

# DIABETES MELLITUS



# Introduction

- ◆ God wants His people to be a healthy people, physically, mentally and spiritually. He wants us to be the head and not the tail in health principles. Healthy people are in better conditions to fully understand the will of God and perceive the deceptions of the enemy seeking to separate us from the way of salvation.

# Diabetes Mellitus Definition

- ◆ It comprises a group of frequent metabolic disorders that share the phenotype of hyperglycemia (high glucose).

# Classification

- ◆ DM is classified based on the pathogenic process leading to hyperglycemia.
- ◆ The two broad categories of DM are designated as type 1 and type 2.
- ◆ The two types are preceded by a phase of abnormal glucose metabolism.

# Classification

- ◆ Diabetes type 1 (A and B)
- ◆ Diabetes type 2
- ◆ Other specific types of diabetes (A, B, C, D, F, G, H)
- ◆ Gestational diabetes

# Risk factors for developing diabetes mellitus

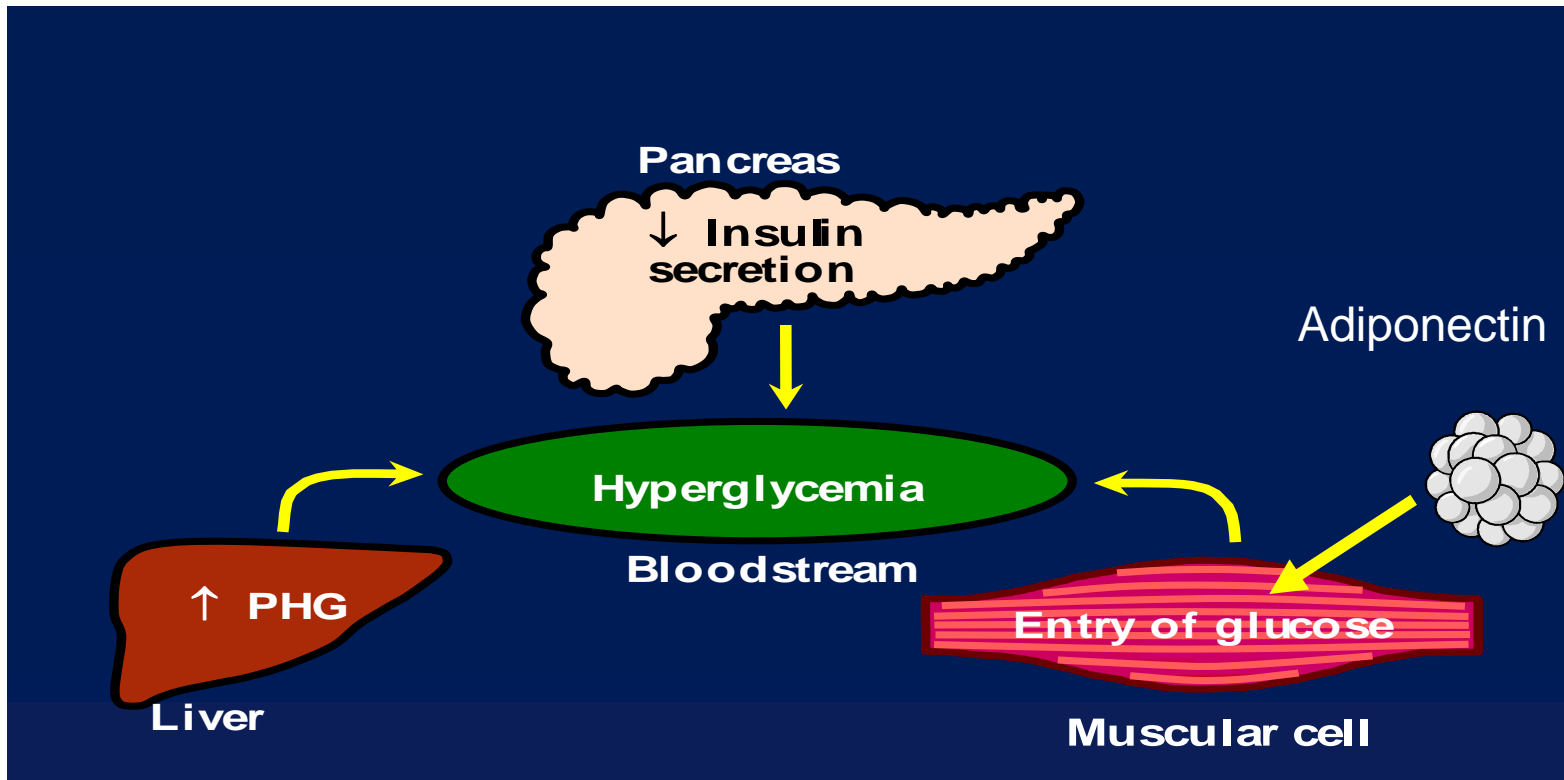
ADA 2007

- ◆ Family history
- ◆ Obesity
- ◆ Regular physical inactivity
- ◆ Race or ethnicity
- ◆ Impaired fasting glucose
- ◆ Hypertension
- ◆ HDL cholesterol <35 mg / 100ml or triglycerides > 250 mg / 100 ml
- ◆ Polycystic ovarian syndrome
- ◆ History of vascular disease
- ◆ History of gestational diabetes or child weighing >4 kg
- ◆ ADA 2007

# Epidemiology

- ◆ Epidemiology
- ◆ According to the International Diabetes Federation, China, India, USA, Brazil, Russia and Mexico, in that order are the countries with the highest number of diabetics.
- ◆ Of the total adult population in Mexico, 9.17% (CI 95%) which is equivalent to 6.4 million people.
- ◆ In Mexico by gender, this percentage was 8.60% for men and 9.67% among women, equivalent to 2.84 million men and 3.56 million women.

