



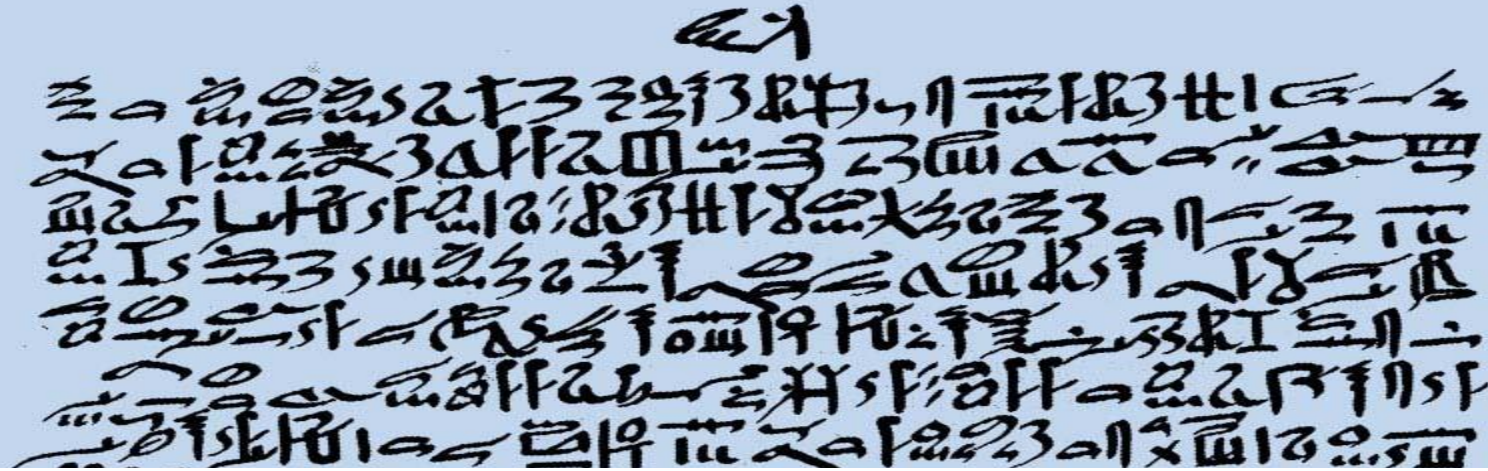
The discovery of insulin, the first step on a journey of innovations

