In The name of God

Diabetes Mellitus

- Type 1
- Type 2
- GDM
- Other
  - MODY
  - Impaired insulin function
  - pancreatitis
  - Down syndrome
  - Huntington , Prader willi
  - infection

برای چه افـــرادی
آزمایـــش دیـــابت
درخواست کنیـــم ؟

screening

Diabetes Mellitus

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Symptoms ?

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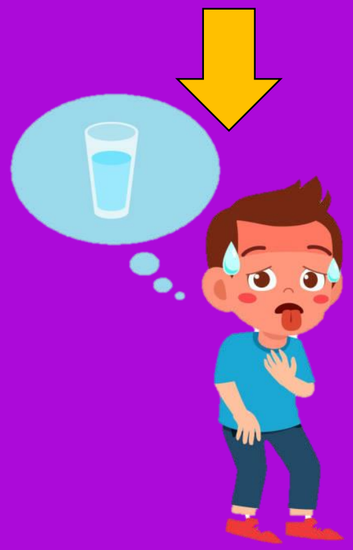
symptoms

P



polydipsia ***polyuria*** ***polyphagia***

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ATTENTION!

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Screening

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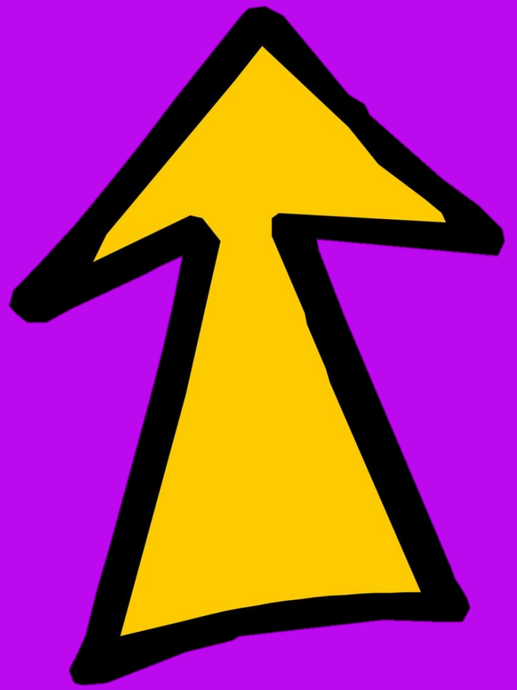
35 Years

&



$BMI \geq 25\ kg/m^2$

$BMI \geq 23\ kg/m^2$

Asian Americans

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1 or more following risk factors

First-degree relative with diabetes

High-risk race/ethnicity (eg , African American, Latino, Native American, Asian American, Pacific Islander)

History of CVD

Hypertension (≥140/90 mmHg or on therapy for hypertension)

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HDL cholesterol level <35 mg/dl (0.90 mmol/L) and/or a triglyceride level >250 mg/dl (2.82 mmol/L)

History of PCOS

Physical inactivity

Other clinical conditions associated with insulin resistance (eg, severe obesity, acanthosis nigricans)

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Prediabetes

- IFG
- IGT
- HbA1C ≥ 5.7 %

*The patients Should be tasted **yearly***

GDM

History

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should have lifelong testing at least every 3 years

HIV

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If results are normal, testing should be repeated at a minimum of 3-year intervals, with consideration of more frequent testing depending on initial results and risk status.

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Criteria for testing for diabetes or prediabetes in asymptomatic adults

1. Testing should be considered in overweight or obese (BMI ≥25 kg/m^2 or ≥23 kg/m^2 in Asian Americans) adults who have 1 or more of the following risk factors:
   - First-degree relative with diabetes
   - High-risk race/ethnicity (eg, African American, Latino, Native American, Asian American, Pacific Islander)
   - History of CVD
   - Hypertension (≥140/90 mmHg or on therapy for hypertension)
   - HDL cholesterol level <35 mg/dL (0.90 mmol/L) and/or a triglyceride level >250 mg/dL (2.82 mmol/L)
   - History of PCOS
   - Physical inactivity
   - Other clinical conditions associated with insulin resistance (eg, severe obesity, acanthosis nigricans)
2. Patients with prediabetes (A1C ≥5.7% [39 mmol/mol], IGT, or IFG) should be tested yearly.
3. Patients with a history of GDM should have lifelong testing at least every 3 years.
4. For all other patients, testing should begin at age 35 years.
5. If results are normal, testing should be repeated at a minimum of 3-year intervals, with consideration of more frequent testing depending on initial results and risk status.
6. Persons with HIV.

