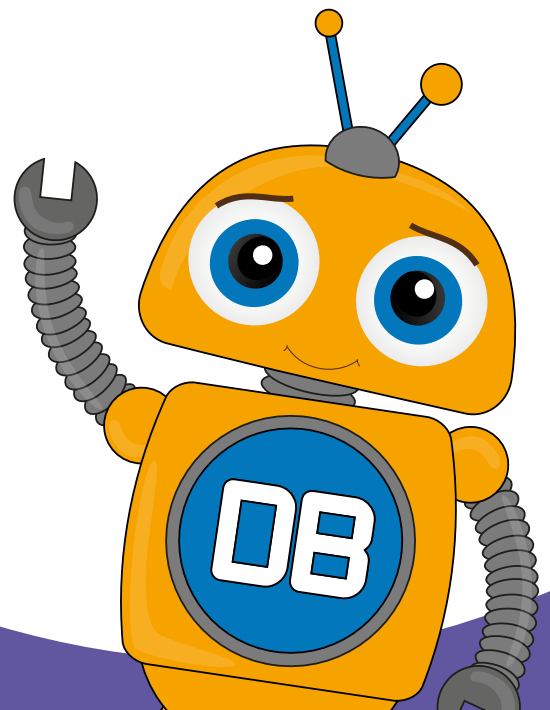




Goals of Diabetes Education

Resources relevant for 16-18 year olds

This handout is designed to explain what you need to know about the management of diabetes. It has been tailored to the educational needs of 16-18 year olds.



Resources relevant for 16-18 year olds

Guide for healthcare professionals

This guide outlines the goals of diabetes education for your 16-18 year old patients. Use this guide as part of a narrative discussion with your patients to assess their learning.

Handout for young people

This handout is designed to explain to young people what they need to know about the management of diabetes. It has been tailored to the educational needs of 16-18 year olds. Photocopy the handout page and provide to the young person to take home.

Record sheets

Record sheets are provided to help you evaluate and monitor your patients' understanding of their diabetes. Complete the record sheet over the course of the two-year period, reflecting each patient's gradual achievement of the learning goals over that time.



DigiBete Structured Education

Goals for 16-18 year olds

GUIDE FOR YOUNG PERSON

General Diabetes Knowledge

- You should know about all the major body organs such as the heart, kidneys, liver and pancreas.
- You should be familiar with the circulatory system, the digestive system and the processes by which nutrients are absorbed by the body.
- You should have a good knowledge of how the body works in order to understand the range of issues that you may face in the future.
- You should understand the action of insulin.

Food

- You should gain a deeper understanding of nutrition, including energy-producing foods, vitamins and minerals, and suitable portion sizes.
- You should feel competent at counting carbohydrates when away from home.
- You should learn how to cook healthy meals at home.
- You should apply the principles of good nutrition to daily situations such as school, playing sports, religious fasting, eating fast foods and going to parties.
- You should understand that excessive amounts of fat or protein will have adverse effects on your blood glucose levels.
- You should be encouraged to maintain a regular meal pattern, spreading carbohydrate throughout the day and not missing meals.
- You should know that frequent consumption of less healthy foods or snacks will have a significant impact on body weight and glucose levels.



Exercise

- You should know that glucose levels should be checked before exercise and which readings mean that you need to take a ketone test, and which readings mean you need to eat more carbohydrate before exercising.
- You should know that your target blood glucose before sport is 7mmol/L. Do not exercise if blood ketones are above 0.6mmol/L.
- You should understand that daily activity, including exercise, is essential for a healthy heart, bone strength and weight management, even if you don't like sports.
- You should be able to apply all relevant precautions to avoid low glucose levels while exercising, whether you compete in competitive sporting events or follow an exercise routine, such as running or gym sessions.
- You should know that activity and exercise can have a positive impact on how well you feel.
- You should be made aware of any special rules about the use of your medication in competitive sports at national or international level.

Diabetes Technology

Operating and caring for diabetes technology is your responsibility.

