



Information and Guidelines on the Management of Diabetes.

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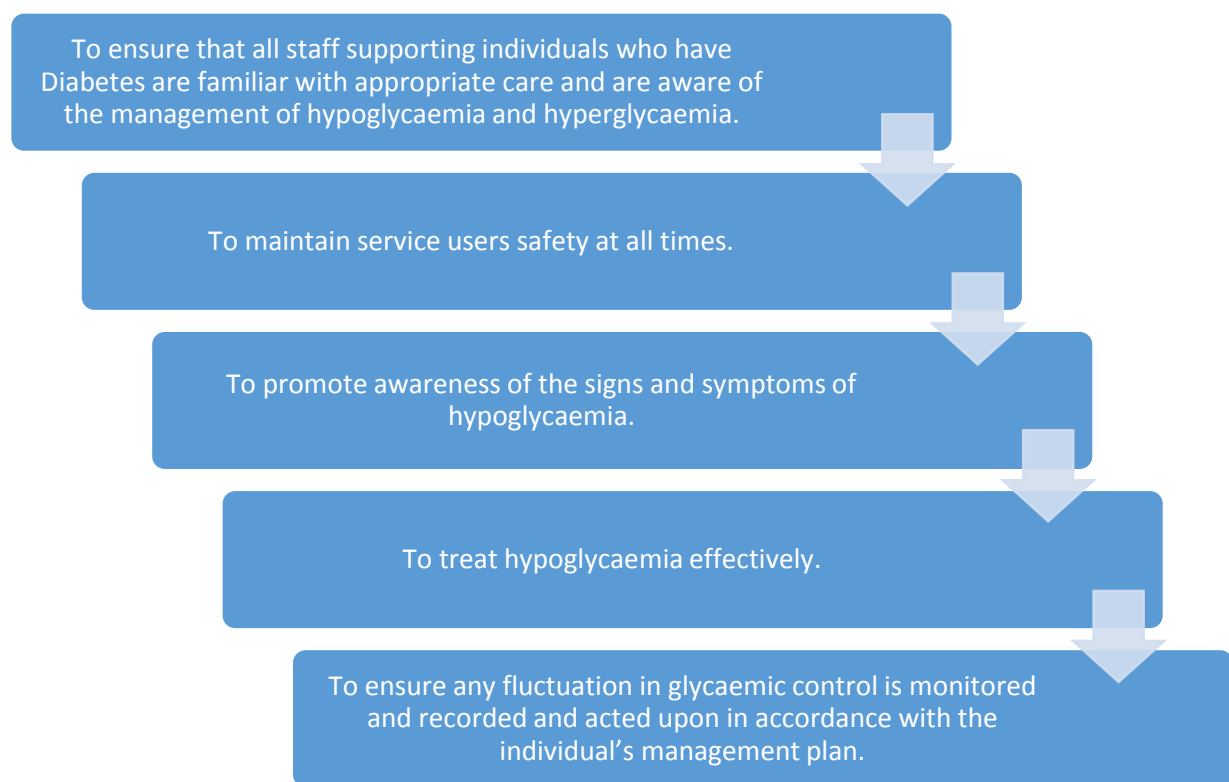
Information and Guidelines on the Management of Diabetes

Kare is committed to an active approach to the management of Diabetes in the organisation. The information and guidelines detailed below are to assist staff in providing individualised person centred care, to improve management of Diabetes and develop better outcomes for the individuals who use Kare services through education and support.

Where staff are supporting Individuals who have Diabetes and require administration of medication, they must complete the one day Diabetes training provided by KARE.

These Guidelines have been developed in line with Diabetes Ireland National Guidelines.