Prof. Konstantinos Makrilakis, IDF Europe Board Member

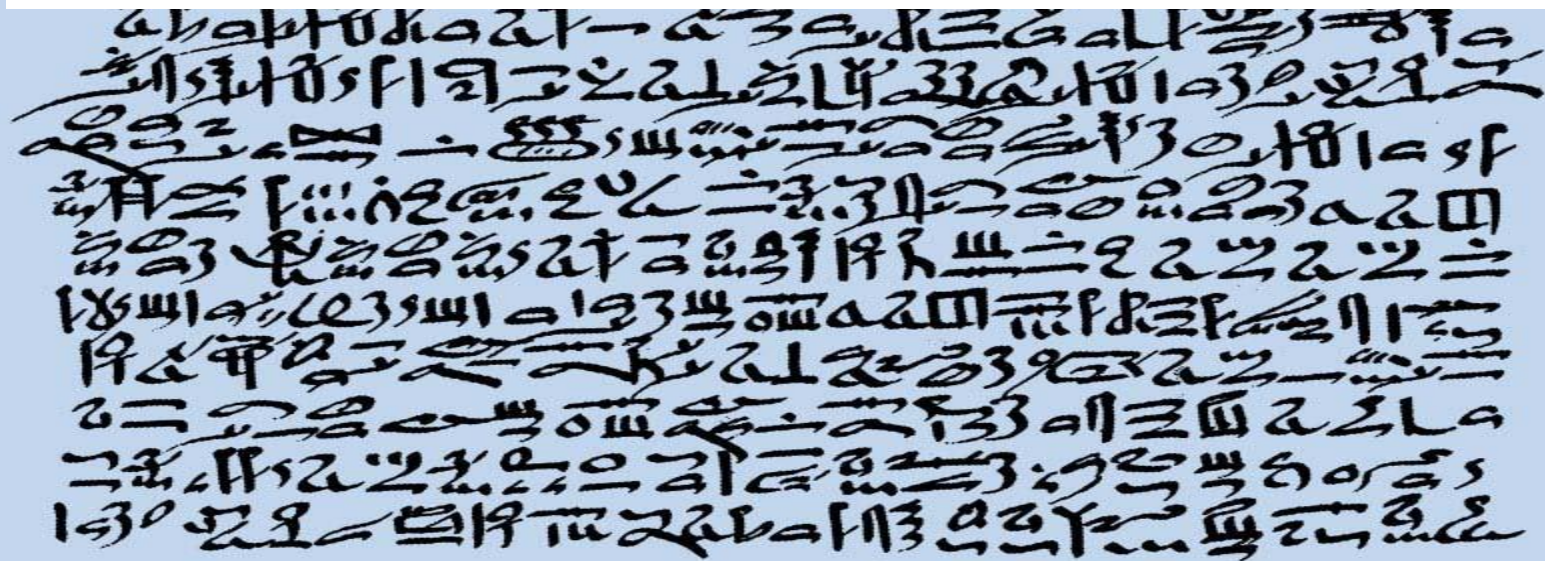


**International
Diabetes Federation**
Europe

The Ebers papyrus. Courtesy of the Wellcome Library, London



The option preferred by “experts” of the pharaoh of Egypt 3,500 years ago was a mixture of “water from the bird pond,” elderberry, fibers from the asit plant, milk, beer, cucumber flower, and green dates.



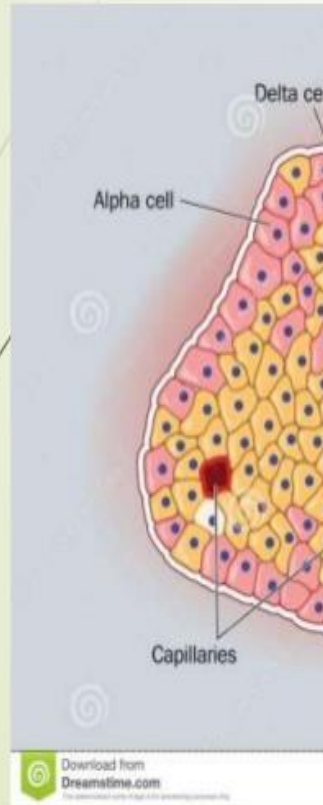
Clinical description of diabetes by Aretaeus of Cappadocia (2nd century AD)

Adapted from Papaspyros NS (1952) *The History of diabetes Mellitus*

Diabetes is a dreadful affliction, not very frequent among men, being a melting down of the flesh and limbs into urine. The patients never stop making water and the flow is incessant, like the opening of aqueducts. Life is short, unpleasant and painful, thirst unquenchable, drinking excessive, and disproportionate to the large quantity of urine, for yet more urine is passed. One cannot stop them either from drinking or making water. If for a while they abstain from drinking, their mouths become parched and their bodies dry; the viscera seem scorched up, the patients are affected by nausea, restlessness and a burning thirst, and within a short time, they expire.

7

The islets of Langerhans



Beiträge
zur mikroskopischen Anatomie der
Bauchspeicheldrüse.

INAUGURAL-DISSERTATION,

ZUR

ERLANGUNG DER DOCTORWÜRDE

IN DER

MEDICIN UND CHIRURGIE

VORGELEGT DER

MEDICINISCHEN FACULTÄT

DER FRIEDRICH-WILHELMS-UNIVERSITÄT

ZU BERLIN

UND ÖFFENTLICH ZU VERTHEIDIGEN

am 18. Februar 1869

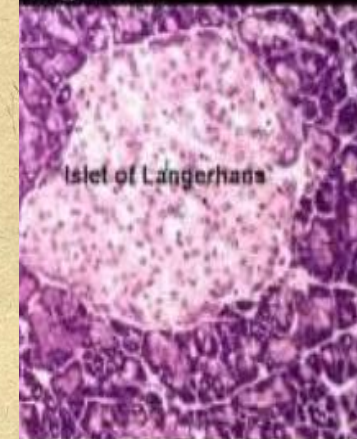
VON

Paul Langerhans

aus Berlin.