Technology may help you to manage your diabetes more effectively, improving your wellbeing and health. This may include glucose sensors, insulin pumps or smart insulin pens. These devices may be used separately or together to allow you to manage diabetes more easily by providing more information, allowing you to fine-tune your diabetes management.

You should have appropriate and ongoing training and support from healthcare staff to ensure you feel confident in operating or using the technology effectively.

- You should look after your diabetes equipment to the best of your ability; devices should be added to home insurance in case of accidental damage or loss.

Glucose Monitoring

Blood glucose should be checked a minimum of 6-10 times per day if not wearing glucose monitoring technology

You should be able to:

- Be responsible for regular scanning of glucose sensors or reviewing data on CGM.
- Understand the significance of arrows on glucose monitors and be able to use this information to manipulate diabetes care proactively.
- Enter glucose readings from meters or monitors into pumps(if required) or apps for proactive insulin dosing.
- Review your own data with the diabetes team. You may still appreciate the support of a parent/ carer around discussions about potential insulin changes.
- Understand that glucose levels are a tool to assist you with your diabetes management, not just for clinic staff.

Insulin

You should:

- Know the name(s) of the insulins you use and how they work.
- Understand how the type of insulin you take affects when it must be injected with respect to mealtimes.
- Understand that the timing of your insulin dose before meals can have a significant impact on your glucose levels.
- Be almost fully independent in matching blood glucose levels, diet and exercise to appropriate doses of the different insulin types you use.
- Have a greater understanding of the relationship between food, exercise and insulin (see also Alcohol).
- Be able to examine, care for and rotate your injection/ infusion sites.

If you use an insulin pump you should be able to:

- Order your supplies.
- Perform an infusion set change, programme the device and use advanced bolus features so that you can adjust the insulin dose to cover the carbohydrate content of meals and snacks.
- Use a continuous glucose monitor (CGM).
- Calculate your insulin dose and inject it in the event of a pump failure, also how to obtain a replacement pump and how to programme it.



Illness

You should:

- Be able to take appropriate precautions when you are ill, including more frequent monitoring of blood glucose levels and checking for blood ketones even if your blood glucose level is not out of range.
- Know how to adjust insulin doses to accommodate a fever.
- Know what to do in the event of episodes of nausea and vomiting.
- Realise that it may be necessary to get help from the diabetes care team, and have their contact numbers available.
- Be aware of medicines to prevent illness, such as vaccines.
- Take up annual public health vaccines.
- Never stop insulin during illness.



Hypoglycaemia or HYPO = Low Blood Glucose Level (3.9mmol/L or less)

You should:

- Understand the importance of teaching your friends and schoolmates about diabetes precautions, especially the symptoms and treatment of hypoglycaemia.
- Know when and how to treat hypoglycaemia so that you can instruct potential helpers.
- Know the importance of checking your blood glucose levels after treatment to ensure that a normal blood glucose level is restored.
- Appreciate that treatments for hypoglycaemia must be part of your emergency kit and be able to instruct others in their use.
- Know that insulin doses may need to be reduced if the rapid growth phase of puberty has finished. Failure to do so may result in frequent hypoglycaemia.
- Know that when using a Hybrid closed loop system, hypo treatment required may be significantly less.

You should have an opportunity to revise how to use glucagon annually or access video resources. Expiration dates of stored glucagon should be checked regularly.

Hyperglycaemia or HYPER = High Blood Glucose Level (10mmol/L or more)

You should:

- Know the causes and symptoms of high blood glucose levels and precautions to avoid them.
- Know that your blood must be checked for ketones.
- Understand the results of the ketone test and know the appropriate action to take.
- Know that ketoacidosis can be life threatening.
- Be able to treat high blood glucose levels successfully by yourself.
- Review your glucose data to adjust your insulin doses if needed.
- If you wear an insulin pump, you may develop high glucose levels and ketones within 4 hours if the pump has failed or the cannula becomes dislodged.
- Despite wearing a pump, high glucose levels and ketones may require a pen injection to provide effective treatment.

