



IRAN

**Non - Communicable Disease
Risk Factors Surveillance**

**National report
Selected results
2011**

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Introduction to the country



- *Geographical location: Asia; Middle East*
- *Neighbors: Afghanistan, Armenia, Azerbaijan, Iraq, Pakistan, Turkmenistan, Turkey*
- *Location: Middle East Region*
- *Size: 1648195 Sq Km.*
- *Population: 77,447,000 (2013), Second most populous country in the region*
- *Population annual average growth: 1.29% (2011)*
- *Population by age: 0-15 (23.3%), 15-65 (70.8%), 65 and over (5.7%)(2011)*
- *Urban population: 71.4% (2011)*
- *Life expectancy at birth: 72.1 (male), 76.6 (female) (2011)*

Executive Summary

Stepwise Non-communicable Diseases Risk Factors Survey in Iran (Iran – STEPs) is a surveillance tool recommended by WHO (World Health Organization). Iran STEPs was planned as a nationwide system to all over the country in cooperation with 46 universities, to obtain a valid and continuous evidence to assist the effective affairs of prevention and control programs representative of 15-64 years old.

Objectives:

- To develop infrastructure for NCDs risk factor surveillance and strengthen the monitoring and evaluating of NCD control intervention program priorities.
- To provide national and provincial reliable and up- to- date information resources on risk factors to map prevalence, trend and distribution.
- To prepare a tool for evidence-based public health decision making with the ultimate aim of containing and reducing the emerging epidemic of non- communicable diseases
- To prepare a supportive infrastructure for NCD preventive research to view effective interventions
- To promote the level of knowledge, reinforcement and enlargement of public health capacity in NCD prevention and PHC services.

The planning and running of survey was based on the World Health Organization STEPs as the sixth round in Iran. It was a population base cross sectional survey, representative the national pattern of NCDs risk factors, among 7-70 years old. In present report, the analysis has been done for population aged 15-64 years.

Data collection questionnaire was categorized in sequential three-step process as follows:

- **STEP 1:** Interview-based on demographic and behavioral risk factors including tobacco use, diet, physical activity, history of high blood pressure, diabetes and additional issues such as: fastening front seat belt and insurance coverage.
- **STEP 2:** Physiological measures of health risk factors such as blood pressure, body mass and waist circumference.
- **STEP 3:** Biochemical measures of health risks including fasting blood glucose and blood lipids.

All aspects of survey were managed by Iran STEPS team.

Methodology:

The 6th round of national STEPs was conducted in March 2011 based on “WHO Stepwise approach” to surveillance for NCD risk factors with respect of standardized data collection as well as sufficient flexibility in appropriate a variety of country situations and setting. It was comprised 12000 Iranian citizens aged 15-64 years old from 31 provinces across Iran. All selected participants were invited to participate by receiving informed consent.

STEPS staff participated intensive training program techniques, through demonstrations and role-plays, and practiced interview and engaged in discussions to clarify issues surrounding item and technical and medical requirements

follow the same process for the first and second survey. All participants were visited by trained interviewers and all selected individuals were invited to participate in all three steps.

Steps questionnaire:

The core questions in 3 steps instrument remained unchanged. Additional items relating to NCD control and prevention to be included by survey team agreement as optional and expanded questions.

- **Step 1: Demographic and Behavioral Assessments:**

Data for step 1 were collected in 6 different domains: demographic information, diet, physical activity, tobacco use, history of hypertension and diabetes. Occupation, sex, age, province and area of residence were included in demographic information and diet information; consist of fruit and vegetable servings consumed per day for a usual week and common type of oil or fat used by the family.

- **Step 2: Physical measurements**

Weight, height, waist circumference and blood pressure were measured, in light clothing without shoes, by portable calibrated electronic weighting scale, a portable height scale and constant tension tape at the end of a normal expiration (except for female participants who were pregnant) and calibrated.

- Omron M7 sphygmomanometer (HEM-780-E), average of 5 minutes for 3 measurement intervals respectively. Quality control for each measurement was monitored through periodic checks conducted by STEPs team supervisors in provinces. Blood pressure was measured three items and the mean value of them was recorded for analysis.

- **Step 3: Biochemical risk factor measurements**

Fasting plasma glucose, triglycerides, total cholesterol, high density lipoprotein, low density lipoprotein level were determined. Laboratory personnel in MOH and universities, who were familiar with the STEP 3 protocols, ensured quality control and supervised the process.

Questionnaire Processing and Method of Analysis

Data collection were done in 31 provinces by related steps team and entered into EpiInfo 6 data base. The double data entry was done after data cleaning activities by related steps staffs. All data checked in the view of duplicated record, incompleteness and invalid code and values. Weighting the survey data was computed based on 2006 Iranian national census, in considering calculated missing data weight, to match the age, sex, and provinces stratum. Data analysis were conducted using Stata version 10 and weighted frequency estimates presented with 95% confidence interval and significant P values less than 0.05 for all variables by 5 age groups and sex in each provinces.

Main results

Tobacco use

- The prevalence of current smoking was 10.91% overall with the higher proportion for males (20.84%) than females (0.90%).
- The prevalence of current smoking in urban area was 10.98% overall with the higher proportion for males (21.05%) than females (0.83%).
- The prevalence of current smoking in rural area was 10.77% overall with the higher proportion for males (20.40%) than females (1.07%).

- Among all respondents, 9.93% were daily smokers: 19.16% of males and 0.63% of females.
- Among all respondents in urban area, 10.08% were daily smokers: 19.53% of males and 0.56% of females.
- Among all respondents in rural area, 9.59% were daily smokers: 18.33% of males and 0.78% of females.

- The mean age at which daily smoking started was 21.23 years.
- The mean age at which daily smoking started was 21.27 years in urban area.
- The mean age at which daily smoking started was 20.82 years in rural area.

- Among current smokers, the average number of manufactured cigarettes smoked per day was 10.15; 12.53 of males and 7.74 of females.
- Among current smokers, the average number of manufactured cigarettes smoked per day in urban area was 9.56; 11.93 of males and 7.17 of females.
- Among current smokers, the average number of manufactured cigarettes smoked per day in rural area was 13.59; 14.28 of males and 12.63 of females.

Fruits and vegetables consumption

- The overall prevalence of eating less than 5 servings of fruit and vegetables reported per day was 88.15%; 89.50% for males and 86.78% for females.
- The overall prevalence of eating less than 5 servings of fruit and vegetables reported per day was 87.07%; 88.60% for males and 85.51% for females in urban area.
- The overall prevalence of eating less than 5 servings of fruit and vegetables reported per day was 90.53%; 91.70% for males and 89.36% for females in rural area.

Physical activity

- The overall prevalence of low levels of activity (defined as <600 MET-minutes/week) was 40.12 %; 31.53% for males and 48.82 % for females.
- The mean minutes of total physical activity on average per day was 92.42 min. This was highest amount among men with 134.83 min than women with 49.42 min.
- The mean minutes of total physical activity on average per day in urban area was 83.31 min. This was highest amount among men with 121.83 min than women with 44.25 min.

- The mean minutes of total physical activity on average per day in rural area was 114.44 min. This was highest amount among men with 166.5min than women with 61.64 min.

Overweight and obesity

- Body mass index (BMI) categories classified as; underweight and normal weight (BMI: <25.0 kg/m²), overweight (BMI: 25.0 to <30.0 kg/m²), and obese (BMI: ≥30.0 kg/m²), computed as the weight in kilogram divided by the square of height in meters.
- Overall mean BMI was 25.34 kg/m²; 25.93 kg/m² for females and 24.76 kg/m² for males.
- The prevalence of being overweight or obese was 48.24%; 51.59% of females and 44.96% of males.

High blood pressure

- 19.01 % of all had raised blood pressure (SBP≥140 or DBP≥90 or currently on anti-hypertensive medication). The total proportion was: 19.21% for females and 18.83 % for males.

Prevalence of diabetes

- Mean fasting blood glucose was 93.02 (mg/dl) in both sexes: 93.16 (mg/dl) in females and 92.87 (mg/dl) in males.
- The prevalence of defined single fasting blood glucose ≥126 mg/dl (7.0mmol/L) or currently receiving treatment for diabetes was 13.79%; in male 13.02% and in female 14.57%.

Cholesterol

- Mean cholesterol was 180.58 (mg/dl) in both sex: 184.38(mg/dl) in females and 176.82 (mg/dl) in males.
- Mean cholesterol was 182.14 (mg/dl) in urban area: 185.63(mg/dl) in females and 178.68 (mg/dl) in males.
- Mean cholesterol was 177.31 (mg/dl) in rural area: 181.97(mg/dl) in females and 172.68 (mg/dl) in males
- The overall prevalence of elevated cholesterol (≥5.2 mmol/L) was 28.43%, higher for females: 30.98% than males: 25.89%.
- The overall prevalence of elevated cholesterol (≥6.5 mmol/L) was 5.34%, higher for females: 6.57% than males: 4.13%.

HDL

- Mean of HDL was 44.31 (mg/dl) in both sexes: 47.03(mg/dl) in females and 41.62 (mg/dl) in males.
- Mean of HDL was 43.77(mg/dl) in urban area: 46.59(mg/dl) in females and 40.97 (mg/dl) in males.
- Mean of HDL was 45.35(mg/dl) in rural area: 47.78(mg/dl) in females and 42.94 (mg/dl) in males.

Triglycerides

- Mean of Triglycerides was 149.38 (mg/dl) in both sexes: 141.37 (mg/dl) in females and 157.23 (mg/dl) in males.

- Mean of Triglycerides was 156.73(mg/dl) in urban area: 146.36 (mg/dl) in females and 166.90 (mg/dl) in males.
- Mean of Triglycerides was 134.98(mg/dl) in rural area: 132.22(mg/dl) in females and 137.69 (mg/dl) in males.
- The overall prevalence of elevated Triglycerides (≥ 2.26 mmol/L) was 19.61%, higher for males:21.98% than females: 17.18%.

