



Manual for Diabetes Care

During this module you will be asked some questions to simply provoke thought and test your current knowledge please have a note pad or supervision workbook to hand to make notes. Your performance will only be measured on the answers you select when completing the knowledge test at the end of the module.

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Learning Outcomes

- Understanding what diabetes means
- Knowing the risk factors for developing type 2 diabetes
- Understanding the treatment and management options for diabetes patients
- Knowing how to respond to hypoglycemia
- Understanding the links between diabetes and other conditions

Complementary manuals

- Diet and Nutrition
- Care and Administration of Medicines
- Basic First Aid

Chapter One

Introduction to diabetes

Under the Health and Social Care Act 2008 your employer has a duty to make sure that you and your colleagues are given appropriate information, support and training to understand the differing needs of clients with chronic health issues. (Regulation 23. Supporting staff).

When they assess your care The Care Quality Commission will look for evidence of the following.

People using services are safe and their health and welfare needs are met by competent staff because employers:

- Ensure that staff are properly supported to provide care and treatment
- Ensure that staff are properly trained, supervised and appraised
- Enable staff to acquire further skills and qualifications that are relevant to the work they undertake

(Essential Standards of Quality and Safety, October 2010)

Diabetes definition

Diabetes (Diabetes mellitus) is a condition in which the amount of glucose(sugar) within the body is too high, when this happens the body becomes unable to utilise and process it properly. In the ancient world sufferers of Diabetes Mellitus were identified by the sweet smell (and taste) of their urine. This is because the illness causes a build-up of excess glucose (sugar) it also increases the amount of sugar which is excreted from the body.

The glucose comes from the digestion of the food that we eat, primarily this is carbohydrates such as bread, rice, potatoes, cereals and fruit along with sugar and other sweet foods. These are digested by the liver in order for it to produce, store and release the glucose when the body needs it.

Types of diabetes: Type 1 & Type 2

Type 1 is responsible for around 8% of cases in the UK, it comes on quickly and can be immediately life threatening; type 2 progresses more slowly, but the effects of both can cause disability and premature death.

Type 1 also known as insulin dependent diabetes results from the insulin producing cells in the pancreas being destroyed causing an insulin deficiency in the body which is needed to control levels of glucose in the blood.

Because people with type 1 diabetes produce no insulin at all they have to inject it on a regular basis or have an insulin pump.

Someone is diagnosed with diabetes every two minutes.

Type 2 diabetes occurs when the body can still make insulin, just not enough or when it is produced it doesn't work properly (known as insulin resistance).

The pancreas is the organ which produces the hormone insulin; insulin is the 'key' which allows glucose to be used by cells in the body. If the supply of insulin is faulty or inadequate the glucose cannot be used and builds up in the blood stream.

Excess sugar in the blood causes serious physical health problems.



Type 2 diabetes is far more common than type 1; like many health conditions the likelihood of developing type 2 diabetes increases with age so, as the population ages, so do levels of diabetes. Unfortunately, there is also a link between type 2 diabetes and obesity and for this reason it is becoming increasingly common in younger people; more people than ever are developing diabetes before the age of 40.

Although people with type 2 diabetes may produce insulin they are unable to properly regulate their blood glucose and will need to find suitable ways of gaining and maintaining control. They may be able to do this by changing their diet and lifestyle or they may require tablets or even insulin injections.

There is a common misconception that type 2 diabetes is a milder form of the illness; however, if left undiagnosed and untreated it will cause serious long term harm. Effects can include organ failure, heart disease, loss of sight and nerve damage resulting in amputations. For this reason, it's important that you identify clients at risk and ensure that they are regularly tested by their GP so that treatment can be started as soon as possible.

Both type 1 and type 2 diabetes have similar signs and symptoms but with type 2 they may go undetected for years whereas with type 1 they will be evident within weeks.

General Symptoms:

- passing urine more often than usual, especially at night
- increased thirst
- extreme tiredness
- unexplained weight loss
- genital itching or regular episodes of thrush

- slow healing of cuts and wounds
- blurred vision
- Tingling in the hands and feet

(Diabetes UK 2018)

Type 1 and type 2 diabetes are different diseases with different causes but broadly similar effects. People with type 2 may find that they require insulin therapy if their condition deteriorates. Over time, as the person ages or if they fail to control their blood sugar levels, their pancreas may produce less insulin and they may become even less effective at regulating its use. This deterioration may mean that the person requires treatment with insulin to manage their condition.