Future Health and Routine care:

You are invited to attend clinic 4 times a year routinely, this will include an annual review.

- You should know about the different follow-up examinations that are necessary, including:
 - Your individualised HbA1c target and what it means.
 - Blood pressure monitoring.
 - Blood investigations.
 - Urine testing for microalbuminuria.
 - Checking sensation in the feet.
 - Eye examinations.
- You should know why and how these tests are performed, how the results are evaluated and what treatments are possible if any tests show signs of long-term complications.
- You also should know how to arrange your own retinopathy screening and any local arrangements for accessing your annual reviews.
- Have a key diabetes contact, such as a nurse.
- Understand that regular contact with the diabetes team will help you maintain optimal blood glucose levels and help reduce the risk of long-term complications.
- Know how to contact your nurse in between routine clinic appointments when needed.
- Know that in adult services routine diabetes care may be less frequent but all people with diabetes should continue to access a diabetes care review at least once annually to monitor their health.

Menstruation

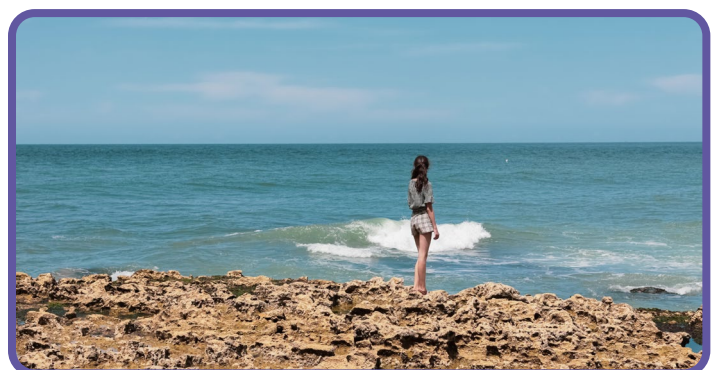
Girls need to be aware that around the time of a period blood glucose levels can change with the increase in hormones. Many girls find that 3-5 days before a period starts glucose levels may rise and then go back to normal a few days in. This may be the opposite for some girls.

Girls should:

- Learn how their monthly cycle impacts on blood glucose levels and recognise any patterns.
- Learn to adjust insulin doses appropriately when using injections or pump.
- Understand the importance of responding to changes in BG levels and adjusting insulin doses promptly.
- Understand for some girls there is a similar pattern each month and for some each month is different- both are normal.
- Be able to contact and discuss with HCP if support is needed.

Travel

- You should be able to travel independently, not only locally but also abroad.
- involve the diabetes team in preparations for independent travel, to ensure a safe trip.
- You should be well-informed about special concerns, such as how to carry and store insulin while travelling.
- It is advisable to carry some form of identification, including an emergency contact number, stating that you have been diagnosed with diabetes and require insulin.
- You should know the importance of taking out travel insurance and the amount of cover you require.



Driving

You should:

- Be advised about the process for applying for a licence including the declarations that will be required.
- Refer to the most up-to-date guidelines issued by the Driver and Vehicle Licensing Agency (DVLA), which covers insurance, hypoglycaemia management and carrying identification.



Smoking and vaping

- You should be made aware of the effects that smoking and vaping could have on your diabetes and long-term health.
- If you have started smoking or vaping you should be offered help to stop.



Substance Misuse

You should be told of the effects that recreational drugs and substance misuse could have on your blood glucose control, mental health and diabetes management, and where you can get advice and support locally to help you discontinue their use.

Alcohol

You should receive advice regarding the effects of alcoholic drinks.

You need to know that:

- You should eat food when you are drinking.
- Different alcoholic drinks have different effects on blood glucose.
- You must eat foods containing long-acting carbohydrate and check your blood glucose level before going to sleep.
- You run significant risks if you drink too much.
- You may overlook the symptoms of hypoglycaemia and mistake them for the effects of alcohol.
- There is an increased risk of hypoglycaemia after alcohol consumption, including while sleeping and particularly after exercise. This could also happen the next day.
- The liver will not release its glucose stores in the event of a severe hypoglycaemic episode.
- You should wear/carry some ID stating you have type 1 diabetes.

