

# metabolic syndrome& hypertention

- Dr. ehsan sekhavati moghadam
- Dr. mehrzad naseri

## Patient history -1

CC: -

- Male
- 56 years
- Smoker (15 cigarette /day from 20 years ago)
- HTN (for 6 years ago)

DH: tab Atenolol 50 mg/BD& tab hydrochlorothiazide 25mg ½ daily (nightly)

FH: -

P.E: weight= 85 kg

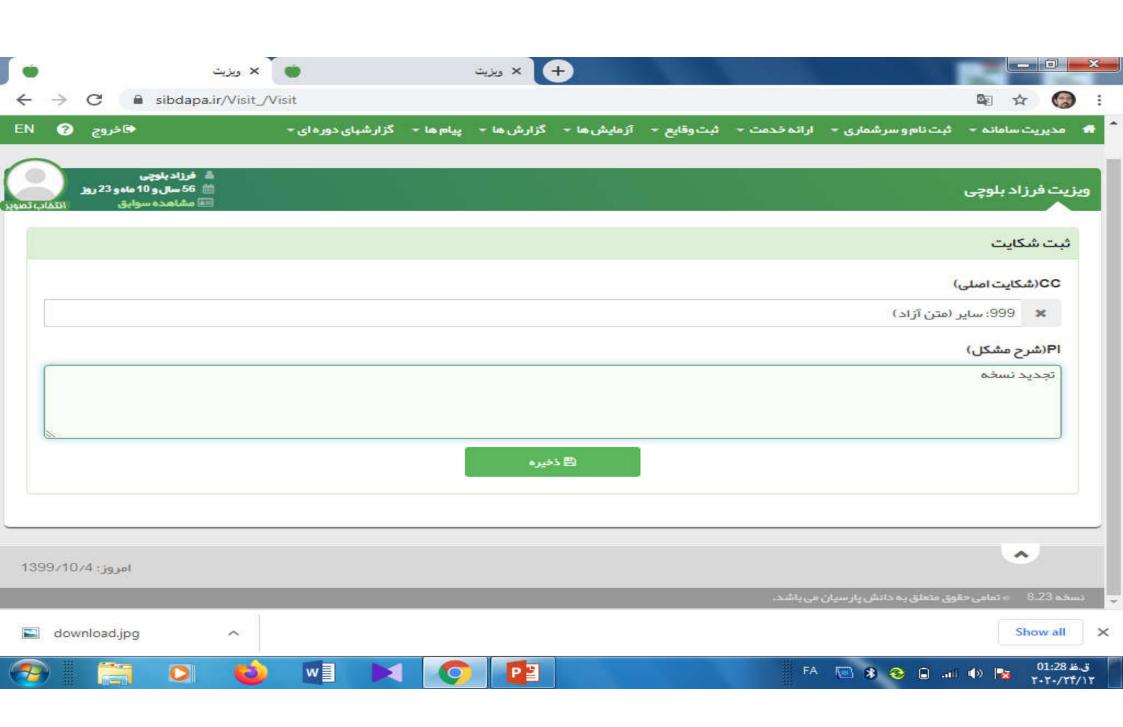
height=170 cm

