


Ann Morris

- Nurse
- Husband has Type 1 diabetes for 64 years
- Diabetes Education since 1976
 - Royal Children's Hospital, Melbourne
 - Diabetes camps
- Experienced in managing children and adults w Type 1, Type 2, Gestational diabetes
- Use a lot of technology – insulin pumps
- Awards:
 - JDRF Diabetes Educator of the Year 2011 for Impact and Relationships
 - Australian Diabetes Educator of the Year 2016


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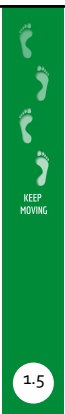


Diabetes

Ann Morris RN CDE
October 2020



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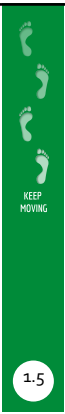


Diabetes Mellitus

- Diabetes Mellitus is a metabolic disorder in which the body's ability to use sugar (glucose) fat and protein is disturbed due to lack of insulin or insulin resistance or both.
- Weight loss and weakness occurs due to the lack of insulin, caused by no glucose absorption and the use of fat and proteins as a secondary source of energy

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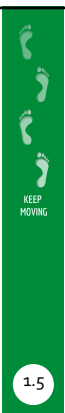
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- Type 1 & Type 2 diabetes have various genetic risk
- Both types have progressive loss of Beta cell mass
- Type 1 – auto-immune/ idiopathic (unknown cause)
- Type 2 – inflammatory process leads to progressive Beta cell destruction
- Increasing higher risk of organ and tissue damage and therefore diabetes complications

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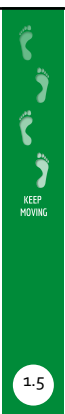


Signs and Symptoms of Diabetes

- Excessive thirst (Polydipsia)
- Excessive urination (Polyuria)
- High blood glucose (Hyperglycaemia)
- Weakness & tiredness (Lethargy)
- Weight loss
- Blurred vision
- Recurrent infections

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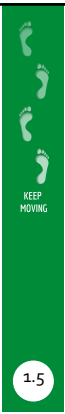


Type 1 diabetes

- Genetic
- Sudden onset
- Auto-immune/ idiopathic (unknown)
- Ketosis /Diabetes Ketoacidosis
 - Requiring urgent attention
 - May be fatal in children
 - Cerebral Oedema
 - Intensive care

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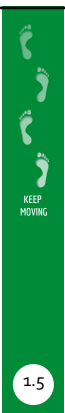


Type 1 diabetes

- Requiring insulin therapy
- Healthy diet and exercise
- Monitor for normal growth and development
- Maintain blood glucose levels in acceptable range to lower risk of complications
 - Better for learning and normal functioning

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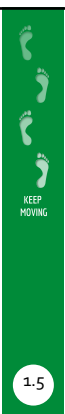


Causes of Type 2

- Family History
- Metabolic syndrome
 - Obesity, high blood sugar levels (hyperglycaemia), high blood pressure (hypertension), high cholesterol (hyperlipidaemia)
 - Large babies (PHx GDM)
- Recent weight gain – Type 2
- Stress
- Major illness
- Depression
- Age

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Types of diabetes

- Impaired Fasting Glycaemia
- Impaired Glucose Tolerance
- Type 1
 - Antibody +ve so Autoimmune cause
 - Antibody -ve so Idiopathic cause
- Type 1.5 (LADA) latent autoimmune diabetes in adulthood
 - Antibody +ve
 - Insulin deplete
 - Presents as Type 2 but progresses to insulin quickly
- Type 2
 - Antibody -ve
- Gestational Diabetes

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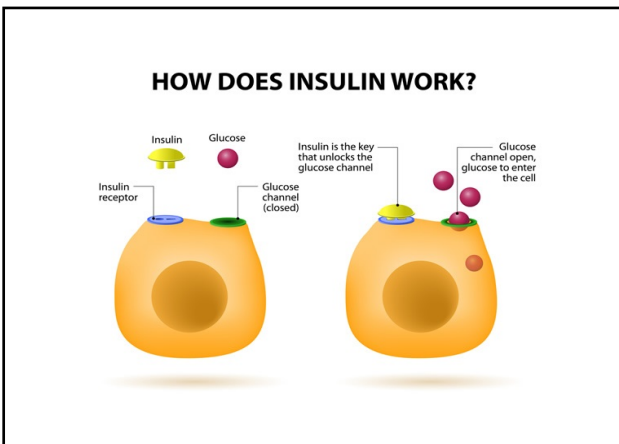
Insulin

- Insulin is an anabolic (Body building) hormone.
- Signals the Liver, muscle and fat cells to take up glucose from the blood
- If there is sufficient glucose in the cells, insulin signals the liver to take up the extra energy and store it as glycogen