Treatment with Insulin

Diabetes was first treated with insulin in the 1920's, prior to that people with type 1 diabetes had a significantly reduced life expectancy as the only way they could control their blood glucose was by limiting their intake of food. Much money is spent on the research and development of new ways of administering insulin as the need for regular injections can be unpleasant.

Insulin is a treatment for diabetes, not a cure. Both type 1 and type 2 are incurable conditions but they can be well managed. Insulin therapy allows millions of people to live normal and healthy lives but they will always be dependent on medication, there is not currently any likelihood of a cure.

The biggest difference between the two types is the fact that a person with type 1 diabetes must take insulin and will be dependent on it for life; a person with type 2 may benefit from short term insulin therapy but be able to improve their blood glucose management and no longer have to take it.

The longer a person with type 2 diabetes takes insulin for, the less likely it becomes that their pancreas will be able to produce enough insulin itself, however, it can be reversed through altering the diet, weight loss and lifestyle changes meaning that insulin injections will no longer be required.

Risk Factors

The actual causes of most cases of type 1 diabetes are not currently known but we are aware of various factors that increase an individual's risk of developing type 2 diabetes; they include:

- Having a close relative who has diabetes
- Being overweight
- Developing diabetes in pregnancy (gestational diabetes)
- Smoking
- Ageing

A common misconception is that eating sugar causes diabetes, but it is not as simple as that. Eating a high sugar and high fat diet resulting in the likelihood of becoming overweight will certainly be a risk factor but it is not the whole story. Type 1 reasons can be slightly more complex.

The causes for type 2 diabetes are clearer, in most cases of people with type 2 this is linked to them being overweight, 80% of people diagnosed with type 2 diabetes are overweight.

Life-style

Having diabetes does not mark a person out as having a poor lifestyle or being generally unhealthy.

Identifying all people with diabetes as 'Diabetics' and treating them all the same is unhelpful and could even be dangerous. Some people with diabetes may be seriously ill, they might suffer from disabling side effects and general poor health, others may be healthier and fitter than you. Take as an example Sir Steven Redgrave diagnosed with type 2 diabetes prior to winning his fifth Olympic gold medal.

Exercise can be extremely beneficial and we will look at how your clients can be supported to manage their lifestyles for best control of their blood glucose levels.

The guidelines for healthy eating for people who have diabetes are the same as for anyone else and will be discussed in more detail in Chapter 3. A balanced diet will involve all types of food including ones containing sugar such as fruit and milk; people with diabetes should not be prevented from eating any foods and may actually need quick sugar fixes such as chocolate or fizzy drinks if they feel their sugar levels are dropping.

Specialist 'diabetic' foods are not recommended by health professionals or expert groups like Diabetes UK as they are overpriced, have no health benefits and may even cause side effects such as diarrhoea.

Chapter Two

Health improvement

If a client has been diagnosed with diabetes or if they are known to be at risk of developing it they should be encouraged to visit their doctor; with a family member, carer or other advocate if necessary. Their GP can check their blood pressure, cholesterol and blood sugar levels and, if there is any cause for concern, prescribe medication and suggest lifestyle changes which will help to improve their condition.

To safeguard your clients' health you should be supporting them to make 'good' lifestyle choices and helping them to access advice and information.

Outcome 1 of the Care Quality Commission's essential standards of quality and safety requires that 'people who use services must be given relevant information to encourage them to change lifestyle behaviours that are placing their health at risk, so they can make an informed choice about whether they wish to lead a healthier life.'

The Mental Capacity Act 2005

The Mental Capacity Act 2005 was designed to protect the rights of potentially vulnerable adults who might otherwise be prevented from making their own choices and decisions. The Act is based on five key principles which together ensure that individuals are respected as competent adults; given every opportunity to make their own decisions and choices; treated fairly without prejudice or discrimination and supported to be as independent as possible.

