor blood glucose, but they advise monitoring regularly and at times relevant to driving.

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