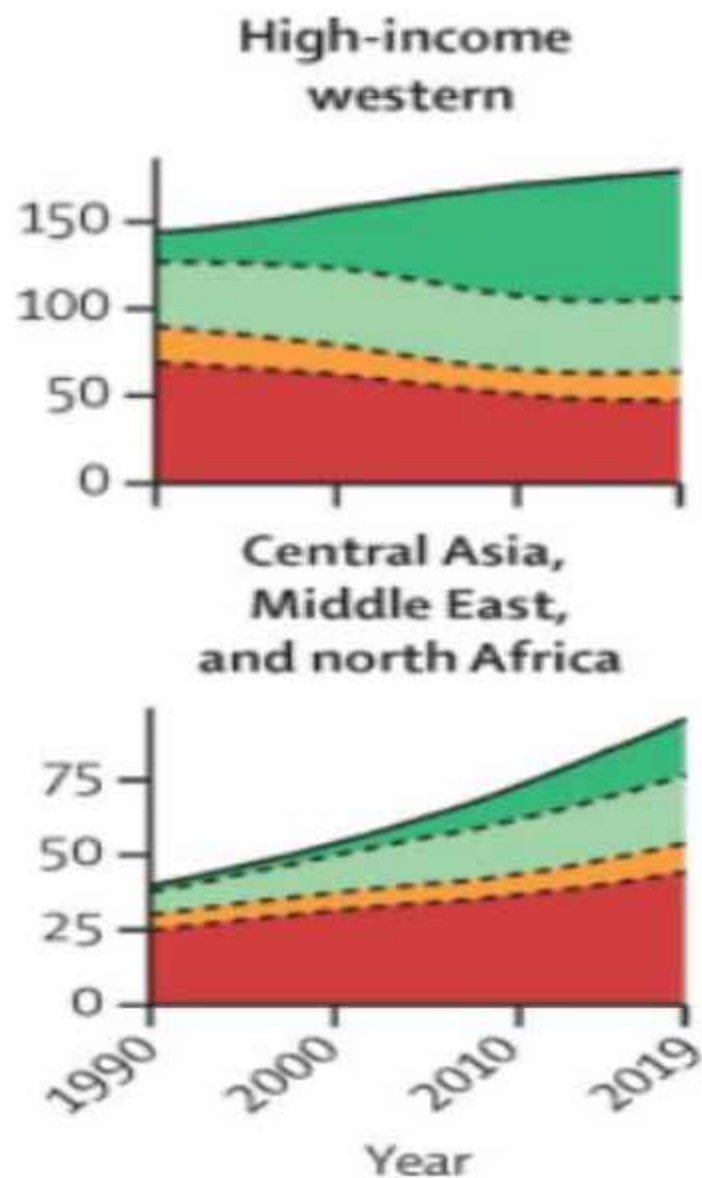


CVD PREVALENCE - HTN



1200 studies in 184 countries (104 million participants), covering 99% of the world's population- 1990-2021

Hypertension treatment cascade (30-79yrs) :

Detection:

Diagnosed 47-59%

Un diagnosed 41-49%,

Treatment:

Dx with treatment 38-47%

Dx without treatment:11-12%

Control:

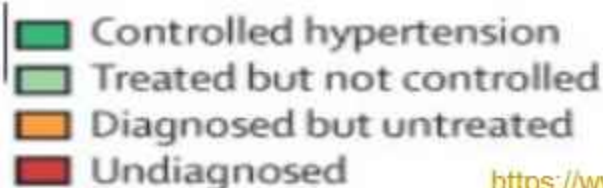
Blood pressure was effectively controlled 18-23%

Blood pressure was treated but not controlled 20-24%

Article metrics

2,447

Citations



[https://www.thelancet.com/article/S1-01330\(21\)6736-0140fulltext](https://www.thelancet.com/article/S1-01330(21)6736-0140fulltext)



CVD PREVALENCE - HTN



IRAN 2023: Hypertension was defined as a SBP > 130 mmHg or a DBP > 80 mmHg (new criteria), being a known case of hypertension, or use of blood pressure lowering medications.

