

# Diabetes Mellitus

WHAT IS DIABETES?

WHAT IS INSULIN?

TYPES OF DIABETES

RISK FACTORS

TREATMENT

PREVENTION – WHAT CAN YOU DO TO REDUCE YOUR RISK?



# What is Diabetes Mellitus



- ▶ Diabetes Mellitus is a chronic disorder of carbohydrate, protein and fat metabolism resulting from insulin deficiency or impaired insulin use.

## What is Insulin?



- ▶ Insulin is a hormone that is produced by the pancreas. It's role in the body is to regulate the amount of glucose (sugar) in the blood. When we eat, insulin is released into the blood stream where it helps to move glucose from the blood into cells for energy. Insulin helps keep your blood sugar from getting too high or too low.

# Types of Diabetes Mellitus



## Type 1

- ▶ Insulin Dependant Diabetes Mellitus (IDDM) is an autoimmune disease that occurs when the pancreas stops producing insulin. This happens because the person's immune system mistakenly destroys the insulin producing beta cells in the pancreas, leading to the person becoming dependant on insulin injections. This type of diabetes usually appears below the age of 15.

## Type 2

- ▶ Non – Insulin Dependant Diabetes Mellitus (NIDDM) is a progressive condition where the body becomes resistant to the effects of insulin and/or loses the ability to produce enough insulin in the pancreas. There is no known cause of Type 2 Diabetes however there is a strong genetic and family related risk factor as well as modifiable lifestyle risk factors. It usually presents in adults over the age of 45 however it is increasingly being seen in younger age groups (including children).

# Types of Diabetes Mellitus continued....

## Pre-Diabetes

- ▶ Pre-Diabetes is a condition where the blood glucose levels in your body are higher than what is considered normal, although not high enough to be classified as Type 2 Diabetes. Without sustained lifestyle modifications, 1 in 3 people will go on to develop Type 2 Diabetes.

## Gestational Diabetes

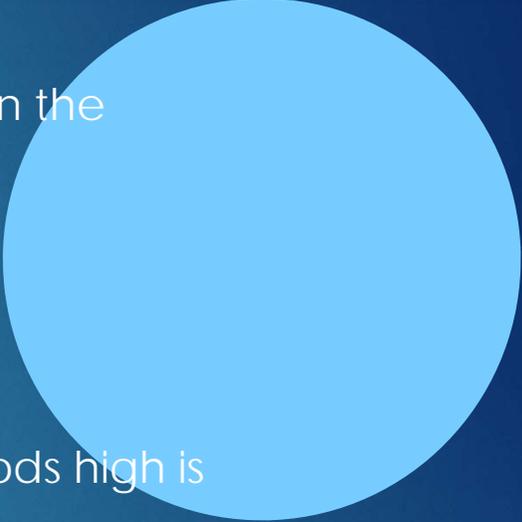
- ▶ Gestational Diabetes Mellitus (GDM) is a temporary form of diabetes that occurs during pregnancy. This is usually temporary and will disappear after the baby is born. Women who have had gestational diabetes in pregnancy are at a higher risk of developing Type 2 Diabetes later in life.

# Risk factors (Type 1)

- ▶ A family history of Type 1 Diabetes – this is because there are known genes that are linked to Type 1 Diabetes that can be handed down to the next generation.
- ▶ Genetic background – there are a number of gene variants that have been identified in the susceptibility of developing Type 1 Diabetes.
- ▶ Age – There are two ranges in which children are commonly diagnosed with Type 1 Diabetes. The first is between the ages of 4 – 7 years old and the second between the ages of 10 – 14 years old.

# Risk Factors (Type 2)



- ▶ Being overweight – especially if the excess weight is carried in the abdominal area
  - ▶ Ethnicity
  - ▶ History of Cardiovascular Disease
  - ▶ Physical inactivity
  - ▶ Poor diet – related to eating mainly processed foods and foods high in sugar
  - ▶ Familial history
  - ▶ Other medical conditions – polycystic ovarian syndrome, gestational diabetes, high blood pressure, high triglycerides or pre-diabetes.
  - ▶ Hypertension
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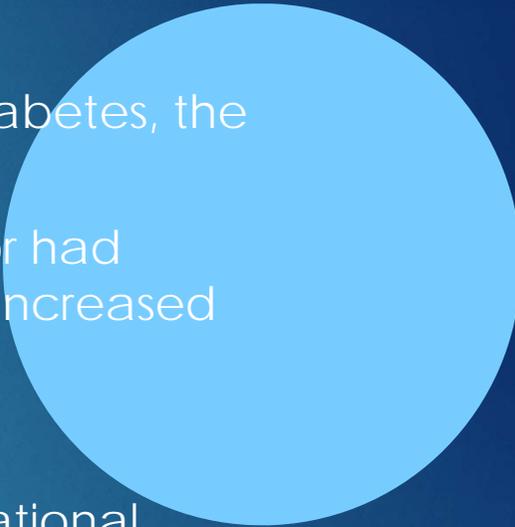
# Risk factors (Pre-diabetes)



Risk factors for Pre-diabetes are similar to those for Type 2 Diabetes.

