

Disease

Diabetes is a disease characterised by inability of the body to produce insulin or use insulin properly, and by high blood glucose levels, as insulin is the “key” that unlocks the “doors” to the cells and allows glucose to enter. If insulin is missing, glucose remains in the blood instead of providing the cells with energy.

Two major types of diabetes are distinguished:

- Type 1 diabetes is caused by destruction of the insulin-producing cells of the pancreas. It tends to develop before the age of 30 but may occur at any age.
- Type 2 diabetes is much more common and accounts for 90% to 95% of all diabetes cases worldwide. This form of diabetes occurs almost entirely in adults and results from the progressive failure of appropriate insulin production of the pancreas and from the inability of the body to respond to the action of available insulin.

A third type, gestational diabetes, is a temporary form of insulin resistance that may occur during pregnancy (affects ca. 4% of all pregnant women).

Complications from diabetes, such as coronary artery and peripheral vascular disease, stroke, diabetic neuropathy, amputations, renal failure and blindness, are resulting in increasing disability, reduced life expectancy and enormous health cost for virtually every society.

Prevalence

According to current estimates by the World Health Organization, the number of people with diabetes is set to rise to over 300 million by the year 2030. In other words, it is likely to more than double in about 20 years. It is the fourth leading cause of death in most developed countries.

Diabetes is certain to be one of the most challenging health problems in the 21st century. On December 20 2006, the General Assembly of the United Nations passed a landmark Resolution recognizing the global threat of the diabetes epidemic. For the first time, governments have acknowledged that a non-infectious disease poses as serious a threat to world health as infectious diseases like HIV/AIDS, Tuberculosis and Malaria.

Prevention and therapy

Individuals can avoid diabetes by

- Appropriate diet
- Weight reduction to normal, supported when necessary by a weight management programme
- Increased physical activity

People with diabetes can lead a normal and active life. One important requirement is that they learn how to manage their diabetes:

- Testing blood glucose regularly to be aware of glucose levels and level of control of glycaemia
- Modify lifestyle with increased physical exercise, adopted diet and eating habits

In patients who are overweight or do not take sufficient exercise, appropriate lifestyle changes can have a significant positive impact on the disease. Effective weight control is therefore very

important in the long-term management of type 2 diabetes. Moderate weight loss of 5% to 10% of body weight can improve blood glucose levels and the responsiveness of the body to insulin.

- Control increased blood glucose levels with antidiabetic drugs that increase Insulin production in the pancreas and/or improve the ability of the body's cells to respond to insulin.
- In the later stages of type 2 diabetes, use of insulin may become essential. As a type 1 diabetes patient the use of insulin is mandatory at all stages of the disease via injections or continuously with an insulin pump.

Roche Diagnostics in Diabetes Care

With more than 30 years experience in diabetes monitoring and 20 years in insulin pump therapy, Accu-Chek is a key pioneer in the area of diabetes care management.

Products

- Blood glucose systems such as Accu-Chek Aviva, Accu-Chek Compact Plus, Accu-Chek Integra, Accu-Chek Go, Accu-Chek Active, Accu-Chek Advantage/Sensor, Accu-Chek Performa
- Insulin pumps such as Accu-Chek Spirit, Accu-Chek D-TRONplus
- Infusion Sets such as Accu-Chek FlexLink, Accu-Chek TenderLink, Accu-Chek Rapid-D Link
- Lancing systems such as Accu-Chek Multiclix, Accu-Chek Safe-T-Pro plus, Accu-Chek Softclicx
- Data management such as Accu-Chek Smart Pix, Accu-Chek Pocket Compass, Accu-Chek Camit Pro, Accu-Chek Compass, Accu-Chek Smart Printer, Diabetes Assistant, Accu-Chek DiaLog

Financials

- Sales 2006: 3,0 billion Swiss francs
- Sales increase from 2005: +3% (in local currencies)
- Market share 2006: 33% (blood glucose monitoring: market leadership), 16% (insulin infusion systems: number 2 position)

Roche Pharmaceuticals in Diabetes Care

Roche is currently investigating over 200 different biological targets and screening drug candidates against them.

The Roche Pharmaceuticals cardiovascular and metabolic diseases development pipeline contains the following molecules:

- R1439 (dual PPAR agonist): type 2 diabetes, phase II
- R1583 (GLP-1 analogue): type 2 diabetes, phase II
- R1658 (CETP inhibitor): dyslipidemia, phase II
- Three phase I compounds

Further information

- Accu-Chek: www.accu-chek.com
- Roche Health Kiosk / Diabetes: www.health-kiosk.ch/text_diab_the_1
- Picture: www.roche.com/pages/downloads/photosel/071002/

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