

تفریغ ڪلینکال



المحاضرہ:

diabetes Mellitus pl

الصيدلانيۃ: یاسمين خلیل



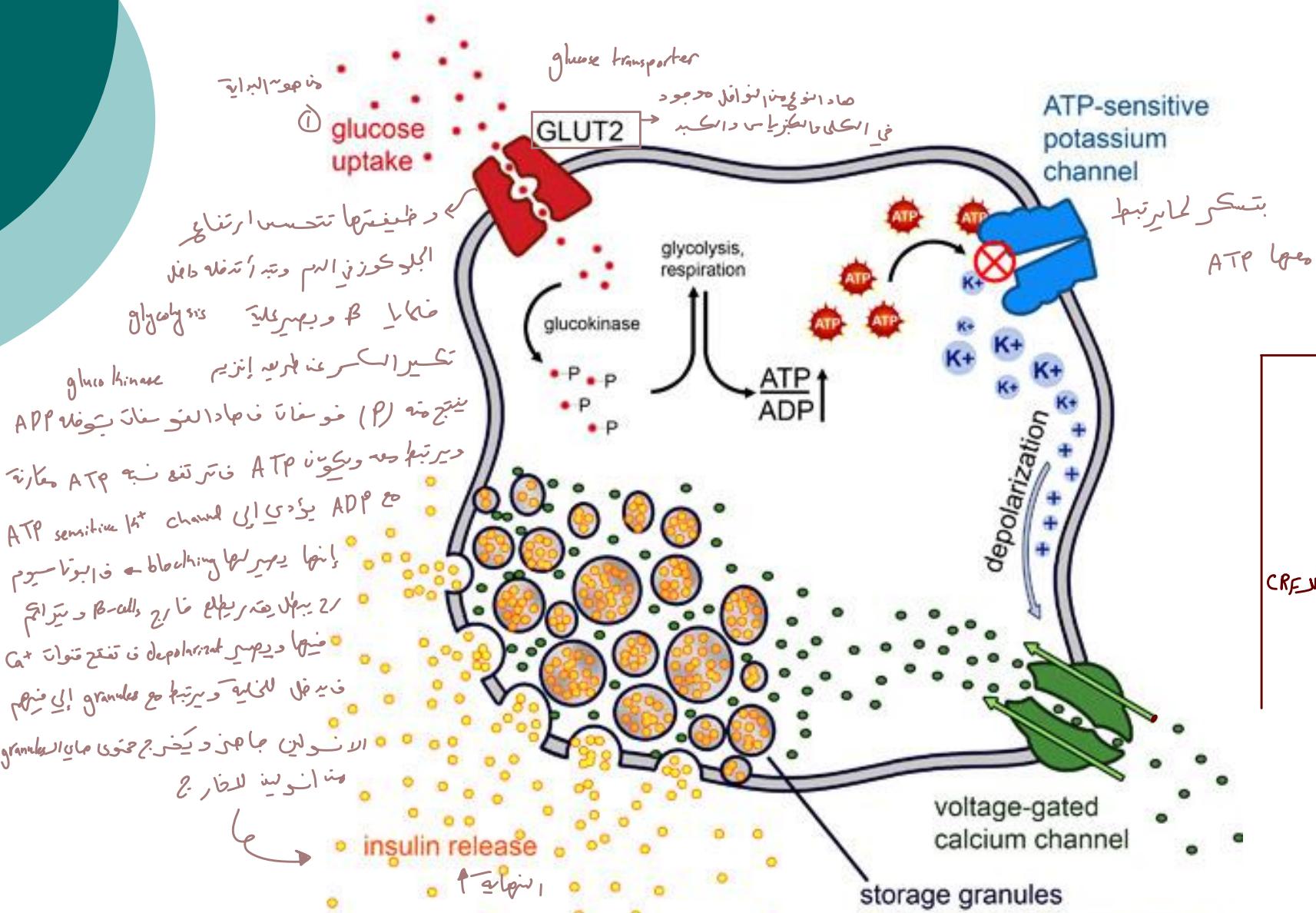
لجان التُّفَعَّات

Glucose Metabolism and diabetes Mellitus

اللهم ارحم أئيمه واغفر له واعف عنه واجمعه وأهله
وال المسلمين في الجنة أمين
وصل اللهم وسلم وبارك على محمد 

Effect of Insulin

يحفز إفراز الإنسولين
من β -cells من الجزر البابillar
عند ارتفاع مستوى
السكر في الدم