THE PANCREAS: *Islets of Langerhans*



Charles Best



Frederick
Banting

1921

Marjorie

The discovery of insulin (1921)

**Sir
Frederick
Banting**
14/11/1891-
21/02/1941



**James
Collip**
1892-1965



**Charles
Best**
1899-1978



**John
Macleod**
1876-1935



1922



LEONARD THOMPSON
First patient to receive insulin in
Toronto.

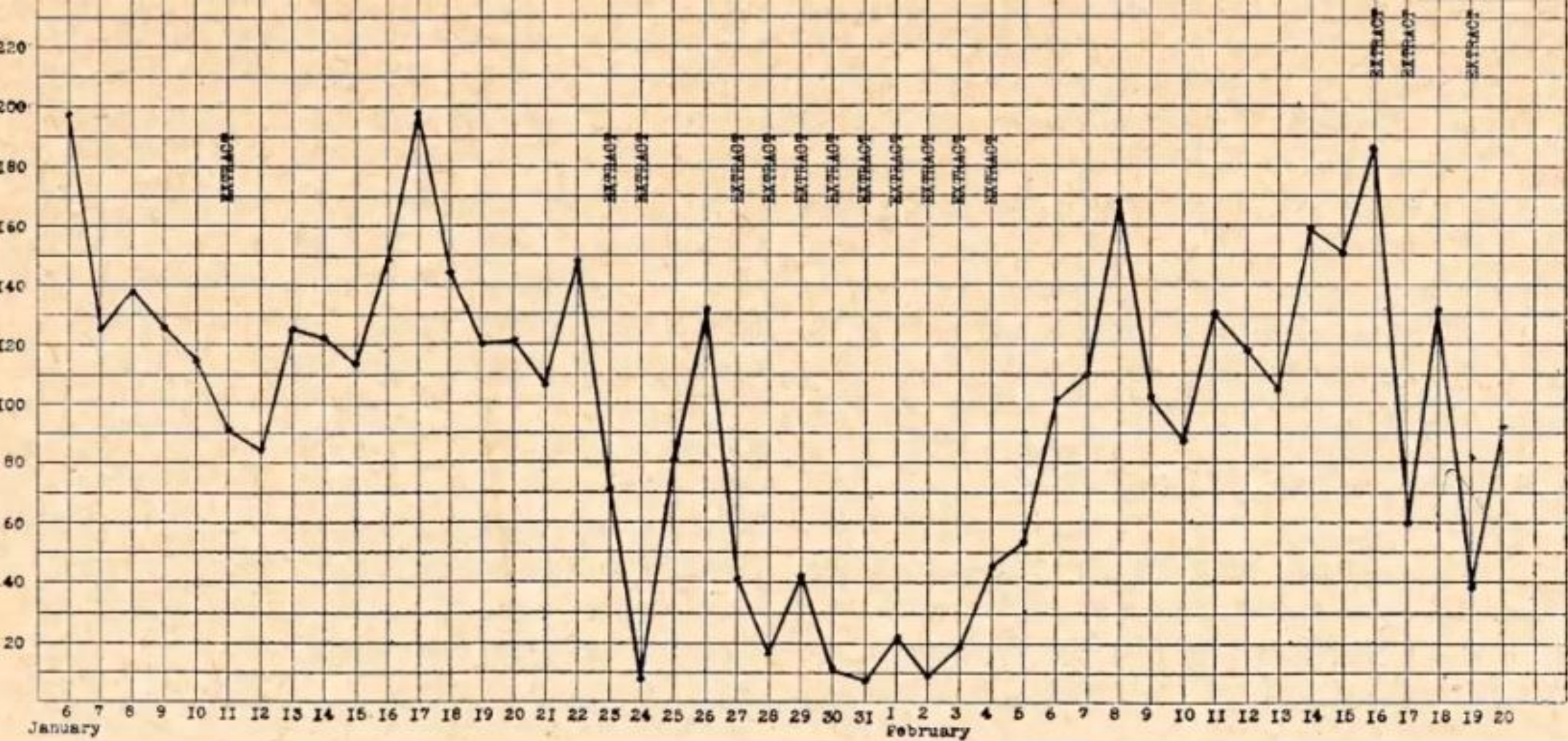
Leonard Thompson's Medical File

Toronto General Hospital, Dec 1921 / Jan 1922

Toronto General Hospital

NAME Leonard Thompson NO. 31161

Provisional Diagnosis:	
Diabetes Mellitus -	
Dec. 4/21 - Feeling well since admission - drinking fluids freely.	Feeling well since admission - Is drinking fluids freely.
Dec. 31 st /21 - Weight 65 lbs. Apparently as better - Diabetic acid still persists at times.	Weight 65 lbs. Apparently no better. Diabetic acid still persists at times.