BMI: body mass index; CVD: cardiovascular disease; HDL: high-density lipoprotein; PCOS: polycystic ovary syndrome; A1C: glycated hemoglobin; IGT: impaired glucose tolerance; IFG: impaired fasting glucose; GDM: gestational diabetes mellitus; HIV: human immunodeficiency virus.

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Diabetes Mellitus

FBS

HbA_1C

OGTT

RBS

آزمایش های
تشخیصی دیابت

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Test 1

FBS

FBS

Fasting Blood Sugar

Or

FPG

Fasting Plasma Glucose

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FBS < 99

Normal

100 < FBS < 125

IFG

prediabetes

FBS > 126

Diabetes

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***Fasting** is defined as no caloric intake for at least 8 hours*

2:00

10:00

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FBS ≤ 99

Or

100 ≤ FBS ≤ 125

Or

FBS ≥ 126

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FBS < 99

Normal

ATTENTION!

100 ≤ FBS ≤ 125

repeat

if

100 ≤ FBS ≤ 125

Prediabetes

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FBS ≥ 126

repeat

if

FBS ≥ 126

Diabetes

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Test 2

HbA1C

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What is HbA1C

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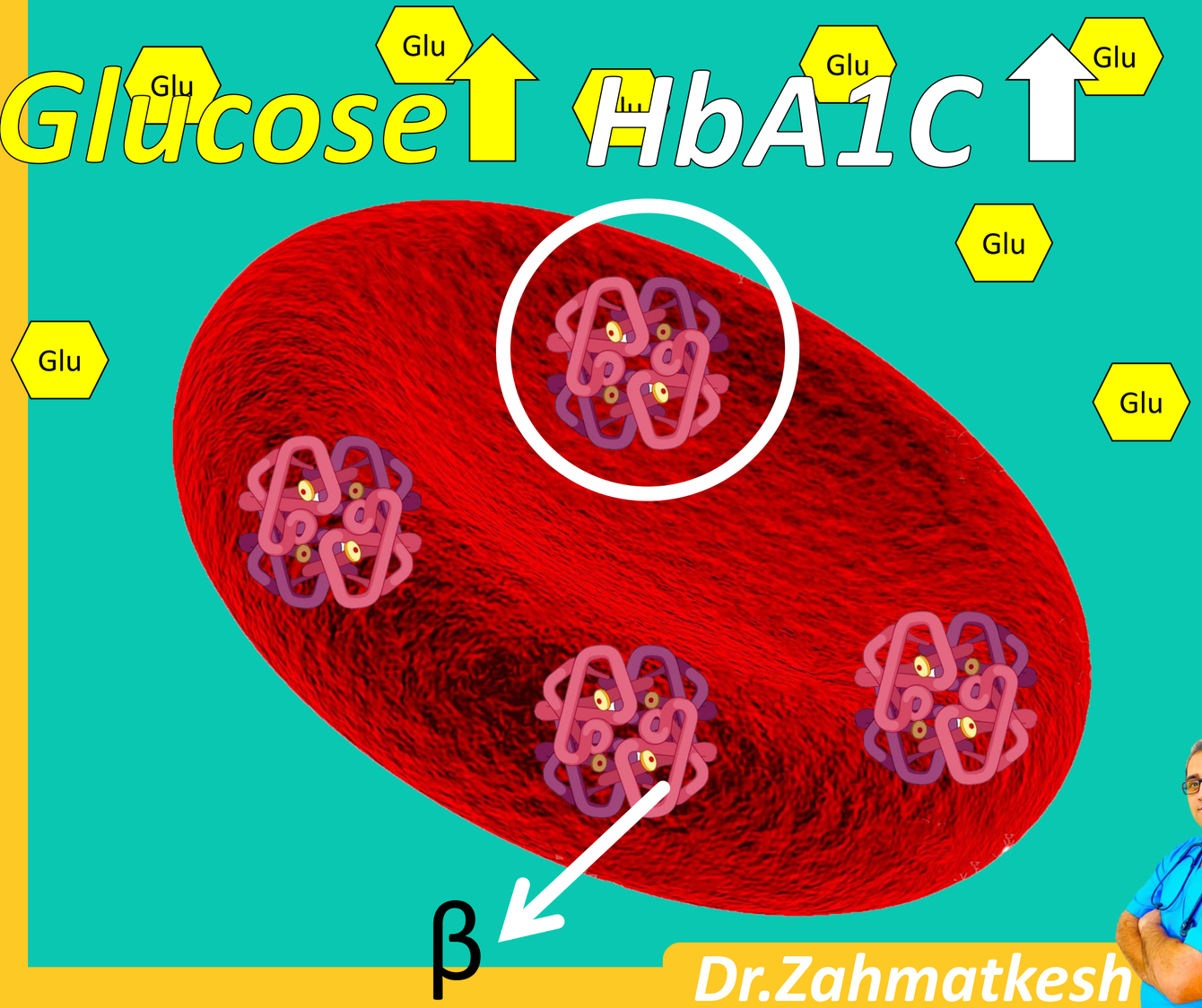
Glucose ↑ HbA1C ↑



