DIABETES DISCOVERIES QUIZ

Celebrating 100 years of insulin

Question sheet

DIABETES UK
KNOW DIABETES. FIGHT DIABETES.

In 2022, we're celebrating 100 years since the first person was given insulin to treat their diabetes, on 11 January 1922.

The discovery of insulin is one of the twentieth century's greatest medical discoveries – it remains the only treatment for people with type 1 diabetes today and is used by millions of people with type 2, gestational and rarer types of diabetes.

This discovery went on to save millions of lives around the world, and triggered a century of diabetes discoveries.

This quiz will teach you a thing or two about this major breakthrough and those that have happened since to transform the lives of people living with diabetes.

Instructions

- Print or save this quiz and use it to organise your own Diabetes Discoveries quiz.
- Invite friends, family or colleagues to join your quiz.
- Optional: ask everyone taking part to make a small donation to support our work, which includes research into future diabetes discoveries. Simply text **DUK** to **70123** to donate £5.
- The quiz has four rounds and takes about 45 minutes to an hour. For a shorter quiz, select one or two rounds instead.

ROUND 1

The discovery of insulin

Learn more about how the very first insulin treatment came to be, 100 years ago...

1 100 years ago in 1921, what was the recommended treatment for type 1 diabetes?

A ☐ Cinnamon
B ☐ Malaria-induced fever
C ☐ A 'starvation' diet
D ☐ Bleeding by leeches

2 Research student Charles Best found himself teaming up with a surgeon, Frederick Banting, and a diabetes professor, John Macleod, to work on insulin after winning a coin toss.

True ☐ False ☐

3 At the end of 1921, why did James Collip join the team?

A ☐ To purify the insulin
B ☐ To perfect the doses needed
C ☐ He was bankrolling the rest of the experiments
D ☐ To spy on behalf of a rival research team

4 14-year old Leonard Thompson was the first person in the world to receive insulin on 11 January 1922.

True ☐ False ☐

5 In 1923, the discovery of insulin won a Nobel Prize. Why did the win cause drama?

A ☐ Banting lost the gold medal that winners receive
B ☐ Banting had already won a Nobel Prize
C ☐ It was only awarded to two of the four scientists behind the discovery
D ☐ John Macleod had controversial political beliefs

6 How much did Banting sell the patent of insulin for?

A ☐ $20,000
B ☐ $1
C ☐ $1 million
D ☐ He didn't

7 Why do we celebrate World Diabetes Day on 14 November?

A ☐ It's Banting's birthday
B ☐ It's Marjorie's birthday (the dog who was kept alive by insulin in early experiments)
C ☐ It's when the WHO declared type 1 diabetes was a treatable condition
D ☐ Banting loved Thanksgiving and wanted World Diabetes Day to fall a week before it

8 The house where Banting lived near Toronto is now a museum.
What can you find next to the house?

A ☐ A memorial to dogs
B ☐ A flame
C ☐ A diabetes research centre
D ☐ The Niagara Falls

ROUND 2

Diabetes discoveries through the ages

From before insulin was an available, life-saving treatment for people living with diabetes, to the discoveries that followed – how many of these can you get?

1 Which of these **wasn't** an early 'treatment' for diabetes?

A ☐ Exercise on horseback
B ☐ Opium
C ☐ Snake bile
D ☐ A glass of water filled from a bird pond

2 When did scientists first discover that the pancreas was key in diabetes?

A ☐ 1564
B ☐ 1625
C ☐ 1766
D ☐ 1889

3 Put these diabetes discoveries in order of when they happened.

A ☐ Synthetic human insulin is made in the lab
B ☐ HbA1c is discovered as a way to measure longer term blood sugar levels
C ☐ Bariatric surgery is shown to put type 2 into remission
D ☐ The first oral diabetes medication becomes available

4 Who is this and why is she a British Science icon?

5 In 1992 a new, rare form of diabetes was discovered, called monogenic diabetes. What's it caused by?

A ☐ The immune system
B ☐ Gut bacteria
C ☐ A virus
D ☐ A mistake in a single gene

6 In 2007, the first of a new type of type 2 diabetes medication, called GLP-1's, became available. Which of these ingredients did it contain?

A ☐ Lizard venom
B ☐ An inactive cold causing virus
C ☐ Gold
D ☐ Chilli pepper

ROUND 3

Research breakthroughs and Diabetes UK

Your support means that at Diabetes UK, we're able to continue funding the research that will change our understanding about how diabetes develops, explore new treatments and technologies and one day, find a cure. Test your knowledge about where Diabetes UK's research has taken us in the last 100 years.

1 How much was Diabetes UK's first ever research grant, awarded in 1935?

_____

2 In 2000 Diabetes UK funded DAFNE – a structured education course for people living with type 1 diabetes. Amongst lots of other things DAFNE teaches about carb counting.

