

**Goals of Diabetes Lesson Plans**

**14-15 years**

**Highs and Lows of Diabetes**

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| **Goals of Diabetes Lesson Plans** | **Age Group: 14-15y** |
| **Topic: Hypos, hypers and ketones**  **Delivered by Nurse** |  |
| **Title of session:**  **Highs and Lows of Diabetes** | **Timing of session:**  **Approx 34 mins** |

**Aim of session:**

Learn causes of high and low BG

Suggest ideas of how to prevent high and low BG

Explain the significance of ketones

Learn about ketoacidosis

**Learning Objectives:**

Can I state some of the factors that can affect BG

Can I describe their own symptoms and treatment for hypoglycaemia

Can I describe their own symptoms and treatment for hyperglycaemia

Do I know when to test for ketones?

Do I know how to calculate extra insulin to reduce ketones

**Assessment for Learning (AfL) activities built into session:**

Highs and lows quiz

Identifying suitable hypo treatment from selection

Scenario flashcards and answers for highs and lows

Ketone calculations

**Evaluation activities to be built into session:**

**Red/amber/green**

**Materials/resources needed:**

Highs and lows quiz (attached)

Selection of appropriate (glucose) and inappropriate (biscuits, chocolate, fruit, s’wich, cheese string) hypo treatments

Scenario flashcards and answer cards (attached examples)

Printed worksheets, ketone calculations

Access to DigiBete Goals of Diabetes Videos – hypos and hypers 14-15y

**Would these situations make your blood glucose go HIGH, LOW or EITHER?**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | HIGH | LOW | EITHER | DON’T KNOW |
| view detailsGiving too much  insulin with a  meal |  |  |  |  |
| view details  Exercise |  |  |  |  |
| Medical supplies, syringe to give shots  Missing insulin |  |  |  |  |
| Businessman with question mark  Guessing carbs in  a meal |  |  |  |  |
| view details  Alcohol |  |  |  |  |
| A multiple choice exam and a pencil  Exam stress |  |  |  |  |
| view details  Growing |  |  |  |  |
| dglxasset[1]  Hot holiday |  |  |  |  |
| Boy smiling while skiing downhill in winter  Cold holiday |  |  |  |  |
| view details  Not rotating  injection sites |  |  |  |  |
| view details  Snacking without  insulin |  |  |  |  |
| view details  Not giving enough  insulin with a meal |  |  |  |  |

**Example scenarios for hyper, hypo, illness**

**Each child to have answer flash cards which state:**

**TREAT HYPO /GIVE A CORRECTION /TEST FOR KETONES /HAVE A SNACK/GO TO HOSPITAL**

**Example scenarios:**

1. **BG 3.2 mmol, lunch in 30 mins time**
2. **BG 6 mmol, about to play football**
3. **BG 17.4mmol, feeling a bit poorly**
4. **BG 15.3mmol, about to play basketball**
5. **BG ‘HI’, ketones 5.5mmol, stomach ache**
6. **BG 12.2mmol, about to eat lunch**
7. **BG 3.8mmol, been sick, not very well, not eating (ketones 4.5mmol)**
8. **BG 14mmol, on an insulin pump**

**KETONE WORKSHEET**

**If BG is high and ketones are present, you are likely to need twice your usual correction dose to clear the ketones and reduce the BG to target.**

**(answers in red – to take off worksheets before printing for young people)**

**In each case, the target is 5mmol**

|  |  |  |
| --- | --- | --- |
| **BG and ketones** | **Usual correction dose** | **Total given** |
| **BG 20mmol, ketones 1.3mmol** | **1 unit per 5mmol** | **6 units** |
| **BG 23mmol, ketones 2.4 mmol** | **1 unit per 3mmol** | **12 units** |
| **BG 18mmol, ketones 0.2mmol** | **1 unit per 2mmol** | **6.5 units** |
| **BG 27mmol, ketones 3.5mmol** | **1 unit per 4mmol** | **11 units** |

**Use this space below to work out the doses**

|  |  |  |
| --- | --- | --- |
| **Time** | **Session Content/Taught Content** | **Resources Needed** |
| 2 min  5 mins  2 mins  5 mins  1 min | Q: What BG level do you call low or high?  Complete highs and lows quiz individually  Educator to go through each factor and explain effects – may be different for different people  Q: How do you feel if you are low?  Q: How do you feel if you are high?  What are suitable treatments for a low BG?  Group task to identify appropriate treatments from a mixed selection  Pick out correct treatments from a selection of suitable and unsuitable foods or drinks  Q: What should you do after treating a hypo?  Wait 15 minutes and recheck – explain why | Listen to individual responses – agree definitions together  Highs and lows quiz  Listen to responses and share experiences  Listen to responses for both  Flip chart to write responses  Identify common symptoms  Selection of suitable (glucose in different forms) and unsuitable foods (sandwich, yogurt, chocolate, biscuit, fruit, crisps, cheese string)  Listen to responses |
| 5 mins  3 mins  5 mins | Q: When would you test for ketones?  Above 14mmol OR if unwell with any BG  Educator to explain what ketones are, how they form, potentially dangerous, need for extra insulin to clear  Has anyone ever had DKA? (Diabetic Ketoacidosis) – at diagnosis or since?  Can you remember how you felt?  Summary quiz: (attached)  Each YP to have a set of 5 flashcards – answers to scenarios   * Treat hypo * Give correction * Have a snack * Test for ketones * Go to hospital   Could also write on whiteboards – answers same  Read out scenarios and give time for each to show an answer on flashcards/  Q: How do you get rid of ketones?  Insulin  Drinking water/SF squash  Usual correction dose is not enough  In pairs, work through ketone dose calculations  Supervision from educator | Listen to responses  Refer back to illness on highs/lows quiz  Share any experiences  YP to show an answer to each scenario  Ketone dose worksheet (attached) |
| 5 mins | Summary:  Watch G of D DigiBete 14-15y hypo, hyper videos to summarise and revise tasks | Access to website with screen + projector/tablets/laptops |
| 1 min | Evaluation:  How much have you understood today?  Flashcards | Red  Amber  Green |