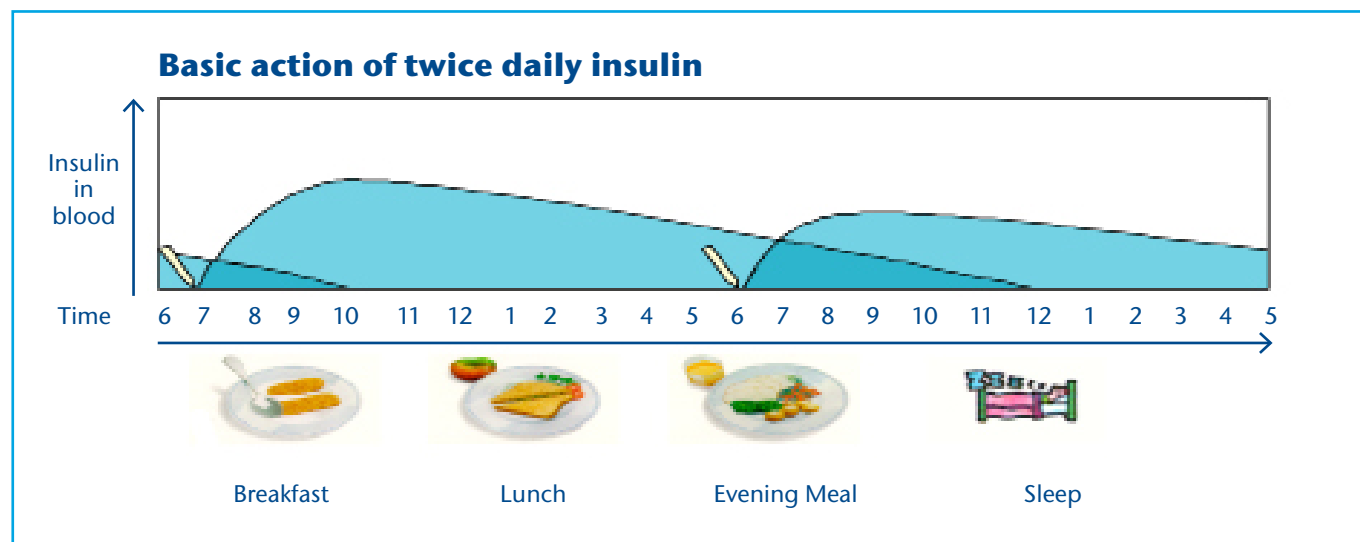


Insulin Adjustment For Twice Daily Mixed Insulin



Patient Information Leaflet



The amount of insulin you require can vary due to changes in the food you eat and/or the amount of activity or exercise you undertake. This leaflet is designed to give you information about the action of insulin, and how and when to adjust insulin. Your Diabetes Specialist Nurse can assist with insulin management.

WHEN DOES INSULIN WORK?

The body needs a basic amount of insulin all the time – day and night. Insulin such as Humulin M3, Novomix 30 and Humalog Mix 25 are mixtures of ‘short acting’ and ‘intermediate’ acting insulin.

Humulin M3, Insulatard and **Humulin I** insulin preparations should be given 20-30 minutes before breakfast and evening meal.

Novomix 30 and **Humalog Mix 25 and 50** insulin preparations have a quicker action and can be given immediately before or immediately after breakfast and evening meal.

INSULIN TAKEN BEFORE BREAKFAST WILL WORK DURING THE MORNING AND AFTERNOON

- ❖ The short acting insulin works until lunchtime.
- ❖ The intermediate insulin works until evening meal time.
- ❖ You will therefore know the effect that the insulin has had by checking your blood glucose level at lunchtime and/or evening meal time.

INSULIN TAKEN BEFORE EVENING MEAL WILL WORK DURING THE EVENING AND OVERNIGHT

- ❖ The short acting insulin will work until bedtime.
- ❖ The intermediate insulin works during the night.
- ❖ You will therefore know the effect that the insulin has had by checking your blood glucose level at bedtime and/or breakfast time.

HOW OFTEN SHOULD MY BLOOD GLUCOSE LEVELS BE CHECKED?

- ❖ Your healthcare professional can recommend when and how often to test your blood glucose levels.
- ❖ Ideally your blood glucose levels should be between 4-7mmol/L before meals.
- ❖ Test your blood glucose more often if your diabetes treatment has been altered.
- ❖ Test your blood glucose more often if you are ill. See Patient Information Leaflet on Sick Day Rules.
- ❖ Test your blood glucose level more often if results are outwith your recommended target, use the following information to identify the reason(s) and consider adjustment of insulin if necessary.

WHY ARE MY BLOOD GLUCOSE LEVELS SOMETIMES HIGH?

A temporary high blood glucose level from time to time is impossible to avoid in everyday life. Some reasons for high blood glucose levels include:

- ❖ Missed insulin dose
- ❖ Insufficient insulin
- ❖ Infection
- ❖ Certain foodstuffs
- ❖ Stress
- ❖ Steroid therapy
- ❖ Problem with injection technique or injection sites for example lumpy areas (lipodystrophy) under injection sites.