Purpose of guidelines



Supporting Individuals to manage their diabetes:

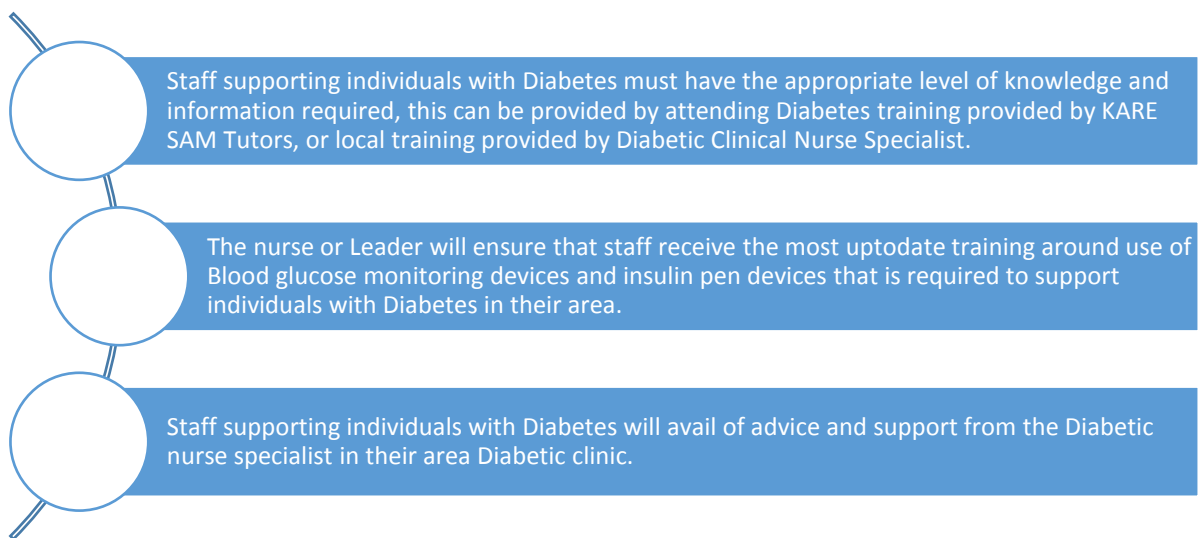
All individuals being supported by KARE who have a diagnosis of diabetes will:

- have a Diabetes Management Plan as part of their overall Individual support Plan.
- have at least 6 monthly bloods carried out by their GP or more often if recommended by the GP
- attend their local Diabetic Clinic as recommended by the Diabetes Clinical Nurse Specialist
- have an annual review with chiropody/podiatry.

- be registered with the National Retinal Screening Programme (Individuals need to be registered through their GP or Diabetic consultant for this programme, they will then be sent an invitation letter for consent to be on the register and if consent is given then an appointment letter will be sent out to the individual to attend for Retinal screening at their nearest centre, they will then be automatically sent out appointments on an annual basis)

Roles and responsibilities:

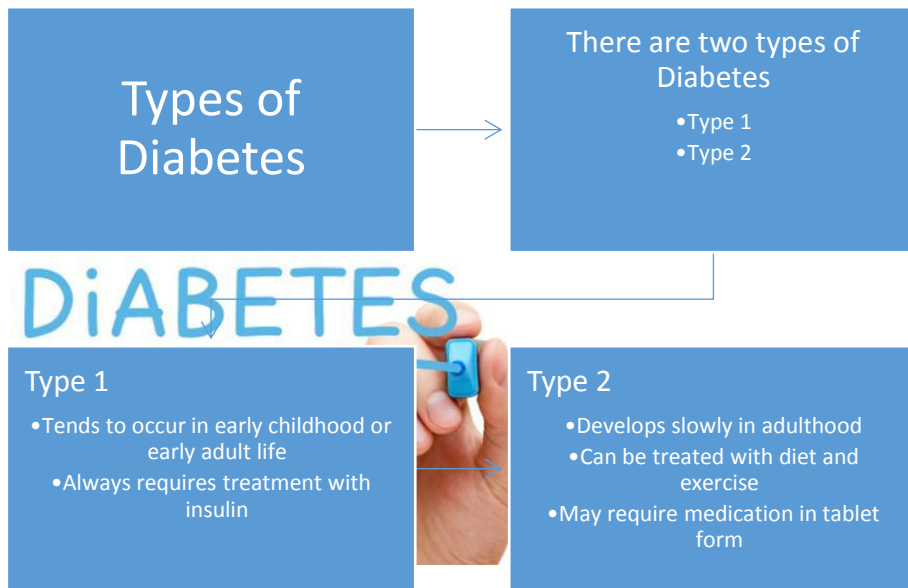
- It is the responsibility Leaders to ensure that staff in their area who are supporting individuals with diabetes have read these guidelines and signed to say they have done so.



