

DIABETES MANAGEMENT PLAN 2024 Insulin Pump

SCHOOL SETTING

Use in conjunction with Diabetes Action Plan.
This has been developed by specialist diabetes clinicians.

As kaitiaki (carers/guardians) of diabetes related services, it is a collective responsibility to establish an environment that facilitates a pathway for people with diabetes to navigate te ao mate huka - the world of diabetes¹.

Student's name:	Age:	Date:
-----------------	------	-------

RESPONSIBLE STAFF

School staff who have voluntarily agreed to undertake training and provide support with diabetes care to the student.

Responsible staff will need to receive training on how to check glucose levels and how to put information into the pump and how to administer insulin via the insulin pump or injection if required.

A Medication Authority Form may be required if school staff are required to administer / supervise insulin given via the pump or injection.

List below and tick those that apply.

Staff's name/s:	Glucose checking	Insulin administration

INSULIN PUMP

The student wears an insulin pump that continually delivers insulin.

Insulin Pump model:

Student is able to independently: (tick YES or NO, if NO adult assistance required)

Yes No

Count carbohydrate foods (Parent /caregiver will label all food)

Enter glucose levels and carbohydrate grams into pump

Do a 'correction dose'

Disconnect and reconnect pump if needed

Restart pump manually

Able to prepare and inset a new infusion set if needed

Give an insulin injection if needed

Able to troubleshoot pump alarms and malfunctions

If using CGM can utilise "Exercise Mode" or "Temporary Target" for Activity

If the pump or pump infusion site fails, it may be necessary to administer an injection of insulin.

Type of injection device (please tick) Pen Syringe

The location in the school where the injection is to be given: _____

Please note, injections should be administered wherever the student feels comfortable; this may be in the classroom.

It is the responsibility of the parent / caregiver to keep the school up to date with changes to insulin doses.

GLUCOSE LEVEL (GL) CHECKING

Target range for glucose levels (GLs): 4 – 8 mmol/L

- GL results outside of this target range are common
- GL check should be done where the student is, whenever needed
- The student should always wash and dry their hands when doing a BGL check via finger prick.

Glucose levels will vary day-to-day and be dependent on a number of factors such as:

- Insulin Dose
- Excitement / stress
- Age
- Growth spurts
- Type/quantity of food
- Level of activity
- Illness / infection

Is the student able to do their own glucose check independently? Yes No

If NO, the responsible staff member needs to Do the check Assist Observe Remind

Times to check GLs (tick all those that apply)

- | | | |
|---------------------------------------|-------------------------------|---------------------|
| Anytime, anywhere | Before snack | Before lunch |
| Before activity | Before exams/tests | When feeling unwell |
| Anytime hypo suspected | Beginning of afterschool care | |
| Other routine times - please specify: | | |
-
-

A finger prick (blood glucose check) is required if GL is **less than 4.0 mmol/l** or **greater than 15.0 mmol/l**. Refer to diabetes action plan.

AND/OR

If the meter reads **LO** this means the BGL is too low to be measured by the meter
Follow the **Hypoglycaemia** (Hypo) treatment on Diabetes Action Plan

If the meter reads **HI** this means the BGL is too high to be measured by the meter
Follow **Hyperglycaemia** (Hyper) treatment on Diabetes Action Plan

SENSOR GLUCOSE (SG) MONITORING

Some students will be wearing a small sensor that sits under the skin and measures glucose levels in the fluid surrounding the cells (interstitial fluid).

A sensor glucose (SG) reading can differ from a finger prick blood glucose reading during times of rapidly changing glucose levels e.g. eating, after insulin administration, during exercise. Therefore, **LOW** or **HIGH** SG readings must be confirmed by a finger prick blood glucose check. Hypo treatment is based on a blood glucose finger prick result.

The child is wearing Continuous Glucose Monitor (CGM) or Intermittently Scanned Continuous Glucose Monitor (ISCGM)

Dexcom G6®

Freestyle Libre - ISCGM

Dexcom G7®

Aidex CGM

Guardian™ Connect

Guardian™ Sensor 3

Guardian™ Sensor 4

- With CGM, a transmitter sends data to either a receiver, phone app or insulin pump.
- An ISCGM device will only give a glucose reading when the sensor disc is scanned by a reader or phone app.
- These devices are **not** compulsory management tools.

CGM ALARMS

- CGM alarms may be 'on' or 'off'.
- If 'on' the CGM will alarm if interstitial glucose is low or high.

ACTION: Check finger prick blood glucose level (BGL) and if less than 4.0 mmol/L, treat as per Diabetes Action Plan for treatment.

Alerts for high glucose levels or in response to changing glucose trends are not recommended in this setting

USE AT SCHOOL

- Staff are not expected to do more than the current routine diabetes care as per the student's Diabetes Action and Management plans.
- Staff do not need to put CGM apps on their computer, smart phone or carry receivers.
- Parents/carers are the primary contact for any questions regarding CGM/ ISCGM use.
- Some CGM/ ISCGM devices can be monitored remotely by family members. They should only contact the School if they foresee a prompt response is required.
- If the sensor/transmitter falls out, staff are required to keep it in a safe place to give to parents/carers.
- The sensor can remain on the student during water activities.

