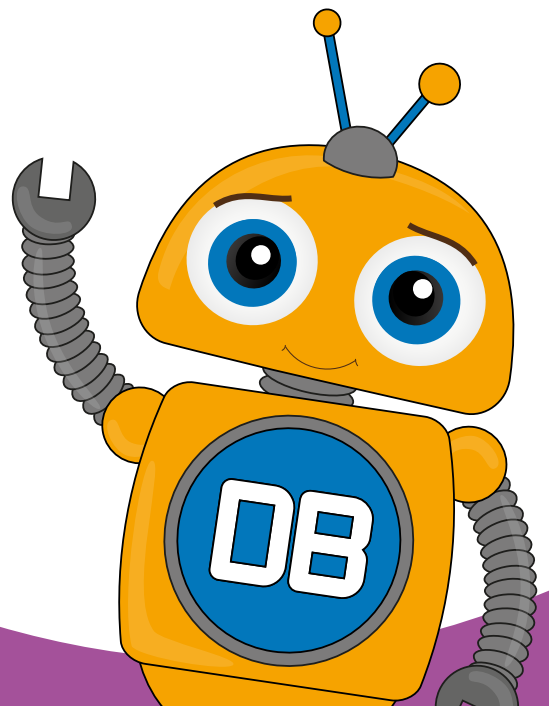


# Goals of Diabetes Education

## Resources relevant for 14-15 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 14-15 year olds.





**DigiBete Structured Education**

# Goals for 14-15 year olds

## HANDOUT FOR YOUNG PEOPLE

### General Diabetes Knowledge

By now, you should thoroughly understand the function of the pancreas and the effect of insulin on your body, and be able to handle all practical aspects of diabetes care.

If you are uncertain about this, or if you are uncertain about anything else in this handout, you can ask any member of your diabetes team for advice. Alternatively, you can find information on the DigiBete website or app ([www.digibete.org](http://www.digibete.org)).

Although you are taking a greater role in managing your diabetes, your parents or carers should still continue to supervise your overall diabetes care.

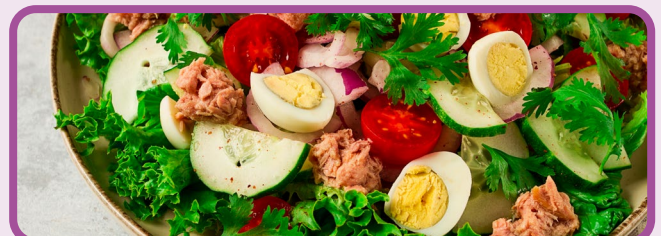


### Food

#### By now you should:

- Know which foods and drinks are best to eat for good health.
- Understand that some types of carbohydrate (low glycaemic index) will have beneficial effects on blood glucose levels.
- Regularly include some slow-acting (low glycaemic index) carbohydrates as part of meals.
- Understand the information on food labels.
- Be familiar with different forms of food sweeteners if used and be able to recognise names of suitable brands.
- Be able to take part in activities involving food with your friends.

- Be competent at carbohydrate counting, using suitable resources such as books, apps and websites if required.
- Maintain a regular meal pattern, spreading carbohydrates throughout the day and not missing meals.
- Be aware that frequent consumption of less healthy foods or snacks may have a significant impact on body weight and glucose levels.
- Be aware that meal portion sizes should be appropriate for age, size and level of activity.



## Diabetes Technology

- Technology may help you to manage your diabetes more effectively, improving your wellbeing and health. This may include glucose sensors, insulin pumps, smart insulin pens or automated insulin delivery systems. These devices may be used separately or together to allow you to manage your diabetes more easily by providing information allowing regular insulin adjustment during this rapid growth period.
- You should have appropriate and ongoing training and support from healthcare staff to ensure you feel confident in operating or using the technology effectively.
- Parents should still support you in setting up and programming the technology.
- You should look after the technology to the best of your ability; devices should be added to home insurance in case of accidental damage or loss.
- You should understand the importance of injection or canula rotation and how to look after skin around sites.

## Exercise

- You should know that glucose levels should be checked before exercise.
- You should know that your target glucose level before sport is 7mmol/L. Do not exercise if ketones are above 0.6mmol/L.
- You should know which readings mean that you need to check for ketones, and which readings mean you need to eat more carbohydrate before exercising.
- You should know that daily activity, including exercise, is essential for a healthy heart, bone strength and weight management.
- You should be active for at least 60 minutes per day and find ways of achieving this, even if not enjoying active hobbies.
- You should know that activity and exercise can have a positive impact on how well you feel and your diabetes management.
- You should know how to prevent problems with your glucose levels that can happen during exercise or sport.
- You should be learning, through experience, and the results of glucose checking, how taking part in sport affects your glucose levels and how glucose can affect your performance. Glucose sensors may help in managing activity more effectively and discreetly.
- You should be made aware of any special rules about the use of your insulin as medication in competitive sports at regional or national level.