# Diabetes Mellitus Type 2 Pathophysiology



Decrease in insulin secretion in the pancreas, increase in the hepatic production of glucose, decrease of the revenue of glucose to the muscle (resistance to the insulin).



# Diabetes Mellitus Type 2 Pathophysiology

- ◆ It has been shown that there is deterioration in function of the pancreatic beta cell from the stage impaired fasting glucose. Patients at this stage have lost 50% of beta cell function.
- ◆ It has been shown that when Diabetes Mellitus is manifested, the patient has lost 80% of beta cell function.
- ◆ El internista Vol I 3<sup>a</sup> edición

# What does the Spirit of Prophecy say?

- ◆ Sometimes the result of overeating is felt at once. In other cases there is no sensation of pain; but the digestive organs lose their vital force, and the foundation of physical strength is undermined.

# Pre diabetics

- ◆ It is said that a patient is pre diabetic when blood glucose is higher than normal, but not overt DM (impaired fasting glucose AGA 100-125mg / dl or 5.7-6.4% HbA1c).

◆ NEJM 2012 ;367:542

# Diagnosis Diabetes Mellitus

- ◆ Fasting glucose > 126 mg / dl on 2 occasions
- ◆ Random glucose > 200 mg / dl
- ◆ HbA1c > 6.5% (glycosylated hemoglobin)

◆ Diabetes care 2003 ; 26:S33

◆ NEJM 2012 ;367:542

# The glucose test should be done to all adults with:

- ◆ BMI (Body Mass Index)  $>25$
- ◆ Physical inactivity
- ◆ First-degree relative with diabetes
- ◆ High risk Ethnicity / race (African Americans, Latinos, Native Americans, Asian Americans, the Pacific Islands)

# The glucose test should be done to all adults with:

- ◆ Women who have had babies weighing > 4 kg, or had gestational diabetes
- ◆ Hypertension
- ◆ HDL cholesterol <35 mg / dl or triglyceride >250 mg / dl
- ◆ Women with polycystic ovarian syndrome
- ◆ Previous altered A1C testing >5.7%, impaired fasting glucose

