

DIABETES Mellites (DM)

Presented

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Akisan USA, Inc. Health & Medical Committee

WHAT IS DIABETES

- A group of diseases that result in too much sugar in the blood – high blood glucose
- The body breaks down the carbohydrates we eat into blood sugar that it uses for energy.
- Insulin produced in the pancreas is a hormone serves as a “key” that moves this glucose (sugar) from the bloodstream into the cells of the body

WHAT IS DIABETES

- It occurs when your body cannot make or effectively use its own insulin : insulin serves as an “key” to open the cells to allow sugar from food to enter.
- The sugar is then used for energy
- Most common forms are type 1 and type 2
other is gestational diabetes, occurs during pregnancy

- When the insulin –producing cells are destroyed, a person can no longer produce its own insulin.
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- **WITHOUT INSULIN OR THE “key”, THE SUGAR STAYS IN THE BLOOD STREAM AND BUILDS UP, STARVING THE CELLS**
 - Left untreated, high blood sugar levels can damage the eyes, kidneys, nerves, the heart and can lead to a coma and death

Statistics

National Diabetes Statistics Report

2020

Estimates of Diabetes and Its Burden in the United States

- 34.2 million **Americans**—just over **1 in 10**—have diabetes.

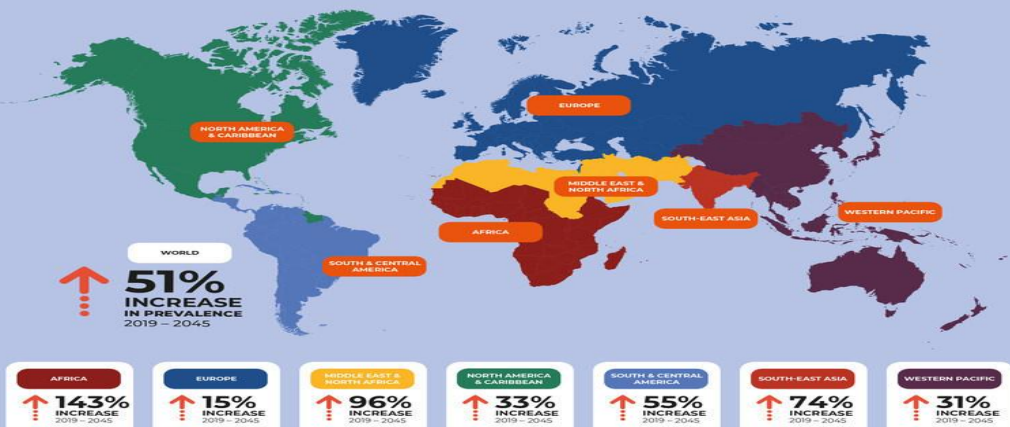
- 88 million American adults - about **1 in 3 persons**—have **prediabetes**.
- 26.9 million people are diagnosed
(Know they're Diabetic)
- 7.3 million people are undiagnosed
(Don't know their diabetic status)
- **88 million people have prediabetes**
(About 34% of US population)



THE ALARMING RISE IN DIABETES AROUND THE WORLD

The IDF Diabetes Atlas 9th Edition 2019 reveals global diabetes prevalence continues to increase. Current projections show 700 million adults will be living with diabetes by 2045.

463
million
adults are living
with diabetes
worldwide



Diabetes affects all age groups, regardless of geography and income. It is impacting families worldwide.

A healthy lifestyle can help prevent type 2 diabetes and early diagnosis and uninterrupted access to appropriate care can avoid or delay life-threatening complications in people with the condition.



DIABETES: PROTECT YOUR FAMILY

View all the latest IDF Diabetes Atlas findings and learn more about what can be done to reduce the impact of diabetes at:

www.diabetesatlas.org
#WorldDiabetesDay



International
Diabetes
Federation



world diabetes day
14 November

Statistics

According to International Diabetes Federation (IDF), 2019 Facts, Revised, 2020

- About **463 million adults** (20-79 years) were living with diabetes; **by 2045** this will rise to **700 million**
- **1 in 5** of the people who are above 65 years old have diabetes
- **1 in 2 (232 million)** people with diabetes were undiagnosed
- **79%** of adults with diabetes live in **low- and middle-income countries**

International Diabetes Federation (IDF), Statistics Cont..