## Glucose Monitoring

If you use a continuous glucose monitor you should be able to manage its insertion yourself, be able to interpret the results and know how to act on them.

### You should:

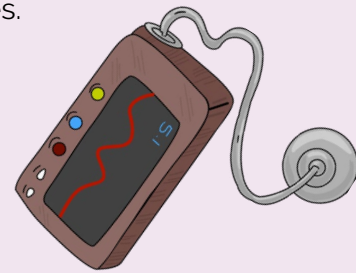
- Check your blood glucose regularly (6-10 times per day) if not wearing glucose monitoring technology.
- Be able to insert your glucose monitoring sensor yourself.
- Be responsible for regular scanning of glucose sensors or reviewing data on continuous glucose monitors.
- Understand the significance of arrows on glucose monitors.
- Enter glucose readings from meters or monitors into pumps or apps for proactive insulin dosing.
- Review your own data with a parent and be involved in discussions about potential patterns and insulin adjustments.
- Be able to upload or share your data with your clinic remotely.
- You should understand the importance of glucose readings and Time In Range and be able to explain the implications of being outside this.
- Understand that glucose levels are a tool to assist you with your diabetes management, not just for clinic staff.

## Insulin

- You should be able to administer your own insulin either with a pen or a pump.
- You should be learning how to adjust your insulin doses based on your glucose levels, and have a good understanding of the relationship between food, exercise and insulin (see also Alcohol).
- You should understand how the type of insulin you take affects when it must be injected with respect to mealtimes.
- You should understand that the timing of your insulin dose before meals can have a significant impact on your glucose levels.
- You should be able to examine, care for and rotate your injection/infusion sites.

### If you use an insulin pump you should:

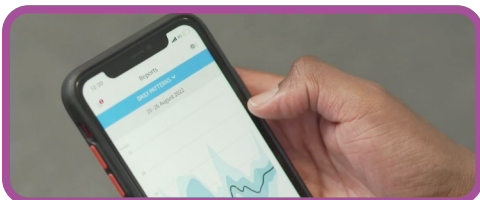
- Feel confident entering your carbohydrate values of food eaten and in programming the pump.
- Be aware of how to calculate the dose and to inject insulin in the event of a pump failure. You should also know how to obtain a replacement pump and how to programme it.
- Be confident in performing your own infusion set changes.



### Hypoglycaemia or HYPO = Low Glucose Level (3.9mmol/L or less) You should:

- Know how much hypo treatment is appropriate for your age, size and method of diabetes management to prevent over or under treatment.
- 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 glucose levels after treatment to ensure that a normal level is restored.
- Appreciate that treatments for hypoglycaemia must be part of your emergency kit, and that you should be able to instruct others in their use.

Parents 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 Glucose Level (10mmol/L or more) You should:

- Know the causes and symptoms of high glucose levels and how to avoid them.
- Know that hormones released during puberty cause insulin resistance. Insulin doses will increase frequently during this growth period to help prevent high glucose levels.
- Be able to treat high glucose levels successfully by yourself.
- Know when to check for ketones.
- Know that when using an insulin pump high glucose levels and ketones may develop within 4 hours if the pump has failed or cannula becomes dislodged.
- Know that despite wearing an insulin pump, high glucose levels and ketones may require a pen injection to provide prompt and effective treatment
- Know that ketoacidosis can be life threatening.

If on automated insulin delivery systems, young people will need to come out of automode and into manual for the duration of active insulin time, for example 4 hours.



## Future Health and Routine care

Young people with type 1 diabetes are invited to attend clinic 4 times a year routinely, this will include an annual review.

- You should have a key diabetes contact.
- You should understand that regular contact with the diabetes team will help you maintain optimal glucose levels and help reduce the risk of long-term complications.
- You should understand why optimal glucose management is vital in preventing long-term complications.
- You should understand why blood and urine are taken every year at annual review; to check for any early signs of long-term complications or other conditions linked to diabetes.

### These include:

- Your individualised HbA1c target and what it means.
- Blood pressure monitoring.
- Blood investigations.
- Urine tests for microalbuminuria.
- Checking the level of sensation in your feet.
- Regular eye examinations.

### You should know:

- Why each test is performed.
- How the results are evaluated.
- The treatment possibilities should any test be positive.
- How to contact your nurse in between routine clinic appointments when needed.



## Illness

If you become ill, your parents or carers are still responsible for your care.