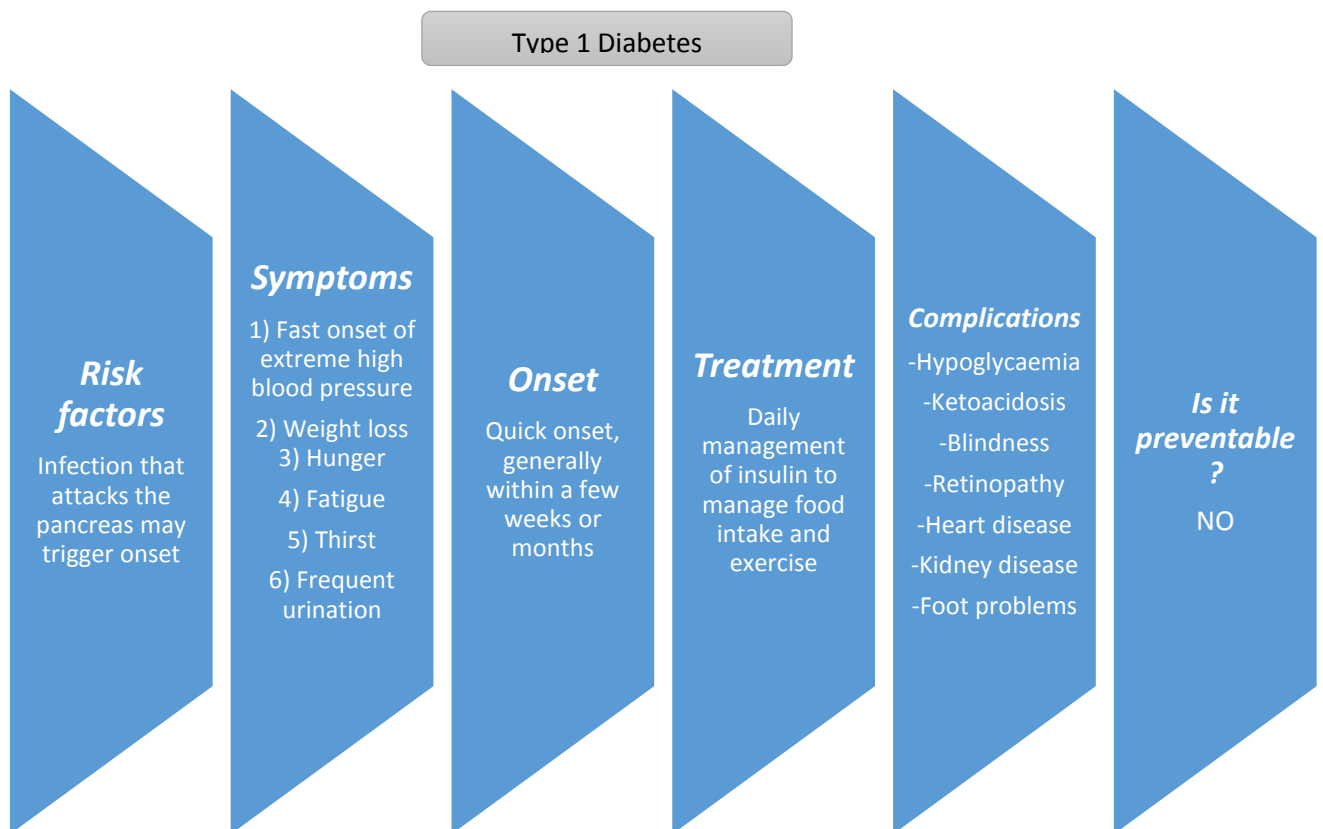
What is Diabetes?

