TYPE ONE DIABETES MANAGEMENT PLAN: 2027

Insulin Pump

CYHNCN Child & Youth Health National Clinical Network

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 diabetes[1].

Student's name:	Age:	Date:

RESPONSIBLE STAFF

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 staff are required to administer / supervise insulin given via the pump or injection. The form may be provided by the school staff.

The School SENCO or Early Childhood Centre Manager is responsible for ensuring the appropriate documentation is completed for staff who are required to administer / supervise insulin given via the pump or injection.

List below and tick those that apply	Glucose checking	Insulin Adminstration	Glucagon Adminstration
Nominated staff members:			

INSULIN PUMP

The student wears an insulin pump that continually delivers insulin. Insulin Pump Model: _____

Student can independently (tick YES/NO. If no is ticked, adult assistance is required.)

	Yes	No
Count carbohydrate foods (Parent /caregiver will label all food if student is too young to do this independently)		
Enter glucose levels and carbohydrate grams into pump/phone		
Do a 'correction dose'		
Disconnect and reconnect pump if needed		
Restart pump manually		
Able to prepare and insert a new infusion set if needed		
Give an insulin injection if needed		
Able to troubleshoot pump alarms and malfunctions		
Turn on "Exercise mode"/ "Temp target"/ "Ease-off" / "Temp basal" / "Profile" prior to activity		

Student's name: _____

[1] *Te Kaiwhakahaere Māori te Roopu mate huka Debbie Rawiri-Te Whatu Ora Waitaha Canterbury*

If the pump or pump infusion set fails, ketones can develop quickly. An insulin injection using an insulin pen needs to be administered quickly. Refer to "High" management plan on page 5.

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.

NOTES

- Parent / caregiver will determine carbohydrate count values to be entered into the pump pre-meals unless student can do this independently.
- Parent / caregiver will need to be contacted to troubleshoot any pump malfunctions unless student can do this independently.
- If the set comes out, a new pump set will need to be inserted by the parent / caregiver or student if able.
- If the set comes out and the parent /caregiver cannot be contacted, contact the diabetes team, if team or parents are uncontactable and child young person has positive ketones , call an ambulance.

Student's name: _____

GLUCOSE LEVEL (GL) CHECKING

Target range for glucose levels (GLs): 4 – 10 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 GL check via finger prick.

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

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

Is the student able to do their own glucose level check: Yes No

Independently? If NO, the responsible staff member needs to: ☐ Remind ☐ Observe ☐ Assist ☐ Do the check

Times to check GL (tick all those that apply)

☐ Before activity ☐ Before snack ☐ Before lunch

☐ Anytime hypo suspected ☐ Before exams / tests ☐ When feeling unwell

☐ Beginning or after school care ☐ Other routine times *(please specify):* _____

A confirmatory finger prick is required if:

- child has signs of hypoglycemia, but sensor reading is above 3.9mmol/L with no alert
- SG fails to rise above 3.9mmol/L within 15 minutes following a hypo treatment
- SG is persistently greater than 15mmol/L for 2 hrs or more
- Any time that there is concern over the sensor accuracy or symptoms don't match CGM value

Refer to the Diabetes Action Plan

AND / OR

If the meter reads **LO** this means the blood GL 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 blood GL is too high to be measured by the meter

Follow **Hyperglycaemia** (Hyper) treatment on Diabetes Action Plan

Student's name: _____

SENSOR GLUCOSE (SG) MONITORING

Most 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, there may be times SG readings should be confirmed by a finger prick blood glucose check. Discuss with parent/caregiver.

☐ The student is wearing Continuous Glucose Monitor (CGM)

The CGM sensor transmits glucose data to:

☐ Phone app ☐ Receiver ☐ Scanner

CGM is not a compulsory management tool.

CGM ALARMS AND ALERTS

- CGM alarms may be 'on' or 'off'.
- If 'on' the CGM will alarm if interstitial glucose is low or high.
- Alerts for high glucose levels or in response to changing glucose levels set to vibrate

Action: When pump/phone alarms high or low, treat as per Diabetes Action Plan.