Raised risk for NCDs

- Five common and critical risk factors for NCDs were selected to assess STEPs NCD risk factors-raised risk by WHO recommendation: current daily smokers, overweight or obese ($BMI \geq 25.0$ kg/m²), raised blood pressure ($SBP \geq 140$ and/or $DBP \geq 90$ mmHg or currently on medication for raised blood pressure), consuming less than 5 servings of fruits and vegetables per day and low level of physical activity(<600 MET-minutes).
- Percentage with low risk (i.e. none of the risk factors included above) in both sex 2.79% : 3.0% in **males** and 2.58% in **females**.
- Percentage with raised risk, aged 15 to 44 years old in both sex 26.96%: in **males** 26.04% and 27.91% in females.
- Percentage with raised risk, aged 45 to 64 years old in both sex 54.29%: in **males** 52.13% and 56.48% in females.

1. Demographic Information Results and Response Proportion:

Residential area	Men		Women		Both sexes	
	n	%	n	%	n	%
Urban	3,649	43.74	4,693	56.26	8,343	68.93
Rural	1,493	39.70	2,268	60.30	3,761	31.07
Total	5,142	42.49	6,961	57.51	12,104	100.00

Employment status:

This Table describes proportion of respondents in paid employment, which is best, their main work status over the last 12 months, and those who are unpaid. Unpaid includes persons who are non-paid, students, homemakers, retired, and unemployed.

Residential area	Men				
	n	%Government employee	%Non-government employee	%Self-employed	%Unpaid
Urban	3,640	10.03	10.25	30.38	49.34
Rural	1,487	3.16	11.30	45.53	40.01
Total	5,127	8.04	10.55	34.78	46.64

Residential area	Women				
	n	%Government employee	%Non-government employee	%Self-employed	%Unpaid
Urban	4,690	3.99	2.64	2.22	91.15
Rural	2,260	1.11	0.58	3.27	95.04
Total	6,950	3.05	1.97	2.56	92.42

Residential area	Both Sexes				
	n	%Government employee	%Non-government employee	%Self-employed	%Unpaid
Urban	8,331	6.63	5.97	14.52	72.88
Rural	3,747	1.92	4.83	20.04	73.21
Total	12,078	5.17	5.61	16.24	72.98

Unpaid work and unemployed

Proportion of respondents based on their main work status over the last 12 months in unpaid work is described in this table.

<i>Table 3 Unpaid work and unemployed</i>							
Residential area	Men						
	n	%Non-paid	%Student-Solider	%Home-maker	%Retired	Unemployed	
						%Able to work	%Not able to work
Urban	1,796	0.61	49.89	3.34	29.96	11.75	4.45
Rural	595	2.18	58.99	3.53	10.59	16.13	8.57
Total	2,391	1.00	52.15	3.39	25.14	12.84	5.48
Residential area	Women						
	n	%Non-paid	%Student-Solider	%Home-maker	%Retired	Unemployed	
						%Able to work	%Not able to work
Urban	4,275	0.26	18.64	74.67	2.60	3.42	0.42
Rural	2,148	0.98	17.32	77.65	0.28	2.70	1.07
Total	6,423	0.50	18.20	75.67	1.82	3.18	0.64
Residential area	Both sexes						
	n	%Non-paid	%Student-Solider	%Home-maker	%Retired	Unemployed	
						%Able to work	%Not able to work
Urban	6,072	0.36	27.88	53.57	10.69	5.88	1.61
Rural	2,743	1.24	26.36	61.57	2.52	5.61	2.70
Total	8,815	0.64	27.41	56.06	8.15	5.80	1.95

2. Tobacco use

To assess the state of current smokers, all respondents were asked if they currently smoke (daily and non daily) any tobacco products such as cigarettes, cigars or pipes, also the mean amount, age started and duration of smoking, percentage of ex-daily smokers among all respondent and the mean duration, in years, since ex- daily smokers quit smoking daily.

Residential area	Men			Women			Both sexes		
	n	%Current smoker	95% CI	n	%Current smoker	95% CI	n	%Current smoker	95%CI
Urban	3,184	21.05	[19.07,23.18]	4,338	0.83	[0.40,1.72]	7,522	10.98	[10.07,11.96]
Rural	1,272	20.40	[17.14,24.09]	1,995	1.07	[0.64,1.80]	3,267	10.77	[9.05,12.77]
Total	4,456	20.84	[18.94,22.87]	6,333	0.90	[0.55,1.48]	10,789	10.91	[9.97,11.93]

Residential area	n	Men				%Does not smoke	95%CI
		Current smoker		%Non-daily			
		%Daily	95%CI	%Non-daily	95%CI		
Urban	3,180	19.53	[17.56,21.66]	1.44	[1.00,2.06]	79.04	[76.89,81.03]
Rural	1,271	18.33	[14.98,22.24]	2.02	[1.28,3.19]	79.64	[75.92,82.92]
Total	4,451	19.16	[17.24,21.24]	1.60	[1.16,2.21]	79.24	[77.19,81.15]
Residential area	n	Women				%Does not smoke	95%CI
		Current smoker		%Non-daily			
		%Daily	95%CI	%Non-daily	95%CI		
Urban	4,338	0.56	[0.29,1.11]	0.27	[0.10,0.72]	99.17	[98.27,99.60]
Rural	1,995	0.78	[0.41,1.49]	0.29	[0.13,0.65]	98.93	[98.20,99.36]
Total	6,333	0.63	[0.38,1.02]	0.27	[0.13,0.58]	99.10	[98.52,99.45]
Residential area	n	Both sexes				%Does not smoke	95%CI
		Current smoker		%Non-daily			
		%Daily	95%CI	%Non-daily	95%CI		
Urban	7,518	10.08	[9.14,11.11]	0.85	[0.69,1.28]	89.06	[88.07,89.98]
Rural	3,266	9.59	[7.81,11.73]	1.16	[0.75,1.78]	89.25	[87.24,90.97]
Total	10,784	9.93	[8.95,11.00]	0.94	[0.69,1.28]	89.13	[88.10,90.08]

Table 6 <i>Current daily smokers among all smokers</i>									
Residential area	Men			Women			Both sexes		
	n	% Daily smokers	95% CI	n	% Daily smokers	95% CI	n	% Daily smokers	95% CI
Urban	697	91.40	[86.89,94.46]	42	59.82	[40.39,76.60]	739	75.67	[65.26,83.74]
Rural	261	87.68	[79.02,93.08]	30	55.02	[44.35,65.25]	291	71.41	[64.80,77.23]
Total	958	90.42	[86.16,93.46]	72	63.73	[51.47,74.44]	1,030	77.13	[70.54,82.60]

Table 7 <i>Mean amount of tobacco used by daily smokers by type</i>						
Residential area	Men					
	n	Mean #of manufactured cig.	95%CI	n	Mean of Hobble bubble	95%CI
Urban	640	11.93	[10.78,13.07]	108	1.82	[1.43,2.20]
Rural	233	14.28	[12.65,15.92]	50	1.81	[1.60,2.02]
Total	873	12.53	[11.44,13.62]	158	1.85	[1.55,2.15]
Residential area	Women					
	n	Mean of manufactured cig.	95%CI	n	Mean of Hobble bubble	95%CI
Urban	32	7.17	[5.83,8.51]	86	1.98	[1.64,2.32]
Rural	22	12.63	[7.90,17.37]	69	3.04	[1.92,4.16]
Total	54	7.74	[5.88,9.61]	155	2.48	[1.71,3.25]
Residential area	Both Sexes					
	n	Mean of manufactured cig.	95%CI	n	Mean of Hobble bubble	95%CI
Urban	672	9.56	[8.58,10.53]	194	1.90	[1.67,2.13]
Rural	255	13.59	[11.36,15.83]	119	2.41	[1.84,2.98]
Total	927	10.15	[8.92,11.37]	313	2.16	[1.73,2.60]

Residential area	Men			Women			Both Sexes		
	n	Mean age	95% CI	n	Mean age	95% CI	n	Mean age	95% CI
Urban	633	20.26	[19.70,20.83]	29	22.15	[19.99,24.32]	662	21.21	[20.02,22.39]
Rural	227	19.26	[18.23,20.30]	22	22.97	[20.63,25.30]	249	20.82	[19.71,21.92]
Total	860	19.98	[19.43, 20.53]	51	22.49	[20.43,24.54]	911	21.23	[20.09,22.37]

Residential area	Men			Women			Both Sexes		
	n	Mean duration	95% CI	n	Mean duration	95% CI	n	Mean duration	95% CI
Urban	625	16.00	[15.40,16.60]	28	15.08	[13.71,16.45]	653	15.54	[14.77,16.31]
Rural	224	17.01	[16.18,17.83]	22	18.31	[16.31,20.32]	246	17.55	[16.68,18.43]
Total	849	16.28	[15.75,16.82]	50	13.83	[12.16,15.49]	899	15.06	[14.20,15.92]

The percentage of ex-daily smokers among all respondents and the mean, in duration years, since ex-daily smokers quit smoking daily also the percentage of daily and current (daily plus non-daily) tobacco users, includes smoking and smokeless are shown, in tables 11-14, respectively.