- **Diabetes caused 4.2 million deaths** with at least **USD 760 billion dollars** in health expenditure in 2019 – 10% of total spending on adults
- **More than 1.1 million children and adolescents** are living with type 1 diabetes
- **1 in 13 Adults (20-79 years)** have impaired glucose tolerance making room for **374 million** people to be at increased risk of developing type 2 diabetes



Criteria for Diagnosis by your doctor

Random blood sugar level of 200mg/dL or higher suggests diabetes –

- Blood sample is taken at any time regardless of when you ate.

Fasting blood Glucose (FPG) ≥ 126 mg/dL -

- Blood sample after eight hours or more overnight fast

Glycated hemoglobin (A1C) test: Does not require fasting and indicates your average blood sugar level for the past two to three months.

- **Normal = A1C below 5.7%; Prediabetes = 5.7% and 6.4%; Diabetes = 6.5% or greater on two separate tests.**

TYPE 1 Diabetes

Also known as insulin – dependent diabetes is a chronic condition in which the pancreas does not produce insulin because the pancreatic cells are damaged by your immune system

People with type 1 diabetes have to be on insulin for the rest of their lives (**Lifelong insulin users**)

Typically appears in adolescence hence the name “Juvenile diabetes”.

It's the most severe form of the disease and there's no cure

TYPE 2 Diabetes

Type 2-diabetes is the most common form of diabetes and is a chronic condition in which the pancreas does not produce enough insulin or it resists insulin

Some people may have to be on insulin or medication,

While some can control their blood sugar levels with healthy eating and exercise, hence the name -non-insulin dependent diabetes

Prediabetes & Gestational

- Prediabetes, a condition in which the blood sugar is high, but not high enough to be type 2 diabetes.
-
- A prediabetic person will usually go on to become type 2 diabetic without intervention
 - Gestational diabetes occurs during pregnancy in many women. Sometimes the hormones which support the baby growth can also block the action of the mother's insulin to her body causing insulin resistance. This insulin resistance makes it hard for the mother's body to use insulin and will result in high blood glucose in the blood.

CAUSES of Diabetes

- Genes may play role with type 1
- Type 2 may be caused by a combination genetics and lifestyle factors

SIGNS AND SYMPTOMS

- Excessive urination (**Polyuria**)
- Increased thirst (**Polydipsia**)
- Increased hunger (**Polyphagia**)
- Unexplained weight loss weight loss
- Blurred vision
- Itchy skin

RISK FACTORS AND COMPLICATIONS

- Genetic predisposition
-
- Pre-diabetes
 - Previous gestational dm
 - Elevated bp/cholesterol
 - Have African American/Hispanic/Alaska/Indian/Asian ancestry