The Constitutional Values

1. A person must be assumed to have capacity unless it is established that he lacks capacity
 2. A person is not to be treated as unable to make a decision unless all practicable steps to help him to do so have been taken without success
 3. A person is not to be treated as unable to make a decision merely because he makes an unwise decision
 4. An act done, or decision made, under this Act for or on behalf of a person who lacks capacity must be done, or made, in his best interests
 5. Before the act is done, or the decision is made, regard must be had to whether the purpose for which it is needed can be as effectively achieved in a way that is less restrictive of the person's rights and freedom of action
- (Mental Capacity Act 2005 Code of Practice)



When you are working you must comply with the Mental Capacity Act and CQC guidance, therefore, it is up to your individual clients to decide whether to make changes or not. Even if you have to make decisions on a client's behalf you must base your decisions on your knowledge of their personal values, beliefs etc. The following would be unacceptable care practices even if you believed you were acting in the client's best interests:

- Treating clients with diabetes differently at mealtimes e.g. giving them no menu choices and refusing to serve them desserts that were available to other clients
- Refusing to allow a client to smoke
- Forcing a client to exercise

If you feel that individuals could benefit from changes in their lifestyle and behaviours you must find appropriate ways to encourage and support them. Your methods need to be gently persuasive without restricting people's rights and freedoms or overstepping the professional boundaries of your relationship.

Good and bad practices

Good Practice:

- Make sure you are acting in the individual's best interests
- Use a person-centred approach based on fairness, respect and partnership
- Respect the individual's cultural and religious identity
- Identify benefits that mean something to the individual
- Educate, inform and empower

Bad Practice:

- Taking actions which restrict the individual's freedoms or rights
- Making assumptions about individual's knowledge or motivations
- Dismissing any fears or anxiety related to change
- Putting pressure on individuals to follow your values and beliefs

Bringing changes

Annually the NHS spend £10 billion on diabetes; three quarters of this money pays for treatment of associated complications; that is for things like amputations and transplants that become necessary when diabetes is poorly managed. With education and support more people living with diabetes or at risk of developing diabetes could be helped to make the changes necessary to avoid complications; this would significantly reduce costs and the burden on health services.

Sadly, it is estimated the cost pressure which diabetes and its complications puts on the NHS is projected to soar. A significant part of this is the rapidly increasing rates of obesity in adults and children.

In 2008, over 40 million preschool children were overweight worldwide. The WHO suggests that more than 1 in 4 (28.1%) of adults in the UK are obese (has a BMI of 30 or more).

Diet Plan

Poor food choices can lead to obesity, high blood pressure, high cholesterol, and blocked arteries; these can reduce life expectancy and cause medical emergencies including stroke.

Result of healthy diet

- Keeping weight down and avoiding excess strain on joints and internal organs
- Good energy levels
- Steady blood sugar levels (important to maintain energy and avoid fatigue)
- Protection against illness and injury (e.g. bone strength relies on adequate intake of vitamins and minerals)

Poor diets are likely to be high in saturated fat, sugars and salt while balanced diets include plenty of fibre, unprocessed carbohydrates and monounsaturated fats. Dietary advice can be found everywhere nowadays but the recommended sources are those which have been put together by suitably qualified professionals such as those found in doctors' surgeries. The advised online sources are sites such www.nhs.uk which provides good common sense guidance.

Balanced diet: A guideline

- It should be based on starchy carbohydrates in as unprocessed a form as possible – wholegrains, vegetables, brown rice and pasta, pulses etc. These will provide plenty of fibre and are low in fats; they will help to maintain blood sugar levels
- Aim to eat 5 portions of fruit and vegetables a day, 1 of which should be raw
- Keep processed carbohydrates, particularly refined sugars to a minimum
- Reduce intake of saturated fats (red meats, dairy products, cakes) and increase monounsaturated fats (avocados, olive oil)
- Reduce salt intake – salt raises blood pressure
- Protein is necessary but many people rely too much on red meat and dairy products; alternatives such as fish, nuts and pulses can provide essential nutrients with lower levels of saturated fat
- Eat regularly – people generally make better choices if they eat little and often

If you have a good cook or catering team they will work with care staff and individual clients to ensure that they are providing a range of attractive food options that encourage people to eat well.