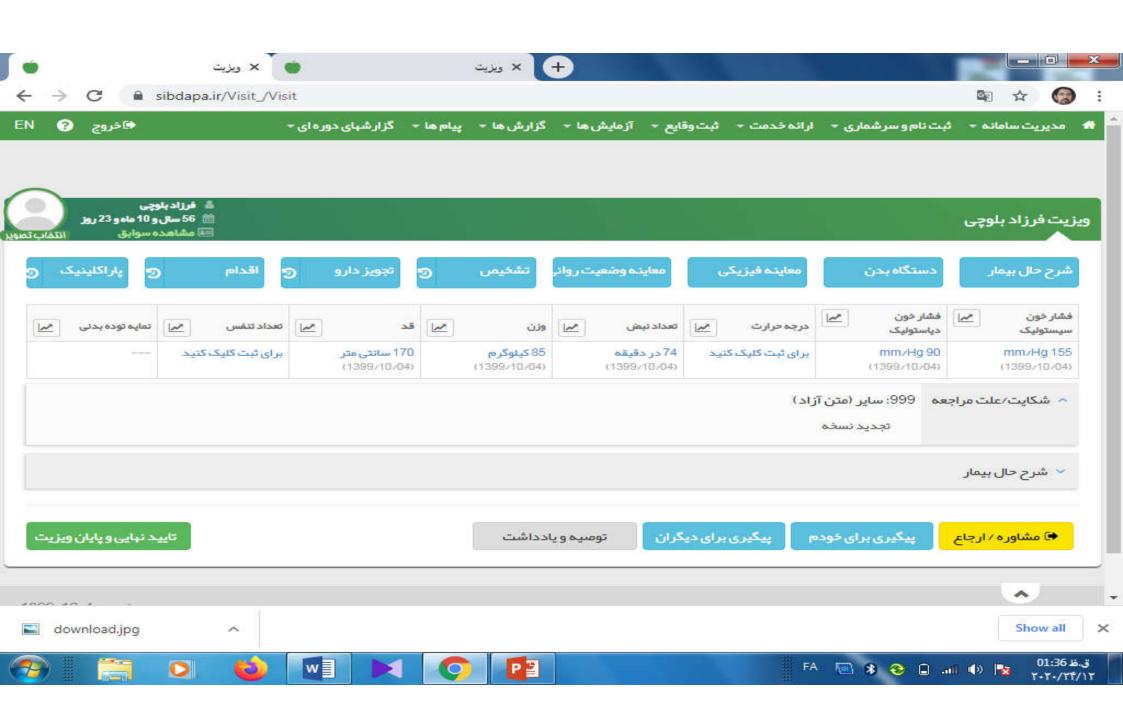
PR= 74

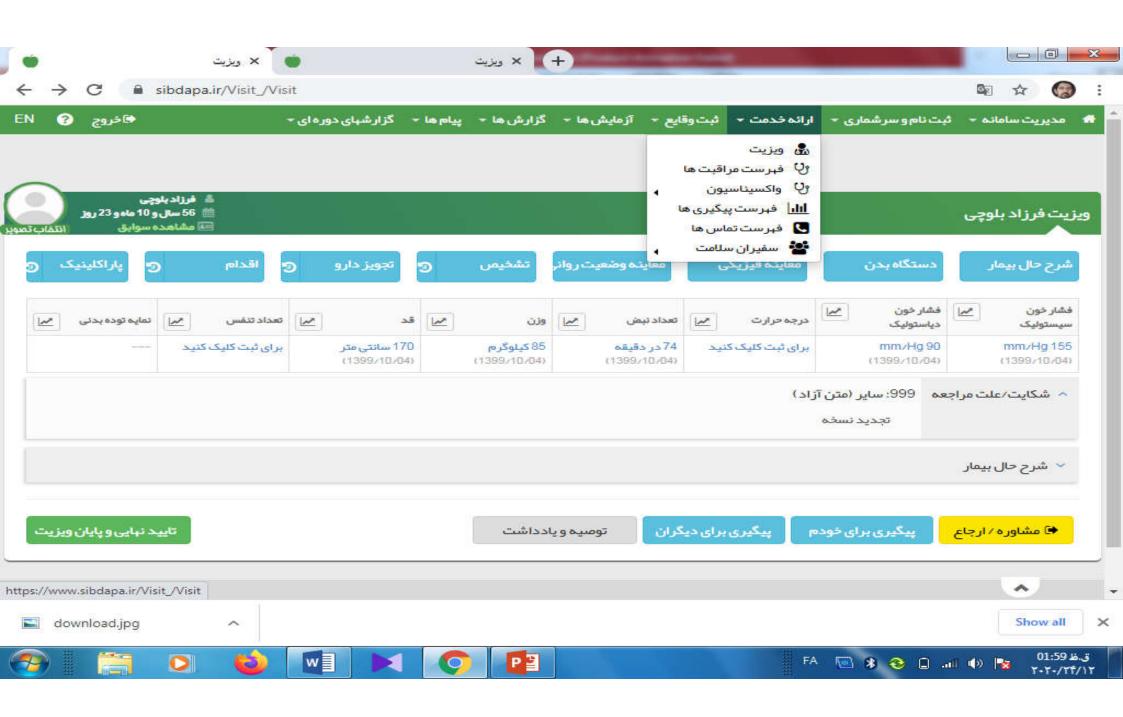
BP=155/90

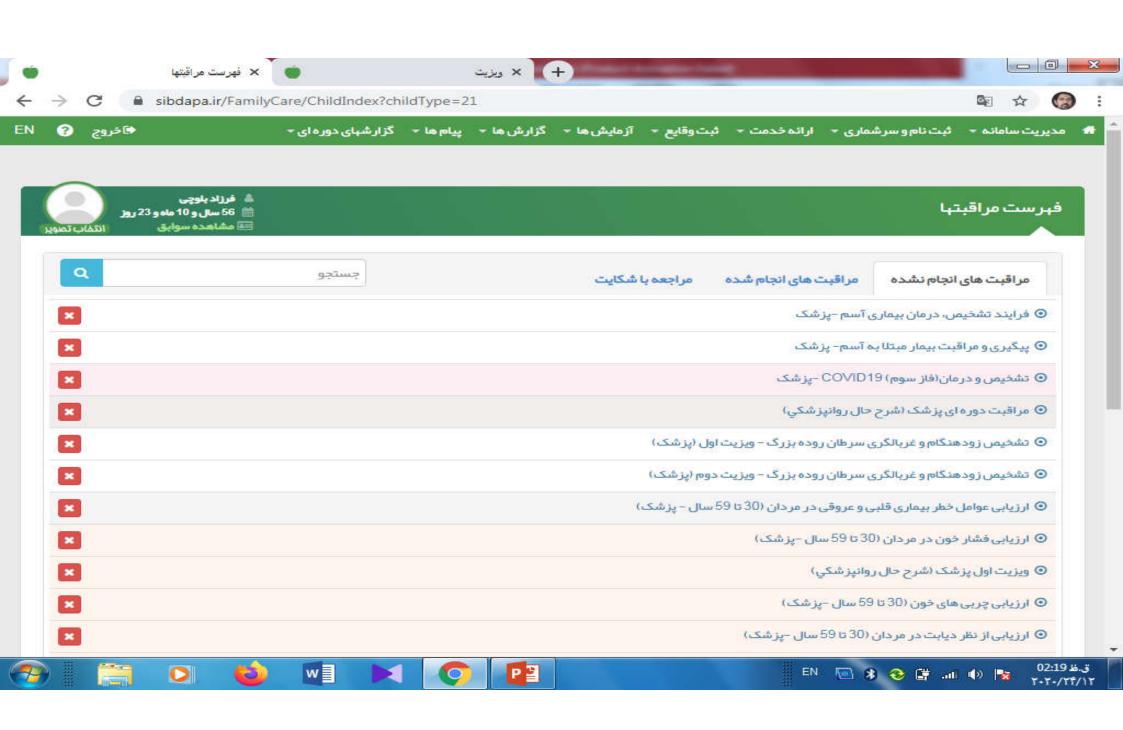
waist circumference= 98 cm

