UNIVERSITY OF WALES, TRINITY SAINT DAVD, OVAL, LONDON

INTRODUCTION TO PHYSIOLOGY

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Public Health Issue: Diabetes

Physiology

Indicates the working of the human body based on normal condition

Diabetes

Diabetes is a public health disease where the pancreas cannot produce sufficient insulin to the body cells. House of Parliament (2012) indicates that diabetes is as a result of the pancreas inability to release enough insulin to the cells. The insufficient insulin in human body is a serious illness and may result to the liver with plenty glucose to causes unclear vision, limb amputation, kidney failure as well as heart disease

Types of Diabetes

Type 1 and 2 diabetes Type 1 diabetes life expectancy is 20 years, compared to people having Type 2 diabetes (Public Health England, 2014)

Causes of Diabetes

Poverty, unemployment, high social inequality, and lack of insulin

Acknowledgement to

Cooke & Plotmick (2008)

UK Diabetes (2016)

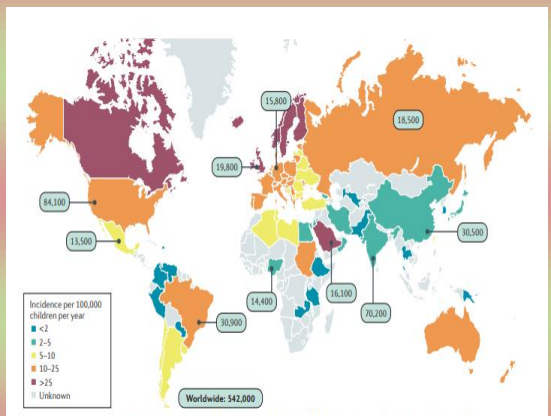

Figure 2 | **The incidence and prevalence of T1DM in children.** The estimated number of new cases of type 1 diabetes mellitus (T1DM) in children (<15 years of age) per 100,000 individuals in 2015. The prevalence of T1DM in the 10 most-affected countries is noted. Data from the International Diabetes Federation (http://www.diabetesatlas.org/across-the-globe.html).

Diabetes Type 1 & 2

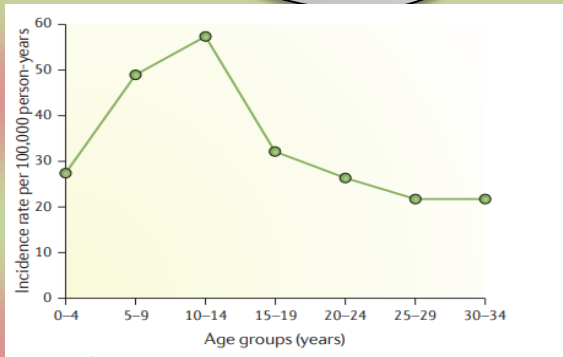

Figure 3 | **Age-specific incidence rates of T1DM.** The incidence rates of type 1 diabetes mellitus (T1DM) per 100,000 person-years in Sweden by age group. The graph shows the incidence of T1DM in men and women combined, and is based on data from the Prescribed Drug Register; data on insulin prescriptions were used as a proxy for T1DM diagnosis. Adapted with permission from REF. 30, Springer.

Risk Factors of diabetes (Type 1 & 2)

- Overweight
- Storing fat in the abdomen
- Lack of physical activity
- Family history
- Blood lipid levels
- Age (40 above)
- Prediabetes
- high blood pressure,
- Heart attack or a stroke
- Women with polycystic ovary syndrome

Intervention

- Promoting community physical activity
- Healthy dietary change program to induce a 7 percent weight loss
- Health-check programs
- Introducing food taxes as an intervention to reduce obesity/diabetes
- Design building with stair case
- Education campaign for eating behavior

Table 1. **Risk of Developing Type 1 Diabetes for Individuals Who Have an Affected Relative**

Sibling	Risk
Overall	6%
Identical twin	<50%
HLA identical	15%
HLA haploidentical	6%
HLA nonidentical	1%
Offspring	**Risk**
Overall	5%
Father who has IDDM	6%
Mother who has IDDM	2%

HLA=human leukocyte antigen, IDDM=insulin-dependent diabetes mellitus

References

Cooke & Plotmick (2008) Type 1 Diabetes: Melitus in Pediatrics, American Academy of Pediatrics

House of Parliament (2012) Preventing Diabetes, Post Note, No. 415

Katsarou et al. (2017) Type 1 Diabetes Melitus, Primer, Vol. 3, (17): p 1-17