Jan. 11 th - 15 cc McLeod's serum 7 1/2 cc into Each buttock.	15 cc. McLeod's serum. 7 1/2 cc into each buttock
Jan. 18 - Area of induration - circular - 7 1/2 in in diam - over left buttock - centre raised & softened.	Area of induration - circular - 7 1/2 cc in diam. - over left buttock - centre raised & softened



The effect of pancreatic extract on glucose levels in Leonard Thompson's urine (1922)

Banting FG, Best CH, Collip JB, Campbell WR, Fletcher AA. Pancreatic extracts in the treatment of Diabetes Mellitus. Canad Med Ass J. 1922;2:141-6.

November is National Diabetes Month



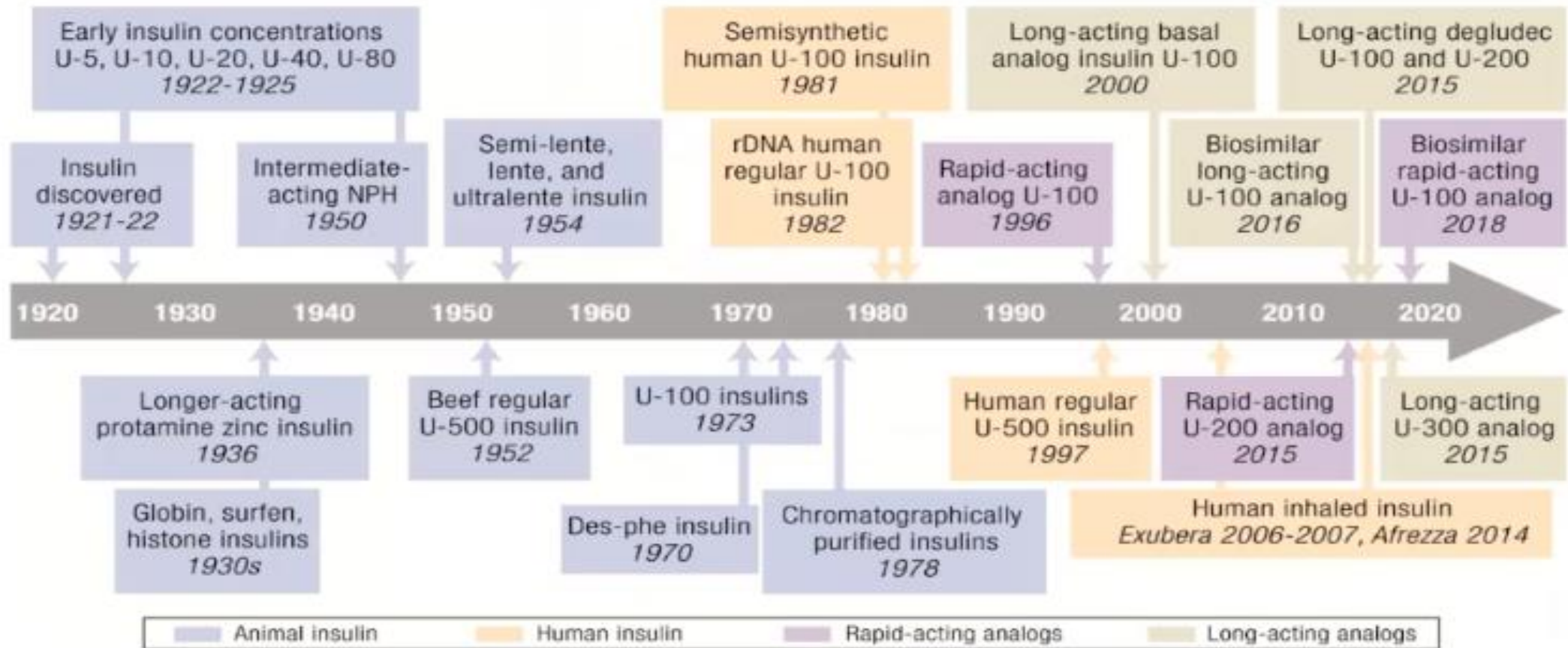
Canadian Nobel Prize
Recipient

Dr. Frederick Banting,
discoverer of insulin,
sold the rights to the
University of Toronto
for \$1 so that it was available
to everyone!