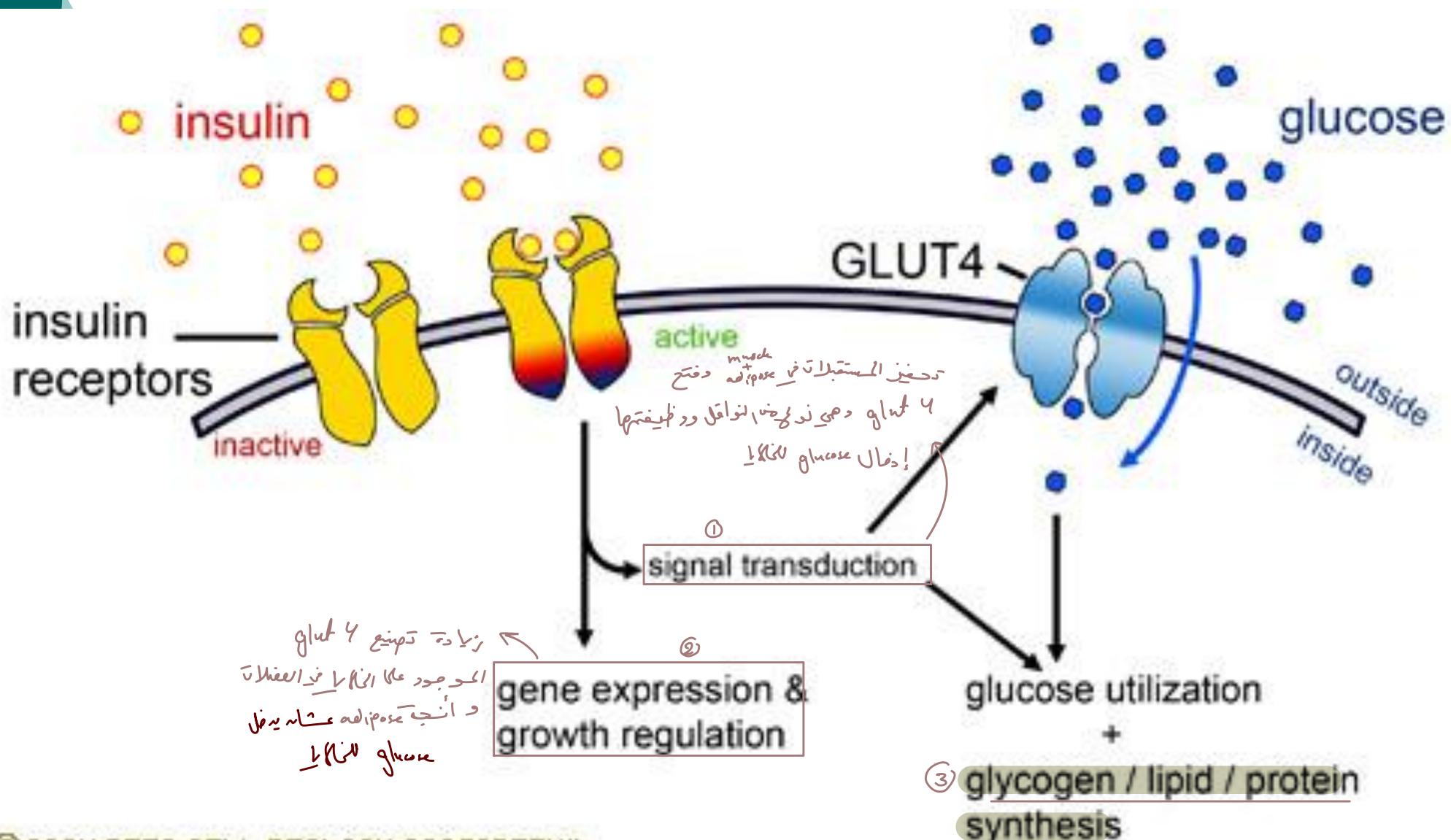


مستقبلات الإنسولين في:
adipose tissue و skeletal muscle

حيثما تم إنتشاره فهو انه الانوشن يطلع الماء وتزيد نسبة في الماء

فبروح كنامنه مختلفه في الجسم مثل insulin receptors في adipose tissue muscles muscle tissue signal transduction gene expression + growth regulation ① ② ③