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ATTENTION!

Cardio vascular

Show what your average blood sugar level

For the past 2 to 3 month

Use for

- Diabetes diagnosis
- Follow up treatment

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A1C

HbA1C

glycohemoglobin

glycosylated hemoglobin

Other names

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NGSP

National Glycated hemoglobin Standardization Program

DCCT %

Diabetes Control and Complications Trial

IFCC *mmol / mol*

International Federation of Clinical Chemistry

HbA1C < 5.7%

Normal

5.7% < HbA1C < 6.4%

prediabetes

HbA1C ≥ 6.5%

Diabetes

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You do not need to fast

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HbA1C < 5.7%

Or

5.7% ≤ HbA1C ≤ 6.4%

Or

HbA1C ≥ 6.5%

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HbA1C < 5.7%

Normal

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5.7% < HbA1C < 6.4%

repeat

if

5.7% < HbA1C < 6.4%

Prediabetes

HbA1C ≥ 6.5%

repeat

if

HbA1C ≥ 6.5%

Diabetes

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Red cell turnover changing

Hemoglobin variants

Chronic kidney disease

For Example!

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HbA1C	7%
FBS	140

For Example!

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HbA1C	7.5%
FBS	87

Test 3

OGTT

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What is OGTT

Oral Glucose Tolerance Test

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Fasting ?

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You do not need to fast

How is OGTT done ?

