Defintion, diagnosis and classification of Diabetes Mellitus

By : Prof. Dr. Maha Adel

Dept: Basic Sciences

DM: A metabolic disease in which the body's inability to produce any or enough insulin causes elevated levels of glucose in the blood."

Common symptoms of diabetes include:

- Excessive thirst and appetite
- Increased urination (sometimes as often as every hour)
- Unusual weight loss or gain
- Fatigue
- Nausea, perhaps vomiting
- Blurred vision
- In women, frequent vaginal infections
- In men and women, yeast infections
- Dry mouth
- Slow-healing sores or cuts
- Itching skin, especially in the groin or vaginal area

Types of diabetes:

- Type 1
- Type 2
- Gestational diabetes
- Prediabetes

Type 1 diabetes:

- Also known as juvenile diabetes

- Usually diagnosed in children and young adults

- When body's own immune system destroys the insulin producing cells of the pancreas – beta cells – which produce insulin

- Only 5% of people have this disease

- Body does not produce insulin

- Is not preventable

- No primary intervention

Causes?

- Predisposition to diabetes – genetics - and something (i.e. weather, virus ... etc) in environment triggers the disease

Type 2 diabetes:

- Most common form of diabetes – about 90% of cases

- Used to be called adult onset, non insulin dependent diabetes

- Body produces insulin, but does not use it properly

- glucose doesn't move into cells, they pile up in the bloodstream

Risk factors:

- Genetics

- Polycystic ovary syndrome

- Irregular menses

- Race

- ⬤ African Americans, Hispanics and Asians > whites

- ⬤ Age

- ⬤ After age 45, but increases in younger adults and children

- ⬤ Environmental factors

- ⬤ Inactivity

Gestational diabetes mellitus (GDM):

- Having diabetes during pregnancy

- Family Hx of diabetes, overweight prior to pregnancy?

- Having gestational diabetes puts you at risk for diabetes type 2

- Giving birth to a baby > 9 lbs also puts you at risk for type 2

- 18 out of every 100 pregnant females will develop GDM

Blood Sugar Classification	Fasting Blood Sugar Levels	Post Meal Blood Sugar Levels
Normal	70-100 mg/dL	70-140 mg/dL
Prediabetes	101-125 mg/dL	141-200 mg/dL
Diabetes	125 mg/dL and above	200 mg/dL and above
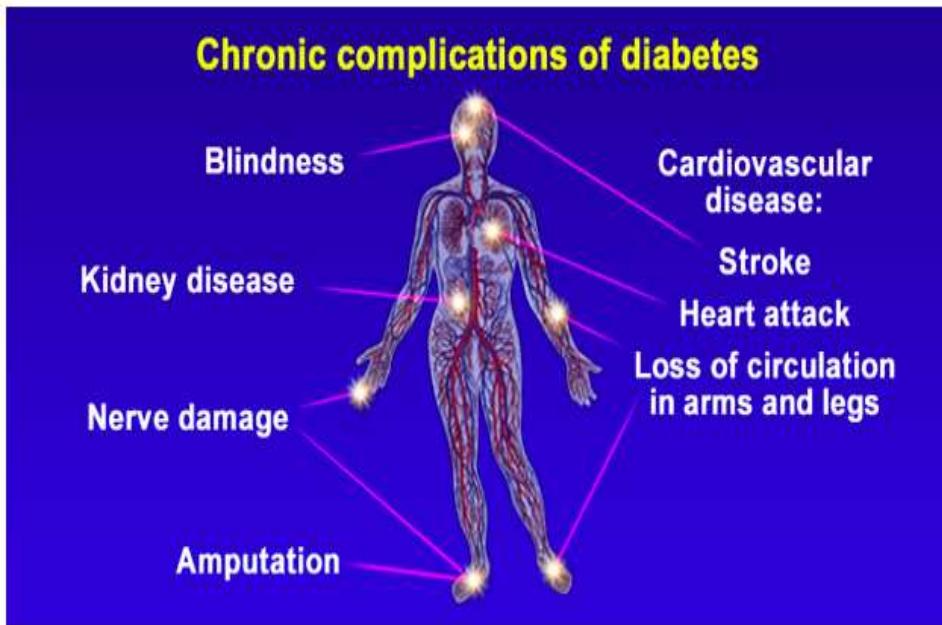
Preventions:

⭕ Type 1:

- ▪ Not preventable, as of right now.

- ▪ Studies on ways to possible prevent further destruction of the beta cells

⭕ Type 2:

- Primary: maintain a healthy lifestyle

- Secondary: check HbA1c, adjust diet

  - HbA1c – blood sugar avg over span of 3 months

  - ⭕ Measures what % of your HbAIc is coated with sugar

  - ⭕ Nl = 4 % - 5.6%, pre diabetes = 5.7% -6.4% and diabetes = 6.5% +

- Tertiary: exercise and eat well

- Foot exam?

⦿ Gestational diabetes:

- Physical activity: Researchers found being physically active before and after their pregnancy reduced their risk of GDM by about 70% or more

- Diet : A study showed that each 10 gram increase in fiber a day reduced their risk of GDM by 26%

⦿ Prediabetes:

⦿ Diabetes prevention program

- ⦿ Lifestyle intervention group vs medicated group with Metformin vs placebo group

- ⦿ 3,243 participants were overweight and had prediabetes

- ⦿ Lifestyle intervention reduced diabetes by 58%

- ⦿ Metformin reduced diabetes by 31%

- ⦿ Effective in both sexes ages 25-44 yoa and BMI of 30 +

Summary: **Type 2 diabetes can be pevented/delayed with activity and diet.**