

# Achieving glycaemic targets What role should exercise play?



A decorative graphic consisting of several overlapping circles in green, blue, and orange, connected by dashed lines, framing the top and sides of the slide.

# GOOD MORNING

## I am Jane Redding

- ◎ **Declaration**
- ◎ I am not receiving any payment for this presentation.
- ◎ I work for MCH and I am not affiliated to any other organisation

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## LEARNING OBJECTIVES

To have a basic understanding of the physiology of exercise in people with Diabetes

To appreciate the benefits of exercise for people with Diabetes

To understand the difference in effects of exercise in type 1 and type 2 Diabetes

To explore motivation and adult learning styles

## **Question**

### **Does exercise**

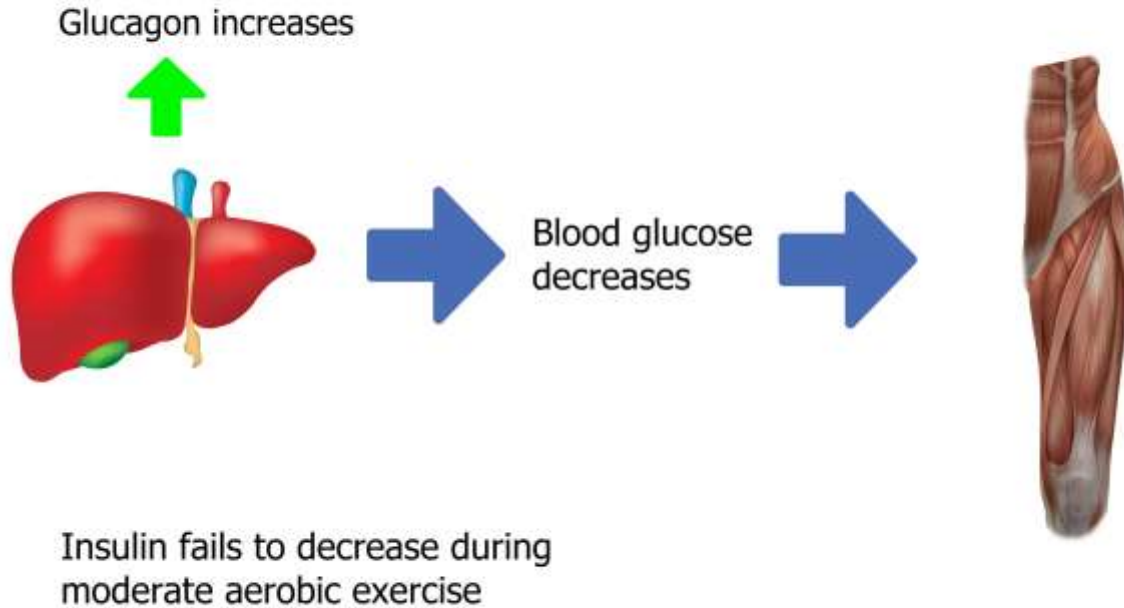
Increase blood glucose?

Decrease blood glucose?

Have no effect?

Have multiple effects on blood glucose?

## Aerobic Exercise - Type 1 Diabetes



## Anaerobic Exercise - Type 1 Diabetes

Catecholamine increases



Blood glucose increases



Insulin fails to increase sufficiently following intense anaerobic exercise

## Physiology of exercise

Glucose is the main fuel for giving energy for movement. So during exercise blood glucose CAN fall

Insulin is the hormone that transfers the glucose from our blood to our cells

Our bodies release glycogen from our livers to supply more glucose

However exercise increases the uptake of glucose and reduces insulin resistance

These effects can last for up to 48 hrs

<b>BLOOD GLUCOSE</b>	<b>ACTION TO TAKE</b>
<b>&lt;5 mmol</b>	<b>take 10-20g cho before exercise</b>
<b>5-6.9 mmol</b>	<b>take 10g cho before exercise</b>
<b>7-10 mmol</b>	<b>only aerobic exercise and no cho before</b>
<b>&gt;15 mmol</b>	<b>check for ketones and follow usual advice but do not exercise</b>



If on pump reduce % delivery up to 90 mins before exercise

If on mdi can reduce short acting insulin before exercise but also look at increasing cho

Never exercise within 48 hours of hypo needing 3rd party assistance

Insulin intake before during and after exercise may need to be reduced by up to 80%

During prolonged exercise high gi carbohydrates will need to be consumed such as energy drinks

If weight loss is the aim then try to reduce insulin intake rather than eat more carbohydrates

Carbohydrate loading does not work in diabetes

What percentage of people with diabetes have type 2?  
90% of people with diabetes have type 2 diabetes

What percentage of people with type 2 have a BMI over 25?  
90% of people with type 2 diabetes have a bmi over 25

## Activity or exercise?

Definition of activity - the condition in which things are happening or being done, a thing that a person or group does or has done, a thermodynamic quantity. Oxford English dictionary

Definition of exercise - an activity requiring physical effort carried out to sustain or improve health and fitness. Oxford English dictionary

A University of Bristol-led study found 80% failed to meet the government target of taking moderate exercise at least 12 times in a four-week period

What do our patients think when we encourage them to take regular exercise?



# BENEFITS OF MOVEMENT



## CONTRAINDICATIONS

Most people will benefit from being more active but if a person has active proliferic retinopathy they may be advised to avoid certain activities.



## UK recommendations for exercise

- at least 150 minutes of moderate aerobic activity such as cycling or brisk walking every week and
- strength exercises on 2 or more days a week that work all the major muscles (legs, hips, back, abdomen, chest, shoulders and arms)

## UK recommendations for exercise

Or:

- 75 minutes of vigorous aerobic activity such as running or a game of singles tennis every week and
- strength exercises on 2 or more days a week that work all the major muscles (legs, hips, back, abdomen, chest, shoulders and arms)

## UK recommendations for exercise

Or:

- a mix of moderate and vigorous aerobic activity every week – for example, 2 x 30-minute runs plus 30 minutes of brisk walking equates to 150 minutes of moderate aerobic activity and
- strength exercises on 2 or more days a week that work all the major muscles (legs, hips, back, abdomen, chest, shoulders and arms)

## UK recommendations for exercise

Do you do the recommended weekly amount of exercise?

Yes/No

**Sometimes fitness can seem  
like an unattainable goal**



## SMART GOALS

- **S:** Specific. Start with stating the objective you wish to meet, as specifically as possible
- **M:** Measurable. Adding quantifiable or measurable criteria to your goal will allow you to measure
- **A:** Attainable. Do not set yourself up for failure by selecting unattainable goals
- **R:** Relevant. Your goal should be meaningful to you, set by you and not set by someone else
- **T:** Time . Set yourself a time limit to attain your goal

## **Useful resources**

local public health department often organise healths walks etc.

Discounted local council gyms and swimming pools

Exercise referral by gps

[www.nhs.uk](http://www.nhs.uk)

Phone Apps

# Diabetes UK website





All movement is good.

The best exercise is one you enjoy and so will maintain.



# Thanks!



## Any questions?

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