Residential area	Men			Women			Both Sexes		
	n	%ex daily smokers	95% CI	n	%ex daily smokers	95% CI	n	%ex daily smokers	95% CI
Urban	2,519	6.84	[5.72,8.16]	4,299	0.46	[0.28,0.77]	6,818	3.66	[3.09,4.34]
Rural	1,033	8.71	[6.33,11.87]	1,968	0.47	[0.26,0.85]	3,001	4.60	[3.39,6.23]
Total	3,552	7.36	[6.13,8.81]	6,267	0.47	[0.31,0.69]	9,819	3.93	[3.30,4.66]

<i>Table 11</i> <i>Mean years since cessation</i>									
Residential area	Men			Women			Both Sexes		
	n	Mean years	95% CI	n	Mean years	95% CI	n	Mean years	95% CI
Urban	197	8.99	[7.49,10.48]	28	12.19	[8.26,16.12]	225	10.58	[8.57,12.59]
Rural	85	10.38	[8.77,11.99]	16	7.41	[4.49,10.33]	101	9.35	[7.74,10.96]
Total	282	9.49	[8.25,10.73]	44	11.11	[8.31,13.91]	326	10.30	[8.88,11.72]

<i>Table 12</i> <i>Daily tobacco users</i>									
Residential area	Men			Women			Both Sexes		
	n	%Daily users	95% CI	n	%Daily users	95% CI	n	%Daily users	95% CI
Urban	3,180	22.95	[20.71,25.36]	4,338	2.14	[1.51,3.01]	7,518	12.58	[11.41,13.86]
Rural	1,271	21.10	[17.60,25.09]	1,995	3.76	[2.03,6.86]	3,266	12.47	[10.44,14.82]
Total	4,451	22.39	[20.33,24.59]	6,333	2.60	[1.77,3.79]	10,784	12.53	[11.39,13.77]

<i>Table 13</i> <i>Current tobacco users</i>									
Residential area	Men			Women			Both Sexes		
	n	%Current users	95% CI	n	%Current users	95% CI	n	%Current users	95% CI
Urban	3,184	25.41	[23.15,27.80]	4,338	2.72	[1.98,3.74]	7,522	14.11	[12.98,15.32]
Rural	1,272	23.21	[19.82,26.99]	1,995	4.15	[2.25,7.54]	3,267	13.72	[11.69,16.03]
Total	4,456	24.74	[22.68,26.91]	6,333	3.12	[2.20,4.41]	10,789	13.97	[12.84,15.19]

3. Fruit, Vegetable and type of oil Consumption

To assess dietary behaviors, respondent were asked how often they consumed fruit and vegetables in a typical week, the average of consumption on one of those days. Also the mean number of fruit, vegetable, and combined fruit and vegetable servings on average per day are viewed as followed.

Table 14 *Mean number of days fruit consumed in a typical week*

Residential area	Men			Women			Both Sexes		
	n	Mean number of days	95% CI	n	Mean number of days	95% CI	n	Mean number of days	95% CI
Urban	3,599	4.73	[4.46,4.99]	4,639	5.03	[4.80,5.26]	8,239	4.88	[4.63,5.12]
Rural	1,462	3.85	[3.40,4.30]	2,229	4.12	[3.70,4.54]	3,691	3.98	[3.56,4.40]
Total	5,061	4.47	[4.16,4.77]	6,868	4.74	[4.45,5.03]	11,930	4.60	[4.31,4.89]

Table 15 *Mean number of days vegetables consumed in a typical week*

Residential area	Men			Women			Both Sexes		
	n	Mean number of days	95% CI	n	Mean number of days	95% CI	n	Mean number of days	95% CI
Urban	3,572	3.94	[3.69,4.18]	4,637	4.47	[4.25,4.70]	8210	4.20	[3.98,4.43]
Rural	1,466	3.59	[3.25,3.94]	2,238	3.98	[3.60,4.36]	3704	3.79	[3.45,4.13]
Total	5,038	3.83	[3.60,4.07]	6,875	4.31	[4.06,4.55]	11,914	4.07	[3.84,4.30]

<i>Table 16 Mean number of servings of fruit on average per day</i>									
Residential area	Men			Women			Both Sexes		
	n	Mean number of servings	95% CI	n	Mean number of servings	95% CI	n	Mean number of servings	95% CI
Urban	3,509	1.56	[1.41,1.71]	4,521	1.65	[1.50,1.81]	8,031	1.61	[1.46,1.75]
Rural	1,420	1.22	[1.02,1.41]	2,156	1.27	[1.09,1.44]	3,576	1.24	[1.06,1.42]
Total	4,929	1.46	[1.31,1.61]	6,677	1.53	[1.37,1.68]	11,607	1.49	[1.35,1.64]

<i>Table 17 Mean number of servings of vegetable on average per day</i>									
Residential area	Men			Women			Both Sexes		
	n	Mean number of servings	95% CI	n	Mean number of servings	95% CI	n	Mean number of servings	95% CI
Urban	3,425	1.06	[0.94,1.18]	4,475	1.24	[1.13,1.35]	7,901	1.15	[1.04,1.26]
Rural	1,410	0.96	[0.81,1.12]	2,149	1.09	[0.93,1.26]	3,559	1.03	[0.88,1.18]
Total	4,835	1.03	[0.91,1.15]	6,524	1.19	[1.07,1.31]	11,460	1.11	[0.99,1.22]

<i>Table 18 Mean number of servings of fruit and/or vegetables on average per day</i>									
Residential area	Men			Women			Both Sexes		
	n	Mean number of servings	95% CI	n	Mean number of servings	95% CI	n	Mean number of servings	95% CI
Urban	3,649	2.49	[2.26,2.72]	4693	2.77	[2.55,2.99]	8,343	2.63	[2.43,2.84]
Rural	1,493	2.08	[1.74,2.41]	2268	2.24	[1.91,2.57]	3,761	2.16	[1.84,2.48]
Total	5,142	2.37	[2.14,2.61]	6961	2.60	[2.35,2.84]	12,104	2.48	[2.25,2.71]

Table 19 *Number of servings of fruit and/or vegetables on average per day*

Residential area	Men								
	n	%no fruit and/or vegetables	%95CI	%1-2 servings	%95CI	%3-4 servings	%95CI	%≥5 servings	%95CI
Urban	3,647	20.07	[17.11,23.40]	47.43	[43.92,50.96]	21.10	[18.74,23.67]	11.40	[8.85,14.57]
Rural	1,491	31.52	[23.93,40.25]	44.11	[39.36,48.98]	16.06	[11.90,21.34]	8.30	[5.49,12.37]
Total	5,138	23.47	[19.40,28.11]	46.40	[43.06,49.77]	19.62	[16.96,22.59]	10.50	[8.09,13.52]
Residential area	Women								
	n	%no fruit and/or vegetables	%95CI	%1-2 servings	%95CI	%3-4 servings	%95CI	%≥5 servings	%95CI
Urban	4,690	15.15	[12.40,18.37]	45.58	[42.10,49.10]	24.79	[22.19,27.58]	14.49	[11.71,17.79]
Rural	2,265	28.15	[22.12,35.09]	42.6	[38.97,46.31]	18.60	[14.91,22.97]	10.64	[7.55,14.80]
Total	6,955	19.46	[15.59,24.02]	44.55	[41.60,47.54]	22.76	[20.03,25.75]	13.22	[10.55,16.44]
Residential area	Both Sexes								
	n	%no fruit and/or vegetables	%95CI	%1-2 servings	%95CI	%3-4 servings	%95CI	%≥5 servings	%95CI
Urban	8,337	17.63	[15.04,20.55]	46.51	[43.47,49.58]	22.93	[20.68,25.35]	12.93	[10.58,15.71]
Rural	3,756	29.85	[23.26,37.40]	43.36	[39.88,46.91]	17.33	[13.74,21.62]	9.466	[6.70,13.21]
Total	12,093	21.48	[17.64,25.89]	45.48	[42.70,48.29]	21.18	[18.66,23.95]	11.85	[9.50,14.69]

Table 20 *Consuming < 5 servings of fruit and/or vegetables on average per day*

Residential area	Men			Women			Both Sexes		
	n	% < five servings per day	95% CI	n	% < five servings per day	95% CI	n	% < five servings per day	95% CI
Urban	3,647	88.60	[85.43,91.15]	4,690	85.51	[82.21,88.29]	8,337	87.07	[84.29,89.42]
Rural	1,491	91.70	[87.63,94.51]	2,265	89.36	[85.20,92.45]	3,756	90.53	[86.79,93.30]
Total	5,138	89.50	[86.48,91.91]	6,955	86.78	[83.56,89.45]	12,093	88.15	[85.31,90.50]

The type of oil or fat most often used for meal preparation, were asked in households and presented only for both sexes because results are for the household not individuals.

Table 21	<i>Type of oil or fat most often used for meal preparation in household</i>						
Type of oil	%Vegetable oil 95% CI Sat	%Vegetable oil 95% CI Unsat	%Lard 95%CI	%Butter 95% CI	%Margarine 95% CI	%None used 95% CI	%Other 95% CI
Urban areas	33.97 [28.30,40.15]	63.45 [57.38,69.12]	0.35 [0.12,1.07]	1.21 [0.75,1.95]	0.03 [0.01,0.86]	0.34 [0.15,0.77]	0.64 [0.32,1.27]
Rural areas	58.99 [51.16,66.39]	37.14 [30.02,44.86]	0.97 [0.33,2.86]	1.80 [1.07,3.01]	0.08 [0.03,3.22]	0.11 [0.04,0.29]	0.91 [0.25,3.22]
Total	41.73 [35.27,48.50]	55.31 [48.54,61.88]	0.53 [0.18,1.51]	1.38 [0.90,2.12]	0.04 [0.02,0.11]	0.27 [0.12,0.58]	0.73 [0.33,1.60]

4. Physical Activity

Physical activity data analysis which is done based on WHO guide lines, can be very complicated. The guidelines clarify the results of the physical activity data and also provide valuable information on the classifications to report related data.

MET (Metabolic Equivalent) values are applied to vigorous and moderate intensity variables in the work, transport and recreation domains. These have been calculated using an average of the typical types of activity undertaken. Calculating total physical activity and different types of activities have been grouped together and given a MET value based on the intensity of the activity. Survey participants were asked to report on the frequency and duration of physical activity as part of work, travel to and from places and recreational activities separately including:

- The work involves **vigorous-intensity** activity that causes large increases in breathing or heart rate for at least 10 minutes continuously, **moderate-intensity** activity, that causes small increases in breathing or heart rate such as brisk walking for at least 10 minutes continuously, how many days and how much time they spend doing vigorous and moderate -intensity activities at work on a typical day.
- In transportation they walk or use a bicycle for at least 10 minutes continuously, how many days and how much time in a typical week.
- In recreational activities if any involve vigorous or moderate- intensity sports, fitness or recreational activities that cause large increases in breathing or heart rate for at least 10 minutes continuously, how many days and how much time In sedentary behavior also, how much time they usually spend sitting or reclining on a typical day. The Following Section Presents physical activity levels in terms of low, moderate and high, mean and mediam minutes of; total; work-related, transport-related and recreation-related physical activity on average per day and no physical activity in any parts and composition of Total physical activity by sex and age groups.