Diabetes is a condition caused by a lack, or insufficiency of insulin. Insulin is a hormone, a substance of vital importance that is made by your pancreas. In Diabetes the pancreas makes too little insulin to enable all the sugar in your blood to get into your muscles and other cells to produce energy. If sugar can't get into the cells to be used, it builds up in the blood stream. Therefore Diabetes is characterized by high blood sugars. (Diabetes Ireland)

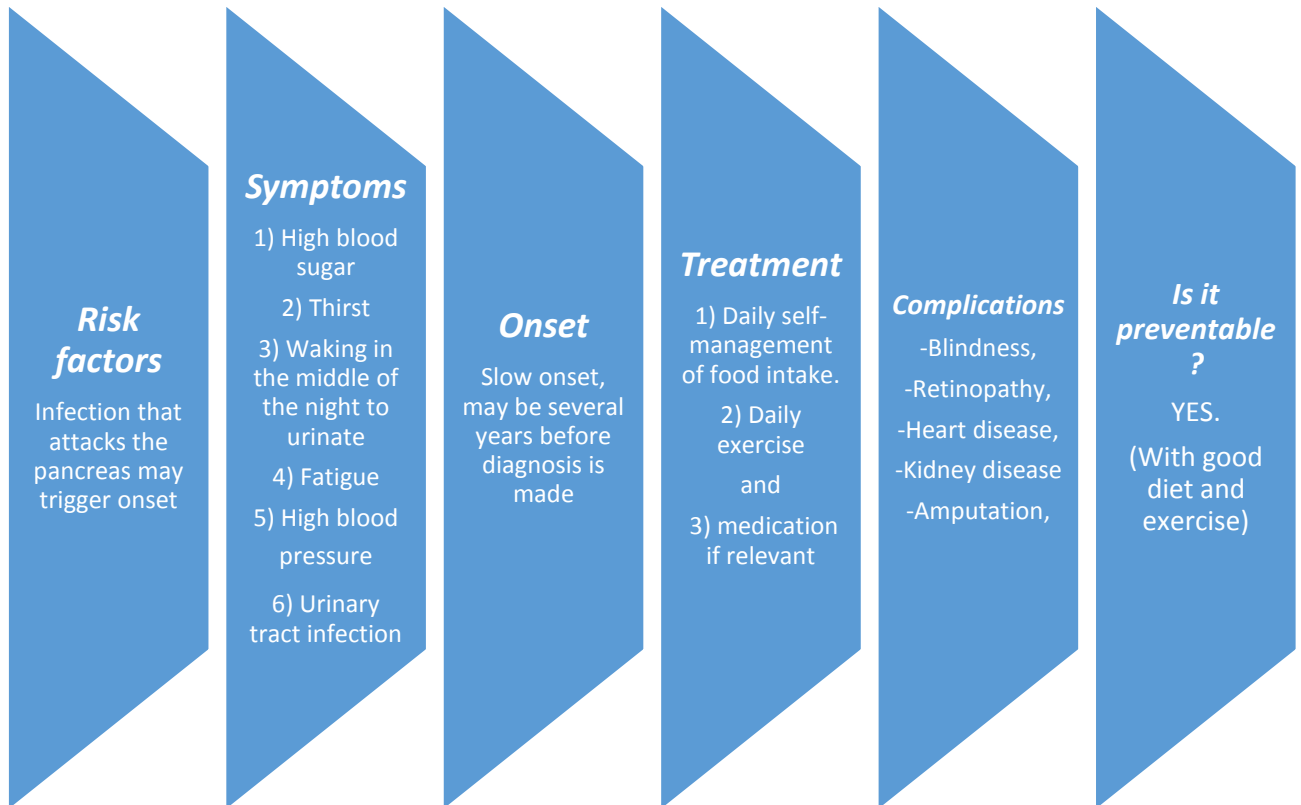
After a meal containing carbohydrates, sugar may be absorbed into the blood stream very quickly depending on the type of carbohydrate taken. The amount of sugar in the blood must not get too high or too low. A hormone called Insulin is produced in the pancreas to ensure that the blood sugar is always well controlled no matter how much is eaten or how much exercise is taken.



Characteristics of the condition...



Type 2 Diabetes



Hypoglycaemia (Low blood sugar)

Hypoglycaemia or a “Hypo” occurs when the level of sugar in the blood falls below 4MMOL/L. It can occur in either Type 1 or Type 2 Diabetes.