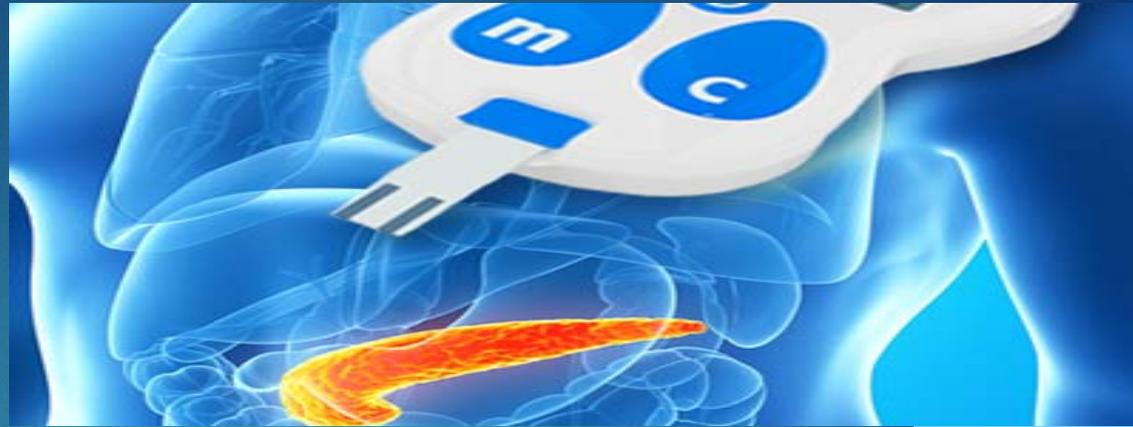
- ▶ Being overweight – especially if the excess weight is carried in the abdominal area
- ▶ Ethnicity
- ▶ Physical inactivity
- ▶ Poor diet – related to eating mainly processed foods and foods high in sugar
- ▶ Family history of Type 2 Diabetes and/or heart disease
- ▶ Other medical conditions – polycystic ovarian syndrome, gestational diabetes, high blood pressure and high triglycerides.
- ▶ Hypertension

# Risk factors for Gestational Diabetes



- ▶ Family history – Someone in the close family has Type 2 Diabetes, the risk of gestational diabetes increases.
- ▶ Personal medical history – if a woman has pre-diabetes or had gestational diabetes in previous pregnancies they are at increased risk.
- ▶ Overweight
- ▶ Age – Women over the age of 25 years are at risk of gestational diabetes.
- ▶ Ethnicity – Women with certain ethnic backgrounds are at an increased risk of developing gestational diabetes.

# Treatment



## Type 1 Diabetes

Type 1 Diabetes is managed with the use of daily (several times a day) insulin injections or an insulin pump. Lifestyle factors such as physical activity and diet modifications are recommended to help reduce the risk of diabetes-related complications.

## Type 2 Diabetes

Type 2 Diabetes can be managed with lifestyle modifications (diet, physical activity, losing weight) and medications. NOTE: Type 2 Diabetes is progressive so efficient management of the disease is paramount to avoiding diabetes-related complications.

# Treatment continued....



## Pre-Diabetes

The treatment for Pre-diabetes involves the same lifestyle modifications that are recommended for people who have Type 2 Diabetes. This includes increasing physical activity, eating a healthy balanced diet and losing weight (if needed).

## Gestational Diabetes

Treatment for gestational diabetes can be managed with healthy eating (a balanced diet) and increasing physical activity. Sometimes, women may also need to take medication and/or insulin injections to manage the condition.

# Prevention – what can you do to reduce your risk?

There are some factors that you can't control and some you can.

Factors you **can't** control:

- ▶ Genetics, ethnicity, age, medical conditions.

Factors you **can** control:

- ▶ Diet
- ▶ Exercise
- ▶ Weight



# Prevention – what can you do to reduce your risk?

## Type 1 Diabetes

This form of diabetes cannot be prevented. Research is being conducted into the autoimmune process and environmental factors that could lead people to develop Type 1 Diabetes.

## Type 2 Diabetes

There is increasing evidence that Type 2 Diabetes can be prevented or delayed in up to 58% of cases. This can be achieved through:

- ▶ Maintaining a healthy weight
- ▶ Eating a healthy, balanced diet

# Prevention – what can you do to reduce your risk?

- ▶ Regular physical activity
- ▶ Managing blood pressure
- ▶ Managing cholesterol
- ▶ Not smoking

## Pre-Diabetes

Prevention for Pre-diabetes involves the same lifestyle modifications that are recommended for Type 2 Diabetes, which are:

- ▶ Maintaining a healthy weight
- ▶ Eating a healthy, balanced diet



# Prevention – what can you do to reduce your risk?

- ▶ Regular physical activity
- ▶ Managing blood pressure
- ▶ Managing cholesterol
- ▶ Not smoking

## Gestational Diabetes

Gestational diabetes can't be prevented entirely but you can lower your risk of developing it by:

- ▶ Maintaining a healthy weight
- ▶ Eating a healthy, balanced diet
- ▶ Participating in regular physical activity

# References

- ▶ <https://www.diabetesaustralia.com.au/>
- ▶ <https://diabetesnsw.com.au/>
- ▶ <https://www.ndss.com.au/>