- **Systematic review on 50 studies(2023): 26.3% for both sex**
- **Elderly >60yrs (2023) : 81%**
 - 75% 60-64 years to 88.40% in ≥ 80 years
 - 30% new cases





ECONOMIC BURDEN OF CVD AMONG ELDERLY-2024

- Direct cost of health systems exceeds \$600 billions each year
- Cost more than \$600 billion to health systems each year:
 - \$244.8 billion in the United States,
 - \$54.4 billion in Germany and
 - \$49.5 billion in Japan
- The direct cost of CVD as a proportion of total health system expenditure ranges from 11% to 15%.
- Economic costs (direct healthcare cost plus the indirect cost of illness, e.g., those due to loss in productivity and human capital) are even higher



ECONOMIC BURDEN OF CVD AMONG ELDERLY IN IRAN-2024



- The annual total cost of CVDs among people aged 60 years and above in Iran: Estimated at US\$ 1,885,091,171.7 (about US\$ 2 billion)
 - Between US\$ 1.2 billion and US\$ 2.7 billion
 - Equivalent to 1.27% of the Iran's GDP in 2021
- Direct medical costs accounted for 90.62% of the total, with
 - 54.72% attributed to ambulatory care.
- The average cost of CVDs per patient was US\$ 446.2.

IRAN By 2030, cost of CVDs is projected to reach US\$ 21 billion.





الگوی هزینه خدمات سلامت در سالمندان ایرانی: مطالعه مرور نظاممند

▪ 10 مطالعه

▪ حجم نمونه کلی 88450 فرد سالمند بالای 60

▪ 70% علت اصلی مراجعات سالمندان به بیمارستان: مربوط به مشکلات قلبی- عروقی بود.

▪ **نتیجه‌گیری:** سالمند شدن جمعیت طی سال‌های نه‌چندان دور آینده، نظام سلامت و اقتصاد کشور را با چالش جدی مواجه خواهد کرد. با توجه به اینکه بیشترین بار بیماری‌ها و هزینه مربوط به بیماری‌های غیرواگیر و مزمن می‌باشد، راه برون رفت از این چالش اجرای برنامه‌های توانمندسازی در سالمندان از جمله آموزش برنامه‌های خود مراقبتی، تقویت و پشتیبانی از برنامه مراقبت خانوادگی می‌باشد.



CVD RISK CALCULATOR: [HTTPS://WWW.CVDCHECK.ORG.AU/CALCULATOR](https://www.cvdcheck.org.au/calculator)



Australian CVD risk calculator

AusCVDRisk is a risk assessment, communication and management tool for health professionals. To learn more about how this calculator works, refer to the Australian Guideline for assessing and managing cardiovascular disease risk.

This risk assessment is recommended for the following individuals without known atherosclerotic cardiovascular disease:

- All people aged 45-79 years
- People with diabetes aged 35-79 years
- First Nations people aged 30-79 years (assess individual risk factors 18-29 years).

Clinically determined high risk*

Clinical conditions that automatically confer high risk:
If either of these apply, you will be redirected to management for high risk category

- Moderate-severe chronic kidney disease ?
- Familial hypercholesterolaemia ?
- Neither present

Please make a selection to continue

Age* ?

75

Years

Sex at birth* ?

- Female Male

Smoking status*

- Never smoked
- Previously smoked
- Currently smokes

Systolic blood pressure* ?

120

mmHg

Ratio of total cholesterol to HDL cholesterol* ?

4

OR enter mmol/L

Use of CVD medicines within last 6 months*

- Blood pressure-lowering medicines ?
- Lipid-modifying medicines ?