RISK Factors

MODIFIABLE RISK FACTORS



Overweight/obese



Physical inactivity



Poor dietary habits



Hypertension



Smoking



Certain medications
e.g. glucocorticoids

NON-MODIFIABLE RISK FACTORS



Genetics



Family history



Race/ethnicity

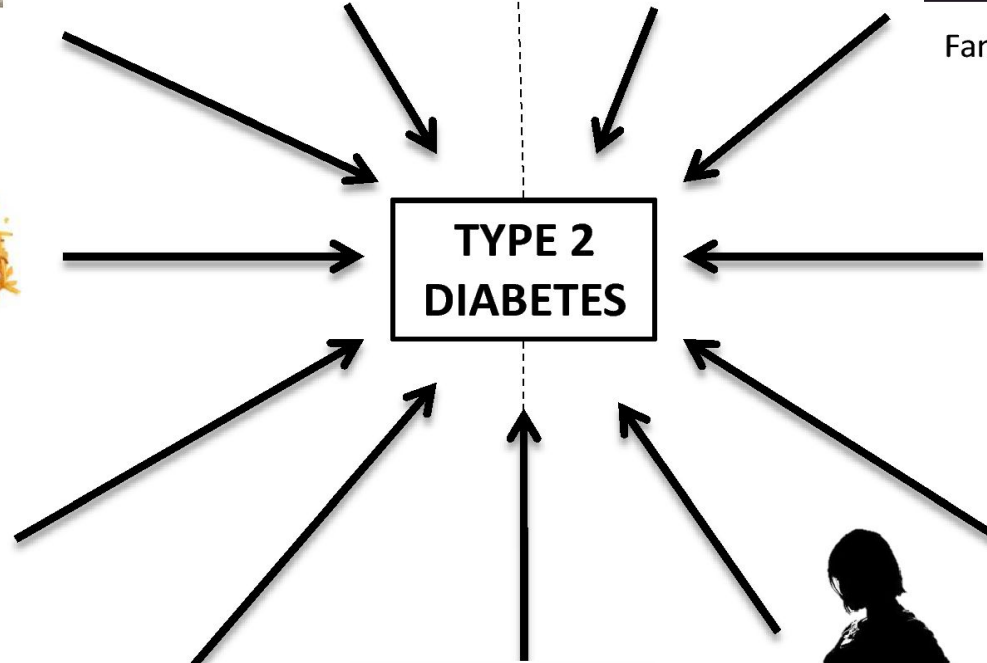


Increasing age (>45)



History of gestational diabetes

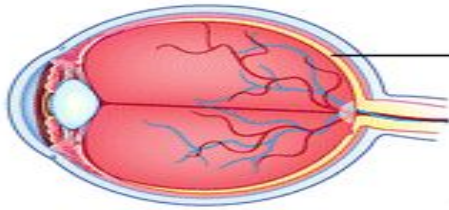
TYPE 2
DIABETES



DIABETIC Complications

Impact of Diabetic Complications

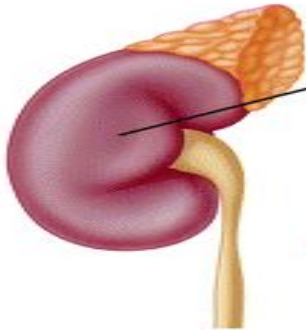
Diabetic retinopathy
Leading cause
of blindness in
working-age adults



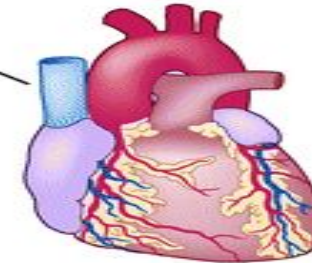
Stroke
2- to 4-fold increase
in cardiovascular
events and stroke



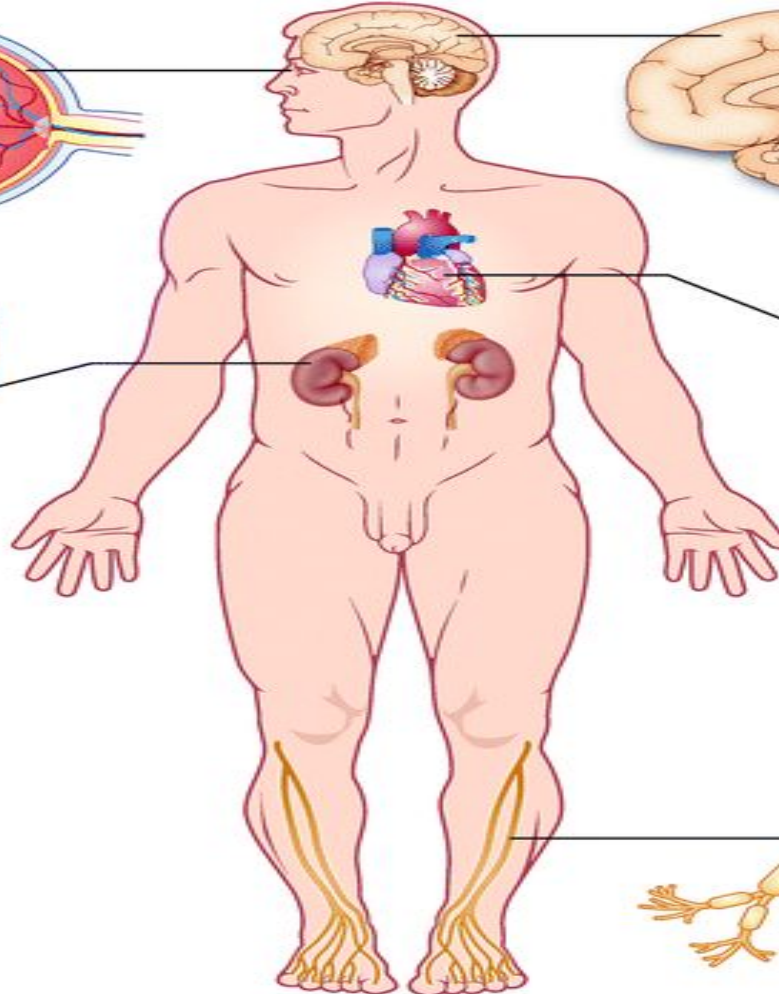
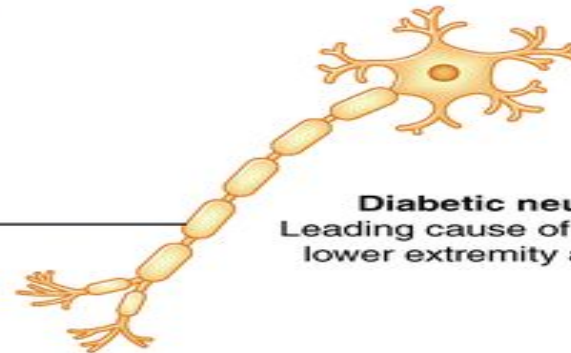
Diabetic nephropathy
Leading cause of
end-stage renal disease