Effect of Insulin



Effect of Insulin

anabolic
hormone
lipid \rightarrow \downarrow \downarrow
proteins
glycogen
وزن

Effect of Insulin

لَا حُوْلَ وَلَا قُوَّةَ إِلَّا بِاللَّهِ

نفر مني شخص أكل Carbs دمادمك ①

Carbohydrates



التحول من نوع الوجبة إلى

Glucose

- Fructose (2)
- Galactose (3)

Introduction

أَحَمْ فَرْمَعَهُ بَيْنَ الْمُرْعَى هُوَ الْمُسْبِبُ

Type 1 diabetes

مرضٌ مناعيٌّ، بهُ مِنْعَيٌّ مُهَاوِعٌ لِلْأَنْجَادِ
لِلْبَكْرِيَّاتِ مَنْ يَبْطِلُ قَادِرًا عَلَى إِفْرَازِ
in insulin فَخَسِيٌّ، لَا يُنْتَهِي مُدْرَدَةً أَوْ سُدًّا تَلَبِّيَّةً (يَتَكَلُّمُ مَعَهُ مَنْ)

- Most frequently affects children and adolescents.
- Symptoms include excessive thirst, excessive urination, weight loss and lack of energy.
- Daily insulin injections required for survival.

Type 2 diabetes

Type 1
يَتَكَلُّمُ مَعَهُ مَنْ يَنْهَا
يَتَكَلُّمُ مَعَهُ مَنْ يَنْهَا
يَتَكَلُّمُ مَعَهُ مَنْ يَنْهَا
يَتَكَلُّمُ مَعَهُ مَنْ يَنْهَا

- Occurs mainly in adults.
- Usually people have no early symptoms.
- People may require oral hypoglycaemic drugs and may also need insulin injections.

↑
يَتَكَلُّمُ مَعَهُ مَنْ يَنْهَا

أَرْدَةٌ سَكَرِيٌّ

اللَّهُمَّ أَعْزِّ إِلَّا سَلَامٌ وَالْمُسْلِمُونَ

الستخراج Type I بكتير دزنه قليل نحيف لأنها ماعنة انتربا ارجوك جد ١٠ تاليه
 ف بكتير \leftarrow fat metab \leftarrow glucose metab

