

RAISING AWARENESS OF HYPOGLYCAEMIA

Proud participants of
Hypo Awareness Week

2nd to 8th October 2017

Educational slide-deck

**SPOT THE SIGNS!
LEARN THE SYMPTOMS!
KNOW THE TREATMENTS!**



HYPO
AWARENESS
WEEK 2017



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This programme is organised by Orange
Juice Communications

SANOFI

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Hypoglycaemia in diabetes



Presentation content provided by Effective Diabetes Education Now (EDEN), comprehensive training package which aims to up-skill healthcare professionals from the Leicester Diabetes Centre

Overview of the session



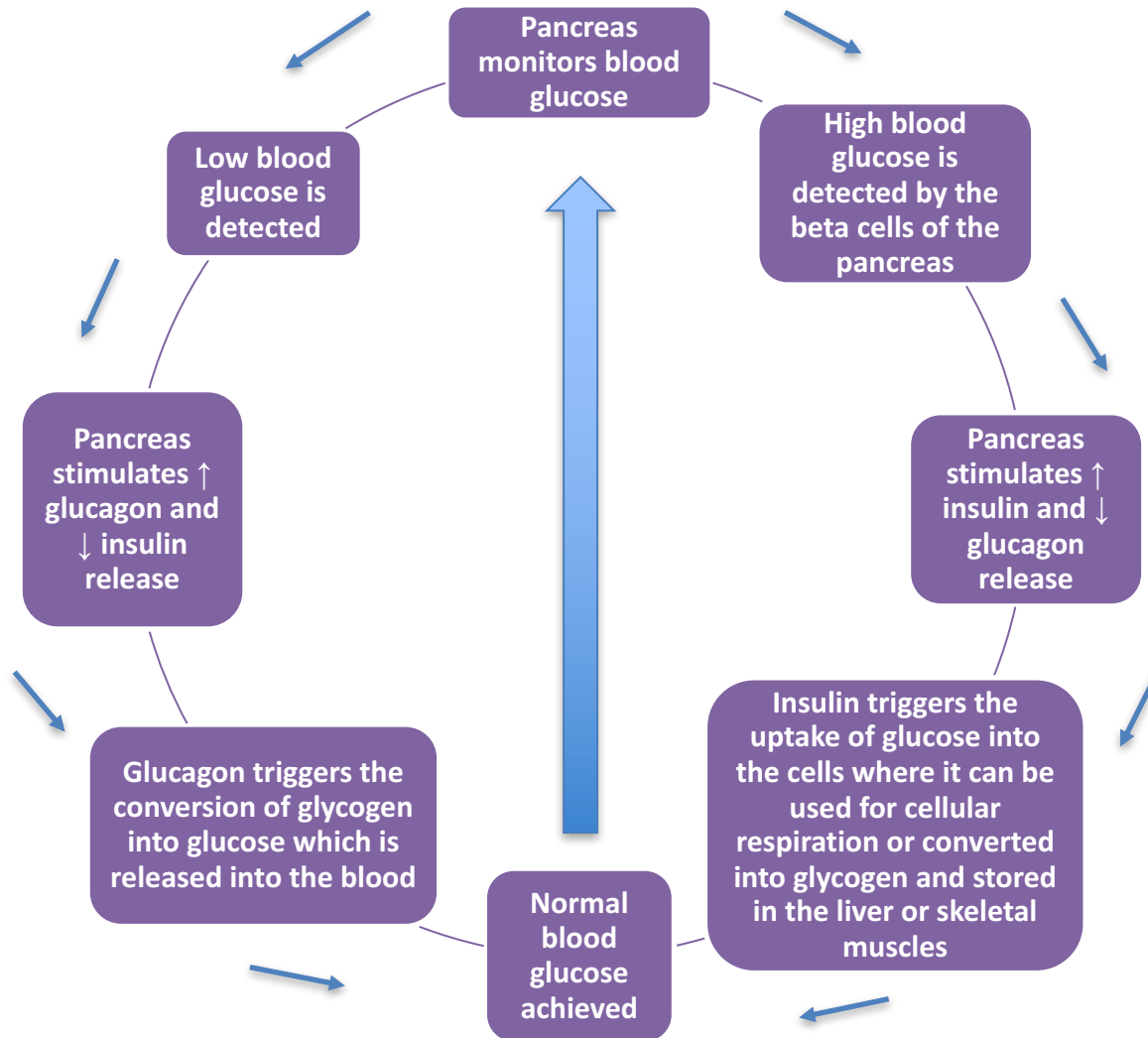
- Overview of hypoglycaemia
 - Hypoglycaemia classifications
 - Blood glucose homeostasis and the development of hypoglycaemia in type 1 and type 2 diabetes
 - Signs and symptoms
 - Risk factors
 - Management therapies and hypoglycaemia risk
 - Economic burden of diabetes and cost of hypoglycaemia
 - Incidence
 - Impact on quality of life

Hypoglycaemia classifications



- No concise biochemical definition
 - American Diabetes Association
 - Blood glucose homeostasis and the development of hypoglycaemia in type 1 and type 2 diabetes
 - Signs and symptoms
 - Risk factors
 - Management therapies and hypoglycaemia risk
 - Economic burden of diabetes and cost of hypoglycaemia
 - Incidence
 - Impact on quality of life

Blood glucose homeostasis



Development of hypoglycaemia in type 1 diabetes



- There are three main causes:
- Requirement for exogenous insulin
- Decreased hormonal counter-regulatory response with disease duration
- Impaired symptomatic response/awareness