# The glucose test should be done to all adults with:

- ◆ Adults over 45 years of age (in the absence of the above criteria)
- ◆ If tests are normal the studies should be conducted every three years and every year if there is 1 risk factor

# Testing for Type 2 diabetes in children

- ◆ Overweight, BMI above the 85th percentile for the age
- ◆ Height / weight >85th percentile
- ◆ Weight >120% of ideal weight



# Clinical Picture

## SYMPTOMS OF HYPERGLYCEMIA

- ◆ Polydipsia (extreme thirst)
- ◆ Polyphagia (extreme hunger)
- ◆ Weakness
- ◆ Weight loss
- ◆ Fatigue
- ◆ Blurred vision
- ◆ Superficial infections (cutaneous mycoses)
- ◆ Slow healing

# Chronic Complications

## ◆ I METABOLIC

◆ Neuropathy

◆ Cataract

◆ Tendon contractures (etc.)

## ◆ II MICROANGIOPATHY

◆ Retinopathy

◆ Nephropathy

◆ Neovascular glaucoma

## ◆ III MACROANGIOPATHY

◆ Coronary

◆ Cerebral

◆ Of the lower limbs

## ◆ IV MIXED

◆ Diabetic heart disease

◆ Diabetic foot

◆ Diabetic dermopathy (etc.)

# Early treatment

- ◆ Diet
- ◆ Exercise
- ◆ Weight loss
- ◆ Medications

◆ El internista Vol I 3ª edición

# Insulin preparations

<u>Insulin</u>	<u>Onset</u>	<u>Peak</u>	<u>Duration</u>
Lispro	5-15 min	1-2 hr	3-5 hr
Glulisine	5-20 min	1-3 hr	3-5 hr
Exubera	5-15 min	1-3 hr	6-8 hr
Regular	30-60 min	2-4 hr	6-8 hr
NPH	1-4 hr	8-12 hr	12-20 hr
Detemir	1-4 hr	no peak	20-24 hr
Glargine	1-4 hr	no peak	22-24 hr
Mixture			
Aspart	10-20 min	1-3 hr	3-5 hr

# Health recommendations from the Spirit of Prophecy

- ◆ The message of health reform is more than eating or not eating meat. It is more than vegetarianism, includes the observance of principles that contribute to a healthy lifestyle.



◆ THE 8 NATURAL REMEDIES AND  
THEIR IMPACT ON CONTROLLING  
DIABETES MELLITUS



## I. Water

Drink enough pure water every day (8 glasses) The consumption of bottled sugary drinks (soft drinks) is not recommended for patients with diabetes because it raises blood glucose levels



## II.

Breathing pure clean air.



III.

Contact with sunlight.

IV.

Temperance is the moderate consumption of what is good and total abstinence from what is harmful for our body.







V.

Exercise (30 minutes, 4 times per week)

In patients with type 2 diabetes, exercise improves insulin sensitivity and reduces glucose levels.



VI. Rest (7-8 hours)

A lack of adequate rest leads to increased resistance to insulin action.

The insulin released by the pancreas is reduced by 30% after a deprivation of sleep and rest.

Improve your health 24 realistic ways.



VII. Proper nutrition. A vegetarian diet contributes to glucose control and prevents malnutrition.

Carbohydrates 45-65 % Proteins 15-20%,  
polysaturated fat 10%, saturated fat 5%

◆ El internista Vol. I 3<sup>a</sup> edición.

VIII. Trust in God. All of the above must be accompanied by the assurance of God's blessing.

- ◆ Those who accept and obey one of His precepts because it is convenient to do so, while they reject another because its observance would require a sacrifice, *lower the standard of right, and by their example lead others to lightly regard the holy law of God.*

# Biblical support

- 💧 Beloved, I pray that you may prosper in all things and be in health, just as your soul prospers.
- 💧 3 John 2