WHY ARE MY BLOOD GLUCOSE LEVELS SOMETIMES LOW?

- ❖ Missed or delayed meals
- ❖ Not enough carbohydrate (bread, pasta, rice, potato, cereal) in meals
- ❖ Too much insulin
- ❖ Increased exercise/activity
- ❖ Alcohol
- ❖ Problem with injection technique or injection sites for example, lumpy areas (lipodystrophy) under injection sites.

INSULIN ADJUSTMENT

- ❖ Check your blood glucose levels more regularly before adjusting your insulin e.g. before each meal and before bed for 2 - 3 days
- ❖ If the cause of your high or low blood glucose is known then take steps to prevent further problems. For example, insulin can be adjusted in advance if you anticipate changes in your dietary intake or activity
- ❖ During illness you may require to adjust insulin quickly. See NHS Lanarkshire leaflet on Sick Day Rules for more information.
- ❖ The boxes below provide you with general guidelines about insulin adjustment.
- ❖ Your Diabetes specialist nurse can help and advise you about insulin adjustment.
- ❖ Sometimes a different 'mixture' of insulin is required.

INSULIN ADJUSTMENT GUIDELINES FOR HIGH BLOOD GLUCOSE LEVELS

Identify and address the cause of high blood glucose levels if possible. If the blood glucose level trend is still high after at least 2-3 days then consider adjusting your insulin.

If the blood glucose level is:

- ❖ **high** before lunch **and** evening meal **increase** the breakfast insulin dose
- ❖ **high** before bed **and** before breakfast **increase** the evening meal time insulin dose.

Increase the insulin dose by 2 units at a time. For example if you normally take 20 units of insulin, increase your insulin dose by 2 units to 22 units.

Observe the pattern of your blood glucose for 2-3 days before adjusting again.

Contact your Diabetes Specialist Nurse if you need advice and support

WHAT IF MY BLOOD GLUCOSE LEVEL IS HIGH AND MY NEXT INSULIN INJECTION IS DUE?

Take your usual dose of insulin. If you cannot identify the cause for the high blood glucose it may be that the insulin dose given **before** the high reading needs to be increased. Follow the insulin adjustment guidelines for high blood glucose.

INSULIN ADJUSTMENT GUIDELINES FOR LOW BLOOD GLUCOSE LEVELS HYPOGLYCAEMIA OR 'HYPO'

If you know the reason for a low blood glucose level then take action to prevent it from happening again.

If you have **unexplained** 'hypo' (blood glucose below 4mmol/L) reduce your insulin dose. The dose given **before** the 'hypo' should be reduced.

If your blood glucose is:

- ❖ **low** before lunch **and/or** before evening meal **reduce** breakfast insulin
- ❖ **low** before bed **and/or** before breakfast **reduce** the evening meal time insulin dose

Reduce your insulin dose by 2 units at a time. For example if you normally take 10 units of insulin, reduce the dose by 2 units to 8 units.

Contact your Diabetes Specialist Nurse if you need advice and support

WHAT IF MY BLOOD GLUCOSE LEVEL IS LOW (BELOW 4MMOL/L) AND MY NEXT INSULIN INJECTION IS DUE?

Have some quick acting carbohydrate for example 100mls (small glass) of Lucozade, 150-200mls (larger glass) of ordinary cola or fruit juice or 4-6 glucose tablets to increase your blood glucose level, then take your insulin and meal as usual. Follow the insulin adjustment guidelines for low blood glucose levels to prevent the problem happening again.

Do not tolerate hypoglycaemia on a regular basis; ask for help from your healthcare professional. See NHS Lanarkshire Patient Information Leaflet 'Having a Hypo' on the [Diabetes MCN website](#).

CONFIDENTIALITY AND THE USE OF PATIENT INFORMATION

NHS Lanarkshire take care to ensure your personal information is only accessible to authorised people. Our staff have a legal and contractual duty to keep personal health information secure, and confidential. In order to find out more about current data protection legislation and how we process your information, please visit the Data Protection Notice on our website at www.nhslanarkshire.org.uk or ask a member of staff for a copy of our Data Protection Notice.

NHS Lanarkshire - for local services and the latest health news visit www.nhslanarkshire.org.uk
NHS Lanarkshire General Enquiry Line: 0300 30 30 243

NHS inform - The national health information service for Scotland.
www.nhsinform.co.uk
Tel No: 0800 22 44 88

If you need this information in another language or format, please contact the NHS Lanarkshire General Enquiry Line on 0300 3030 243 or e-mail info@lanarkshire.scot.nhs.uk



www.careopinion.org.uk

For further information go to:
[Diabetes MCN website](#)

Pub. date:	March 2020
Review date:	March 2022
Issue No:	05