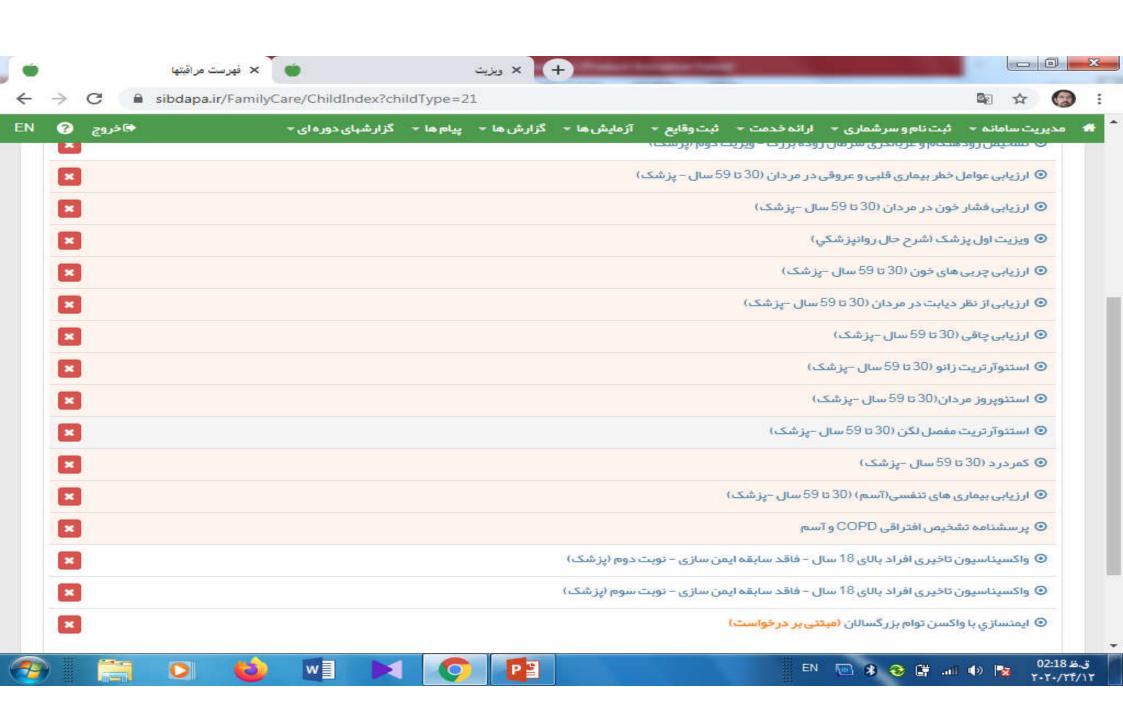
BMI=29/4

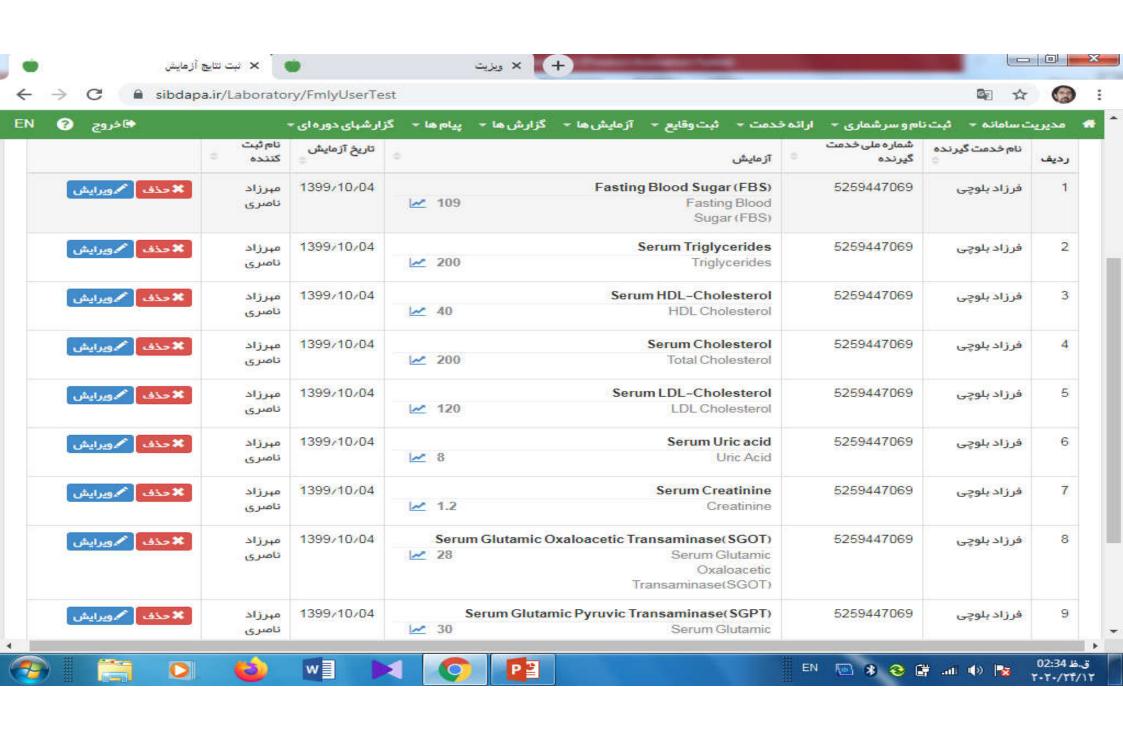












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#### Five definitions of the metabolic syndrome