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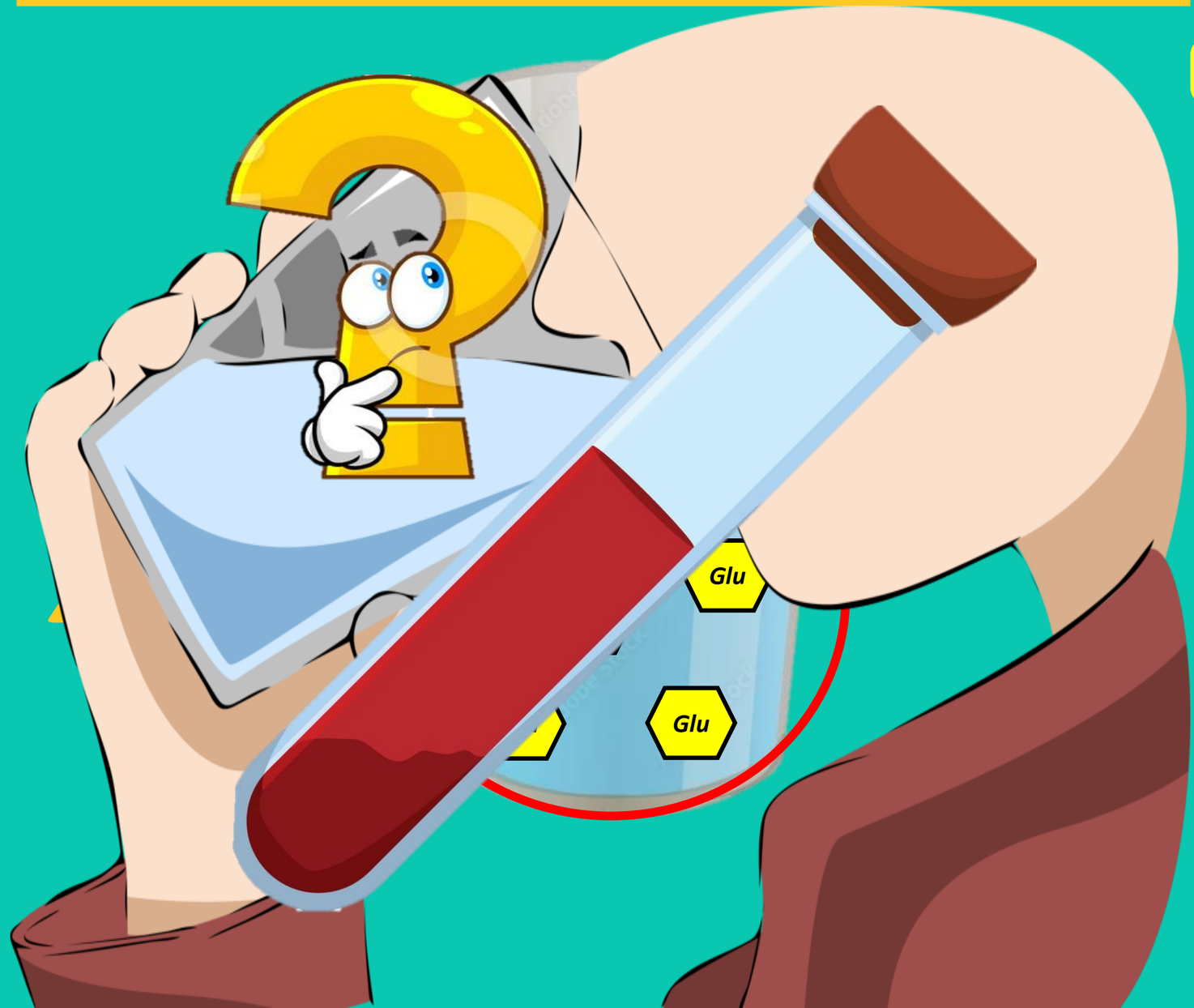

OGTT < 139 mg/dl

Normal

140 < OGTT < 199

prediabetes

IGT

OGTT > 200

Diabetes

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HbA1C < 139

Normal

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140 ≤ OGTT ≤ 199

repeat

if

140 ≤ OGTT ≤ 199

Prediabetes

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OGTT ≥ 200

repeat

if

OGTT ≥ 200

Diabetes

For Example!

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HbA1C	7.5%
OGTT	220

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For Example!

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HbA1C	5.4%
OGTT	210

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For Example!

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HbA1C	5.6%
OGTT	390

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Test 4

RBS

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What is RBS

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Random

Blood

Sugar

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A random sample is a sample that is taken without considering the time of the last meal.