McCrimmon, 2008

Development of hypoglycaemia in type 2 diabetes



- Very little research which may be due to different problems occurring
- Decreased hormonal counter-regulatory response
- Medication plays a key role in development, particularly insulin and SUs
- Individuals with type 2 diabetes have a more effective defense mechanism to low BG than those with type 1

Signs and symptoms of hypoglycaemia



Autonomic symptoms	Neuroglycopenic symptoms
Shakiness	Lack of concentration
Sweating	Confusion
Palpitations	Aggression
Hunger	Anxiety
Pupil dilation	Weakness
Dry mouth	Visual impairment
	Speech difficulties
	Headaches
	Fatigue or drowsiness
	Seizures
	Coma
	Death

Risk factors for hypoglycaemia



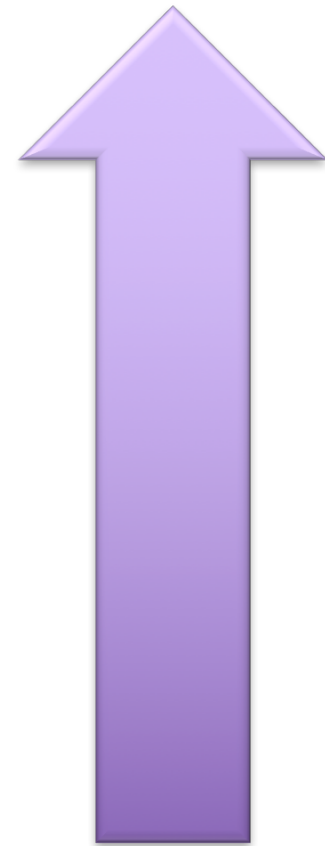
- Incorrect glucose-lowering medication dosage
- Alcohol
- Illness
- Fasting
- History of hypos
- Increased exercise
- Infections
- Polypharmacy
- Comorbidities e.g. impaired renal function
- History of hypos
- Stress
- Injecting into areas of lipohypertrophy
- Impaired awareness of symptoms
- Irregular lifestyle
- Duration of diabetes
- Diabetes medication
- Breastfeeding
- Reduced carbohydrate intake
- Age
- Low health literacy
- Inadequate blood glucose monitoring
- Cognitive impairment

Treatment therapies



- Common treatments
 - Insulin
 - Sulphonylureas
 - Incretin/GLP -1 agonists
 - DPP-4 inhibitor
 - SGLT2 inhibitors
 - Metformin/Pioglitazone
 - Diet and lifestyle management

High risk



Low risk

Reid, 2012 and Bennett et al, 2011

Economic burden

- In 2010/11 it was estimated that 10% of NHS budget was spent on diabetes care
 - 80% of which was treating potentially avoidable complications (Diabetes UK, 2014)
 - Each hospital admission as a result of hypoglycaemia cost the NHS approximately £1,000 (Amiel et al., 2008)
- Within next 20 years it is estimated that 17% of the NHS budget will be spent on diabetes care Hex et al, 2012

Economic burden



Cost of diabetes treatment in the UK in 2012

Area of expenditure	Type 1 diabetes	Type 2 diabetes	Total cost	Percentage of costs
Diabetes drugs	£0.344 billion	£0.712 billion	£1.056 billion	7.8%
Non-diabetes drugs	£0.281 billion	£1.810 billion	£2.091 billion	15.2%
Inpatient	£1.007 billion	£8.038 billion	£9.045 billion	65.8%
Outpatient (excluding drugs)	£0.170 billion	£1.158 billion	£1.328 billion	9.7%
Other (including social service)			£0.230 billion	1.7%
Total	£1.802 billion	£11.718 billion	£13.750 billion	100%

18%

82%

Hypoglycaemia incidence – type 1 diabetes



- Incidence is very difficult to report
 - Issue with patients misreporting
- Mild hypoglycaemia – two symptomatic episodes per week
 - Up to 10 in intensively controlled patients
- Severe hypoglycaemia – 1-1.7 episodes per patient per year

Event	Incidence
Mild hypo	7
Severe hypo	2

Hypoglycaemia incidence – type 2 diabetes



- Increasing interest in hypoglycaemia incidence in type 2 diabetes

Systemic review

46 observational studies

532,542 participants

	Mild	Severe
General	19	0.8
Insulin	23	1
Sulphonylureas	2	0.01
Combination OADs	No data	0.01

Impact on quality of life



Green et al, 2009 and Barendse et al, 2011

What can be done to track incidence?

- Always ask about hypos
- Ask at what blood glucose level people tend to become aware of hypoglycaemia
- Look at possible nocturnal hypoglycaemia
- Review glucose target or management
- Education

eden Mini Module 9: Hypoglycaemia



We are inviting GPs and Practice Nurses to attend this one day Mini Module on hypoglycaemia 'hypos' in diabetes.

The topics for this one day module are:

- Information to aid identification of hypoglycaemic events
- Reinforcement of appropriate hypoglycaemia treatment
- Precautionary measures for prevention of hypoglycaemia
- When to inform other agencies i.e. DVLA

What does the training provide?

- An overview of hypoglycaemia
- Hypoglycaemia in Type 1 and Type 2 diabetes
- Hypoglycaemia in the Elderly
- Hypoglycaemia and Driving

This mini module will be a mix of lectures, case studies, group work, group discussions and overview of current evidence.

Information:

Time: 09:00 - 16:00 (lunch will be provided)
Venue: Leicester Diabetes Centre,
(LDC) Leicester General Hospital

Contact: eden@uhl-tr.nhs.uk with your name,
surgery details including practice code.

To ensure a place on this popular
session, please book early.

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Leicester City Clinical Commissioning Group
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