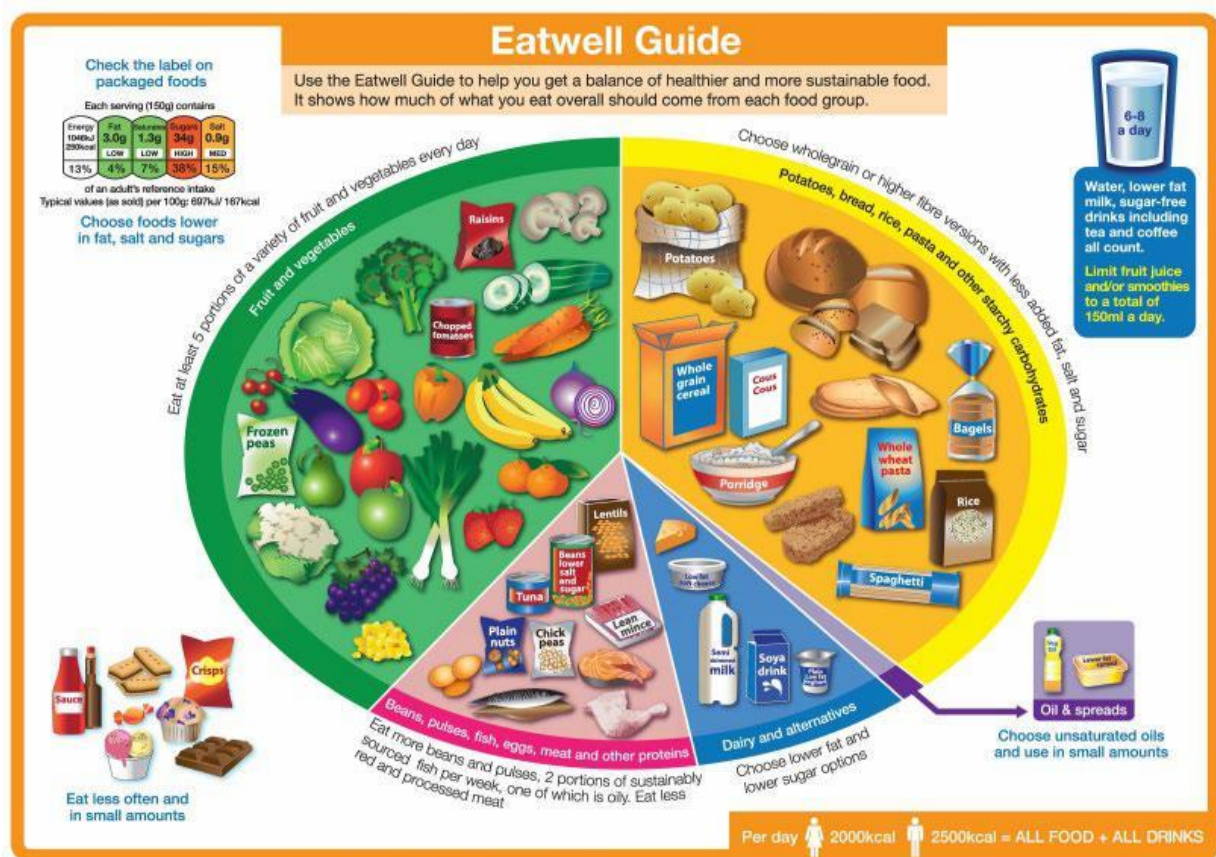
Relation between diet and diabetes

For any diabetic the primary goal is blood sugar levels within the normal range to prevent diabetes related complications, therefore diet is a significant part of treating the illness. Balancing the diet can be challenging but the eating and food choices that are made are important in helping to manage the condition. This doesn't automatically mean that the diet should become restrictive, diabetics should be able to eat a wide range of foods as part of a healthy diet. It is far better to

make small changes which they can stick to than completely altering the diet but not sticking to it.

Eating for diabetic health shouldn't be seen as a 'special diet', they should follow the same guidelines as the rest of the population- low fat, sugar and salt with plenty of fruit, vegetables and good quality carbohydrates such as bread, past, potatoes and cereals.

The 'EATWELL GUIDE' is an excellent tool for this.



Source: Public Health England in association with the Welsh Government, Food Standards Scotland and the Food Standards Agency in Northern Ireland

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Ten effective eating habits

- 1) Eat three regular meals a day
- 2) Include starchy carbohydrates at every meal
- 3) Cut down on the amount of fat that is eaten
- 4) Eat more fruit and vegetables
- 5) Include more beans and pulses in the diet
- 6) Aim to eat at least two portions of oily fish a week
- 7) Limit sugar and sugary foods
- 8) Reduce salt in the diet
- 9) Drink alcohol in moderation
- 10) Don't be tempted to use diabetic food or drinks.

Physical Exercise

Part of keeping healthy includes maintaining a reasonable level of activity as it will help to lower your blood pressure and reduce your risk of stroke and chronic conditions such as diabetes.