Main causes of Hypoglycaemia “Hypo” are:

- Too much insulin or diabetes tablets
- Too little carbohydrate with your meal
- Long gap between meals
- Extra, unplanned activity or exercise
- Excessive alcohol or drinking alcohol on an empty stomach
- Direct sunlight
- Hot bath or shower
- Room too warm

Symptoms:

These can vary from one person to the other and can include

- Light-headedness
- Giddiness
- Sweating
- Shaking
- Headache
- Blurred vision
- Tingling of lips and fingers
- Hunger
- Confusion
- Trembling
- Slurred speech
- Weakness
- Palpitations
- Difficulty in concentration
- Person may also become aggressive or challenging in their behaviour



Occasionally a “Hypo” can occur without any symptoms

Treatment for Hypoglycaemia “Hypo”

- Act immediately, give 15 – 20 g of rapidly absorbing quick acting carbohydrate.

See table below for guidance:

Drink	Portion	Volume	Carbohydrate content.
Lucozade		200ml	17g
Cola	1 mini can (not sugar free)	150ml	15g
Dextrose tablets	5	15g	15g
Fruit Juice	1 small carton	200ml	20g
Fizzy drink e.g. Lemonade, Orange	1 glass	200ml	15g

NB: be careful to monitor the individual’s blood sugar regularly when giving increased carbohydrates

Check blood glucose after 10 – 15 minutes after treating the HYPO. If blood sugar is still below 4MMOL/L give another 15g of carbohydrate from the list above.

Once the blood glucose is above 4MMOL/L and if the next meal is not due in the next hour you may give a snack such as:

Bread	1 slice
Digestive	1 biscuit
Milk	200mls/1 glass.

If there are concerns about hypoglycaemic attacks occurring regularly liaise with the Diabetic nurse Specialist in the Hospital Diabetic Clinic.

Hyperglycaemia: (High Blood Glucose)

Hyperglycaemia is the technical term for high blood glucose/sugar. This happens when the body has too little insulin or when the body can't use insulin properly. This can occur in either Type 1 or Type 2 Diabetes

Causes of Hyperglycaemia:

- For people with Type 1 diabetes they may not have taken enough insulin.
- People with Type 2 Diabetes may have enough insulin but it is not as effective as it should be.
- Eating too much and not exercising enough.
- Illness such as cold or flu.
- Stress

Signs and Symptoms of Hyperglycaemia:

- High blood glucose/sugar - check blood glucose levels
- High levels of sugar in the urine
- Frequent urination
- Increased thirst



Treatment of Hyperglycaemia:

- Drink plenty of water
- Diet adjustment may be beneficial
- Exercise, however if there are **ketones** in the persons urine **DO NOT EXERCISE, seek medical advice as to how to treat the individual.**
- Discuss with the GP the best option for reducing blood glucose level if this is becoming a regular occurrence.

If Hyperglycaemia goes untreated it will lead to a condition called **KETOACIDOSIS**.

It is important to note that not every individual with Diabetes will need to check for Ketones.

Treatment of severe Hypoglycaemia

In the event of an individual having severe Hypoglycaemic attacks resulting in him/her being semi or fully unconscious and unable to take carbohydrates orally then the consultant may prescribe Glucagon to be administered IM in an emergency. The following procedure is to be followed.

- Glucagon is not to be administered unless prescribed and signed by the consultant on the Kardex for the individual
- Staff are not to administer glucagon unless they have received training as provided by KARE SAM tutor group
- Training will be refreshed every two years and this will include on site assessment.

Blood Glucose Monitoring

Each individual in Kare being supported to manage their Diabetes safely has their own individual Blood Monitoring device which is not shared and is for their individual use only.

It is vitally important that the procedure for Blood Glucose Monitoring reflects best practice. A risk assessment should be undertaken to ensure that Blood Glucose Monitoring is carried out in line with standard operating procedures and that the equipment is used in accordance with the manufacturer's instructions.

Monitoring of Blood Glucose levels involves taking a sample of capillary blood with a finger prick lancing device and testing it with a blood glucose monitor. This is carried out in accordance with each individual's personal management plan.

