

10 STEPS

Before you refer for: Diabetes

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Introduction

Diabetes mellitus is caused by an absolute or relative lack of insulin.¹ This article covers people with type 2 diabetes, as most people with type 1 diabetes will be under the care of a secondary care team for at least some of their care. Type 2 diabetes is not primarily about sugar, but about moderating the vascular and neurological damage resulting from chronic hyperglycaemia. Many people with type 2 diabetes will also have components of the metabolic syndrome,² namely hypertension, dyslipidaemia and obesity, all of which need separate and sometimes overlapping interventions.

People diagnosed with diabetes have the condition for the rest of their life, and like many other long-term conditions, most of the interventions that effect control and outcomes are in the hands of the patient themselves.³ The key to successful treatment in primary care is to effectively educate and engage the person with diabetes in a self-management collaboration, using the skills and treatment options offered by healthcare professionals.⁴ Given the possible complications of diabetes, it is important that this support is provided using the combined skills of several different healthcare professional groups, such as nurses, general practitioners (GPs), podiatrists, dietitians and psychologists. Sometimes referral to a specialist team, which may be community or hospital based, will be required. The key ethos in the diabetes “Commissioning diabetes without walls”⁵ concept to make high-quality care available to everyone who needs it, is that it is the skills of the various healthcare professionals needed at any particular time that matter, and not where they are based.

1. Are you sure of the diagnosis?

This is not as simple as it sounds.⁶ The advent of the quality outcomes framework (QOF) forced GPs to code people with diabetes as having either type 1 or type 2 diabetes. Very few were coded as having other forms of diabetes, such as genetic diabetes, and still less as diabetes due to other causes, such as Cushing’s syndrome or acromegaly. The result was that there was a huge variation in the prevalence of people with type 1 diabetes from 1% to 25%.⁷ The implication is that a significant number of people with type 2 diabetes on insulin were misclassified as having type 1 diabetes, as well as people with rarer forms of diabetes, such as one of the variety of gene abnormalities now termed maturity onset diabetes of the young (MODY).⁸

Differentiating type 2 diabetes from type 1 can sometimes be challenging, these rules help:

- type 1 diabetes can present at any age but most cases occur in childhood
- patients with type 1 diabetes tend to lose weight but, as with the general population, they still may be overweight
- the presence of ketones strongly suggests type 1 diabetes.

If in doubt discuss with an expert, they may check diabetes-specific antibodies (glutamic acid decarboxylase [GAD] antibodies, Islet cell antibodies and insulin antibodies) or initiate a therapeutic trial under close supervision.

2. Is this an unusual presentation of diabetes?

Most people would recognise the classic symptoms of diabetes, i.e. weight loss, thirst and polyuria, but sometimes the symptoms cause diagnostic confusion, particularly in the elderly, and may result in an inappropriate or unnecessary referral to the wrong speciality. Patients may present with confusion, memory loss, paraesthesia, mood changes and recurrent infections, particularly vaginal candidiasis. Persistent diarrhoea or vomiting may be a manifestation of early autonomic neuropathy. Sexual dysfunction in women, as well as men, is an increasingly recognised complication, and may be the presenting symptom of diabetes.⁹



3. Have they accepted the diagnosis?

As with many long-term conditions, failure of therapeutic effect may be due to lack of compliance with the agreed treatment regimen, and this is particularly true in diabetes.¹⁰ It is not unusual for people diagnosed with diabetes to go through a period of denial which is akin to a grief reaction. This traditionally has five components: denial, anger, bargaining, depression and, eventually, acceptance. Primary care teams should suspect stages of denial when medication concordance is erratic, or there is a perceived lack of engagement or interest in controlling diabetes. Depression is about twice as common in people with diabetes,¹¹ and this may impair the individual's ability to self-care.¹² Encouraging the attendance of family members, partners or carers to diabetes clinics may shed light on what is going on.

4. Have we mixed the right medications?

Everyone newly diagnosed with type 2 diabetes should be offered a structured education programme along with locally appropriate weight management and exercise opportunities. If this fails to achieve a lowering of glycosylated haemoglobin (HbA_{1c}) to an individually tailored target, the latest National Institute for Health and Clinical Excellence (NICE) guidance (CG 66 and CG 87)¹³ supports the use of an increasingly complex cocktail of medications, including insulin. Certainly, triple therapy with metformin, a sulphonylurea and either a glitazone or a gliptin (dipeptidyl peptidase [DPP] IV inhibitor) should be used where appropriate. Many practices are achieving competence in using insulin regimens, which now have licences to be used with pioglitazone or sitagliptin, as well as metformin. The recently licensed injectible incretin mimetics (exanatide and liraglutide) may well become established primary care drugs in the future but for now they are probably best grouped with insulins, i.e. if you have the confidence, skills and knowledge to initiate insulin, you can certainly initiate incretin mimetics. The role of weight should always be borne in mind, and any intervention that lowers weight is likely to have a beneficial impact on diabetes control. Adjusting the energy balance (eat less, do more) is the cornerstone of weight management, but the use of weight-reducing drugs (orlistat is now the sole remaining licenced drug in this area) and bariatric surgery is recommended, the latter achieving normoglycaemia in over 50% of cases.¹⁴