Sports and organized physical activities aren't for everyone but almost anyone can increase their daily activity levels by making small changes to the way they do things or by setting aside time to exercise. It doesn't necessarily mean getting 'sweaty at a gym'. Simple and more relaxing ways to increase your exercise can include:

- Going for a walk
- Using stairs rather than a lift
- Getting off the bus one or two stops earlier
- Swimming
- Playing swing ball with family
- Playing Wii sports
- Dancing
- Gardening
- Housework
- Carrying shopping bags

Of course, some people may be limited by their physical abilities but some of the activities above may still be suitable, they could also try chairbics or indoor bowls

****Ask physiotherapists to recommend appropriate equipment for individuals with special needs***

Ideally everyone should do 30 minutes of moderate activity (making them slightly out of breath) at least 5 times a week. If there are concerns about people's ability to exercise safely (for example if they are over 40 and get out of breath very quickly) refer them to their GP for advice and support.

One thing to be taken into account is that although we all need to do a level of exercise to maintain our health, people with diabetes need to be conscious of the fact that it can higher the blood sugar levels as well as lower them. It can also vary depending on what type of exercise you do. The best way to manage it is to check the blood sugars more often, before and after activity, this will help to identify patterns which will help manage the fluctuations and put their mind at ease.

Tip: If people are very overweight and experience pain when moving, exercising in water can give support to joints while enabling them to burn off calories.

Smoking

Every smoker risks health damage, but for people with diabetes the risks are particularly high. Diabetes already increases chances of developing cardiovascular disease, such as heart attack, stroke or circulatory problems in the legs; smoking doubles the likelihood of complications.

Possible damage

- Increases the likelihood of neuropathy (nerve damage), nephropathy (kidney damage) and retinopathy (eye damage)
- Decreases the amount of oxygen reaching the tissues of the body, which can lead to a heart attack or stroke
- Causes narrowing of the arteries
- Increases the risk of blood clots
- Increases blood pressure

(Diabetes UK 2018)

So, like maintaining good blood glucose control, eating well, taking regular exercise and keeping to a healthy weight, giving up smoking is one of the most beneficial things you can do for your future health.

There are many different products available that can help people stop smoking, from self-help books to patches and pills. What works for one person may not for another so it's important to persevere until the right help is found.

The NHS stop smoking service is a good starting point; they can offer free advice, counselling, support groups and aids on prescription. Contact them on 0800 022 4 332 or go to their website www.smokefree.nhs.uk

Benefits from Alcohol

Recent research suggests that a moderate amount of alcohol can be good for us but drinking any more than the recommended amounts increases the risk of various health problems. Both binge drinking (more than 6 units in a session for women or 8 units for men) and longer term excessive alcohol intake are dangerous.

Men can drink up to 14 units a week while women should also limit themselves to 14; everyone should have a couple of alcohol free days a week and limit the amount they drink each day to 2 / 3 units.

The size of a unit of alcohol varies but in general terms it's half a pint of normal strength lager, a small glass (125 mls) of wine or a measure (25 mls) of spirits.

If an individual is taking tablets or insulin to treat diabetes they will need to check for the possibility of reactions with alcohol, and they may need to alter their dosage when they have a drink.

Drugs

Certain recreational and performance drugs may cause harm to blood vessels and increase blood pressure; people who choose to take them should be aware of the risks they are taking.

Chapter Three

Strategic and effective management

Anyone who has diabetes will need to become an expert on their condition; if they lack the ability to understand the implications of their illness and the impact that their choices will make they must be supported by people who care enough about them to educate themselves about the disease. Diabetes can't be managed just by taking medication at set times, there are all sorts of factors which will have an impact on what needs to be taken and when, and medication alone is not the answer. People with diabetes must also understand how their daily habits will affect their blood glucose levels.

Long term high blood glucose levels are what because the complications associated with diabetes; there are 3 ways in which people should be supported to manage their blood glucose:

- Medication
- Lifestyle changes
- Education to understand why and how to manage all aspects of their condition

In an attempt to reduce the impact of diabetes the government has produced a National Framework for Diabetes setting out the standards of care which should be available. Your clients with diabetes should be benefiting from the following services:

- A well informed GP or practice nurse – all surgeries should have in-house specialists who can carry out a full medical examination and give appropriate advice and support
- Access to a consultant when necessary – people with type 1 diabetes and those with type 2 who require extra support will be cared for by a hospital consultant who will see them on a regular basis
- Annual medical review
- Annual eye test
- Regular foot checks

The needs of all clients with diabetes are different, have a think about and maybe write yourself some notes on some of the factors that might be considered when planning their support

Monitoring blood glucose

The frequency of blood glucose monitoring needs to be established on an individual basis by the General Practitioner and any other support services who are involved the care.