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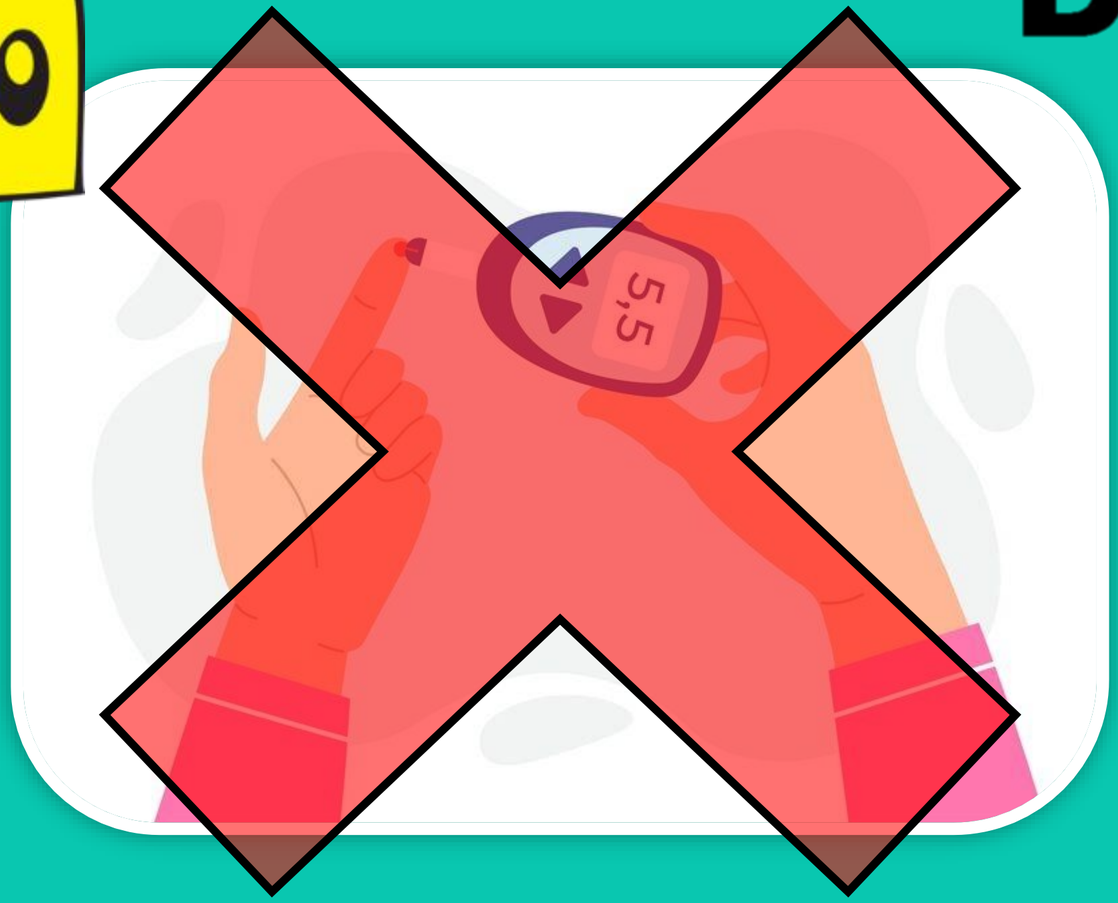

Diagnosis

How is RBS done ?

P

polydipsia *polyuria* *polyphagia*

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Diagnosis

Symptoms

+

BS ≥ 200

In lab

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For Example!

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BS 208

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American Diabetes Association criteria for the diagnosis of diabetes

1. A1C ≥6.5%. The test should be performed in a laboratory using a method that is NGSP certified and standardized to the DCCT assay.* **OR**
2. FPG ≥126 mg/dL (7 mmol/L). Fasting is defined as no caloric intake for at least 8 hours.* **OR**
3. 2-hour plasma glucose ≥200 mg/dL (11.1 mmol/L) during an OGTT. The test should be performed as described by the World Health Organization, using a glucose load containing the equivalent of 75 g anhydrous glucose dissolved in water.* **OR**
4. In a patient with classic symptoms of hyperglycemia or hyperglycemic crisis, a random plasma glucose ≥200 mg/dL (11.1 mmol/L).

A1C: glycated hemoglobin; NGSP: National Glycohemoglobin Standardization Program; DCCT: Diabetes Control and Complications Trial; FPG: fasting plasma glucose; OGTT: oral glucose tolerance test.

* In the absence of unequivocal hyperglycemia, diagnosis requires two abnormal test results from the same sample or in two separate test samples.

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Graphic 61853 Version 18.0

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آیا افراد پره دیابت
نیاز به درمان دارند؟

prediabetes

Diabetes Mellitus

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Prediabetes

$100 \leq FBS \leq 125$

$5.7\% \leq HbA1C \leq 6.4\%$

$140 \leq OGTT \leq 199$

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Life style

OR

Modification lifestyle

7%

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Activities

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aerobic

At least 3 times in week and each time 50 min

Moderate to severe

Cardiovascular examination

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When should the patient take medicine?