Because of these risks, you must:

- Eat extra food when drinking and take less insulin with food if necessary.
- Have a reliable plan for waking up the morning after drinking.
- Inform your friends about the relationship between drinking alcohol and blood glucose levels, so that if you develop hypoglycaemia it is not mistaken for drunkenness.



Sexual Health and Pregnancy

You should share your diagnosis of T1 diabetes with new significant partners.

You should:

- Know the importance of practising safe sex and how to access contraception (including emergency contraception).
- Be aware also that barrier contraception should also be used to protect against sexually transmitted infections (STIs).
- Know that you can talk to any diabetes care team member if you have any concerns about sexual dysfunction.
- Understand that having diabetes does not prevent you from becoming pregnant, and that it poses certain risks during pregnancy. You should inform your diabetes care team immediately if you suspect you could be pregnant.
- In circumstances of accidental pregnancy, women should be encouraged to inform the diabetes staff immediately for referral on to appropriate services.
- **Know how to ensure the safest possible pregnancies:**
 - Achieve excellent blood glucose levels before attempting to get pregnant.
 - The need for medications to be reviewed and for folic acid supplements.
 - Achieve excellent blood glucose levels throughout pregnancy.
 - Frequent visits to a specialist diabetes clinic are needed.
 - More frequent glucose monitoring is required
 - Anyone undertaking gender reassignment hormone therapy will experience changes to blood glucose. Sharing this sensitive information with the diabetes team will enable them to help.



Social Factors

You should:

- Know how to access your general practitioner (GP) and be informed about prescription rules with respect to diabetes care services, insulin, insulin pens, blood glucose meters, test strips, pump supplies etc.
- Start to order and collect your prescriptions yourself.
- Be aware that from the age of 18 years, you will need a prescription charge exemption certificate from your GP.
- Be able to discuss strategies for the management of your diabetes during exams.
- Know that there are very few jobs that you cannot do because of your diabetes, but that there are some jobs for which people with type 1 diabetes may not apply. You should be aware of which jobs these are.
- Know that it may be harder for a person with diabetes to get certain types of insurance.
- Be made aware of precautions relating to body piercing, tattooing and cosmetic procedures.
- Have an understanding of patient confidentiality and the opportunity to contact your diabetes team members directly if you wish.

Emotional Wellbeing

- You should have regular opportunities to discuss your thoughts and feelings, including any worries about your diabetes, experiences of bullying or concerns about body image.
- At least once a year you will be asked questions about your emotional wellbeing to check whether you need any extra support.
- If you need emotional support or help with managing the impact of diabetes on your life, you may be offered the chance to talk to a clinical psychologist attached to the team.
- You should ask for support from your diabetes team if any aspects of your diabetes care are causing major conflict at home or with friends.
- You should ask help from your parents or carers or your diabetes team if you feel that any aspects of your care are becoming overwhelming. You should know that living with diabetes can be unpredictable and feeling fed up, stressed or burnt out about caring for diabetes can be common.
- You may experience low mood or anxiety which may impact on caring for diabetes.
- Getting the right support and talking to someone is essential to find strategies that work for you. Clinical psychology support is available for you, recognising the challenges you might face in caring for diabetes and the importance of your emotional wellbeing.
- You may be signposted to other mental health support outside the diabetes team.



Transition / Moving to Adult Services

- The transition process whereby your future care will be transferred to a young adult team in your local area will be underway.
- You should be able to describe your transition process, and work with your diabetes team in setting your own goals.
- You should start seeing members of the diabetes care team on your own to develop confidence in managing your own consultations.
- You should be able to discuss any issues around consent and patient confidentiality with your team.
- You may start to meet members of your young adult diabetes team.



You should be clear about the move to adult services, and expectations of the adult service explained to you, so you feel prepared for transfer.



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