<i>Table 22</i>		<i>Level of total physical activity</i>					
Residential		Men					
area	n	%Low	%95CI	%Moderate	%95CI	%High	95%CI
Urban	3,199	32.29	[27.24,37.79]	20.25	[16.88,24.10]	47.46	[41.97,53.01]
Rural	1,281	29.35	[24.17,35.12]	21.41	[18.26,24.95]	49.24	[42.01,56.50]
Total	4,480	31.53	[27.65,35.70]	20.79	[18.09,23.78]	47.67	[42.73,52.66]
Residential		Women					
area	n	%Low	%95CI	%Moderate	%95CI	%High	95%CI
Urban	4,349	50.33	[46.06,54.59]	29.01	[23.32,35.45]	20.66	[14.83,28.03]
Rural	2,000	44.7	[39.79,49.71]	26.79	[21.05,33.43]	28.51	[21.48,36.78]
Total	6,349	48.82	[45.3,52.35]	28.37	[24.14,33.02]	22.81	[18.19,28.2]
Residential		Both Sexes					
area	n	%Low	%95CI	%Moderate	%95CI	%High	95%CI
Urban	7,548	41.24	[37.99,44.57]	24.60	[20.62,29.07]	34.15	[30.41,38.10]
Rural	3,281	36.97	[33.00,41.13]	24.08	[20.33,28.28]	38.95	[33.95,44.19]
Total	10,829	40.12	[37.32,42.98]	24.56	[21.56,27.82]	35.33	[31.68,39.15]

<i>Table 23</i>		<i>Mean minutes of total physical activity on average per day</i>					
Residential		Men		Women		Both Sexes	
area	Mean minutes	95% CI	Mean minutes	95% CI	Mean minutes	95% CI	
Urban	121.83	[102.51,141.50]	44.25	[37.85,50.66]	83.31	[72.04,94.58]	
Rural	166.52	[137.97,195.08]	61.64	[47.18,76.09]	114.44	[96.30,132.58]	
Total	134.83	[114.66,155.01]	49.42	[41.96,56.88]	92.42	[80.04,104.81]	

5. Physical Measurements/ Raised Blood Pressure

This part presents data on height, weight, and body mass index among in all respondent participating in step 2 (excluding pregnant women for weight and BMI). Waist measurement was also taken as a measure of central obesity, which is considered to be a risk factor for cardiovascular diseases.

The prevalence of hypertension (a mean systolic pressure >140 mmHg and/or a mean diastolic pressure > 90 mmHg and/or self reported current use of anti-hypertensive medication), whether and/ or not they had previously been told by a health worker that they had elevated blood pressure, was identified based on systolic and diastolic measurements of blood pressure in three times among all respondents, excluding those currently on medication for raised blood pressure. Thresholds for hypertension were computed according to the WHO guidelines.

All respondents were asked if they have been treated for raised blood pressure with drugs (medication) prescribed by a doctor or other health worker during the past two weeks.

Table 24						
Mean body mass index - BMI (kg/m²)						
15-64 (years)	Men		Women		Both Sexes	
	Mean	95% CI	Mean	95% CI	Mean	95% CI
Total	24.76	[24.42,25.10]	25.93	[25.66,26.21]	25.34	[25.07,25.61]

Table 25						
Percentage who are overweight or obese (BMI ≥ 25 kg/m²)						
15-64 (years)	Men		Women		Both Sexes	
	percentage	95% CI	percentage	95% CI	percentage	95% CI
Total	44.96	[43.10,46.84]	51.59	[50.51,52.67]	48.24	[45.82,50.66]

Table 26 <i>Percentage who are obese (BMI \geq 30 kg/m²)</i>						
15-64 (years)	Men		Women		Both Sexes	
	percentage	95% CI	percentage	95% CI	percentage	95% CI
Total	11.92	[11.15,12.74]	21.89	[21.03,22.77]	16.84	[15.44,18.35]

Table 27 <i>Waist circumference (cm)</i>						
15-64 (years)	Men		Women		Both Sexes	
	Mean	95% CI	Mean	95% CI	Mean	95% CI
Total	86.78	[85.59,87.96]	84.55	[83.66,85.43]	85.68	[84.81,86.54]

Table 28 <i>Mean systolic blood pressure (mmHg)</i>						
15-65 (years)	Men		Women		Both Sexes	
	Mean	%95CI	Mean	%95CI	Mean	%95CI
Total	123.02	[121.69,124.35]	117.97	[116.32,119.61]	120.53	[119.16,121.89]

Table 29 <i>Mean diastolic blood pressure (mmHg)</i>						
15-65 (years)	Men		Women		Both Sexes	
	Mean	%95CI	Mean	%95CI	Mean	%95CI
Total	76.64	[75.71,77.58]	76.8	[76.16,77.43]	76.72	[76.07,77.37]

Table 30 <i>Percentage with raised BP (SBP \geq 140 and/or DBP \geq 90 mmHg)</i>						
15-65 (years)	Men		Women		Both Sexes	
	percentage	%95CI	percentage	%95CI	percentage	%95CI
Total	18.83	[17.84,19.85]	19.21	[18.37,20.08]	19.01	[17.84,19.85]

Table 31 <i>Percentage with raised BP (SBP \geq 170 and/or DBP \geq 100 mmHg)</i>						
15-65 (years)	Men		Women		Both Sexes	
	percentage	%95CI	percentage	%95CI	percentage	%95CI
Total	5.72	[5.40,6.05]	9.07	[8.61,9.55]	7.37	[6.80,7.98]

6. Biochemical Measurements

The indicators were measured in step 3 are;

- Mean fasting blood glucose results excluding those who are currently on medication for diabetes

(Non-fasting recipients excluded), categorization of respondents into blood glucose level categories and percentage currently on medication for raised blood glucose (non-fasting recipients excluded).

All respondents were asked if they currently receive any of the treatments for diabetes (prescribed by a doctor or other health worker), Insulin or oral drug (medication) that they have taken in the last 2 weeks.

Impaired fasting glycaemia is defined as either:

- plasma venous value: ≥ 6.1 mmol/L (110 mg/dl) and < 7.0 mmol/L (126 mg/dl)
- capillary whole blood value: ≥ 5.6 mmol/L (100 mg/dl) and < 6.1 mmol/L (110 mg/dl) raised blood glucose is defined as either
 - plasma venous value: ≥ 7.0 mmol/L (126 mg/dl)
 - capillary whole blood value: ≥ 6.1 mmol/L (110 mg/dl)
- **Mean total cholesterol and HDL** among all respondents, percentage of respondents with raised total cholesterol. And low HDL. Also mean triglycerides among all respondents and percentage of respondents with raised triglycerides.

Biochemical measures are estimated for people aged 25-64

<i>Table ۳۲</i>							<i>Mean Fasting Blood Glycaemia</i>			
Residential area	Men			Women			Both Sexes			
	Mean	%95CI		Mean	%95CI		Mean	%95CI		
Urban	93.90	[91.80,95.99]		94.07	[92.30,95.84]		93.98	[92.34,95.63]		
Rural	90.65	[88.44,92.86]		91.59	[88.17,95.02]		91.12	[89.01,93.23]		
Total	92.87	[91.13,94.61]		93.16	[91.35,94.98]		93.02	[91.51,94.52]		

<i>Table ۳۳</i>										<i>Impaired Fasting Glycaemia</i>			
Residential area	Men			Women			Both Sexes						
	n	%	%95CI	n	%	%95CI	n	%	%95CI				
Urban	1,266	4.41	[3.08,6.28]	1,919	5.26	[4.35,6.34]	3,185	4.83	[3.91,5.95]				
Rural	576	3.07	[1.81,5.14]	1,140	3.36	[2.06,5.44]	1,716	3.21	[2.14,4.79]				
Total	1,842	3.963	[2.97,5.27]	3,059	4.59	[3.66,5.74]	4,901	4.27	[3.52,5.18]				

<i>Table 34</i>										<i>Currently on medication for diabetes</i>			
Residential area	Men			Women			Both Sexes						
	n	%	%95CI	n	%	%95CI	n	%	%95CI				
Urban	269	40.29	[31.57,49.67]	499	61.79	[51.54,71.08]	768	51.00	[44.60,57.37]				
Rural	63	62.30	[42.39,78.78]	160	41.66	[25.74,59.53]	223	52.02	[39.17,64.60]				
Total	332	48.26	[35.71,61.03]	659	57.74	[48.58,66.40]	991	52.99	[45.87,59.98]				

Table 35 *Mean total cholesterol (mg/dl)*

Residential area	Men		Women		Both Sexes	
	Mean	%95CI	Mean	%95CI	Mean	%95CI
Urban	178.68	[174.41,182.95]	185.63	[181.80,189.47]	182.14	[178.53,185.76]
Rural	172.68	[167.73,177.64]	181.97	[178.13,185.81]	177.31	[173.24,181.38]
Total	176.82	[173.03,180.60]	184.38	[181.20,187.55]	180.58	[177.39,183.78]

Table 36 *Total cholesterol \geq 5.2 mmol/L or \geq 200 mg/dl*

Residential area	Men			Women			Both Sexes		
	n	%	%95CI	n	%	%95CI	n	%	%95CI
Urban	1,389	26.81	[22.64,31.44]	2,124	31.90	[28.49,35.52]	3,513	29.35	[26.07,32.85]
Rural	645	23.77	[19.22,29.02]	1,280	29.17	[25.14,33.56]	1,925	26.46	[22.55,30.79]
Total	2,034	25.89	[22.34,29.78]	3,404	30.98	[28.05,34.07]	5,438	28.43	[25.57,31.47]