Blood Glucose Monitoring equipment.

There are 3 components of a Diabetes monitoring system.

- Blood Glucose Monitor
- A Lancing device
- Test strip

Lancing Device

Each individual in KARE who is being supported to manage their Diabetes has their own individual Lancing Device, See device instructions for correct use.

Risk Assessment for Blood Glucose Monitoring should include the following:

- Avoid unnecessary blood glucose monitoring
- Blood Glucose monitoring equipment is used in line with the manufacturer's instructions
- Staff and service users receive appropriate education on safe practice for blood glucose monitoring. Education should include the prevention of transmission of blood borne viruses.

- Staff are aware of the importance of implementing the control measures in the risk assessment in order to reduce the risks listed.
- Hepatitis B vaccination for relevant staff and service users

Good practice in the management of blood glucose monitoring should include:

- Each service user should have their own blood glucose monitoring device.
- The monitor must be marked with the individuals details. It should be thoroughly cleaned after use and stored in a hygienic appropriate area, such as a press.
- It is recommended that an individual's glucose monitor, test strips and pen are disposed of when no longer required.
- In Local service it is recommended that the individual brings their own blood glucose monitoring device with them, rather than having a second device which is kept in Local Service.

There are 5 recommended standard precautions which should be implemented to reduce the risk of transmission of blood borne viruses associated with blood glucose monitoring:



1) Hand Hygiene:

Hands should be washed with soap and water prior to and after carrying out blood glucose monitoring.

2) PPE (Personal protective equipment)

- Non sterile disposable latex or nitrile gloves should be worn when carrying out blood glucose monitoring.
- Wash hands prior to putting on gloves
- Remove gloves and wash hands **after** handling objects that may be contaminated with blood e.g. Blood glucose monitor and **before** handling clean items e.g. kardex.
- Gloves do not replace hand hygiene practices.
- Always change gloves between service users.

3) Safe injection practices

- Lancing devices should never be shared between service users
- Service users should be supported to self-monitor in as far as possible
- Lancets used in a reusable pen style firing device must be removed by the service user or staff using a safety device.

4) Disposal of Sharps

- Sharps should be disposed of into an approved sharps container immediately after use. (H&S authority 2014)
- A clean tray with the sharps disposal unit should be brought to the area where the procedure is being carried out.
- Waste should be segregated and disposed of appropriately

5) Decontamination of equipment

- If equipment e.g. kidney dish, is used for multiple service users then it must be decontaminated properly after every use to prevent cross infection of blood borne viruses.
- In Kare best practice dictates that each individual has their own blood glucose monitoring equipment.

Calibration of blood sugar monitor:

Calibration of the blood sugar monitor should be carried out when:

- When a new box of strips is opened or as per local guidelines
- If the blood glucose monitor is dropped
- If the readings are out of the normal range
- When diabetes medication is adjusted or changed, those changes could lead to different readings so it is critical the meter is correct
- Check the meter whenever you question the results. Make sure it is not a machine error
- Please follow the directions and instructions on each individual meter and box of strips when calibrating the machine.
- The control solutions must be stored at a temperature between 3.89 and 30 degrees Celsius. Check the expiration date on the box, **do not use if expired**. Once open the solution lasts for 90 days or the expiration date whichever comes first. Note date when opened on the dispensing label. Keep tightly closed when not in use. Turn the bottles upside down three or four times prior to use to ensure the solutions are properly mixed.
- The same bottle of solution can be used when a new box of strips is opened provided it hasn't reached its expiration date or is opened longer than 90 days.
- Control solution to be ordered from the Rep of the company supplying the blood glucose monitoring machine.
- Control solution to be stored in a locked press.
- Disposal of solution: the recommendations from the company supplying the solution is that it is disposed of as chemical waste, therefore it should be returned to the pharmacy for disposal as per our SAM policy.

- Risk of contracting Hepatitis B or other blood borne virus infections such hepatitis C and HIV, if the procedure is not managed correctly.