Parameters	NCEP ATP3 2005*	IDF 2006	EGIR 1999	WHO 1999	AACE 2003
Required		Waist ≥94 cm (men) or ≥80 cm (women) ¶	Insulin resistance or fasting hyperinsulinemia in top 25 percent	Insulin resistance in top 25 percent A; glucose ≥6.1 mmol/L (110 mg/dL); 2-hour glucose ≥7.8 mmol/L (140 mg/dL)	High risk of insulin resistance of BMI ≥25 kg/m or waist ≥102 cm (men) or ≥88 cm (women)
Number of abnormalities	≥3 of:	And ≥2 of:	And ≥2 of:	And ≥2 of:	And ≥2 of:
Glucose	≥5.6 mmol/L (100 mg/dL) or drug treatment for elevated blood glucose	≥5.6 mmol/L (100 mg/dL) or diagnosed diabetes	6.1-6.9 mmol/ (110- 125 mg/dL)		≥6.1 mmol/L (110 mg/dL); ≥2-hour glucose 7.8 mmol/L (140 mg/dL)
HDL cholesterol	<1.0 mmol/L (40 mg/dL) (men); <1.3 mmol/L (50 mg/dL) (women) or drug treatment for low HDL- C <sup>5</sup>	<1.0 mmol/L (40 mg/dL) (men); <1.3 mmol/L (50 mg/dL) (women) or drug treatment for low HDL- C	<1.0 mmol/L (40 mg/dL)	<0.9 mmol/L (35 mg/dL) (men); <1.0 mmol/L (40 mg/dL) (women)	<1.0 mmol/L (40 mg/dL) (men); <1.3 mmol/L (50 mg/dL) (women)
Triglycerides	≥1.7 mmol/L (150 mg/dL) or drug treatment for elevated triglycerides §	≥1.7 mmol/L (150 mg/dL) or drug treatment for high triglycerides	or ≥2.0 mmol/L (180 mg/dL) or drug treatment for dyslipidemia	or ≥1.7 mmol/L (150 mg/dL)	≥1.7 mmol/L (150 mg/dL)
Obesity	Waist ≥102 cm (men) or ≥88 cm (women) ¥		Waist ≥94 cm (men) or ≥80 cm (women)	Waist/hip ratio >0.9 (men) or >0.85 (women) or BMI ≥30 kg/m <sup>2</sup>	
Hypertension	≥130/85 mmHg or drug treatment for hypertension	≥130/85 mmHg or drug treatment for hypertension	≥140/90 mmHg or drug treatment for hypertension	≥140/90 mmHg	≥130/85 mmHg

NCEP: National Cholesterol Education Program; IDF: International Diabetes Federation; EGIR: Group for the Study of Insulin Resistance; WHO: World Health Organization; AACE: American Association of Clinical Endocrinologists; HDL: high density lipoprotein; BMI: body mass index.

- Most commonly agreed upon criteria for metabolic syndrome (any three of five risk factors).
- ¶ For South Asia and Chinese patients, waist ≥90 cm (men) or ≥80 cm (women); for Japanese patients, waist ≥90 cm (men) or ≥80 cm (women).
- Δ Insulin resistance measured using insulin clamp.
- High risk of being insulin resistant is indicated by the presence of at least one of the following: diagnosis of CVD, hypertension, polycystic ovary syndrome, non-alcoholic fatty liver disease or acanthosis nigricans; family history of type 2 diabetes, hypertension of CVD; history of gestational diabetes or glucose intolerance; nonwhite ethnicity; sedentary lifestyle; BMI 25 kb/m² or waist circumference 94 cm for men and 80 cm for women; and age 40 years.
- § Treatment with one or more of fibrates or niacin.
- ¥ In Asian patients, waist ≥90 cm (men) or ≥80 cm (women).