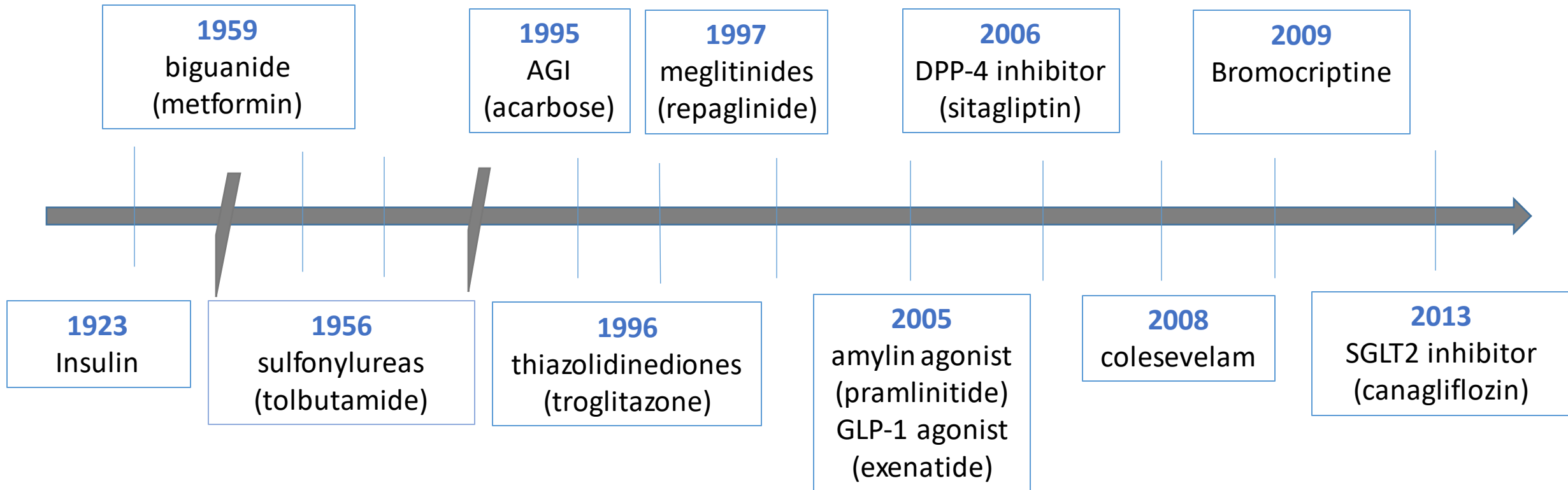


Timeline of insulin development

with approximate historical dates



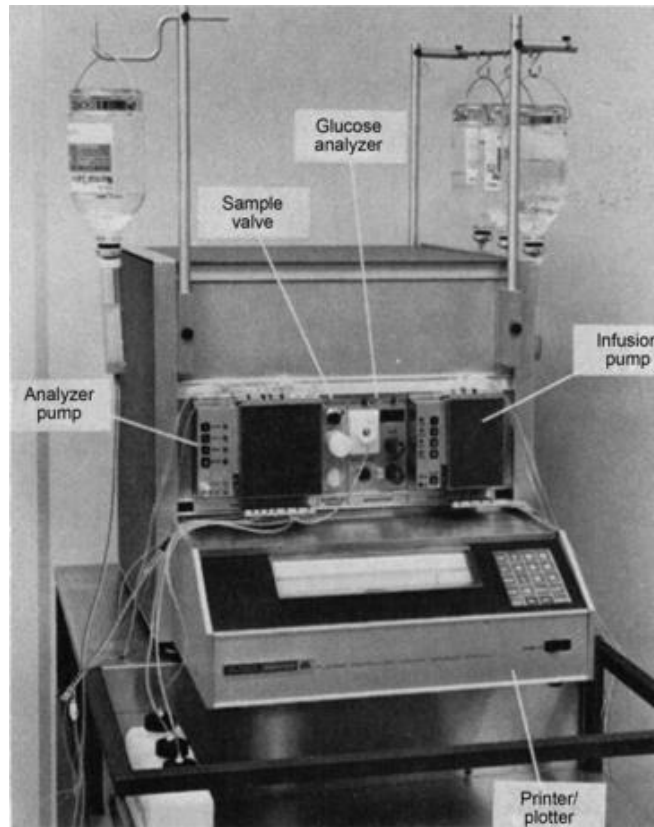
100 years of discoveries and innovations to improve the lives of people with diabetes
DRUG DEVELOPMENT IN DIABETES