Cardiovascular disease
Diabetes and
impaired glucose
tolerance increase
cardiovascular
disease risk
three- to eightfold



Diabetic neuropathy
Leading cause of nontraumatic
lower extremity amputations



MANAGEMENT AND TREATMENT

Medication

- Your doctor will treat your dm type 1 with medications by
- **Mouth or**
- **Injection**

Medical Treatment

There are several treatments/therapeutic regimen for diabetes mellitus (DM)

- **Oral antidiabetics – of various types:**
 - **Glucophage (Metformin) – 1st Drug of choice**
- **The Injectable insulin and types:**
 - **Rapid-acting**, insulin aspart (NovoLog, Flex Pen, Fiasp),
 - **Short-acting**, also called regular (Humulin and Novolin),
 - **Intermediate-acting** (insulin isophane (Humulin N, Novolin N)
 - **Long-acting** (insulin degludec (Tresiba), insulin detemir (Levemir),
- **Then the combination insulins**

DIET AND EXERCISES

- Can help some people manage type 2 and if unable to control blood sugar, you will need medication from your doctor
- The drug your doctor prescribes will depend on the type of dm you have -----and its cause

LIVING WITH DIABETES

Multi-disciplinary Care Approach

(Healthy Lifestyle)

Exercise

- At least **150 minutes a week of moderate intensity exercise** minimum per week

Healthy Diet

- Eat right/No Junk food
 - Sometimes eating the right type of foods and regular exercise can help you lose weight and control your blood sugar
- Stop drinking
- Stop smoking

Take charge of your diabetes through

- **DSMES** –The Diabetic Self management Education and Support.

By Enabling behavior Changes

- Know your diabetes, manage the blood sugar levels and self-management education/support
- ~~Healthy eating is a central part of managing dm~~
 - ✓ In some cases, changing your diet may be enough to control the disease
 - ✓ The dietitian may recommend that you limit the amount of carbohydrates you eat everyday and balance it with your insulin
 - ✓ Carb counting is an important part of eating for type 2
- Stay active to maintain healthy weight
- Manage blood sugar and Prevent complications

Refrain from excessive alcohol intake

Tobacco Cessation –

- If you smoke, tobacco cessation counseling programs to help you stop smoking

Recognize signs of low blood sugar: dizziness, confusion, weakness and profuse sweating

- Carry with you a hard candy for emergency use

Make your health status a priority on your schedule

- Make appointment and see your health care provider as recommended

DSMES – The Diabetic Self management Education and Support.