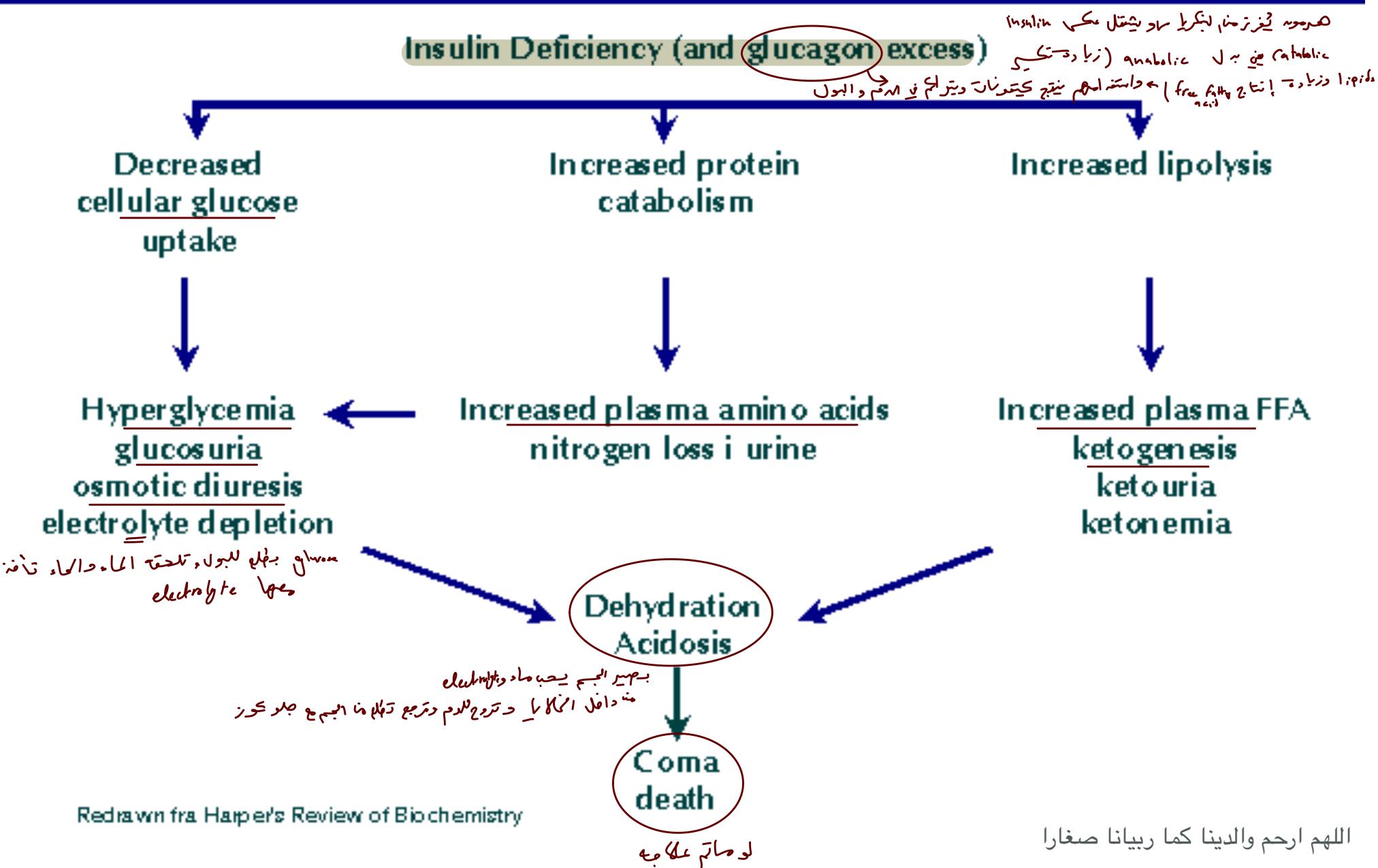
Diabetes mellitus

- Disease in which the body doesn't produce or properly use insulin, leading to hyperglycemia

أحد اسباب معقدم الماء،
 يكبر عمر الماء \rightarrow ونحوه ونكسرو ما تجدد

Main Features	Type I	IDDM	Insulin dependent auto immune disease	NIDDM	non-insulin dependent - Type II - Hyper insulinemia
Epidemiology					
Frequency in Northern Europe		0.02-0.4%			منشر اكبر
Predominance		N. European Caucasians		1-3%	Worldwide
				Lowest in rural areas of developing countries	
Clinical Characteristics					
Age		<30yrs	أهلاك دشبا		
Weight		Low	نحيف		
Onset		Rapid	جنباً دشباً		
Ketosis		Common	المرضا		
Endogenous insulin	كثير	Low/absent	كثياب بفتح		
HLA associations	موجود	Yes	نبا		
Islet cell antibodies	موجود	Yes	نبا		
Pathophysiology					
Aetiology		Autoimmune destruction of pancreatic islet cells		Unclear. Impaired insulin secretion and insulin resistance	
Genetic associations	وجود ارتباط	Polygenic			
Environmental factors	جيئي تجي	Viruses and toxins implicated	مناعة برمون	وراثي اخر	Strong
					عوامل مصيبار \rightarrow Type 2
					عوامل مصيبار \rightarrow Type 2

Diabetic Metabolism



انخفاض مستوي الجلوكوز في الدم تحت المستوي الطبيعي

normal 70-110 mg/dl
prediabetic 110-125 mg/dl
diabetic patient higher than 125

Hypoglycemia

lose of insulin
break fast
more exercise

- Hypoglycemia involves decreased plasma glucose levels
- The plasma glucose concentration at which glucagon and other glycemic factors are released is between 65 and 70 mg/dL; at about 50 to 55 mg/dL, observable symptoms of hypoglycemia appear all related to the central nervous system.
 - The release of epinephrine into the systemic circulation and of norepinephrine at nerve endings of specific neurons act in unison with glucagon to increase plasma glucose.
 - Glucagon is released and inhibits insulin.
 - Epinephrine is released, increases glucose metabolism and inhibits insulin.
 - In addition, cortisol and growth hormone are released and increase glucose metabolism

ما ٤٨٠١٧٦١٧٦١٧٦

بـ مـ سـ كـ

TABLE 13-8 CAUSES OF HYPOGLYCEMIA

PATIENT APPEARS HEALTHY

No coexisting disease

Drugs

Insulinoma

Islet hyperplasia/
nesidioblastosis

Factitious hypoglycemia from
insulin or sulfonylurea

Low sugar ←

Severe exercise

Ketotic hypoglycemia Low carbs

Compensated coexistent

Drugs/disease

PATIENT APPEARS ILL

Drugs

Predisposing illness

Hospitalized patient

لعا^ج م^نك^لا^ه
ي^نت^سم^ا ك^لا^ه ب^ل د^جي^ن ك^لا^ه
5 د^جي^ن ك^لا^ه د^إدا^ه
س^ين^ا 8 ز^م ي^نح^فا^ه د^هر^ا
8 ز^م ي^وع^ف ت^دص^ن د^حول^ا ...