100 years of discoveries and innovations to improve the lives of people with diabetes
INSULIN DELIVERY DEVICES - SYRINGES AND PENS



100 years of discoveries and innovations to improve the lives of people with diabetes
INSULIN DELIVERY DEVICES - PUMPS



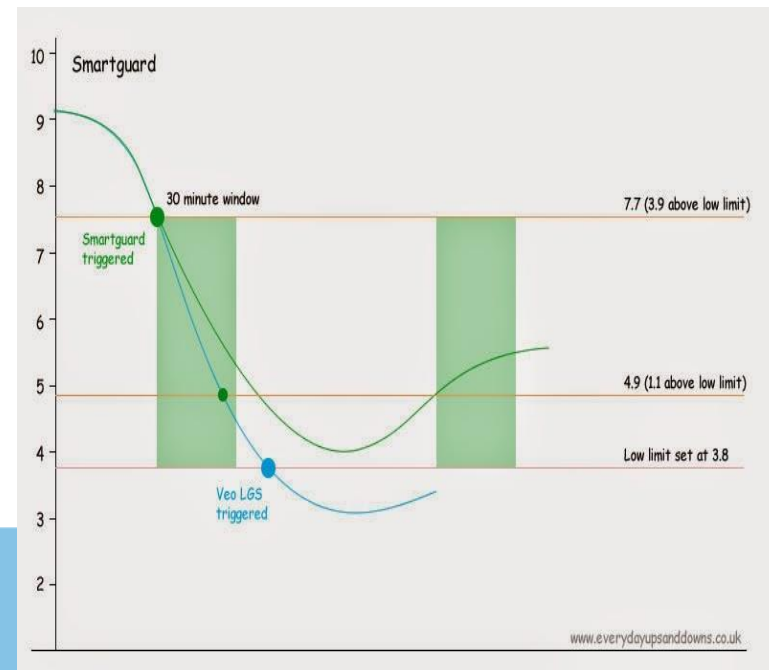
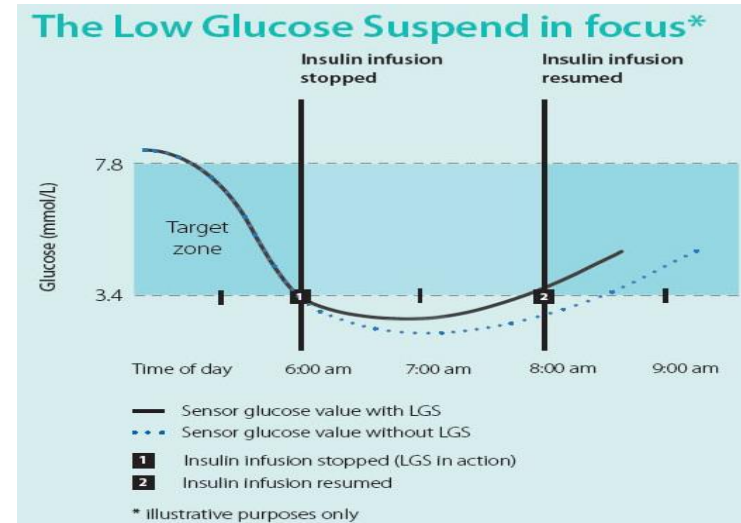
Journal of Clinical Pharmacy and Therapeutics, Volume: 35 , Issue: 2, Pages: 127-138, First published: 05 March 2010, DOI: (10.1111/j.1365-2710.2009.01048.x)