- An informed decision-making, Self care problem solving behaviors in partnership with health care teams to help you make the right decisions about your diabetic status

- Handle DM emergencies by thinking ahead
- Dm & Mental Health – they are connected

**80% OF
TYPE 2 DIABETES
IS PREVENTABLE WITH
LIFESTYLE CHANGES**

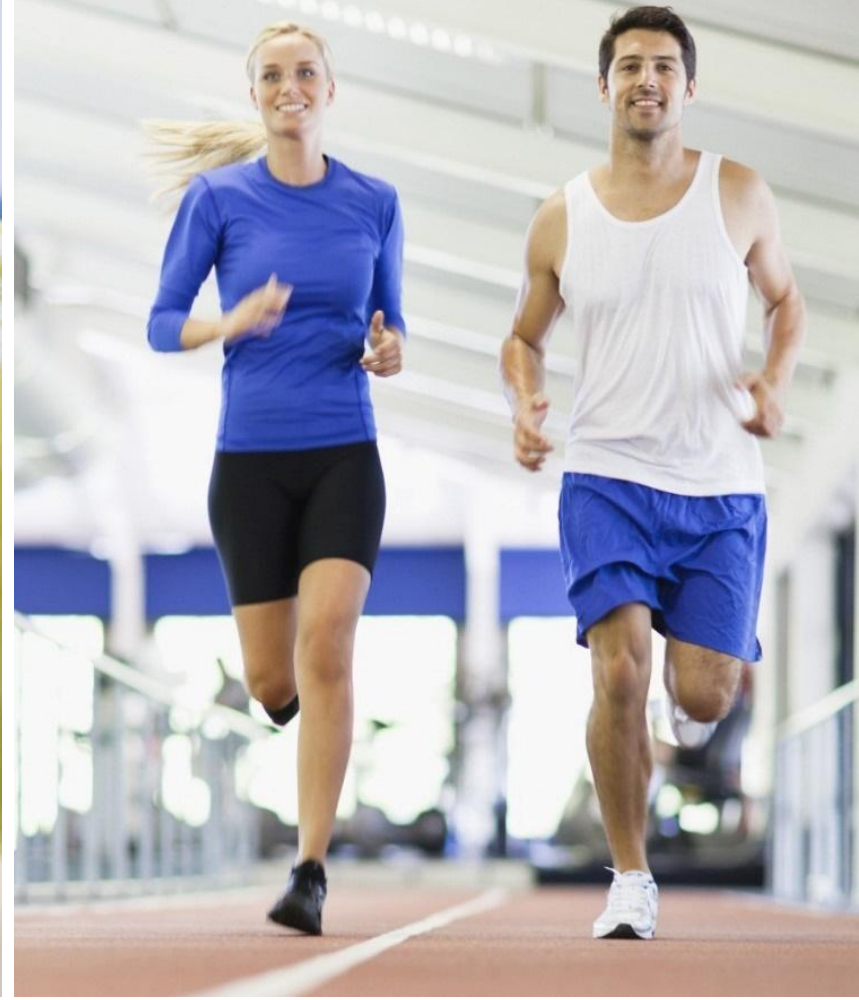
YOU CAN HELP YOURSELF BY:

- GETTING REGULAR EXERCISE**
- EATING A BALANCED DIET**
- GIVING UP SMOKING**
- LOWERING CHOLESTEROL**

Diabetes.co.uk

QR code

The infographic features a purple banner at the top with the main statistic, followed by a blue banner with the heading 'YOU CAN HELP YOURSELF BY:'. Below this are four horizontal bars in red, green, light blue, and orange, each containing one of the lifestyle change recommendations. At the bottom left is the Diabetes.co.uk logo, and at the bottom right is a QR code.



PREVENTION

- Dm type 1 is not preventable: caused by problems in the immune system
- Some causes of dm type 2, such as your genes can not be controlled

References

- [American Diabetes Association](https://www.diabetes.org/healthy-living/medication-treatments). <https://www.diabetes.org/healthy-living/medication-treatments>.
- Diabetes Diet, Eating, & Physical Activity. <https://www.niddk.nih.gov>.
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[Diabetes Diagnosis](https://www.mayoclinic.org/diseases-conditions/type-2-diabetes/diagnosis-treatment/drc-20351199).
<https://www.mayoclinic.org/diseases-conditions/type-2-diabetes/diagnosis-treatment/drc-20351199>
- Diabetes Overview. American Diabetes Association. <https://www.diabetes.org/diabetes>
- National Diabetes Statistics Report, 2020.
<https://www.cdc.gov/diabetes/library/features/diabetes-stat-report.html>
- **Insulin, Medicines, & Other Diabetes Treatments.**
<https://www.niddk.nih.gov/health-information/diabetes/insulin-medicines-treatments/type-sofinsulin>

Q & A