HYBRID CLOSED LOOP PUMP SYSTEMS

Contemporary pumps with automation via a paired CGM can either increase or decrease insulin delivery in real-time. However insulin bolus is still required for food.

If the Child has a pump with a low glucose suspend function the pump may stop insulin delivery when the glucose level is low or predicted to go low.

ACTION: For any low alert a finger prick blood glucose check is required.

- If BGL is less than 4.0 mmol/L only glucose treatment is required as per Diabetes Action Plan (do not give insulin bolus for this treatment).
- If BGL greater than or equal to 4.0mmol/L, no action (i.e. glucose treatment) is required, unless the BGL drops further and is LESS THAN 4.0mmol/L; the pump will automatically restart when the sensor recognises that the glucose level has risen.
- Should the mealtimes insulin bolus be required (e.g. for snacks or lunch) the pump will need to be restarted manually for this mealtime bolus to occur.

PHYSICAL ACTIVITY

“Exercise Mode” or “Temporary Targets” are settings that can be used around planned activity. Please discuss the use of these functions with the family for a plan. More details are outlined on page 7.

LOW BLOOD GLUCOSE LEVELS

(Hypoglycaemia / Hypo)

Follow the student's Diabetes Action Plan if BGL less than 4.0 mmol/L.

Mild hypoglycaemia can be treated by using supplies from the student's HYPO BOX.

Hypo box location/s: _____

HYPO BOX

FAST ACTING CARBOHYDRATE FOOD

AMOUNT TO BE GIVEN

FAST ACTING CARBOHYDRATE FOOD	AMOUNT TO BE GIVEN

LONG-ACTING CARBOHYDRATE FOOD

AMOUNT TO BE GIVEN

LONG-ACTING CARBOHYDRATE FOOD	AMOUNT TO BE GIVEN

- If the student requires more than 2 consecutive fast acting carbohydrate treatments, as per their Diabetes Action Plan, call the student's parent / caregiver. Continue hypo treatment if needed while awaiting further advice.
- If initial BGL between 3.0 and 4.0 mmol/L - follow-up long-acting carbohydrate not required. However if student is hungry, can eat but requires insulin bolus for this long-acting carbohydrate.
- If initial BGL is less than 3.0 mmol/L – give follow up long acting carbohydrate but DO NOT bolus for this long-acting carbohydrate
- All hypo treatment foods should be provided by the parent/caregiver.
- Ideally, packaging should be in serve size bags or containers and labelled as fast acting carbohydrate food and long-acting carbohydrate food.

Mild hypoglycaemia is common. However, if the student is having more than 3 episodes of low BGLs at School in a week, make sure that the parent/carer is aware.

SEVERE HYPOGLYCAEMIA (HYPO) MANAGEMENT

Severe hypoglycaemia is not common.

Follow the student's Diabetes Action Plan for any episode of severe hypoglycaemia.

DO NOT attempt to give anything by mouth to the student or rub anything onto the gums as this may lead to choking.

If the school is located more than 30 minutes from a reliable ambulance service, then staff should discuss Glucagon injection training with the child's Diabetes Treating Team or with family. [A video resource is available here.](#)

HIGH BLOOD GLUCOSE LEVELS

(Hyperglycaemia / Hyper)

- Although not ideal, GLs above target range are common.
- If BGL is 15.0 mmol/L or more, follow the student's Diabetes Action Plan.
- If the student is experiencing frequent episodes of high BGLs at school, make sure the parent/carer is aware.

KETONES

- Ketones occur most commonly when there is not enough insulin in the body.
- Ketones are produced when the body breaks down fat for energy.
- Ketones can be dangerous in high levels.
- Ketones are made more quickly when using insulin pump therapy

You will be required to check the student's blood ketone level if

- **Student is unwell or**
- **BGL is above 15.0 mmol/L twice in 2 hours**

If blood ketones are more than 1.0 mmol/L, follow action for positive ketones on the student's Diabetes Action Plan.

EATING AND DRINKING

- The student will need to have an insulin bolus from the insulin pump before carbohydrate foods are eaten.
- The insulin dose will be determined by the pump based on the grams of carbohydrate food they will be eating and the current blood glucose level.
- For younger students, all carbohydrate food should be clearly labeled by the parent /carer with carbohydrate amount in grams. It is not the responsibility of school staff to count carbohydrates, although they may need to assist the student to add up the food amount that they wish to eat.
- Younger students will required supervision to ensure all food bolused for is eaten.
- The student should not exchange food/meals with another student.
- Seek parent/carer advice regarding appropriate foods for parties / celebrations that are occurring at school.
- Always allow access to drinking water and toilet (high blood glucose levels can cause increased thirst and extra toilet visits).
- Does the student have coeliac disease?