Table 37 *Total cholesterol \geq 6.5 mmol/L or \geq 250 mg/dl*

Residential area	Men			Women			Both Sexes		
	n	%	%95CI	n	%	%95CI	n	%	%95CI
Urban	1,389	4.55	[2.73,7.49]	2,124	6.51	[5.09,8.29]	3,513	5.53	[4.09,7.44]
Rural	645	3.10	[1.73,5.47]	1,280	6.61	[5.04,8.64]	1,925	4.85	[3.83,6.12]
Total	2,034	4.13	[2.66,6.35]	3,404	6.57	[5.38,8.01]	5,438	5.34	[4.21,6.76]

Table 38 *Mean of HDL (mg/dl)*

Residential area	Men		Women		Both Sexes	
	Mean	%95CI	Mean	%95CI	Mean	%95CI
Urban	40.97	[40.00,41.94]	46.59	[45.57,47.61]	43.77	[42.86,44.68]
Rural	42.94	[41.40,44.48]	47.78	[46.30,49.26]	45.35	[43.96,46.74]
Total	41.62	[40.67,42.57]	47.03	[45.97,48.08]	44.31	[43.37,45.26]

Table 39

Triglycerides (mg/dl)

Residential area	Men			Women			Both Sexes		
	n	Mean	%95CI	n	Mean	%95CI	n	Mean	%95CI
Urban	1261	166.90	[154.65,179.15]	1,921	146.36	[137.77,154.95]	2035	156.73	[149.39,164.07]
Rural	576	137.69	[128.28,147.11]	1,139	132.22	[122.83,141.61]	3410	134.98	[126.84,143.12]
Total	1837	157.23	[147.61,166.86]	3,060	141.37	[133.75,148.98]	5,445	149.38	[149.39,156.07]

Table 40

Percentage of those with Triglycerides ≥ 2.26 mmol/L or ≥ 200 mg/dl

Residential area	Men			Women			Both Sexes		
	n	%	%95CI	n	%	%95CI	n	%	%95CI
Urban	1,261	25.65	[21.37,30.45]	1,921	18.42	[15.82,21.33]	3,182	22.07	[19.46,24.92]
Rural	576	14.43	[11.04,18.64]	1,139	15.02	[11.95,18.72]	1,715	14.72	[11.93,18.04]
Total	1,837	21.98	[18.72,25.63]	3,060	17.18	[14.98,19.64]	4,897	19.61	[17.46,21.94]

7. Raised Risk

Raised risk as a comprehensive assessment on Steps NCD risk factors is measured based on WHO definition:

- Percentage of respondents with 0, 1-3, or 4-5 of the following risk factors:
 - Current daily smoker
 - Less than 5 servings of fruits & vegetables per day
 - Low level of activity (<600 MET -minutes)
 - Overweight or obese (BMI \geq 25 kg/m²)
 - Raised BP (SBP \geq 140 and/or DBP \geq 90 mmHg or currently on medication for raised BP).
- Percentage of respondents with 0, 1-2, or 3 of these the following risk factors:
 - Current daily smoker
 - Less than 5 servings of fruits & vegetables per day
 - Low level of activity (<600 MET - minutes)

describe the raised risk and viewed in related tables by sex and age groups.

Table 41			
Results for adults aged 15-64 years (incl. 95% CI) (adjust if necessary)	Both Sexes	Females	Males
Summary of combined risk factors <ul style="list-style-type: none"> • current daily smokers • less than 5 servings of fruits & vegetables per day • Low level of activity (<600 MET -minutes) • overweight or obese (BMI \geq 25 kg/m²) • raised BP (SBP \geq 140 and/or DBP \geq 90 mmHg) 			
Percentage with low risk (i.e. none of the risk factors included above)	2.79 [2.13,3.65]	2.58 [2.22,3.01]	3.00 [2.54,3.54]
Percentage with raised risk (i.e. at least three of the risk factors included above) distributed in the age groups below			
Percentage with raised risk, aged 15 to 44 years old	26.96 [25.25,28.74]	27.91 [26.63,29.22]	26.04 [24.69,27.44]
Percentage with raised risk, aged 45 to 64 years old	54.29 [51.26,57.29]	56.48 [54.62,58.32]	52.13 [50.14,54.11]

Indices

Fish Consumption

Table 42 *Number of servings of fish on average per week*

Residential area	Men										
	n	%no fish consumption	%95CI	%1 servings	%95CI	%2 servings	%95CI	%3 servings	%95CI	%≥4 servings	%95CI
Urban	3,601	57.21	[51.95,62.31]	28.64	[25.71,31.75]	9.38	[7.32,11.95]	2.99	[1.55,5.68]	1.79	[1.05,3.02]
Rural	1,403	58.06	[48.66,66.91]	24.30	[20.13,29.03]	10.26	[6.91,14.99]	2.75	[1.61,4.65]	4.62	[1.86,11.05]
Total	5,004	57.42	[51.92,62.75]	27.45	[24.68,30.41]	9.61	[7.45,12.33]	2.91	[1.71,4.90]	2.60	[1.39,4.79]
Residential area	Women										
	n	%no fish consumption	%95CI	%1 servings	%95CI	%2 servings	%95CI	%3 servings	%95CI	%≥4 servings	%95CI
Urban	4,618	59.12	[54.3,63.77]	25.95	[23.76,28.26]	10.67	[8.27,13.66]	2.71	[1.50,4.86]	1.55	[0.85,2.81]
Rural	2,156	59.27	[49.9,68.01]	23.08	[19.20,27.48]	10.60	[6.79,16.17]	4.41	[2.57,7.47]	2.64	[1.00,6.77]
Total	6,774	59.24	[53.83,64.44]	25.04	[19.20,27.48]	10.58	[8.15,13.62]	3.26	[2.00,5.26]	1.88	[0.96,3.66]
Residential area	Both Sexes										
	n	%no fish consumption	%95CI	%1 servings	%95CI	%2 servings	%95CI	%3 servings	%95CI	%≥4 servings	%95CI
Urban	8,219	58.16	[53.27,62.89]	27.30	[24.96,29.77]	10.02	[7.89,12.64]	2.851	[1.55,5.20]	1.67	[0.98,2.84]
Rural	3,559	58.66	[49.47,67.28]	23.70	[19.99,27.86]	10.43	[6.99,15.28]	3.575	[2.16,5.86]	3.64	[1.45,8.85]
Total	11,778	58.33	[52.95,63.51]	26.25	[23.87,28.78]	10.09	[7.858,12.87]	3.084	[1.88,5.01]	2.24	[1.19,4.19]



IRAN STEPS Survey 2011

Fact Sheet 1390

This STEPS survey of chronic disease risk factors in Iran was carried out in 2011 as the 6th round concluding Step 1 and Step 2; Socio demographic and behavioral information was collected in Step 1. Physical measurements such as height, weight and blood pressure were collected in Step 2. biochemical measurements were collected in this round.

The STEPS survey in Iran was a population-based survey of adults aged 15-64 (25-64 for biochemical measures). A cluster sample design was used to produce representative data for that age range in Iran. A total of 12000 adults participated in the Iran STEPS survey.

Results for adults aged 15-64 years (incl. 95% CI)	Both Sexes	Females	Males
Step 1 Tobacco Use			
Percentage who currently smoke tobacco daily	10.91 [9.97,11.93]	0.90 [0.55,1.48]	20.84 [18.94,22.87]
<i>For those who smoke tobacco daily</i>			
Average age started smoking (years)	21.23 [20.09,22.37]	22.49 [20.43,24.54]	19.98 [19.43, 20.53]
Average years of smoking	10.30 [8.88,11.72]	11.11 [8.31,13.91]	9.49 [8.25,10.73]
Percentage smoking manufactured cigarettes	-----	-----	-----
<i>For smokers of manufactured cigarettes</i>			
Mean number of manufactured cigarettes smoked per day	10.15 [8.92,11.37]	7.74 [5.88,9.61]	12.53 [11.44,13.62]