5. Have we considered the contraindications of the drugs?

Having a good working knowledge of what works with what and the potential side effects and relative contraindications is important. Metformin, although universally regarded as the drug of first choice, does cause gastrointestinal upset in about 10% of people who take it.¹⁵ Gastrointestinal intolerance can be moderated by starting at 500 mg a day and building up slowly, or using the slow-release option, which may also allow less tablets to be taken as it is now available in 1 g tablets. Metformin doses should be halved at estimated glomerular filtration rates (eGFRs) under 45 ml/min/1.73 m² and metformin stopped at eGFR of less than 30 ml/min/1.73 m². Further considerations include the relative contraindication for glitazones in people prone to heart failure or in women at risk of fractures. Sulphonylureas alone or in combination with other oral hypoglycaemic agents can precipitate hypoglycaemia and this may be an issue for people who do a lot of driving or who work in hazardous occupations.



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6. Have we looked for complications?

It is estimated that people diagnosed with diabetes have had raised blood sugars for between four to seven years, and, at diagnosis, half have detectable complications.¹⁶ All people with diabetes should be screened for signs of retinopathy (by digital retinal photography) and nephropathy (by assessment of urinary microalbumin). All members of the primary healthcare team should be competent in basic foot examination and refer appropriately to community podiatry clinics for non-urgent matters, or to local rapid-access foot clinics in the case of ulceration, ischaemia or the suspicion of a Charcot foot with a warm, swollen, subluxed, and often painless, ankle joint.

Half of men with diabetes have erectile dysfunction,¹⁷ and although the condition is often easily improved by the use of phosphodiesterase (PDE) inhibitors (sildenafil, tadalafil, vardenafil), it is important to remember that erectile dysfunction may be an early marker of cardiovascular disease.¹⁸ The less well-recognised complication of diabetic autonomic neuropathy (DAN) can cause diarrhoea, abdominal bloating, orthostatic hypotension and loss of exercise-induced tachycardia, which may contribute to the increased risk of silent myocardial infarctions in people with diabetes. DAN also contributes to loss of hypoglycaemia awareness, which is a major issue for people on insulin.



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7. Have we considered the effect on recreation, work and driving?

Diabetes may impact on the working lives of many people, but it is particularly relevant if the risk of hypoglycaemia might cause harm to the person themselves or others. This may involve driving, operating machinery or working at heights, so knowing someone's occupation may help to guide treatment options. There are some occupations that people on insulin are not allowed to do, such as flying a plane or driving a train, and there are restrictions on driving passenger-carrying or heavy goods vehicles. The Driver and Vehicle Licensing Agency (DVLA) at-a-glance document (<http://www.dft.gov.uk/dvla/medical/ataglance.aspx>) gives up-to-date advice. For drivers who need licence reviews, the opinion of a consultant diabetologist must be sought to confirm that the risk of hypoglycaemia is minimal. This is also true for people who wish to take up hazardous sports, including diving which is no longer prohibited. It should be noted that people with diabetes are covered by the Disability Discrimination Act (1995) and as such employers must make appropriate adjustments to allow them to work. GPs may have to advise employers that making time and arrangements for blood sugar testing or injecting at work is a requirement.

8. Have we considered the technical problems?

Diabetes, almost like no other condition, is complicated by technical issues. People who choose, or are advised, to do self-monitoring of blood glucose (SMBG), need the skills to act on the results. Like all technology, these machines may give erroneous readings for a variety of reasons, and GPs and nurses need to have an index of suspicion when SMBG, HbA_{1c} or indeed symptoms, do not tie up. The same applies to insulin pens and needles, which can malfunction and result in the wrong dose of insulin being dialled up. Insulin itself can denature if incorrectly stored. Batches of blocked needles are not unknown. With the advent of long-haul travel, some patients run out of insulin and return with U40 insulin (40 units per ml), which is still made in China and Russia. This is 2.5 times weaker than European or US insulin, which can lead to rapid loss of control, or hypoglycaemia on returning to using the U100 insulin in the UK.

9. Who do we refer to?

For the majority of diabetes-related problems, the advice of a diabetes specialist nurse or nurse consultant will be sufficient. On occasion, referral to a consultant diabetologist will be necessary, but this could be done by virtual referral as long as the consultant has full access to the primary care records.

Many patients, as mentioned, have psychological and adjustment issues, and referral to a diabetes psychologist is recommended.

Eye, vascular and renal problems may need direct referral, but given the huge variety of possible diabetes complications, diabetologists often regard themselves as the last of the true general physicians, and, as such, are a valuable source of information and advice.

10. Have we considered other sources of support?

There are 2.5 million people in the UK with diabetes and most areas will have a local support group usually affiliated and supported by Diabetes UK (www.diabetes.org.uk) who also run a telephone care line for patients and have a focus on supporting diabetes-related research.

In addition, there are the Insulin Dependent Diabetes Trust (who campaign to maintain supplies of animal insulins; www.iddtinternational.org), Diabetes Lifeline (who will contact a family member in case of an emergency; www.diabeteslifeline.co.uk), and Diabetes Aware (who run awareness events with primary care trusts; www.diabetesaware.org.uk). Healthcare professionals can join Diabetes UK as a professional member, or the Primary Care Diabetes Society (www.pcdsociety.org).



Conflict of interest

None declared.

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