100 years of discoveries and innovations to improve the lives of people with diabetes
BLOOD GLUCOSE MONITORING TESTS AND DEVICES



100 years of discoveries and innovations to improve the lives of people with diabetes

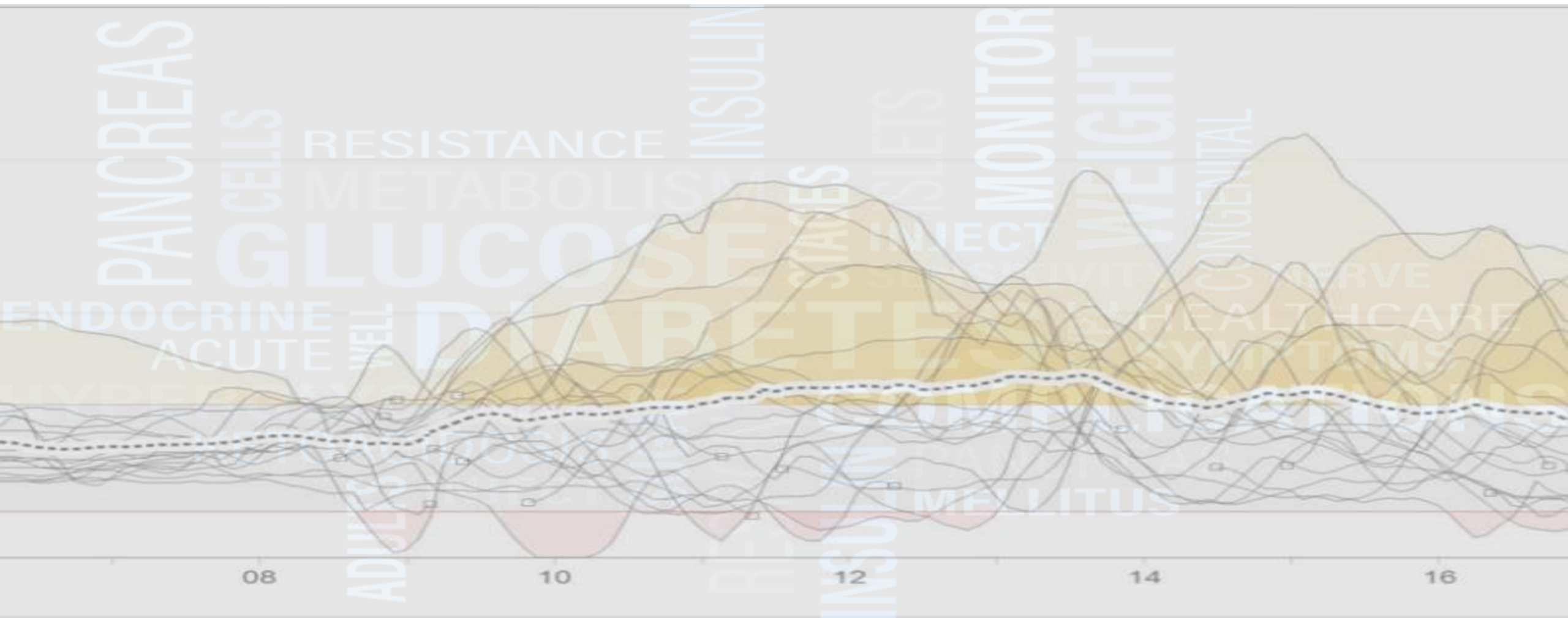
INSULIN DELIVERY DEVICES - SENSOR AUGMENTED PUMPS



100 years of discoveries and innovations to improve the lives of people with diabetes
ARTIFICIAL PANCREAS AND THE DIY-APS MOVEMENT



100 years of discoveries and innovations to improve the lives of people with diabetes
DIABETES EDUCATION, SELF-MANAGEMENT AND PATIENT EMPOWERMENT



We have come a long way in 100 years
Hopefully, we will not need another 100 years for the ultimate
prevention and/or definitive treatment of Diabetes



**International
Diabetes Federation
Europe**