No Yes*

*Seek parent/carer advice regarding appropriate food and hypo treatments.

PHYSICAL ACTIVITY AND SWIMMING

A blood glucose meter and hypo treatment should always be available.

- Check glucose level before physical activity.
- Physical activity may lower glucose levels.
- The student may require an extra 10g of carbohydrates before every 30 minutes of planned physical activity or swimming as provided in the Activity Food Box.

Activity Food Box location/s: _____

ACTIVITY FOOD BOX

CARBOHYDRATE FOOD TO BE USED

AMOUNT TO BE GIVEN

CARBOHYDRATE FOOD TO BE USED	AMOUNT TO BE GIVEN

- Physical activity should not be undertaken if BGL less than 4.0 mmol/L.
- Refer to the Diabetes Action Plan for hypo treatment.
- Vigorous activity should not be undertaken if BGL is greater than or equal to 15.0 mmol/L **AND** blood ketones are greater than or equal to 1.0mmol/L **AND/OR** the student is unwell.
- Suspend AND disconnect pump for intense and water-based activity.
- Pump should not be disconnected or suspended for longer than 90 minutes.
- If pump has been removed for physical activity, it is important it is reconnected as soon as possible.
- There are settings that can be used to manage the effect of physical activity on glucose levels, such as "Temporary Basal Rates", "Exercise Mode" or "Temporary Target". Please discuss with the family for a plan around activity at the school.
- If using **Temporary Basal Rates** – consider 25% reduction 90 minutes prior to planned activity.

Pumps with Automation: Consider starting "Exercise Mode" or "Temporary Target" 90 minutes prior to planned activity. Don't forget to turn off these systems at the end of the activity. If pumps are disconnected for activity they will need to be suspended.

INDIVIDUALISED GUIDANCE

CAMPS

It is important to plan for school camps and consider the following:

- Parents/carers need to be informed of any school camps at the beginning of the year. Checklists for whānau and school are [available here](#).
- A separate and specific Camp Diabetes Management Plan is required.

EXAMS

- GL should be checked before an exam.
- GL should be greater than 4.0 mmol/L before exam is started.
- Hypo treatments and water should be available in the exam setting.
- Blood glucose meter, monitoring strips should be available in the exam setting.
- Continuous Glucose Monitoring (CGM) or Intermittently scanned continuous Glucose Monitoring (ISCGM) devices and receivers (smart phones) should be available in the exam setting.
- Extra time will be required if a hypo occurs or for toilet privileges.

APPLICATIONS FOR SPECIAL CONSIDERATION

Students with diabetes mellitus are eligible to apply to NZQA for "Special Assessment Conditions" (SAC) on medical grounds. Students must complete a "Student application for entitlement to special assessment conditions". This form can be downloaded from the New Zealand Qualification Authority (NZQA) website. The application should be lodged at the beginning of Year 11 and 12. For more information on the Special Assessment Conditions process please go to www.nzqa.govt.nz/

DAY TRIPS/EXCURSIONS

It is important to plan for extracurricular activities. Consider the following:

- Ensure blood glucose meter, blood glucose strips, ketone strips, insulin, hypo and activity food are readily accessible.
- Plan for meal and snack breaks.
- Always have hypo treatment available.

EXTRA SUPPLIES

Provided for diabetes care at the school by parent/carer

Insulin and syringes / pens / pen needles

Spare Infusion sets and tubing

Charging cords and power pack if required

Finger prick device

Blood glucose meter

Blood glucose strips

Blood ketone strips

Sharps container

Hypo food

Activity food

Consider Batteries and / or charger for meter or glucose monitoring device and pump

GLOSSARY OF TERMS

Common insulin pump terminology

Insulin pump also known as continuous subcutaneous insulin infusion (CSII)

Small battery operated, computerised device for delivering insulin.

Cannula

A tiny plastic or steel tube inserted under the skin to deliver insulin. Held in place by an adhesive pad.

Line or tubing

The plastic tubing connecting the pump reservoir / cartridge to the cannula.

Reservoir / Cartridge

Container which holds the insulin within the pump.

Basal

Background insulin delivered continuously.

Food Bolus

Insulin for food delivered following entry of BGL and carbohydrate food amount to be eaten.

Correction Bolus

Extra insulin dose given to correct an above target BGL and / or to clear ketones.

Line failure

Disruption of insulin delivery due usually to line kinking or blockage.

AGREEMENTS

PARENT/CARER

I have read, understood and agree with this plan.

I give consent to the school to communicate with the Diabetes Treating Team about my student's diabetes management at school.

First name _____ Family name _____

Signature _____ Date _____

SCHOOL REPRESENTATIVE

I have read, understood and agree with this plan.

First name _____ Family name _____

Role Principal Supervisor Other (please specify) _____

Signature _____ Date _____

*This document has been developed by Specialist Diabetes Clinicians.
If you have concerns please contact the child's diabetes treating team.*