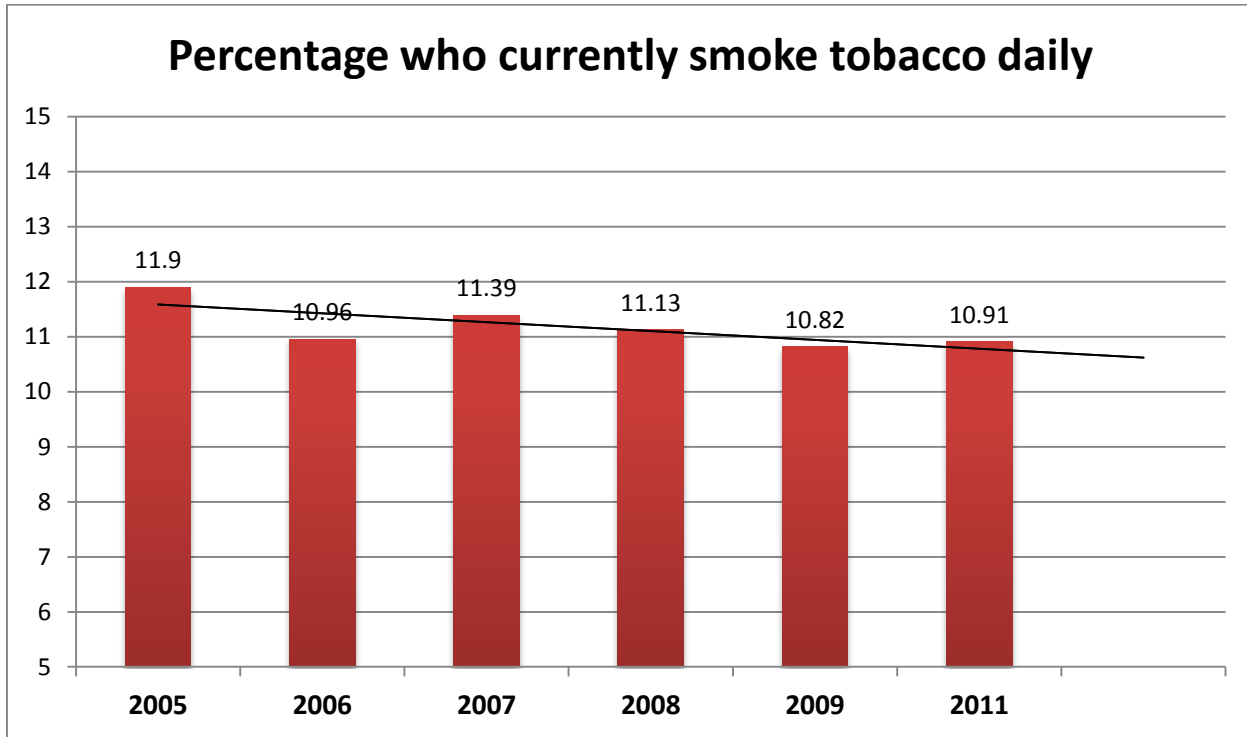
Step 1 Alcohol Consumption			
Percentage of abstainers (who did not drink alcohol in the last year)	-----	-----	-----
Percentage of current drinkers (who drank alcohol in the past 30 days)	-----	-----	-----
<i>For those who drank alcohol in the last 30 days</i>			
Percentage of women who had 4 or more drinks on any day in the last week	-----	-----	-----
Percentage of men who had 5 or more drinks on any day in the last week	-----	-----	-----
Percentage who drank alcohol on 4 or more days in the last week	-----	-----	-----
Step 1 Fruit and Vegetable Consumption (in a typical week)			
Mean number of servings of fruit consumed per day	1.49 [1.35,1.64]	1.53 [1.37,1.68]	1.46 [1.31,1.61]
Mean number of servings of vegetables consumed per day	1.11 [0.99,1.22]	1.19 [1.07,1.31]	1.03 [0.91,1.15]
Percentage who ate 5 or more combined servings of fruit & vegetables per day	11.85 [9.50,14.69]	13.22 [10.55,16.44]	10.50 [8.09,13.52-]
Step 1 Physical Activity			
Percentage with low levels of activity (defined as <600 MET-minutes/week)	40.12 [37.32,42.98]	48.82 [45.3,52.35]	31.53 [27.65,35.70]
No moderate and vigorous physical activity at work	34.85 [31.11,38.79]	27.57 [23.60,31.93]	42.03 [37.31,46.90]
No moderate and vigorous physical activity at transport	67.35 [63.75,70.77]	67.90 [63.62,71.89]	66.82 [62.98,70.45]
No moderate and vigorous physical activity at recreational	24.71 [22.41,27.16]	16.75 [14.24,19.6]	32.56 [29.95,35.28]

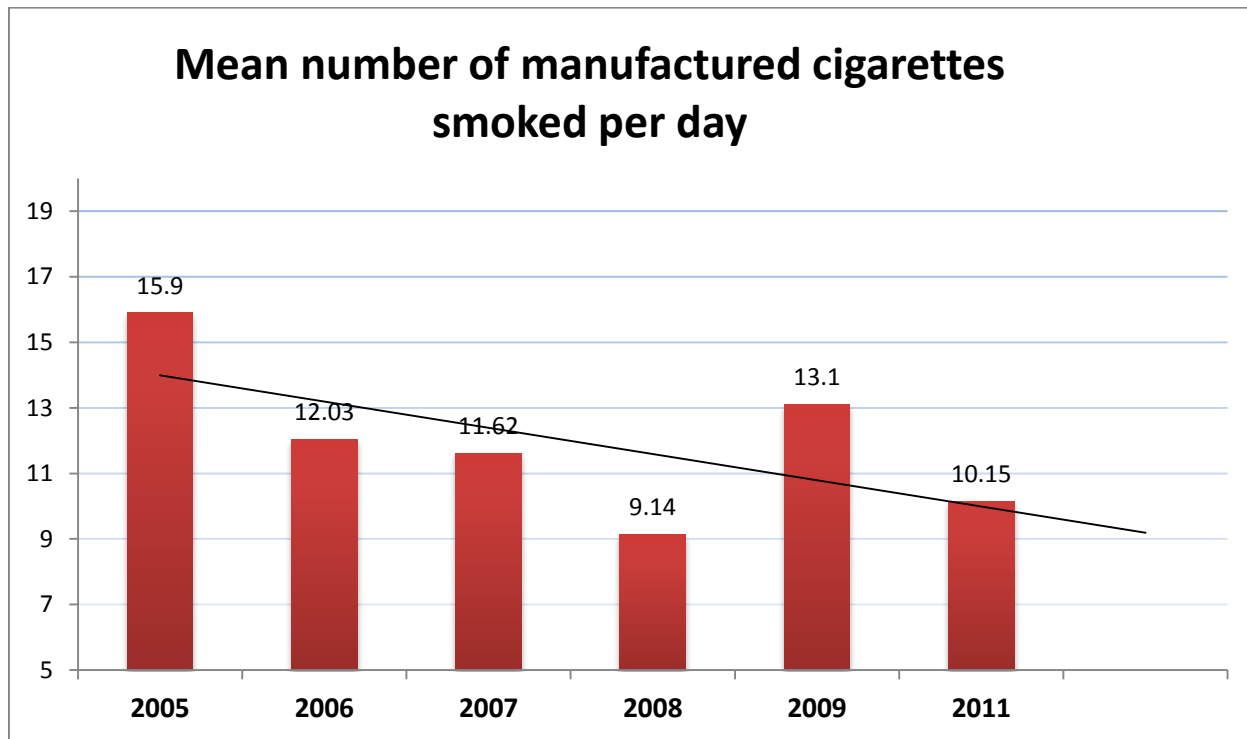
Results for adults aged 15-64 years (incl. 95% CI)	Both Sexes	Females	Males
Step 2 Physical Measurements			
Mean body mass index - BMI (kg/m ²)	25.34 [25.07,25.61]	25.93 [25.66,26.21]	24.76 [24.42,25.10]
Percentage who are overweight or obese (BMI ≥ 25 kg/m ²)	48.24 [45.82,50.66]	51.59 [50.51,52.67]	44.96 [43.10,46.84]
Percentage who are obese (BMI ≥ 30 kg/m ²)	16.84 [15.44,18.35]	21.89 [21.03,22.77]	11.92 [11.15,12.74]
Average waist circumference (cm)	85.68 [84.81,86.54]	84.55 [83.66,85.43]	86.78 [85.59,87.96]
Mean systolic blood pressure - SBP (mmHg)	120.53 [119.16,121.89]	117.97 [116.32,119.61]	123.02 [121.69,124.35]
Mean diastolic blood pressure - DBP (mmHg)	76.72 [76.07,77.37]	76.80 [76.16,77.43]	76.64 [75.71,77.58]
Percentage with raised BP (SBP ≥ 140 and/or DBP ≥ 90 mmHg)	19.01 [17.58,20.54]	19.21 [18.37,20.08]	18.83 [17.84,19.85]
Percentage with raised BP (SBP ≥ 160 and/or DBP ≥ 100 mmHg)	7.37 [6.80,7.98]	9.07 [8.61,9.55]	5.72 [5.40,6.05]
Step 3 Biochemical Measurements (aged 25-64)			

Mean fasting blood glucose (mmol/L)	93.02 [91.51,94.52]	93.16 [91.35,94.98]	92.87 [91.13,94.61]
Percentage with raised blood glucose (≥ 7.0 mmol/L)	13.79 [11.90,15.92]	14.57 [13.49,15.72]	13.02 [11.85,14.28]
Mean total blood cholesterol (mg/dL)	180.58 [177.39,183.78]	184.38 [181.20,187.55]	176.82 [173.03,180.60]
Percentage total cholesterol (≥ 5.2 mmol/L)	28.43 [25.57,31.47]	30.98 [28.05,34.07]	25.89 [22.34,29.78]
Percentage total cholesterol (≥ 6.5 mmol/L)	5.34 [4.21,6.76]	6.57 [5.38,8.01]	4.13 [2.66,6.35]
Summary of combined risk factors			
<ul style="list-style-type: none"> • current daily smokers • less than 5 servings of fruits & vegetables per day • Low level of activity (<600 MET -minutes) • overweight or obese (BMI ≥ 25 kg/m²) • raised BP (SBP ≥ 140 and/or DBP ≥ 90 mmHg) 			
Percentage with low risk (i.e. none of the risk factors included above)	2.79 [2.13,3.65]	2.58 [2.22,3.01]	3.00 [2.54,3.54]
Percentage with raised risk (i.e. at least three of the risk factors included above) distributed in the age groups below			
Percentage with raised risk, aged 15 to 44 years old	26.96 [25.25,28.74]	27.91 [26.63,29.22]	26.04 [24.69,27.44]
Percentage with raised risk, aged 45 to 64 years old	54.29 [51.26,57.29]	56.48 [54.62,58.32]	52.13 [50.14,54.11]