1. How many carbs are in the following?

A ☐ 22g
B ☐ 36g
C ☐ 54g
D ☐ 72g

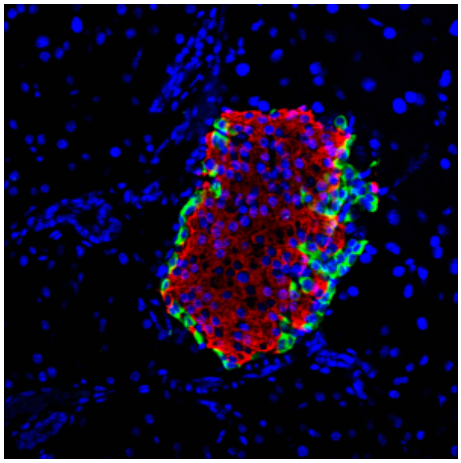
2. How many carbs are in the following?

A ☐ 11g
B ☐ 18g
C ☐ 24g
D ☐ 33g

3 In 2003, Diabetes UK supported a clinical trial called CARDS. It was testing the impact of taking statins on the risk of heart attacks and strokes in people with type 2 diabetes. Why did the trial have to stop two years early?

A ☐ Results were so good it was unethical to keep giving some people a placebo
B ☐ The treatment caused worrying side-effects
C ☐ Funding ran out
D ☐ Another trial announced it results, proving a different drug was really effective

4 What is this picture of?



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5 People living with type 1 diabetes have had all of their insulin-producing beta cells wiped out by the immune attack.

True ☐ False ☐

6 With funding from Diabetes UK, what did Professor Roy Taylor use this second-hand ambulance for in 1986?

A ☐ To give away free insulin
B ☐ Mobile eye screening
C ☐ Mobile foot checks
D ☐ Know your risk screening

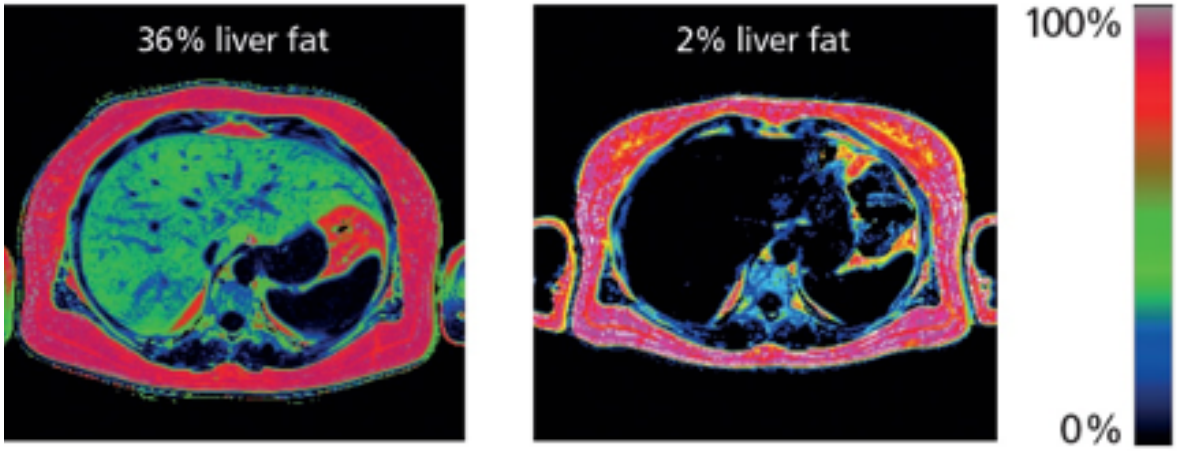
7 A gift in a will allowed us to set up the Diabetes UK Warren Collections for type 1 and type 2 diabetes from 1989 to find genes linked to the conditions. Roughly how many different genes have been linked with the risk of developing type 2 diabetes?

A ☐ 50
B ☐ 100
C ☐ 200
D ☐ 500

8 Put these artificial pancreas world-firsts in the order Diabetes UK research funding made them happen

A ☐ Trial with people with type 1 at home, without medical supervision
B ☐ Trial with women with type 1 during pregnancy
C ☐ Trial with people with type 2 during hospital stays
D ☐ Prof Alberti treats people with a device the size of a filing cabinet