Insulin therapy

Where an individual is prescribed Insulin as part of their diabetes treatment, specific details and type of Insulin/pen will be prescribed on the Individual's Kardex by their GP/Diabetes specialist and detailed in their individual Diabetes Management Plan.

Staff supporting the individual in the administration of their Insulin must be either a nurse or have completed the Diabetes Training provided by KARE SAM tutors

Main categories of Insulin are

- Rapid acting : these act like the insulin that is normally produced to cope with a meal and are virtually instant with their effect, falling away quickly EG. Novo Rapid
- Short Acting : Although quick acting, these work more slowly than Rapid acting and their effect may last up to 8 hours,
- Intermediate acting : These have an effect that lasts longer and may last into the night
- Long acting Insulin : These can last for a long day even into the night up to 24 hours, eg.Lantus

Storage of Insulin

Store insulin as per manufacturer's instruction, Insulin not in use should be stored in a fridge and Insulin in current use may be kept at room temperature for up to 30 days.

See shelf life of the product.

Do not allow Insulin to be exposed to extremes of temperatures.

Administration Of Insulin

The individual's Kardex and Diabetes Management Plan must contain the following information,

- type of PEN prescribed,
- the dose,
- Time of administration
- sliding scale where necessary
- Record of rotation of injection site (Diabetes Management Plan)
- Local guidelines for safe disposal of sharps (Diabetes Management Plan)

Potential complications of Insulin injections

- Infection/Abscess at injection site
- Bruising and pain
- Lipodystrophy due to multiple injections at the same site
- Anaphylaxis (Extreme allergic reaction)

Urinalysis

Basic urinalysis should include observing the urines colour and consistency. Any cloudiness or debris may indicate the presence of abnormal cells or disease.

The aroma of the urine should be noted, a slightly “fishy smell” may indicate infective processes whereas a “pear drop” aroma may indicate the presence of Ketones. (see section below)

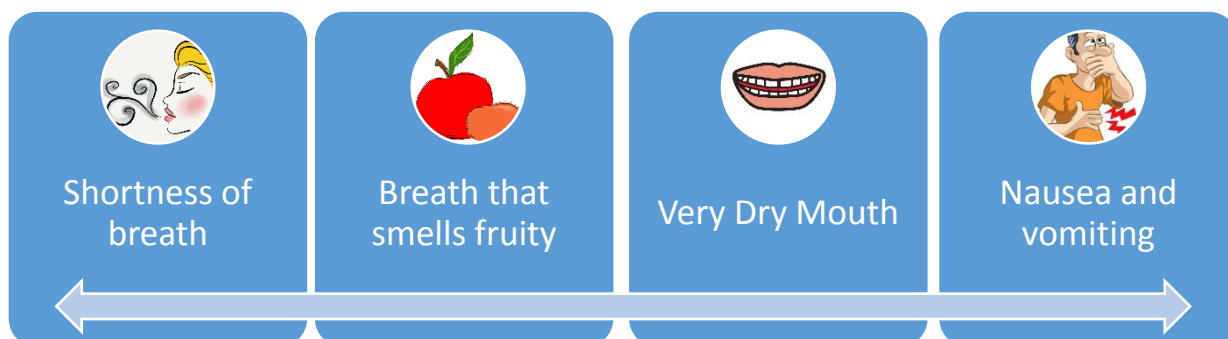
Only nurses or staff who have attended Diabetes training can carry out Urinalysis, this will be carried out in accordance with the guidelines in the Individuals Diabetes Management Plan.

KETOACIDOSIS:

Cause of ketoacidosis:

Ketoacidosis develops when the body doesn't have enough insulin. Without Insulin the body can't use glucose for fuel, so the body breaks down fats to use for energy. When the body breaks down fats, waste products called Ketones are produced. The body cannot tolerate large amounts of Ketones and will try to get rid of them through the urine. Unfortunately, the body cannot release all the Ketones and they build up in the blood which can lead to Ketoacidosis. This is a life threatening condition and needs immediate treatment.

Symptoms:



Treatment:

Seek medical assistance immediately if the person is:

- Vomiting and unable to tolerate any food or liquid
- Blood sugar is higher than the normal range and doesn't respond to treatment
- If ketones are > 1.5 seek medical advice immediately
- If ketones are > 3 go straight to the hospital

What is Glucagon

Glucagon is a hormone produced by the pancreas. It acts on the liver to release glucose and therefore raises blood sugar levels.