1

Modification lifestyle

2

$BMI \geq 35\ kg/m^2$ + $25 \leq age \leq 59$

3

$FBS > 110$ $HbA1C > 6\%$

4

GDM

ASA

Lipid

BP

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ASA

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ATTENTION!

ASA

GIB

PUD

H.pylori

Anaphylaxis

Asthma

Rhinitis allergic

Nasal polyp

CVD

- CABG
- ACS
- PCI
- MI
- CVA
- Aneurysm
- Limbs ischemia

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No CVD but RF +

- smoking
- Albuminuria
- GFR<60
- HTN or using drugs because BP control
- CVD in first degree relative
  - Father or brother < 55
  - Mother or sister < 65

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controversy

Dose

75 -162 mg/day

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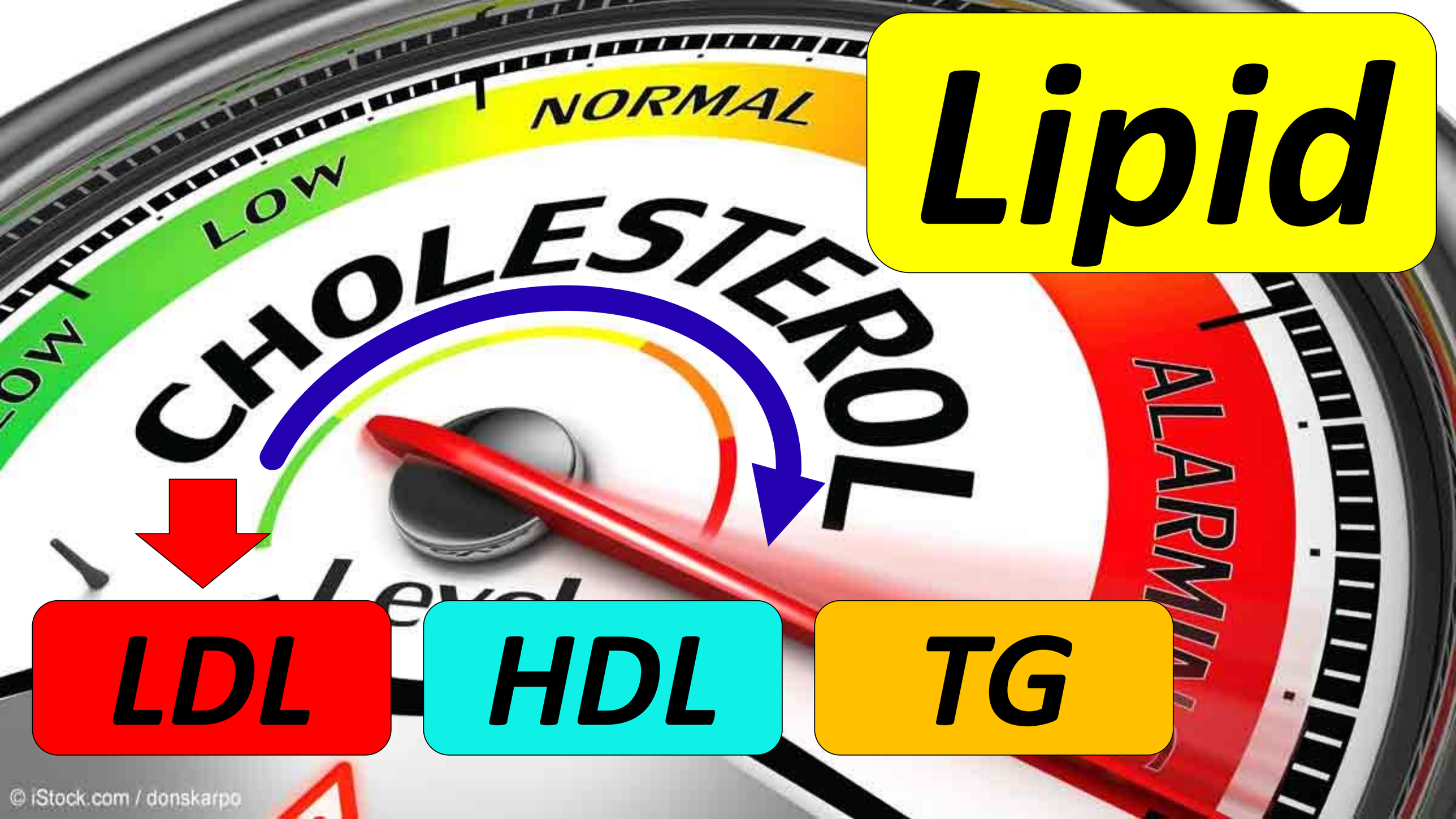
Lipid
LDL
HDL
TG
CHOLESTEROL
NORMAL
LOW
ALARMING
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Rx
Atorvastatin Tablets IP
Atorva™ 80
एटोर्वा ८०