ي^نس^تخ^م ل^ار^باب^ل إ^لي^ل خ^لو^ر إ^لي^ل د^م ك^لا^ه د^م ك^لا^ه EDTA

Laboratory Testing in Diabetes

أ^لو^د م^نا^مس^تا^ه م^اك^لا^ه ف^ل ل^وع^ه

أ^رن^قاع^ل ل^كل^ر د^م ب^ين^ا
ع^ند^ن م^نك^لا^ه ف^ر إ^لف^ل
غ^ل ك^لا^ه ل^ل ك^لا^ه
glucose

Fasting morning venous glucose is the best initial test for diagnosing diabetes.

- An oral glucose tolerance test is reserved for people with equivocal fasting glucose results.
ف^حص^ن ل^ار^ب د^ع ب^ع د^م ك^لا^ه ع^ند^ن أ^شو^ه
م^نك^لا^ه د^م د^فو^ل د^لن^ال^ا
- Patients with impaired glucose tolerance or impaired fasting glucose benefit from lifestyle intervention and annual review.
ال^مل^عه^و د^رج^ع د^ست^في^د د^و و^رج^ع ط^بي^سي^ه
د^بض^لي^ه ي^رج^ع ف^حص^ن ك^ل س^نه^و د^نن^و، ل^ته^رر^ات^ن م^ات^ه

HbA_{1c} is the best test of glycaemic control in diabetes.

م^ن ك^لا^ه د^م ك^لا^ه
ب^ل 7.5% ف^له^ا
ال^ته^مو^را^ت

Patients with diabetes benefit from aggressive monitoring and management of all cardiovascular risk factors.

ال^قر^{اد} د^عه^أ د^عه^أ د^عه^أ د^عه^أ د^عه^أ د^عه^أ د^عه^أ
ب^س م^اع^ند^ن د^ست^في^د د^ل ك^لا^ه
تر^اك^ي (ال^فحص^ن)
ال^أر^{اد} (د^م د^ل ك^لا^ه) د^ل ك^لا^ه م^رب^يم^ه ع^ل
ه^مو^لب^ين^ا و^صي^اة^ه ال^هم^ه 3 أ^نه^ر
ف^ي ب^حص^ن ق^دي^د م^رب^يم^ه د^ل ك^لا^ه ال^هم^ه
أ^خر^ف ق^دي^د م^رب^يم^ه د^ل ك^لا^ه ال^هم^ه
ض^لا^ه 5% - 10% أ^نه^ر 17% ف^له^ا (تر^اك^ي)

People at high risk of diabetes

Unfortunately the risk factors for diabetes, unlike those for cardiovascular disease, have not been quantified.

Factors associated with increased risk for diabetes include:

- Pacific or Indian ethnicity بِكُوْنِ الْعَرِيْفِيْنِ عِرْقَةً هِنْدِيًّا / جُنْزِرِ الْجَمْعِ اِسْهَادِيًّا
- Increasing age
- Metabolic syndrome**
- Impaired glucose tolerance
- Polycystic ovary syndrome الطبِيعِيُّ 3، الْعِوَادِيُّ مَارِكُوْرِ مُرْتَنْ لِوقَتِ طَلَقِنْ فَإِنْتَلْ
- History of gestational diabetes or having a baby over 4 kg كُوْنِيِّ اِجْمَلِيِّ
- Family history of diabetes
- Physical inactivity
- Increased BMI
- Central obesity الْمُنْخَنِيَّةُ اِنْتَهِيَّةُ بِهِ وَهُبَاقِيِّ حَسَبِهِ
- Hypertension
- Adverse lipid profile
- Elevated LFTs كُوْرِتِيزِرُوْنَ (بِرِغْوَلِكِرُونَ) Liver Function tests
- Patients taking some drugs e.g. prednisone or anti-psychotic drugs (haloperidol, chlorpromazine, and newer atypical anti-psychotics).

People at high risk of diabetes

Three or more of the following risk factors listed below are required for a **diagnosis of metabolic syndrome**. **مفتاح** **متabolic syndrome** **لـ** **HDL** **LDL** **triglycerides** **blood pressure** **waist circumference**

نسبة HDL مترتبة على البروتينات (apo A1, apo E، ...) مثلما هو الحال في HDL، ... (in case of HDL، ...) خصائص خصائص.