The normal readings for blood glucose monitoring are as follows:

Target Levels by Type	Upon Waking	Before Meals	At least 90 minutes after meals
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Of course, diet alone cannot always manage diabetes, but there are a number of treatment options available to help.

Medication

The way in which your clients' medication and treatment is prescribed and managed must meet the requirements of the Health and Social Care Act 2008 and should reflect the aims of the National Service Framework for Diabetes created by the Department of Health for implementation in 2013.

Outcome 9: Management of Medicines (Regulation 13) Health and Social Care Act 2008

Effective medication through personalized care

A key element in the Essential Standards is the use of medicines within a personalised care plan which is appropriate and safe for the service user concerned. The Standards specify in Prompt 9A that such care must take into account the service user's:

- age
- choices
- lifestyle
- cultural and religious beliefs
- allergies and intolerances
- existing medical conditions and prescriptions
- adverse drug reactions
- recommended prescribing regimes.

All prescriptions should be monitored and regularly reviewed to ensure that the medication remains appropriate. Prompt 9A of the Essential Standards states that providers must ensure the person's prescription for medicines, for which the service is responsible, is up to date and is reviewed and changed in line with changes to their needs or condition.

Prompt 9B states that an up-to-date list of medicines compiled by a service user should be obtained when they begin to use the service.



By taking a person-centred approach to prescribing, doctors can help to improve compliance; this is particularly important for the treatment of chronic conditions such as diabetes when the medications can have unpleasant side effects and the benefits can be difficult to appreciate.

For example, some people are very regular in their habits and will suit a regime that fits around set mealtimes; others will have more chaotic lives and their treatment will need to be flexible enough to reduce likelihood of harm if doses are not taken or are taken at variable times.

It's important that clients are given as much information as possible about their health and treatment options because for as long as they have capacity to make their own decisions it is entirely up to them whether they follow doctor's advice or not. Even if they lack capacity consideration must be given to the choices they would have made. It can be difficult to avoid interfering if someone is refusing to take vital medication, but you have to respect their right to do so.

Available treatments

Some people with type 2 diabetes may be able to control their blood glucose by eating well and exercising regularly; but if this is not adequate they may take tablets, or, like all people with type 1 diabetes, they may need insulin.

Tablets

There are a number of different medications which are available to help diabetics manage their condition, this includes tablets which can be used on their own or in combination with insulin injections they each work in different ways and have varying side effects so a bit of swapping and changing may be required to find the one which is most suitable.

Commonly used tablets include metformin, gliclazide and acarbose; it's important that you read the information that you receive about specific medications and familiarise yourself with their administration, expected effects and possible risks.

Potential problems with these medications include:

- Life threatening hypoglycemia (low blood glucose, see Chapter 4)
- Facial flushing when alcohol is drunk
- Nausea and diarrhoea
- Weight gain
- Fluid retention

Insulin

As we have previously mentioned all people who have type 1 diabetes have to take insulin as well as some of those with type 2.

Insulin comes in many forms and doctors should work closely with patients to identify the best type, or types, of insulin for them. Some insulin works quickly and lasts for a short time only;

some takes time to take effect but will work for several hours. Typically, someone might take fast acting insulin before their meals and then a slower type before bed, but everyone is different.

Insulin cannot go through the digestive system as it would be destroyed by the stomach's juices so, currently, it has to be injected. Your clients may have pen systems, or they may have to draw up insulin into a syringe; there are other systems available but they are little used at the moment. If a reliable alternative to injections is developed it will transform the lives of millions of people who currently have to inject themselves several times a day.

If clients are insulin dependent they should be supported to self-administer for as long as possible; they should be injecting into a fatty area such as their stomach or thigh and making sure that they vary the injection site. If they regularly inject in the same place they will develop unsightly lumps of fatty tissue.

If clients cannot self-administer a district nurse or suitably trained carer will give them their injections.

People who take insulin must monitor their blood glucose to ensure that they are maintaining safe levels; they should have been taught to use this information to adjust their insulin intake. Insulin requirements will be affected by amount of food eaten, amount of physical exercise and the presence of any infection. The client's GP should have identified the appropriate level of blood glucose they should aim for as people have different needs and levels will be affected by food intake.

The main danger with insulin is hypoglycaemia; insulin dependent clients must be properly monitored and there should be policies and procedures for situations such as delayed meals, client illness and overdose. (see Chapter 4 for the signs and treatment of low blood sugar).

