

Diabetes pathways to prevention and therapies



Type 1 and type 2 diabetes are complex diseases affecting nearly every major bodily organ and impacting the lives of millions of people worldwide. That's why scientists are devoted to developing effective therapeutics and working toward the eventual cure.

463 MILLION

...people worldwide have diabetes (1 in 11 adults), and this number is expected to grow to 642 million by 2040.



14%

.....of health-care dollars in the US are spent treating diabetes and its complications.¹



ABOUT 90%

.....of people with diabetes have type 2, 8% have type 1, and 2% have rare types.²



¹www.diabetes.org/resources/statistics/cost-diabetes
²www.cdc.gov/diabetes/basics/diabetes.html



Type 1

Autoimmune disorder in which the body attacks cells in the pancreas and little or no insulin is produced.



Type 2

Inability to produce sufficient insulin, or resistance to insulin.



Gestational

Pregnancy hormones interfere with the action of insulin, which leads to high blood-sugar levels.

Diabetes then and now



1550 BC

An Egyptian papyrus mentions a rare disease that causes the patient to lose weight rapidly and urinate frequently.



500 BC

Ayurvedic physicians determined there were at least two types of diabetes — one that developed in children and one associated with obesity.



300 BC

The term "diabetes" ("to pass through") was first used by an ancient Greek physician. (however, some sources date first use around 200 ce.)



1880s

Researchers discovered that the pancreas plays a major role in diabetes.



1920s

A 14-year-old boy is successfully treated for the first time with insulin injections. Insulin is mass produced in North America.



TODAY

Advanced drugs combined with modern medical devices (like insulin pumps or glucose monitors) allow patients to manage their diabetes.

What are the health risks?

Diabetes can have a detrimental – and sometimes permanent – impact on many parts of the body:



Kidney



Heart



Eyesight



Neuropathy

The power of research

Striving to better understand the complex cellular and molecular pathways and translate findings into new prevention strategies, effective treatments, and – one day – a cure.



Early diagnosis

More sensitive and specific biomarkers are needed to enable early detection of diabetes and for predicting disease risk, progression, and response to treatment.



Advanced treatment

By better understanding metabolic pathways, researchers can discover novel drug targets, including complications such as heart disease, blindness, kidney failure, and more.



Finding a cure

The goal is to find a cure, perhaps through cell transplantation or reprogramming of other cell types into insulin-producing beta cells.

Instruments and insight

Genomic testing, drug discovery screening, safety and efficacy studies, cellular and *in vivo* imaging – it all comes together to help scientists understand the complex cellular and molecular pathways involved in diabetes and translate these findings into new prevention and treatment strategies.



Genomics solutions

- High-throughput Nucleic acid isolation
- Microfluidic devices
- Automated liquid handling
- NGS library prep kits



Detection

- Radiochemicals and radiometric detectors
- Multimode plate readers
- Microplates
- Reagents for drug discovery



Cell-based assays

- High-content imaging
- Live-cell imaging
- Image analysis and data sharing
- Microplates for cell imaging



In vivo imaging

- Optical imaging
- Micro-CT imaging
- In vivo* imaging reagents

At Revvity, we're committed to providing you the right tools to help you develop more effective outcomes for patients.

www.revvity.com

Revvity, Inc.
940 Winter Street
Waltham, MA 02451 USA

(800) 762-4000
www.revvity.com

For a complete listing of our global offices, visit www.revvity.com
Copyright ©2023, Revvity, Inc. All rights reserved.

revvity

1192790