حُفَّاظ

Risk Factor	Defining Level
Waist circumference* <i>محيط الخصر</i>	<u>Men ≥ 100 cm</u> <u>Women ≥ 90 cm</u> 6
Triglycerides	≥150 mg/dL 5
HDL cholesterol	Men < 40 mg/dL Women < 50 mg/dL 4
Blood pressure	<u>SBP ≥ 130</u> 3 <u>DBP ≥ 85</u> 2
Fasting glucose	≥ 100 mg/dL 1

People with the metabolic syndrome are at increased risk of diabetes, cardiovascular disease, sub-fertility and gout despite only moderate elevation in individual risk factors.

*It is likely that people of Indian ethnicity will have features of the metabolic syndrome at lesser waist circumferences than people of European or Pacific ethnicity.

Prevention and identification

Opportunities for prevention

Both impaired glucose tolerance (IGT) and impaired fasting glucose (IFG) refer to metabolic stages intermediate between normal glucose homeostasis and diabetes, in which there is an increased risk of progressing to diabetes.

Who to test

Asymptomatic people without other known risk factors, Men (45 years) and women (55 years)

لما يزيد عمركم تقارب 45 و 55 و ترددوا في انتظامكم في تناولكم

People with one or more risk factors, Men (35 years) and women (45 years)

metabolic syndrome factors

Testing for diabetes

- Fasting morning blood glucose is the best initial test. \rightarrow tolerance test
- Urine glucose should not be used for diagnosis while $\text{HbA}_{1\text{C}}$ can be used according to the new protocols

البول يستخدم للـ diagnosis و prognosis

$\text{Hb A}_{1\text{C}}$ diagnosis يستخدم للـ

(الناس) ياجعهم ارتفاع سكر بدمائهم لا يكرامهم بالضمور

People with symptomatic hyperglycaemia

بعد ما ظهرت الأعراض هنا دراجع اميريفن الطبيبين ، 8 زم تتأكد هل هو مردفيه سكر فعلياً او شو ؟

جد ١ عند Hyperglycemia كائنة الارتفاع في دم أنسجةهم فجائية

Symptomatic hyperglycaemia may have an acute onset, usually in younger people with type 1 diabetes, or a more insidious onset, usually in older people with type 2 diabetes. The usual symptoms of hyperglycaemia are thirst, polyuria and weight loss but hyperglycaemia can also cause fatigue, lack of energy, blurring of vision or recurrent infections, such as candida.

بعض yeasts يفكوا البيضة قبل نهاد لذتها في دماغه منه سكريتير زين دم سريغها السكري، فـا نهاد يزيد من خطر الإلتهاب بالعدوى

For people with symptomatic hyperglycaemia,

*a single **fasting** glucose of ≥ 126 mg/dl*

OR

← داحد منا الالذين كانوا من اصحابكم

بىن دىكىو ~ اىكل دى جهاز
اىنپرپرس ~ اىل يوم اىل خىچى منى
a **random** glucose of ≥ 200 mg/dl
is diagnostic of diabetes.

الحمد لله الذي عافانا مما ابتلى به غربنا

إذا كان المريض مصاباً
بـ Hyperglycemia

الله حکوره حکت گز زم انذاخ
متن سخن دمه مه فلامان خصه آفر
لعنی علی الائمه محسنه عتاه امکی هاد
تشخیص مه سخنی عافنا ائمه دایایم

Action following fasting venous plasma glucose

Criteria have been recommended by ADA for the diagnosis of diabetes, IGT and IFG.

Tolerance ↘ *Fasting*

های نتایج انتخاب اولیه زیست مایه فرود

	Normal		Diabetes
Fasting glucose result	≤ 110	110-125	$\geq 126 \text{ mg/dl}$ <i>های خلاصه تئویج میگیری</i>
Interpretation	Normal result	IFG <i>میکد میکد میکد</i>	Diabetic
Action <i>3 risk factors</i>	Retest in <i>five</i> years or <i>three</i> years for those at risk. <i>اوامانه عده ۵</i> <i>اوامانه عده ۳</i> <i>risk factors</i>	Assess with OGTT. <i>کل</i> <i>انually</i> those with IFG or IGT	Two results > 126 on two different days are diagnostic of diabetes. OGTT is not required.

کل + تغییر

IFG : Impaired fasting glucose

IGT : tolerance glucose

علل اعلیاب
ماده میانه
اعراض