CVD RISK CALCULATOR: [HTTPS://WWW.CVDCHECK.ORG.AU/CALCULATOR](https://www.cvdcheck.org.au/calculator)

heart attack or stroke in the next 5 years

محاسبه ریسک

1-100%

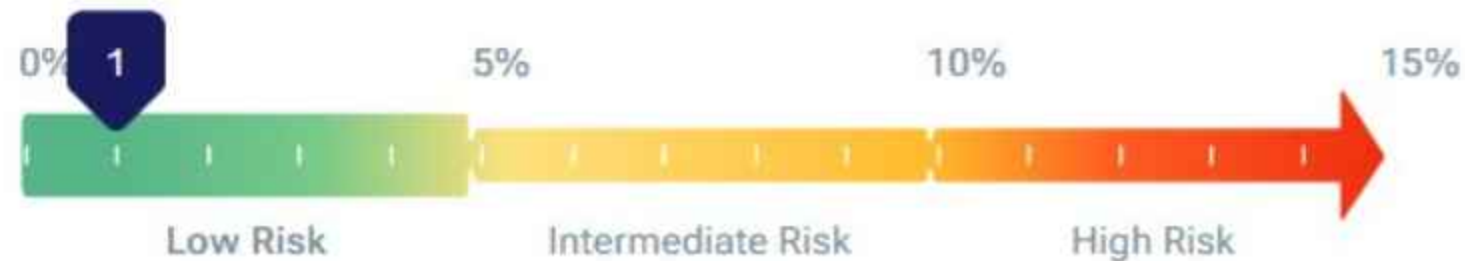
مورد اول: خانم 55 ساله، غیر سیگاری، بدون سابقه بیماری های مزمن کلیه و یا چربی خون با فشار خون نرمال (فشار خون ندارد) دارو مصرف نمی کند. دیابت (-)





1% Low risk

Your current risk of having a heart attack or stroke in the next 5 years is 1 out of 100, which is considered low. Imagine 100 people like you. 1 of those people will have a heart attack or stroke in the next 5 years if they don't take action.



CVD RISK CALCULATOR: [HTTPS://WWW.CVDCHECK.ORG.AU/CALCULATOR](https://www.cvdcheck.org.au/calculator)



heart attack or stroke in the next 5 years

محاسبه ریسک

1-100%

مورد سوم 1: آقای 75 سال، بدون سابقه بیماری های مزمن کلیه، ویا چربی خون (-) با فشار خون نرمال (فشار خون ندارد) دارو مصرف نمی کند. دیابت (-) (فقط سن)

مورد سوم 1: خانم 75 سال، بدون سابقه بیماری های مزمن کلیه، ویا چربی خون (-) با فشار خون نرمال (فشار خون ندارد) دارو مصرف نمی کند. دیابت (-) (فقط سن)





10%

High risk

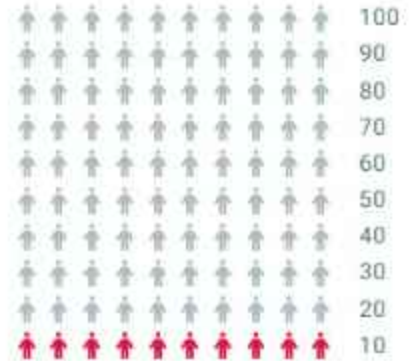


Consider reclassifying down a category if ?

Consider reclassifying up a category if ?

High risk

Your current risk of having a heart attack or stroke in the next 5 years is estimated to be 10 out of 100 or higher, which is considered high. Imagine 100 people like you. 10 or more of those people will have a heart attack or stroke in the next 5 years if they don't take action.



6%

Intermediate risk

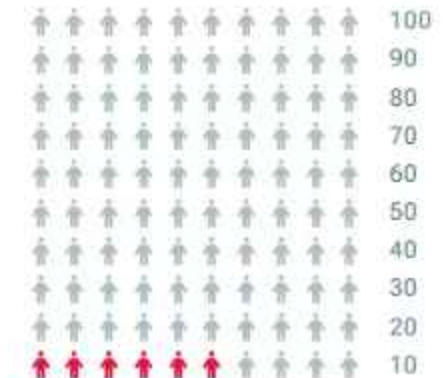


Consider reclassifying down a category if ?

Consider reclassifying up a category if ?

Intermediate risk

Your current risk of having a heart attack or stroke in the next 5 years is estimated to be from 5 out of 100, to 10 out of 100, which is considered intermediate. Imagine 100 people like you. 5 to 10 of those people will have a heart attack or stroke in the next 5 years if they don't take action.