Regular Checks

People who have diabetes are at higher risk of complications associated with high blood pressure and high cholesterol, such as heart disease and stroke. For this reason they should be having regular blood pressure and cholesterol checks and may be being treated with medication to lower blood pressure or tablets such as Simvastatin to reduce cholesterol. Clients with these complications may also need to reduce their intake of salt and dietary cholesterol.



Chapter Four

Complications identifications and management

If people do not maintain satisfactory blood glucose levels they will experience complications. These may be immediately life threatening or result in painful and disabling conditions.

As a carer you have a responsibility to understand your clients' health conditions and to recognise signs and symptoms which may give cause for concern. Older people in particular are more likely to be at risk from high blood glucose (hyperglycaemia) emergencies.

All clients with diabetes should have their blood glucose monitored on a regular basis and action should be taken when readings are outside a normal or acceptable range. The information below is to support your general understanding; you should also be given information by individual clients' GPs about their personal health needs.

Long-term complexity

Clients with diabetes must be made aware of the risks they take if they don't manage their blood glucose levels; for example, if they continue to smoke, eat a poor diet or don't take their medication properly. To avoid serious complications people must be highly motivated; lifestyle changes can require significant willpower and injecting insulin can be unpleasant and lead to weight gain.

The complications of diabetes mean that people with the disease have certain special care needs:

- they must be monitored for deterioration in sight, organ function etc. they should have regular appointments with appropriate specialists for this purpose; if problems are recognised early treatment may be more effective
- particular attention must be paid to their feet – they may have reduced sensation, or no sensation at all, at their extremities. Their feet are at risk if they put them in hot water, stand on sharp objects or wear ill-fitting shoes. Good foot care is essential with daily checks and referrals to chiropodists when necessary. Diabetes uk provide a very good leaflet on Diabetic Footcare
- diabetes is a leading cause of amputation – if you notice ulcers forming or become aware of cuts or wounds that are not healing refer the client to their GP as a matter of urgency.

“The NHS reports that people who have diabetes are 15 times more likely to undergo amputations than other people without the condition.”
Diabetes.co.uk

If people do not manage to control their blood glucose long term hyperglycemia will cause serious harm to their body, this could include:

- nerve damage
- damage to sight / blindness
- heart disease
- damage to kidneys

Depression diabetes relation

People with diabetes are more prone to depression than the general population so it is important that you look out for the signs and symptoms and can offer support for clients to cope with poor mental health. Signs and symptoms include:

- Feeling tired or having little energy
- Crying all or some of the time
- Lack of concentration
- Sleep problems
- Avoiding social contact
- Having little interest or pleasure in doing things
- Finding it hard to function
- Loss of appetite or overeating
- Physical aches and pains
- Feelings of despair and hopelessness

If you suspect that a client may be depressed refer them to their GP for further investigation.

Diabetes during Illness

Illness, infection and stress all have a negative effect on the body by raising the blood glucose levels. The reason for this is that the body releases more glucose into the blood stream to try and fight the illness, but with diabetes the body can't do this. The result being the symptoms of diabetes and the illness are increased.

People with diabetes can be more prone to infections, especially if their blood glucose levels are at a higher than normal level. In addition, nearly all infections will cause blood glucose levels to rise.

Infections in older people, if not dealt with properly, can lead to serious complications which may make admission to hospital necessary. Sometimes signs and symptoms are not obvious, but a change in mobility or the onset of a confused state may indicate infection.

Steps to follow

- Make an urgent referral to GP
- Make sure the person does not become dehydrated
- If someone has diarrhoea, carers should be aware that they may be more prone to hypoglycaemia
- Keep testing blood glucose to monitor improvement or deterioration

Alert!

Do not stop diabetes treatment. The dose of diabetes medication may need to be increased for the duration of infection.

Medical Emergencies

Hypoglycemia (low blood sugar)

If someone takes too much insulin; doesn't eat enough; is more active than normal; has sexual intercourse; is in a stressful situation; drinks excessive amounts of alcohol or has an infection they may experience a sudden drop in blood glucose levels. If their condition is not recognised they may become unconscious; without treatment this condition can be fatal.

People who have diabetes become good at recognising the warning signs and can treat themselves, however, sometimes glucose levels can drop so quickly that they will have to rely on someone else realising that they are in trouble and knowing what to do about it. If the individual has a blood glucose testing kit, they should test their blood sugar; if it is not possible to do this treat them for hypoglycaemia as you will not cause any further harm and it could be lifesaving.