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Aims of management

Formulate an Individual management plan to maximise:

- Independence – active management
- Quality of life
- Dignity
- Person Centred
- Free of Signs and symptoms

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Objectives of management

- Develop trusted relationship with person w diabetes – MDT team & active management
- Encourage independence
- Obtain & maintain acceptable blood glucose levels
 - Minimises low blood glucose and high glucose levels
 - S/S free
- Prevent complications
- Patient education
- Reduce frequency of hospitalisation
- Evaluate outcomes

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Beta Cell Decline pre dx Type 1

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Type 2 diabetes

- Slow onset
- Actively checked for
 - “Metabolic Syndrome”
 - Obesity, Hypertension, Hyperglycaemia, Hypercholesterolaemia, Gestational diabetes
- Sustainable Lifestyle change
- Weight loss
- Active management of Lipid disorder and Hypertension
- Exercise

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Complications screening

- From diagnosis
- Active management of
 - High cholesterol (Lipid disorder)
 - High Blood Pressure (Hypertension)
- 3 months HbA1c or review of glucose levels
- Alternating Spot Urine
- Lipid profile including Trig, HDL, LDL
- U&E
- LFT
- FBE

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Key Practice Points

- Sustainable lifestyle changes
 - Regular exercise, Healthy eating
- Blood glucose testing
- Introduce medication at 7.5% or sooner
- Active Monitor for Complications
- If not over weight and not responding to "traditional " treatments, consider other diagnosis - ?unusual presentation Type 1
- Especially if other Autoimmune present.

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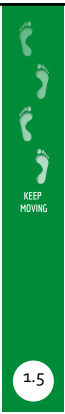


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Gestational Diabetes - Causes

- Diagnosed on OGTT at 26/40 gestation
- Placenta hormone – Placental lactogen
 - Creates insulin resistance (insulin antagonist)
 - Raises BG levels.
- Diagnosis: Fasting ≥ 5.0 mmol/L, 2 hour post ≥ 8.5
- Fasting and 2 hours post meal.
- Introduce insulin if Fasting ≥ 5.5 mmol/L. or 2 hour post meal ≥ 6.7

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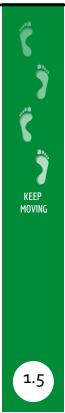


Management of GDM

- Regular review
- If on insulin therapy – deliver at 38 weeks
- Active titration of insulin
- Within 2 days of delivery – drop post meal target to 6.5mmol/L.
- Regular Obstetric review
- Poor / sub-optimal blood glucose (BG) levels – high risk of FDIU

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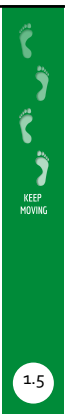


Key Practice Points

- Intervention at diagnosis asap
- BG testing Fasting and 2 hours pp
- Active review weekly by DE / Dr until stable
- Introduction of insulin as soon as targets are exceeded & according to pp BG levels.
- Tighten targets within 2 days of delivery to 6.5mmol/L
- Monitor for placental insufficiency

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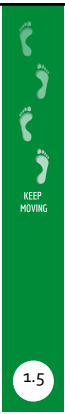


Acute Complications

- Acute
 - Low glucose levels (hypoglycaemia)
 - High glucose levels (hyperglycaemia)
 - Infections
 - Dental disease, fungal infections, urinary tract
 - Fat atrophy & insulin allergy
 - Rare but caused by giving insulin into same site
 - Site rotation is important
 - Reduces absorption of insulin causes unstable glucose levels

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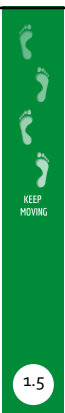


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Chronic Complications

- Large vessel - Macro-vascular
 - Heart Attack (Acute Myocardial Infarction), Stroke (cerebrovascular accident)
- Small vessel - Micro-vascular
 - Damage on back of eye (retinopathy)
 - Damage to filters in kidney (Nephropathy)
- Nerve damage – Neuropathy
- Pregnancy complications

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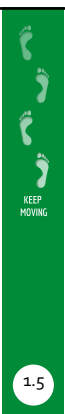


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Aims & Objectives of care

- Early detection and treatment for both short and long-term complications
 - Regular pathology 3-6 monthly
- Consider physical, mental health and social status
- Ability to care for themselves
- Acceptance of diagnosis
 - diabetes
 - development of complications
 - example - Wounds not healing, pending amputation

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Aims & Objectives of care

- Achieve and maintain acceptable blood glucose range and at the same time, low risk of low or high BG levels.
- Active introduction of oral medication or start insulin if required
- Maintaining blood glucose within a target range lowers chances of complications getting worse & helps heal wounds

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Thank you and questions



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Acknowledgements


Author: Ann Morris RN CDE

Pilot location: Honiara Hospital, Solomon Islands

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