### If you become ill, you must:

- Inform an adult.
- Check your glucose levels regularly. This may include blood glucose readings with a finger prick sample.
- Check your blood to see if ketones are present, even if your glucose is not out of range.
- Report the presence of ketones of 0.6mmol/L or above to an adult immediately.
- Start to learn how to calculate the extra insulin doses required with help from your parents or carers. Start to understand how to handle episodes of nausea and vomiting.
- Eat and drink even if you don't feel like it.
- Never stop insulin during illness.
- Know that additional insulin is often needed during illness, and this may be a significant increase.
- It is advisable to take up annual public health vaccines.

## Menstruation

Girls need to be aware that around the time of a period 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 your monthly cycle impacts on glucose levels and recognise any patterns.
- Learn to adjust insulin doses or glucose targets appropriately when using injections or pump or the glucose target when using an automatic insulin delivery system.
- Understand the importance of responding to changes in glucose 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.

## Eating or Sleeping Away from Home

- You should now be able to manage your diabetes independently but also have a parent/ carer you can talk things over with if unsure.
- As a safety measure, you should let your teachers know you have diabetes. You should also inform other adults who are in charge of your care e.g. sports coaches.
- Because you are now more socially independent (and will be in different situations), you should carry some form of identification stating that you have diabetes and require insulin. This could be a card, a bracelet or medical ID in your smartphone.
- Use apps or websites to help with carb counting when eating out
- Your parents may have the capacity to follow continuous glucose readings remotely.



## 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 mental health and diabetes health, and where you can get advice and support locally.

## Social Factors

- You should be able to discuss strategies for management of your diabetes during exams.
- There are very few jobs that you cannot do because of your diabetes but there are some jobs which carry some restrictions for people with type 1 diabetes. You should be aware of these.
- You should know that it may be harder for a person with diabetes to get certain types of insurance.
- You should be made aware of precautions relating to body piercing.

## Sexual Health and Pregnancy

- You should know the importance of practising safe sex and how to access contraception (including emergency contraception).
- You should also be aware that barrier contraception should also be used to protect from sexually transmitted infections (STIs).
- You should understand that having diabetes does not prevent you from becoming pregnant, but that it poses certain risks during pregnancy. You should inform your diabetes care team immediately if you suspect you could be pregnant.
- If you become pregnant unintentionally, tell your diabetes team as soon as possible so they are able to refer you to a specialist service. Delaying this could harm you and your baby.
- Anyone undertaking gender reassignment hormone therapy will experience changes to glucose levels. Sharing this sensitive information with your diabetes team will enable them to help

### You should know how to ensure the safest possible pregnancy:

- Optimal glucose levels before attempting to get pregnant.
- Review your medications and add folic acid supplements.
- Optimal glucose management throughout pregnancy. Recommended glucose targets in pregnancy are tighter.
- Frequent visits to a specialist diabetes clinic.
- Frequent glucose monitoring, probably with a sensor.

## Alcohol

You should receive advice regarding alcoholic drinks.

**You need to know:**

- Which alcoholic drinks contain carbohydrate, to understand their effect on glucose levels.
- That there is an increased risk of hypoglycaemia after alcohol consumption, including while sleeping and, especially, after exercise.
- The safest way to manage glucose levels after alcohol, depending on your method of diabetes management.
- That you run great risks if you drink too much.
- That you may overlook the symptoms of hypoglycaemia.
- That the liver will not release its glucose stores in the event of a severe hypo (hypoglycaemic episode).
- You should wear/carry some ID stating you have T1 diabetes.

**Because of these risks, you must:**

- Eat food before or when drinking.
- Consider taking less insulin with food if necessary or if using an automated insulin device consider raising the glucose target level overnight or setting activity mode.
- Tell your friends about the relationship between drinking alcohol and glucose levels. This is to ensure that your friends do not mistake hypoglycaemia for drunkenness.
- Have a reliable plan for waking up the morning after drinking.



## Transition

- You should be able to describe the transition process by which your diabetes care will be transferred from the children's clinic to a young adult diabetes team in your local area.
- You should work with your diabetes team in setting your own goals for your diabetes.
- You should be invited into your appointment alone for a few minutes, before being joined by a parent.

## Emotional Wellbeing

Caring for diabetes can bring significant challenges for young people and adults, who may both describe symptoms of 'burnout'. This can be a time of increased family conflict with diabetes care often adding to this conflict. You may experience low mood or anxiety which may impact on caring for your diabetes. Clinical psychology support is available for both young people and parents, recognising the challenges of caring for diabetes and the importance of family wellbeing. Meeting other young people with diabetes, in real life or online, may help share your experience.

- You should have regular opportunities to discuss your thoughts and feelings, including any worries about your diabetes, experiences of bullying or any 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 for help from your parents or carers, or your diabetes team, if you feel that any aspects of your care are becoming overwhelming.
- You may be signposted to other mental health support outside the diabetes team.



[www.digibete.org](http://www.digibete.org)