Everyone reacts differently but the early warning signs of mild hypoglycemia may include:

- feeling hungry
- sweating
- dizziness
- tiredness (fatigue)
- blurred vision
- trembling or shakiness
- anxiety or irritability
- going pale
- fast pulse or palpitations
- tingling of the lips



Signs of more severe hypoglycemia include:

- difficulty concentrating
- confusion
- disorderly or irrational behaviour, which may be mistaken for drunkenness

(NHS 2017)

First Aid Manual

Conscious patient:

With a conscious patient follow these steps:

- give them sugar e.g. chocolate, fruit juice, cola

- talk to the patient and monitor condition
- if they don't recover quickly call 999
- if they recover, they should be encouraged to eat a starchy carbohydrate snack to maintain blood glucose levels; they are likely to have a headache and may benefit from painkillers and a rest. Make sure they re-check their sugar levels after eating.

If the person has reduced consciousness, or is unconscious, it will not be safe to give them anything to eat or drink; they may carry a drug called glucagon, if you have been trained to use this you can inject them with it if you suspect hypoglycaemia.

Unconscious Patient:

If the individual is unconscious then the following steps should be taken:

- Check for a response
- If unresponsive, lie them on their back
- open airway, check for breathing
- if they are breathing, place in recovery position and call 999
- if not breathing, call 999 and commence CPR (if trained)



Hyperglycemia (High blood sugar)

If a dose of medication has been missed, too much carbohydrate has been eaten, the individual is stressed, is unwell from an infection or has overtreated a 'hypo',

hyperglycaemia can occur, meaning the blood glucose levels are too high- above 7mmol/l before a meal and above 8.5mmol/l two hours afterwards*.

**www.diabetes.org.uk*

As already mentioned, the signs and symptoms of Hyperglycaemia are:

- Thirst
- Fatigue
- Excessive urination
- Headaches

If hyperglycemia is not treated properly then 'Ketoacidosis' can occur. It develops when the body doesn't have enough insulin. Without it the body is unable to use the glucose for fuel. If this happens the body starts to break down the fats to use for energy.

Hyperglycemia can potentially be extremely dangerous if blood glucose levels get excessively high or remain so for a prolonged period. Very high blood sugar levels can cause complications which endanger life such as *Ketoacidosis* and *Hyperosmolar*

Hyperglycemic State

Ketoacidosis

Ketoacidosis is a high blood sugar condition which is generally associated with people who have type 1 diabetes, however, it is possible that people with type 2 diabetes can develop the condition. Illness can be a contributory factor, so clients with diabetes should be carefully monitored when experiencing illness or infection to maintain control of blood glucose levels.

If this is not recognised and dealt with it may result in coma.

Symptoms:

- increased thirst
- increased urination
- stomach pain
- nausea / vomiting
- deep/fast breathing
- feeling tired or sleepy
- sweet smelling breath (often described as like pear drops)
- confusion
- lightheaded/passing out
- increased level of ketones (urine can be tested for these)
- high blood glucose levels

If you have any of these symptoms check your glucose levels, those with DKA will usually have glucose levels over 11mmol/L

Action

Call 999; this can only be diagnosed and treated by medical professionals.

Hyperosmolar Hyperglycemic State (HHS)

This is another high blood glucose condition; it should be dealt with as a medical emergency as it may be life threatening. This occurs in people with type 2 diabetes who have high blood glucose levels (over 40mmol/l) most commonly it affects the elderly generation who are experiencing a combination of illness/infection as well as dehydration.

Its' development occurs over a period of weeks.

Symptoms

- very high blood glucose (often 40+)
- frequent urination
- greater than normal thirst
- dry skin
- dehydration
- nausea

- disorientation
- drowsiness
- loss of consciousness

Action

- call emergency services
- manage conscious / unconscious patient if trained in first aid
- condition requires hospital treatment

If a person with diabetes has high blood sugar it may be tempting to suggest they take insulin; insulin is never an emergency medication; it must only be taken as prescribed by the individual's GP.

Excess sugar in the blood causes serious physical health problems.

References

www.nhs.co.uk accessed March 2020

www.diabetes.org.uk accessed February 2020

Type 1 Diabetes Dr Ragnar Hanas 2007

Coping with Type 2 Diabetes Susan Elliot-Wright 2005

Providing Diabetes Care in General Practice Mary MacKinnon 2002

The Management of Hyperosmolar Hyperglycaemic State (HHS) in individuals with Diabetes NHS August 2012