### The metabolic syndrome (ins...

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#### THERAPY

Lifestyle modification

- Diet
- Expercise

Prevention of type 2 disbetes

Oral hypoglycemic agents

Cardiovascular risk reduction

- Lipid lowering
- Antihypertensive therapy

: metabolic

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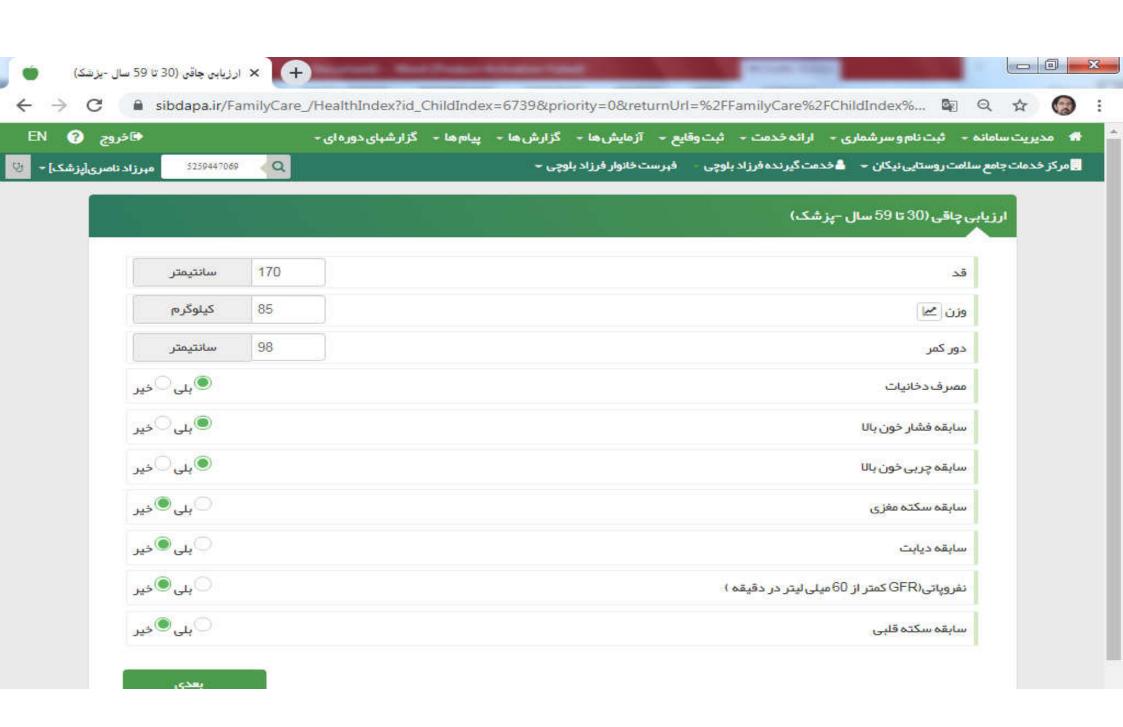
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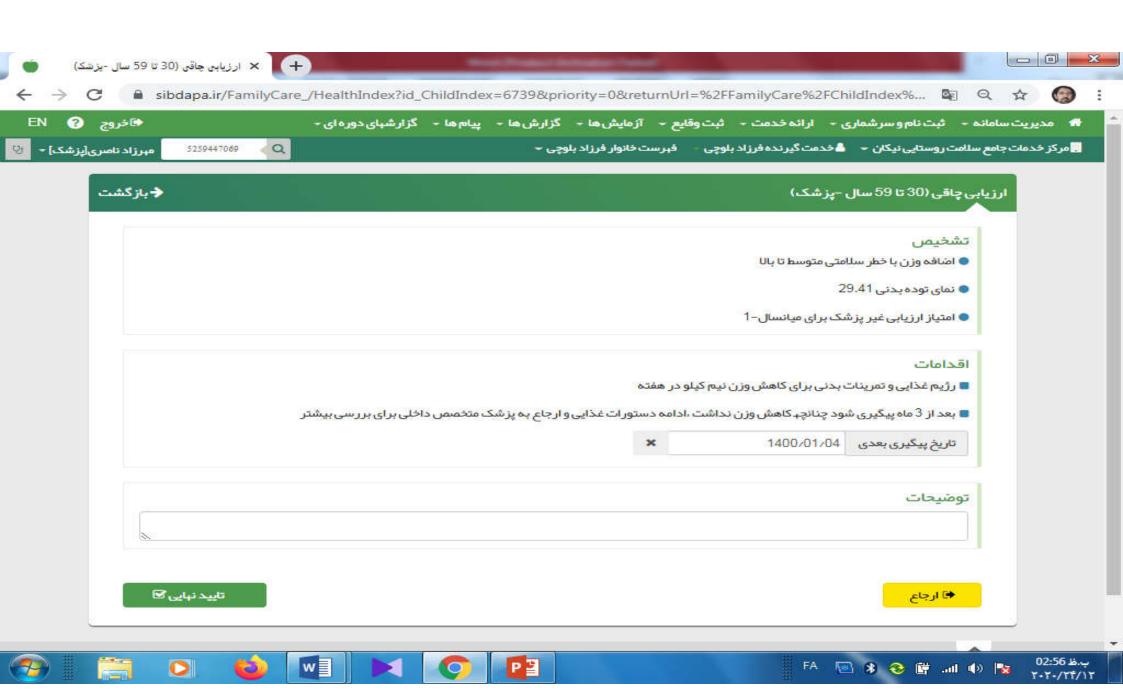
inactivity)