9 These scans show the before and after going on a low-calorie diet as part of of the Diabetes UK-funded DiRECT study.



True ☐ False ☐

ROUND 4

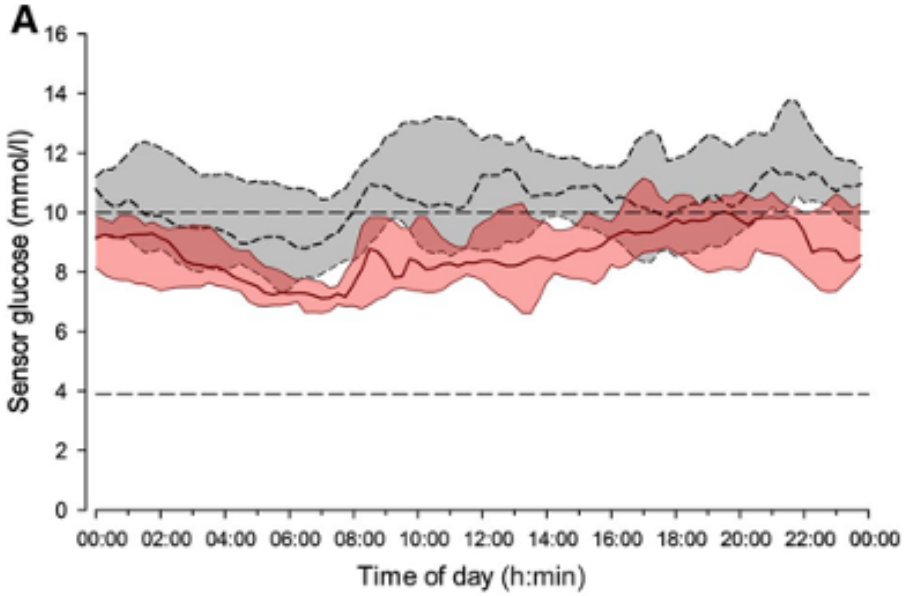
The next 100 years

1 We're getting very excited about the potential of immunotherapy to prevent or stop type 1. A drug called Teplizumab is hoped to become the first ever immunotherapy for type 1 to be licenced. How does it work?

A ☐ Dampens down the whole immune system
B ☐ Exhausts the 'killer' immune cells that seek out beta cells and weakens their attack
C ☐ Helps the pancreas grow new insulin-producing beta cells
D ☐ Boosts 'good' immune cells so they outnumber and turn off 'killer' immune cells

2 Scientists are working on developing smart insulin. But what makes smart insulin smart?

3 What's this showing?



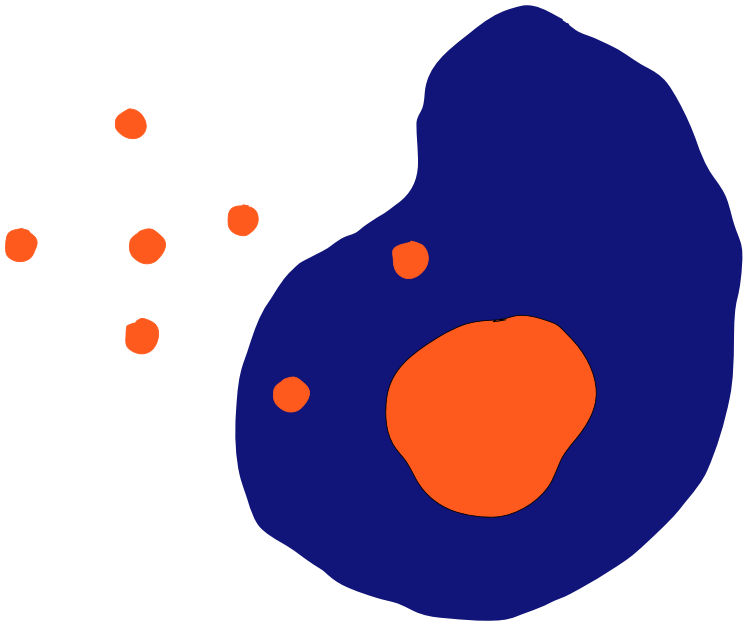
A ☐ Blood sugar levels of someone treated with immunotherapy
B ☐ Blood sugar levels of someone after stem cell therapy
C ☐ Blood sugar levels of someone on a closed-loop trial
D ☐ Blood sugar levels of someone in remission

4 Thanks to research we know remission of type 2 diabetes is possible with weight loss surgery and weight loss through diets. What other approaches are Diabetes UK scientists investigating to hopefully help more people go into remission in the future?

A ☐ Gut hormones
B ☐ Gene editing
C ☐ A vaccine
D ☐ High intensity exercise

5 To cure type 1 or type 2 diabetes we need to give people enough working beta cells so they can make the right amount of insulin. How are scientists trying to do this?

A ☐ Grow new beta cells from stem cells
B ☐ Reprogramme other cells in the pancreas, called alpha cells, into beta cells
C ☐ Treating cells taken from donor pancreases to help them survive
D ☐ All of the above



THANK YOU FOR TAKING PART IN THE DIABETES DISCOVERIES QUIZ!