Non-modifiable risk factors:

- Age,
- Sex, and
- Family history

CVD RISK CALCULATOR: [HTTPS://WWW.CVDCHECK.ORG.AU/CALCULATOR](https://www.cvdcheck.org.au/calculator)



heart attack or stroke in the next 5 years

محاسبه ریسک

1-100%

مورد دوم: خانم 55 ساله، غیر سیگاری، بدون سابقه بیماری های مزمن کلیه و یا چربی خون با فشار خون نرمال (فشار خون ندارد) دارو مصرف نمی کند. دیابت (-)، سابقه بیماری مزمن کلیوی +





High risk

Your current risk of having a heart attack or stroke in the next 5 years is estimated to be 10 out of 100 or higher, which is considered high. Imagine 100 people like you. 10 or more of those people will have a heart attack or stroke in the next 5 years if they don't take action.



CVD RISK CALCULATOR: [HTTPS://WWW.CVDCHECK.ORG.AU/CALCULATOR](https://www.cvdcheck.org.au/calculator)



heart attack or stroke in the next 5 years

محاسبه ریسک

1-100%

مورد چهارم: آقای 70 سال، بدون سابقه بیماری های مزمن کلیه، ویا چربی خون (-)، دیابت (-) مصرف سیگاری +، فشار خون +

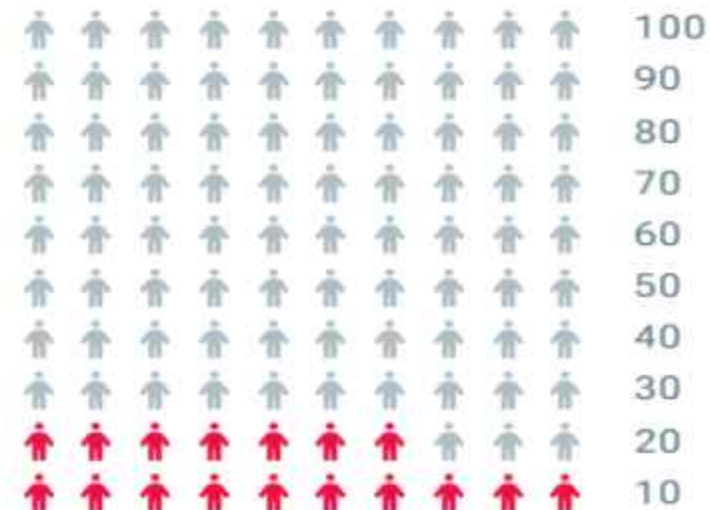




مورد چهارم: آقای 70 سال، بدون سابقه بیماری های مزمن کلیه، ویا چربی خون (-)،
دیابت(-) مصرف سیگاری+، فشار خون +

17% High risk

Your current risk of having a heart attack or stroke in the next 5 years is 17 out of 100, which is considered high. Imagine 100 people like you. 17 of those people will have a heart attack or stroke in the next 5 years if they don't take action.



See how your risk changes if you:

Quit smoking

Lower blood pressure by 10mmHg

Lower LDL cholesterol by 1 mmol/L





Your risk if you quit smoking
= 10% High risk

Risk has reduced from 17 out of 100, to 10 out of 100 which is considered high. Find resources below on smoking cessation.



See how your risk changes if you:

✓ Quit smoking

Lower blood pressure by 10mmHg

Lower LDL cholesterol by 1 mmol/L

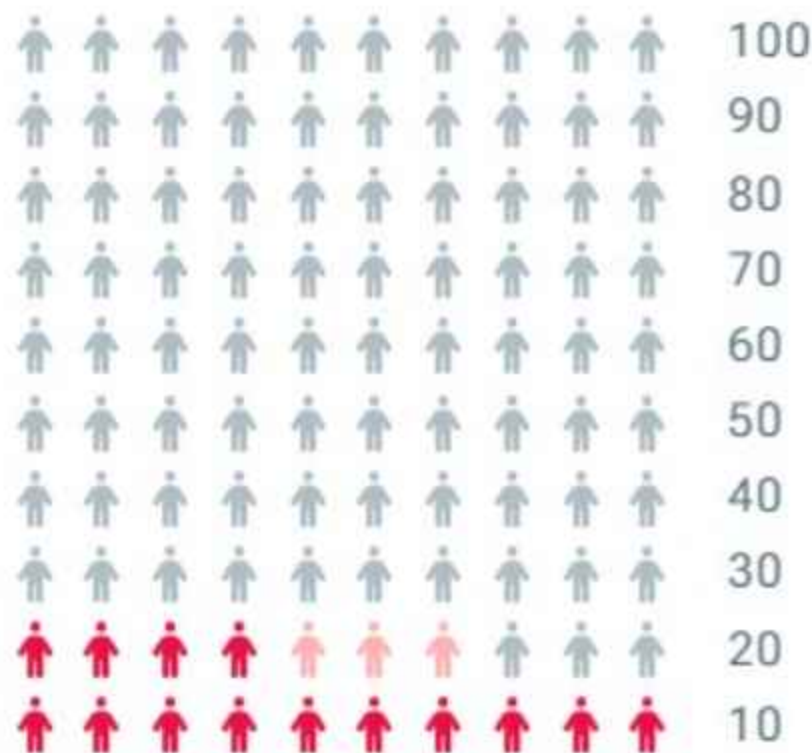




Your risk if you lower blood pressure by 10mmHg

= 14% High risk

Risk has reduced from 17 out of 100, to 14 out of 100 which is considered high.



See how your risk changes if you:

Quit smoking

✓ Lower blood pressure by 10mmHg

Lower LDL cholesterol by 1 mmol/L



RISK REDUCTION



Ischemic heart disease risks

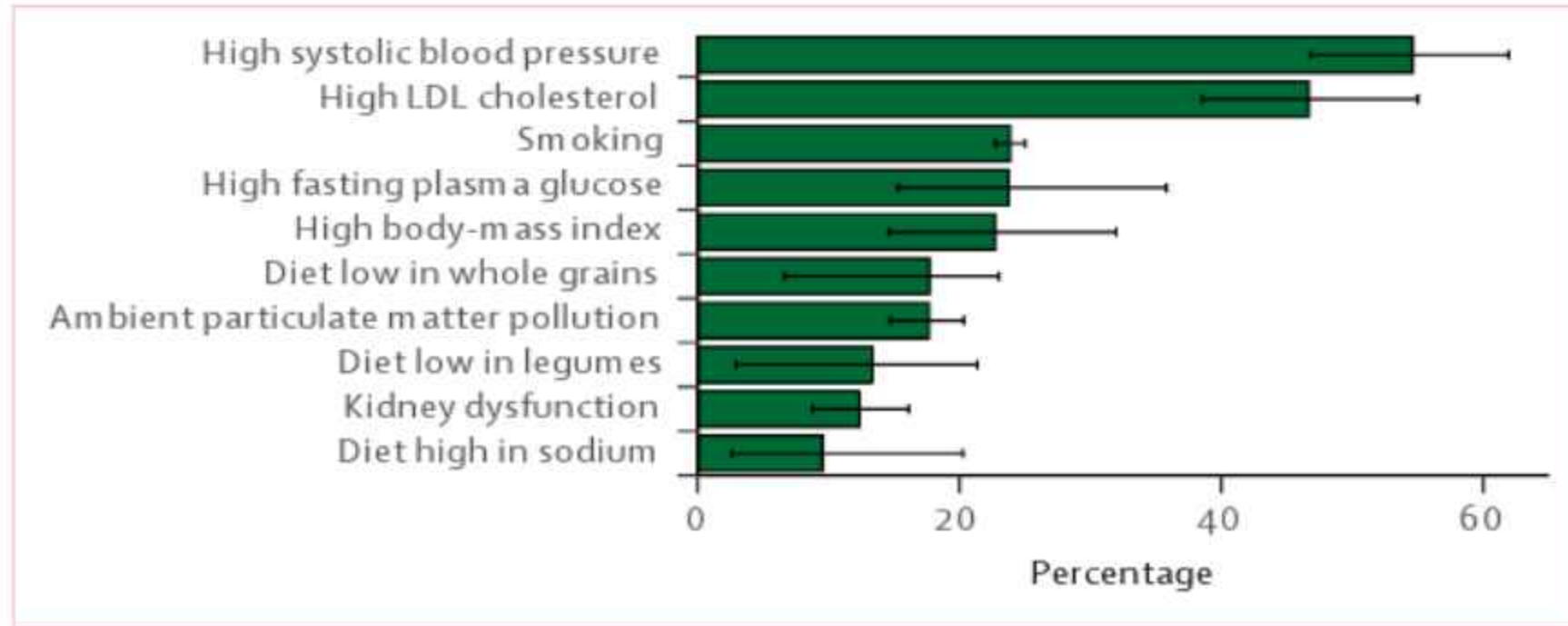


Figure 2: Percentage of DALYs attributable to top risk factors for both sexes combined, 2019



REDUCE RISK



WHO Package of Essential Noncommunicable Diseases Interventions (**WHO PEN**)

heart attacks and strokes, is preventable through lifestyle changes and targeted interventions. Specifically, up to 80% of CVD cases may be preventable.

Reduce the risk of deaths by 25-30%.

The most cost-effective strategies have been preventive therapies that target high-risk individuals.

PEN risk reduction programs for primary prevention such as **Ira-pen are highly cost-effective and efficient** in low- and middle-income countries.



IRA PEN: IRAN-PACKAGE OF ESSENTIAL NONCOMMUNICABLE DISEASES INTERVENTIONS



طبق برنامه سازمان بهداشت جهانی تا سال 2025 باید 25 درصد این مرگ و میرها کاهش یابد، به همین منظور برنامه پیشگیری و کنترل بیماری‌های غیرواگیر در ایران تدوین و ابلاغ شد (1394-1396).
تصحیح زیرساخت‌های این برنامه که همان بهبود وضعیت شبکه بهداشتی و درمانی کشور است در همین راستا انجام شد.
بهیار- پزشک

▪ مهم: پیروی از برنامه: میزان پیروی کلی در مطالعه معادل 19/73 %

<https://ijem.sbm.ac.ir/article-1-2727-fa.html>

دستورالعمل یزشکان در برنامه ایرا پن:

chrome-

extension://efaidnbmnnnibpcajpcgclefindmkaj/https://health.bpums.ac.ir/UploadedFiles/xfiles/File/M-Behdashti/rule/ghair%20vagir/2/pezeshk.pdf





TAKE-HOME MESSAGE

- **Rapid aging in near future**
- **Prevention: lifestyle, screening, treatment**
- **CVD & Modifiable risk factors**
- **High blood pressure**

is the most prevalent and modifiable risk factor for the development of cardiovascular diseases, including coronary artery disease, heart failure, atrial fibrillation, stroke, dementia, chronic kidney disease, and all-cause mortality.

- Clinicians should practices to implement
 - Screening of all adults in their communities risk factors and
 - Implement guideline-based recommendations regarding
 - Prevention, management and control of high blood pressure
- Medications and other structural barriers to support individual patient needs and thereby reduce barriers to achieving hypertension control.



CVD RISK REDUCTION PREVENTION



Primordial prevention-**Lifestyle** Modifications:

- Healthy Diet; Physical Activity; Avoiding Tobacco; Limiting Alcohol; Weight Management; Sodium Intake(daily sodium intake to 2400 m)

Primary Prevention Strategies-**Regular Health Screenings:**

- **Blood pressure checks; Cholesterol screenings; Blood sugar tests**

Secondary Prevention:

- **Medications** for HTN, Diabetes and lipid (CVD complication)

Tertiary Prevention:

- Rehabilitation Programs (heart attacks and strokes) HTN: Lowering systolic blood pressure to below 120 mm Hg can significantly reduce mortality.

Quaternary Prevention: Overmedicalization





**Symbol of grand parents day:
Flower name: forget-me-not
true love and respect**



**Questions?
Comments?**

**Email:
mousavi.b@gamil.com**

The official flower of National Grandparents' Day is the forget-me-not, which blooms in the spring, small blue flowers that grow anywhere from 4 to 12 inches.

Represents remembrance and long-associated with dementia. People with dementia may experience memory loss, among other symptoms. This makes the forget-me-not the perfect flower to represent our cause.