To report adverse eve
visit www.zyduscadila
-Prescription only.
-Avoid taking this medicine during pregnancy and lactation.
30 F.C. Tablets
Atorvastatin 40
40 mg
Each tablet contains:
Atorvastatin (as calcium trihydrate) 40 mg
Atorvastatin
20
ATORBAN® 20
Atorvastatin
Each Tablet Contains:
Atorvastatin (as calcium trihydrate) 20m
30 Scored F.C. Tablets
-Prescription only.
-Avoid taking this medicine during pregnancy and lactation.
F.C. Tablets
Atorvastatin 10
10 mg
Each tablet contains:
Atorvastatin (as calcium trihydrate) 10 mg
Atorvastatin
10
Caja con 30 tabletas
CRESTOR®
rosuvastatina
Tabletas
40 mg
AstraZeneca
30 F.C. Tablets
Rosuvastatin 20 mg
Rosuvastatin
20 mg
Each tablet Contains:
Rosuvastatin (as calcium) 20mg
Aburaihan
30 F.C. Tablets
Rosuvastatin 10 mg
Rosuvastatin
10 mg
10mg
Prescription only.
Avoid taking this medicine during pregnancy and lactation.
C. Tablets
Rosuvastatin 5
5 mg
Each Tablet contains:
Rosuvastatin (as Calcium) 5 mg

