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Assessment of the patient with established diabetes

See also the separate [Diabetes Education and Self-management Programmes](#) article.

When, how and who?

Patients with diabetes frequently attend their healthcare practitioners, either specifically for diabetes-related issues, for complications of their chronic illness, or for unrelated problems. They may see their GP, practice nurse, hospital diabetologist, diabetes specialist nurse, dietician and many others, from time to time. Each visit can be viewed as an opportunity to assess and improve the patient's understanding of their illness, and their ability to control the disease.

This article provides a summary of the areas of assessment relevant to type 1 diabetes and type 2 diabetes, which will need to be adapted, depending on an individual patient's type of diabetes.

Aims of assessing the patient with diabetes

- To educate the patient and enable them to monitor and manage their diabetes as well as possible.
- To assess any problems in glycaemic control and address them to improve it.
- To detect any complications of diabetes and treat them as appropriate.
- To educate and reinforce healthy lifestyle advice.
- To assess the patient's overall health and to treat any associated or coincidental illness, physical or mental.

- To provide support and advice to the patient on how to cope with living with a chronic illness and how they can best alter their lifestyle to maintain their health.

A checklist for a routine, annual or opportunistic review of the patient with diabetes

History

There is much to cover if all the information below is to be discussed at the review:

- **Education and self-management:**
 - How is the patient coping with self-care and self-management of their diabetes?
 - Does the patient consider that they eat a healthy diabetic diet and do they feel sufficiently informed about how to manage their diet and its relationship to their insulin regimen?
 - Have they received, or would they like to receive, any educational input to help them improve their understanding of their condition and its self-management? For example, Dose Adjustment for Normal Eating (DAFNE), Diabetes Self Management for Ongoing and Diagnosed (DESMOND), dietetic input, exercise and activity programmes.
 - Is the patient a smoker? If so, what help would they like to become a non-smoker and are they aware of the importance of stopping smoking?
 - Ensure the patient knows what to do if they become unwell for any reason. See the article on [Diabetes and Intercurrent Illness](#).

- Complications:
 - Has the patient with diabetes had any hospital admissions in the preceding year for diabetic decompensations such as hypoglycaemia, diabetic ketoacidosis (DKA) or hyperosmolar hyperglycaemic state?
 - Has the patient had any treatment or hospital admissions for complications of their diabetes in the preceding year? For example, angina/myocardial infarction, cerebrovascular event/transient ischaemic attack (TIA), diabetic nephropathy, diabetic retinopathy, diabetic neuropathy or diabetes foot problems.
 - Has the patient had any symptoms of cardiovascular, cerebrovascular, renal, ophthalmological or neurological complications of diabetes?
 - Has the patient had any problems with sexual function? Ask specifically about erectile dysfunction.
 - Has the patient been otherwise well, or had any other illness of note over the preceding year for which they have consulted their GP or other healthcare services?
 - How has their mood been? Has there been any problem with, or treatment for, depression?
- Treatment:
 - How is the patient coping with and complying with their medication regimen for diabetes? Have there been any problems with injection of insulin? Have there been any problems with timing of insulin or oral medication? Do they miss injections or medication regularly?
- Monitoring:
 - Are there any problems with the equipment that they have to monitor their capillary glucose? When did they last calibrate their glucose monitoring equipment?
 - Do they have their records of their blood glucose monitoring?

- Pregnancy and pre-pregnancy:
 - See the separate [Diabetes in Pregnancy](#) article.
 - Are they pregnant or planning on having any children? It is essential to ensure effective pre-pregnancy care and care during the pregnancy^[1]. See also the [Pre-pregnancy Counselling](#) article.