USING CGM AT SCHOOL

- Routine monitoring times should be agreed between school/ECE centre and family.
- 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 use.
- Some CGM 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. Monitoring should then be done via finger print glucose checks and entered the insulin pump/phone.
- The sensor can remain on the student during water activities.
- Student may need access to their cell phone to monitor the Glucose Levels and to bolus insulin.

Student's name: _____

LOW GLUCOSE LEVELS

(Hypoglycaemia / Hypo)

Follow the student's Diabetes Action Plan if GL less than or equal to 3.9 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

- 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.
- Once GL is above 4.0mmol/L, a follow-up snack containing long-acting carbohydrate is not a requirement. However if child is hungry, they can eat but requires insulin bolus for this long-acting carbohydrate via the insulin pump.
- 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 patterns of low GL, 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 / ECE centre is located more than 30 minutes from a reliable ambulance service, then staff should discuss Glucagon injection training with the student's Diabetes Team or with family.
Watch video resource.

Student's name: _____

HIGH GLUCOSE LEVELS

(Hyperglycaemia / Hyper)

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

KETONES

- Ketones occur most commonly when there is not enough insulin in the body.
- Ketones can be dangerous in high levels.

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

- Student is unwell or
- GL 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 Action Plan.

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

- Student is unwell or
- BGL is above 15.0 mmol/L for 2 hours or more
- If blood ketones are more than 1.0 mmol/L, follow action for positive ketones on the Diabetes Action Plan.

EATING AND DRINKING

- Student needs to enter all carbohydrate amounts into the pump/app before routine meals or snacks. Younger students require assistance from an adult to do this.
- The student should not routinely go for prolonged periods without having access to a meal or snack containing carbohydrate (if hungry)
- Younger students require supervision to ensure appropriate amounts of food are eaten at meal and snack times
- Students with diabetes are encouraged to eat a nutritionally balanced diet and adequate food to support daily activities and being physically active. It is important NOT to restrict routine meals or snacks to manage glucose levels.
- Seek parent/carer advice regarding appropriate types of food, portion sizes, and insulin dose requirements for food at celebrations/shared kai at school
- Always allow access to drinking water and toilet facilities (high glucose levels can cause increased thirst and extra toilet visits)
- Does the student have Coeliac Disease?

  No Yes*

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

- Does the student have a confirmed food allergy or intolerance?

  No Yes*

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

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) 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.
- Student may require access to their cell phone to monitor glucose levels/bolus insulin from phone during the school day and exams.
- Click here for more information for students doing exams.

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/

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.

EXCURSIONS / TRIPS

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.

Student's name: _____

PHYSICAL ACTIVITY AND SWIMMING

A blood glucose meter and hypo treatment should always be available

- Check glucose level before physical activity, as physical activity may lower glucose levels.
- There are settings that can be used to manage the effect of physical activity on glucose levels, such as "Exercise Mode", "Ease-off" or "Temporary Target". Some children may require this turned on for entire day at school.
- These should be turned on 60 - 90mins prior to activity
- Physical activity should not be undertaken if GL less than 3.9 mmol/L.
- Refer to the Diabetes Action Plan for hypo treatment
- Vigorous activity should not be undertaken if the student is unwell AND/OR blood ketones are greater than or equal to 1.0mmol.
- 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 and insulin delivery restarted.
- If the school has "play then eat" policy, this might need to be discussed with a parent.

INDIVIDUALISED GUIDANCE (FREE TEXT)

EMERGENCIES OR EVACUATIONS

In case of emergencies or evacuation, spare diabetes supplies stored at the school should accompany the student including their personal hypokit. Up to three days of supplies are recommended for a civil defence emergency.

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

Student's name: _____

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.
- **Infusion set**
  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.
- **"Exercise Mode", "Ease-off", "Temp Target", "Temp basal" & "Profile"**
  Modes that can be switched on via certain pumps/phones to deliver less insulin & prevent low GLs Eg., for physical activity
- **"Boost"**
  A mode which can be switched on via certain pumps to deliver more insulin & prevent higher GLs

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/ECE CENTRE REPRESENTATIVE

☐ I have read, understood and agree with this plan.

First name _____ Family name _____

Role ☐ Principal ☐ Supervisor ☐ Manager ☐ 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.

Student's name: _____