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High Intensity

50 %

Moderate Intensity

30% -49%

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- Astatin
  - Atorvastatin
    - High Intensity — 40 , 80
    - Moderate Intensity — 10 , 20
  - Rosuvastatin
    - High Intensity — 20 , 40
    - Moderate Intensity — 5 , 10

How should it be used ?

$age \geq 40$

OR

$age < 40$

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1

age ≥ 40 + CVD

- CABG
- ACS
- PCI
- MI
- CVA
- Aneurysm
- Limbs ischemia

Atorvastatin	40 , 80
Rosuvastatin	20 , 40

→ **High Intensity**

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2

age≥40

No CVD

RF +

- smoking
- Albuminuria
- GFR<60
- HTN or using drugs because BP control
- CVD in first degree relative
  - Father or brother < 55
  - Mother or sister < 65

Atorvastatin	40 , 80
Rosuvastatin	20 , 40

→ **High Intensity**

age≥40

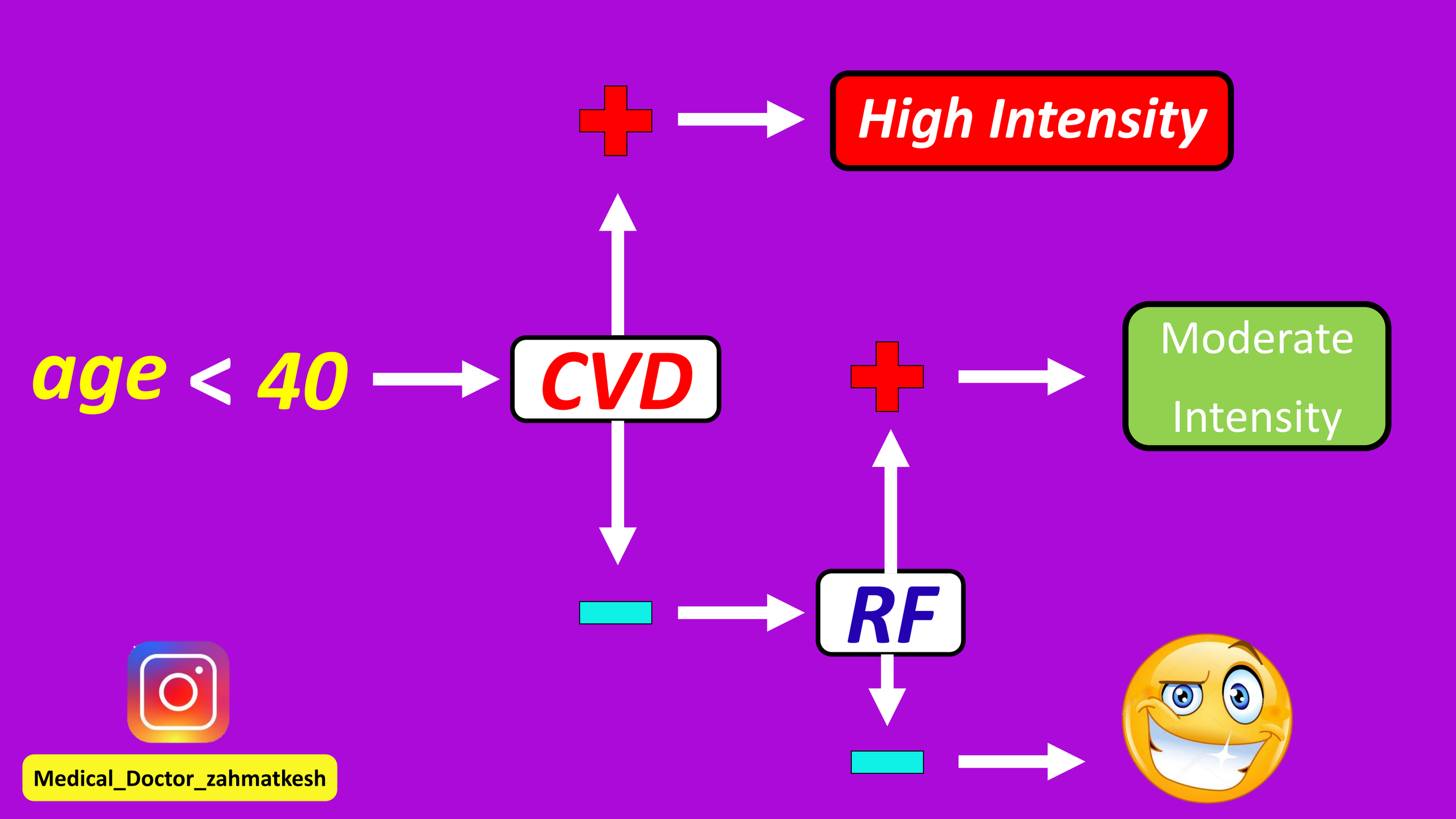
No CVD

NO RF

Moderate Intensity

Atorvastatin 10 , 20

Rosuvastatin 5 , 10


High Intensity
age < 40
CVD
Moderate Intensity
RF
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Proper Blood pressure

SBP < 130

And

DBP < 90

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drugs

ACEI

ARB

CCB

Diuretic

	Spot urine (Mg/g) Alb/Cr	24h Urine (Mg)
Normal	< 30	< 30
Moderate albuminuria	30-299	30-299
Severe albuminuria	≥ 300	≥ 300

3 month >>>>> *6 month*

check

1 → 2 → 3

+ + + *OR* + +

Albuminuria

False-positive albuminuria ?

- fever
- Heavy activities
- menstruation
- CHF
- Not controlled BS
- hematuria
- UTI
- Drugs
- Alkaline urine
- dehydration

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Indication of using ACEI or ARB in diabetes

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SBP > 130

Or / And

DBP > 80

+

Albuminuria

SBP < 130

And

DBP < 80

+

Severe Albuminuria

SBP > 130

Or / And

DBP > 80

+

CVD

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GOOD LUCK
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