Examination

- Weight, abdominal circumference, height and BMI.
- Urinalysis for ketones, protein and nitrite (evidence of infection).
- Inspect injection sites of patients with type 1 diabetes, looking for evidence of lipoatrophy and lipodystrophy/lipohypertrophy.
- Cardiovascular:
 - Check pulse and blood pressure.
 - Listen for carotid bruits and to heart sounds/lung fields if there is any history consistent with cerebrovascular or cardiac illness.
 - Palpate and record the peripheral pulses of the feet.
- Eyes:
 - Ensure regular attendance and appropriate follow-up for diabetes eye screening.
 - Inspect eyes, looking for any evidence of xanthelasmata, cataract formation or ophthalmoplegia.
 - Check visual acuity, with distance vision glasses, if worn.
 - Carry out ophthalmoscopy, preferably with dilated eyes, unless this has already been done as part of the patient's diabetes ophthalmological screening and digital retinal photography programme.

- Neuropathy:
 - Examine the legs for evidence of diabetic amyotrophy.
 - Check peripheral limb sensation - eg, using a 10 g nylon monofilament probe^[2] .
 - Check ankle and knee reflexes using a tendon hammer.
 - Inspect footwear (for suitability) and the feet carefully for any evidence of peripheral neuropathy causing deformity and ulceration, or hypoperfusion due to peripheral arterial disease.

Blood and urine results

- [HbA1c](#); or check when last done.
- [Home capillary glucose monitoring](#) results.
- Frequency and severity of hypoglycaemic episodes.
- Non-fasting lipid profile.
- Estimated glomerular filtration rate to look for diabetic nephropathy (in addition to urine testing for [microalbuminuria](#) and albumin:creatinine ratio - ACR).

Medication review

See also the separate articles on [Management of Type 1 Diabetes](#) and [Management of Type 2 Diabetes](#).

- Current diabetic medication and doses - insulin (short- and long-acting), biguanides, sulfonylureas and thiazolidinediones.
- Current medication for other conditions, especially those designed to ameliorate cardiovascular risk such as diuretics, antihypertensives, angiotensin-converting enzyme (ACE) inhibitors, aspirin, beta-blockers, etc.

Diet, physical activity and education

See also the separate [Diabetes Diet and Exercise](#) article.

- What is the patient's current level of physical activity and can this be improved if thought necessary? Are there any local physical activity programmes in which they could be enrolled?
- Has the patient received adequate education in respect of their diabetes, both in their and in your view? Would they like to receive more advice on self-management of their diabetes? Should they be enrolled into a local diabetes education delivery programme such as DAFNE (type 1 patients) or DESMOND (type 2 patients).

Assessing and addressing modifiable risk factors

- Glycaemic control and how to improve it.
- Smoking status and how to stop smoking if needed.
- Dietary patterns and how to modify them (can help with improving glycaemic control).
- Exercise and how to incorporate regular physical exertion into one's life.
- Lipid status and any lifestyle modifications or medication required to improve it.
- Blood pressure and how to improve its control with medication and lifestyle modification.
- Avoiding weight gain or losing weight (pertinent to both type 1 and type 2 patients).

Discussing results and agreeing on a diabetes care plan with the patient

- Ideally, where the annual diabetic review is carried out as a 'one-stop' service where the patient has had their blood tests in advance of the appointment, the meaning of the results should be discussed with the patient there and then.
- Any change in management that is needed should be outlined and agreed and it should be clear to the patient what the 'medical' and what the 'self-managed' changes need to be.

- Where blood results and other useful information that will determine management are not available until later, a useful practice is to send to the patient a copy of the clinic letter sent to the GP, discussing the results, what they mean and what needs to change as a result of the annual review.
- Where patients are seen exclusively in primary care, a further appointment should be offered to discuss what the ongoing treatment plan is and ensure that the patient is clear about it and knows how to proceed.
- Arrange referrals to other practitioners as appropriate - eg, ophthalmologist, dietician, footcare team, educational support.

Audit

See the separate [Audit and Audit Cycle](#) and [Audit of Diabetes Care](#) articles.

Further reading

- [Management of diabetes](#); Scottish Intercollegiate Guidelines Network - SIGN (March 2010 - updated November 2017)
- [Diabetes UK](#)
- [Diabetes](#); NICE
- [Diabetes - Type 1](#); NICE CKS, November 2020 (UK access only)
- [Diabetes - type 2](#); NICE CKS, November 2021 (UK access only)

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