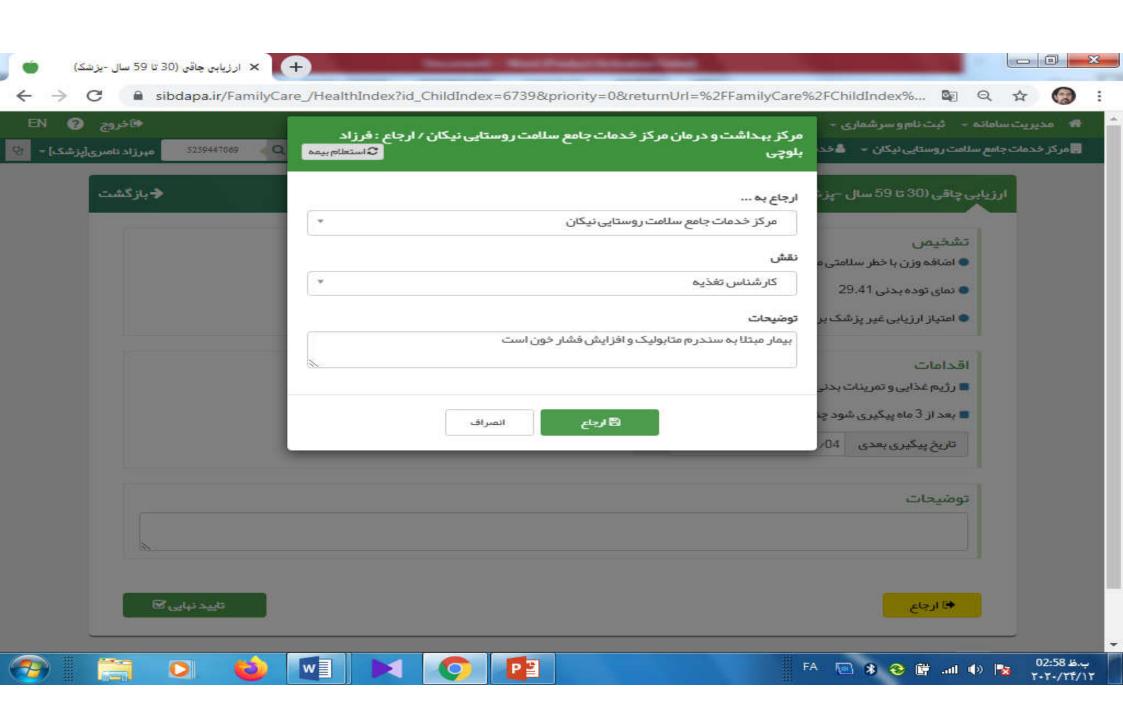
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#### diet

- ✓ The Mediterranean (high in fruis. vegetables. Nuts. whole grains and olive oil)
- ✓ DASH (daily sodium intake limited to 2400 mg and higer in dairy intake
- ✓ Foods with low glycemic index(whole grains. fruits and vegetables and eliminating high- glycemic beverages
- ✓ A high fiber diet ≥ 30 gr/day

### exercise

- Current physical activity guidelines recommended practical. regular and moderate regimens for exercise
- The standard exercise recommendation is a daily minimum of 30 minutesof moderate- intensity physical activity 9 such as brisk walking

# Oral hypogiycemic agents

- Biguanides (Metformin)
- Thiazolidinedios (rosiglitazone- pioglitazone)

## QUITTING SMOKING

- PREPARING TO QUIET
- BEHAVIORAL CHANGES
- MEDICATIONS
- RELAPS

# Lipid lowering

Statin thrapy

# Anti hypertensive therapy

- ACE inhibitors
- ARBs