The glucagon in a glucaGen Hypokit is identical to the natural hormone produced in the human body.

It can be used in emergency situations when someone is in severe "HYPO" and medical help is unavailable.

It is used when the individual cannot take carbohydrate orally eg confusion or unconsciousness.

It is available as a single dose pack and contains a vial of glucagon powder (1mg) and a syringe pre filled with sterile water.

Become familiar with the following instructions before an emergency arises. Do not use the kit after the date stamped on the bottle label.

- Act Quickly, prolonged unconsciousness may be harmful
- The contents of the syringe are inactive. You must mix the contents of the syringe with the glucagon in the accompanying bottle before giving the injection.
- Do not prepare Glucagon for injection until you are ready to use it.

Indications for use

- Symptoms of severe hypoglycaemia include, Disorientation, Unconsciousness, seizures or convulsions
- Individual unable to take carbohydrates orally

To prepare Glucagon for injection

- Remove the flip off seal from the bottle of glucagon. Wipe rubber stopper on bottle with alcohol swab
- Remove the needle protector from the syringe and inject the entire contents of the syringe into the bottle of glucagon. Remove syringe from the bottle

- Swirl bottle gently until glucagon dissolves completely. **Glucagon should not be used unless the solution is clear and of a water like consistency.**
- Using the same syringe, hold bottle upside down and making sure the needle tip remains in solution withdraw all of the solution (1MG) mark on syringe from bottle.

Inject glucagon immediately after mixing

- Cleanse injection site on buttock, arm or thigh with alcohol swab
- Insert the needle into the cleansed site and inject all of the glucagon solution. There is no danger of over dose
- Apply light pressure at the injection site and withdraw the needle
- Press an alcohol swab against the injection site
- Turn the individual on his/her side, when an unconscious person awakens they may vomit. Turning the individual on his/her side will prevent them from choking.

Possible side effects with Glucagon treatment

- Severe side effects are very rare, although nausea and vomiting may occur occasionally

Storage of glucagon

- Glucagon kit should be stored in the fridge.

Procedure following administration of Glucagon

- Management of an individual following the administration of Glucagon will be detailed in the individuals Diabetic management plan as GP recommendations and guidelines.

Sick day management of insulin dependent Diabetes.

Managing diabetes during acute illness can be very difficult. The stress on the body as a result of illness such as a cold, flu or tummy bug may cause blood sugar readings to increase. However illness can often cause loss of appetite, nausea or vomiting resulting in reduced intake of carbohydrate. As a result acute illness can result in hypoglycaemia, hyperglycaemia or even diabetes ketoacidosis.

All individuals with insulin dependent diabetes should discuss sick day management of their diabetes with their diabetes team/ diabetes clinical nurse specialist and have an individual plan for how to cope with high and low blood sugar readings.

Never stop taking insulin even if vomiting or not eating. It is important to understand that an individual with diabetes needs insulin at all times, even when they are unable to eat a full diet and especially when they are feeling unwell. When a diabetic is unwell the liver continues to supply sugar to the blood and they will still need insulin to control their blood sugar.

Dietary Advice and Exercise

“Diabetes Ireland” recommend that any individual with a diagnosis of Diabetes follow a healthy eating pattern similar to people without Diabetes.

In KARE, staff, dieticians, clinicians, Diabetes nurse specialist will support individuals to have a dietary support plan as part their Diabetes management plan.

This will be reviewed each time the individuals Diabetes management plan is due for review or more often as required or recommended following routine blood results and review at Diabetes clinic.

Staff have a responsibility to support and educate the individual to maintain a balanced healthy diet to assist in the management of their diabetes.

Complication of Diabetes.

Staff should be aware that poor management of Diabetes can lead to other health complications, these include

- Kidney disease
- Eye disease
- Nerve disease
- Cardio vascular disease
- Impotence/difficulty passing urine

This is not an exhaustive list and it is important that staff report any physiological changes in an individual as promptly as possible.