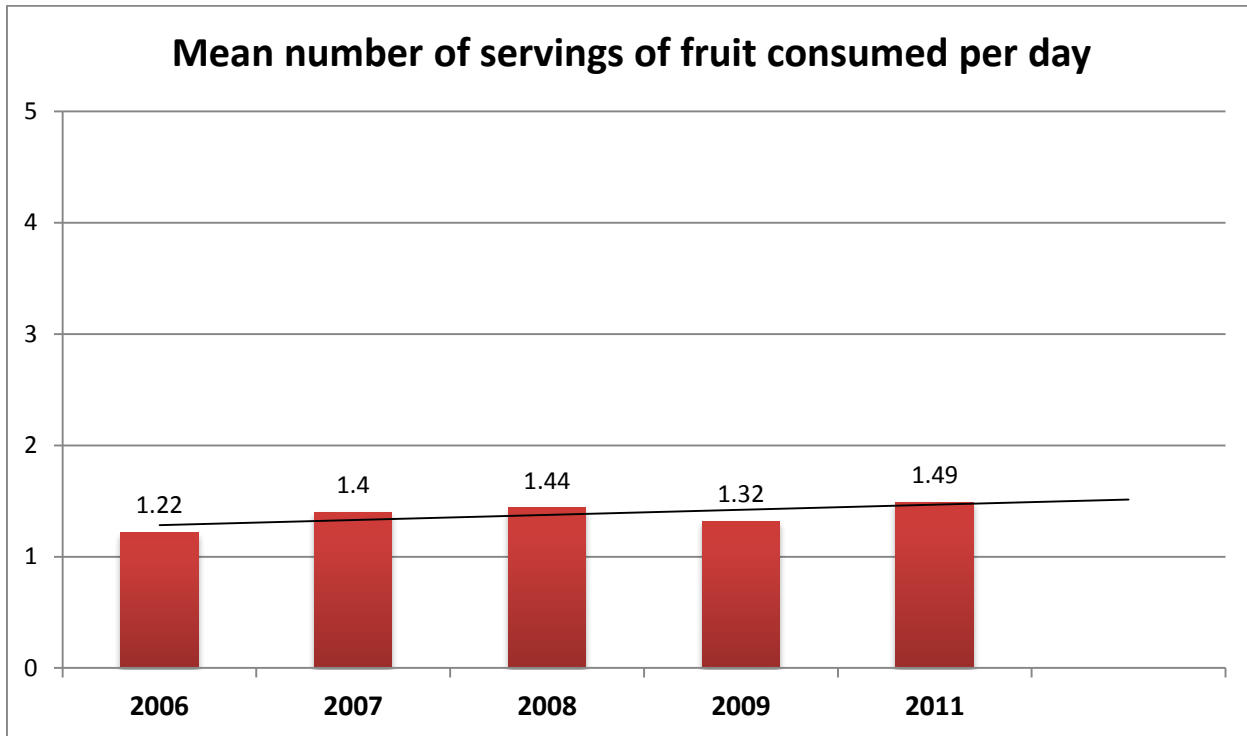
Trend analysis of conducted STEPS in IR Iran (2005-2011)

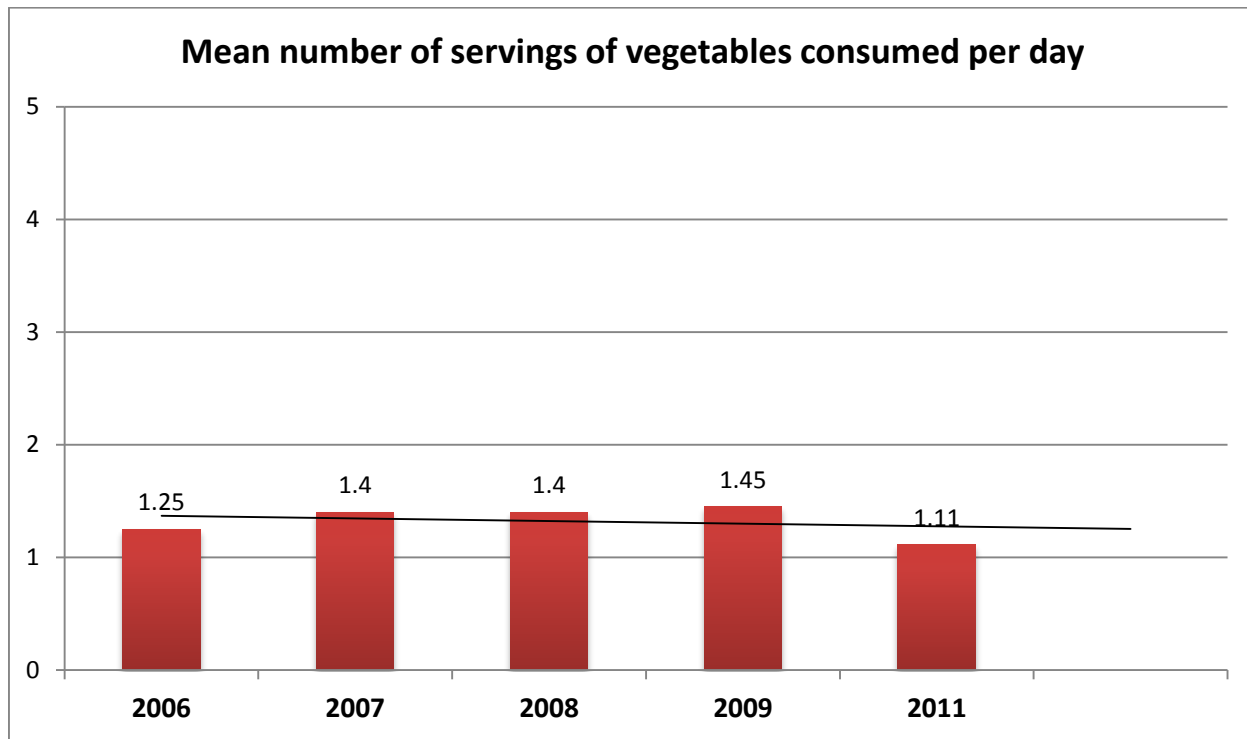
Cigarette smoking



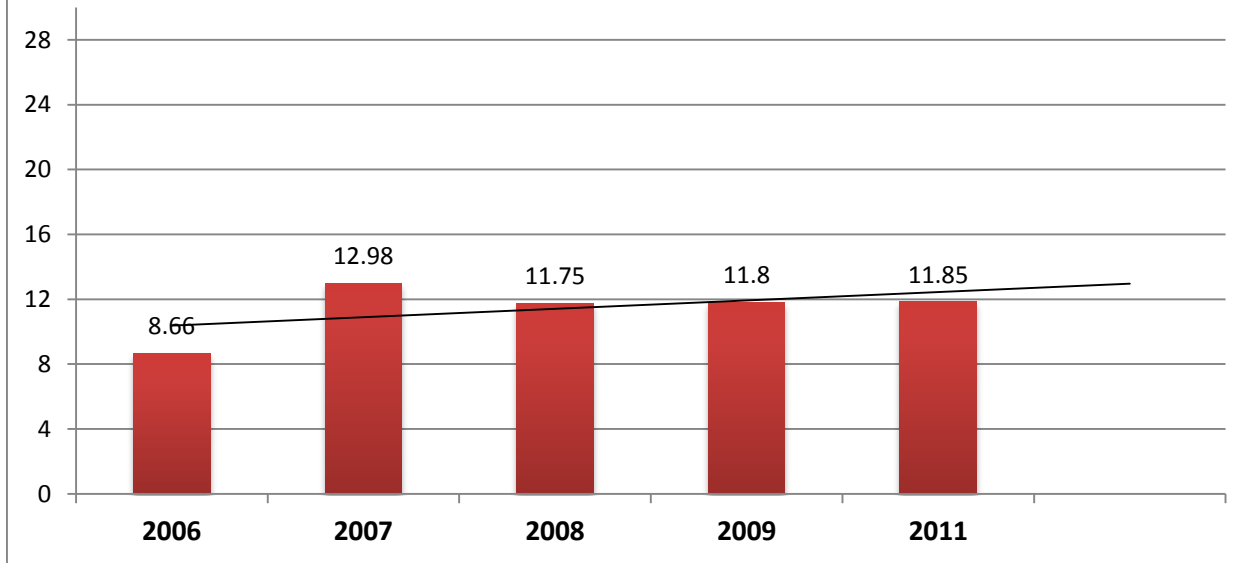


Fruit and vegetable consumption:

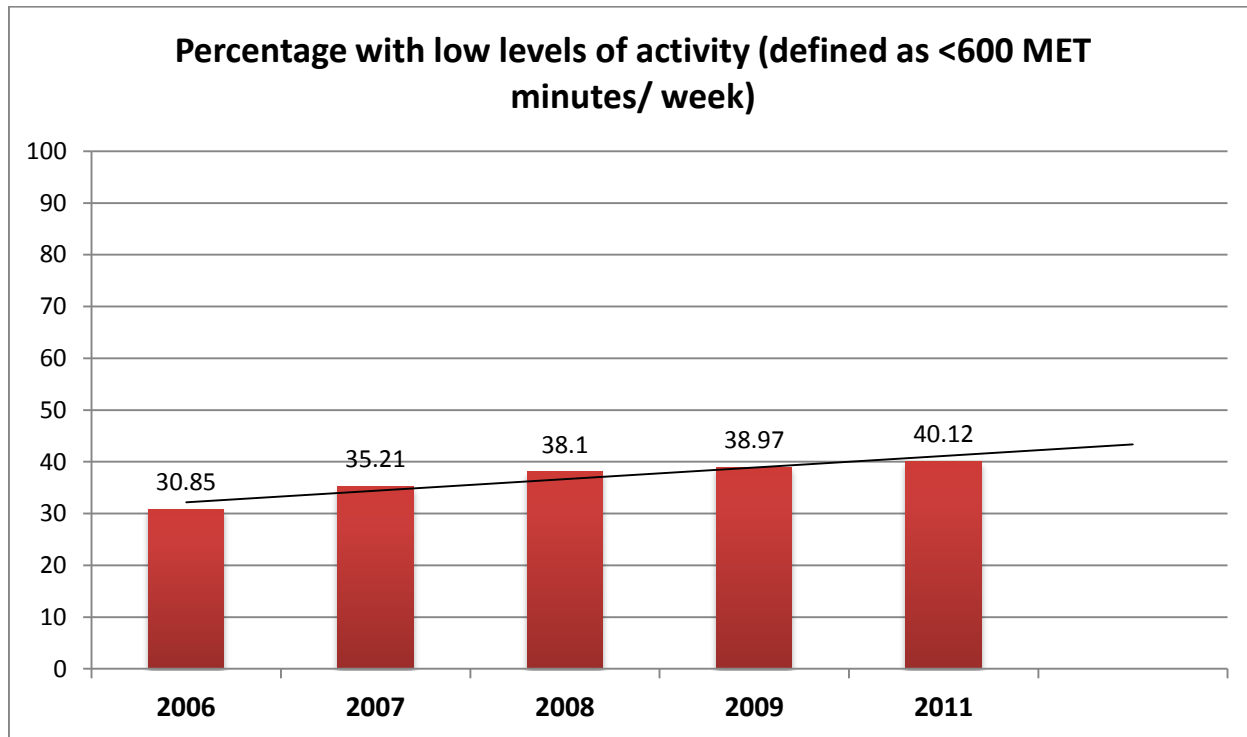




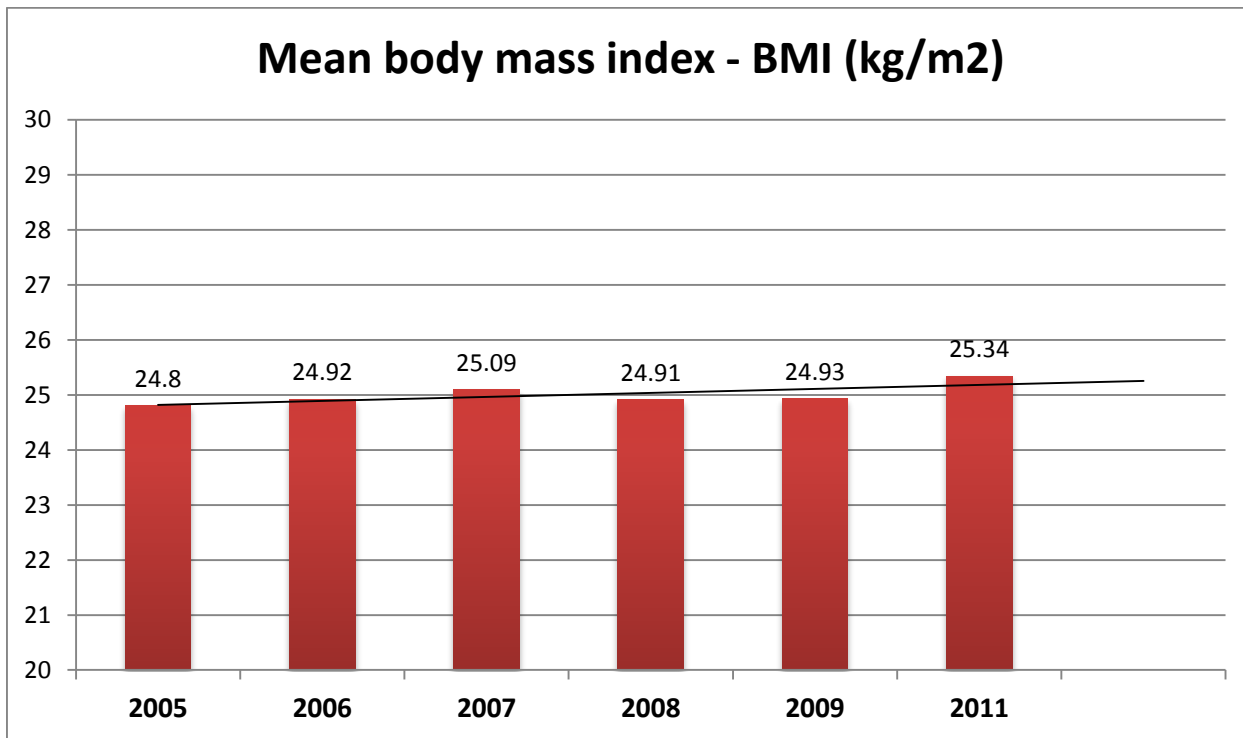
Percentage who ate 5 or more combined servings of fruit & vegetables per day

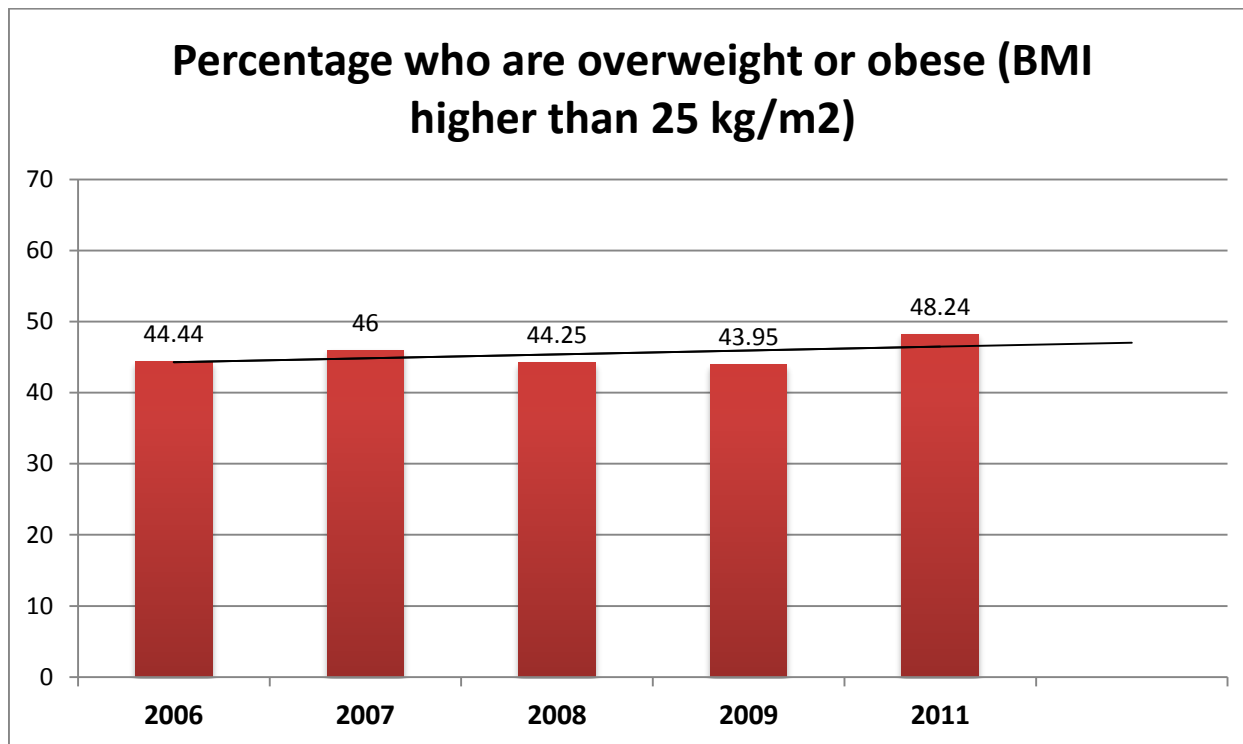


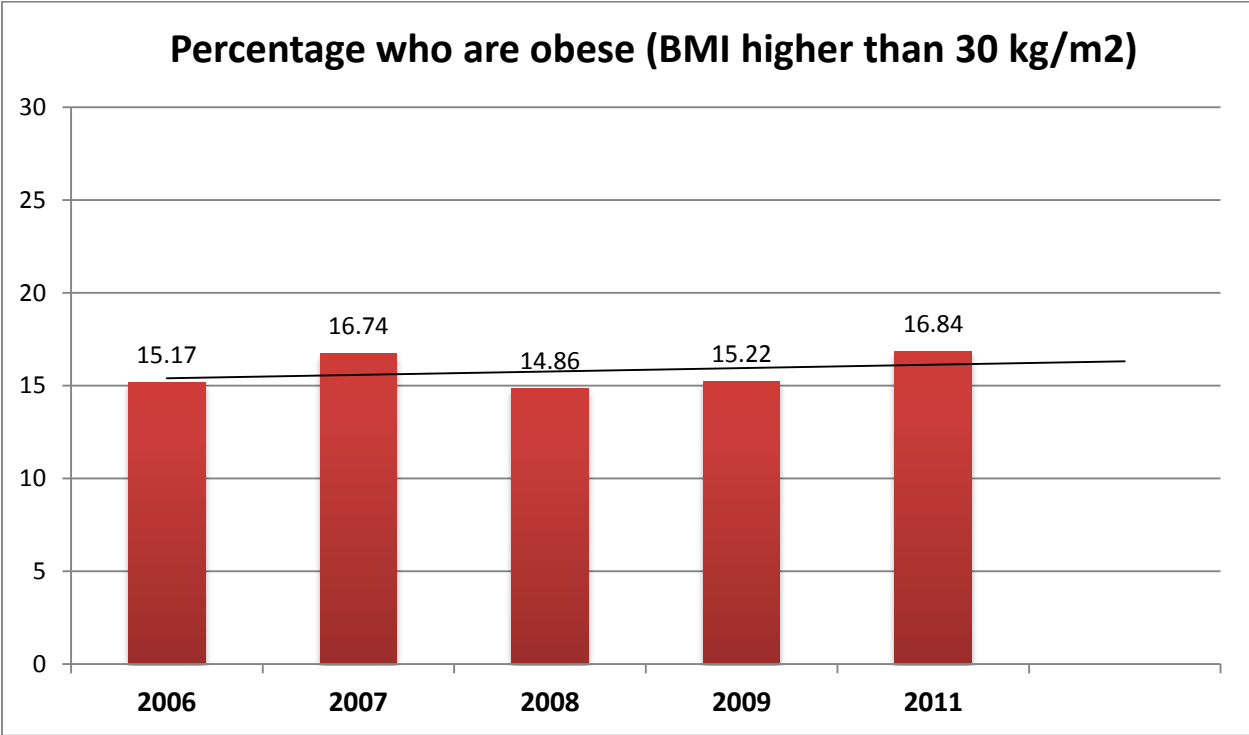
Physical inactivity

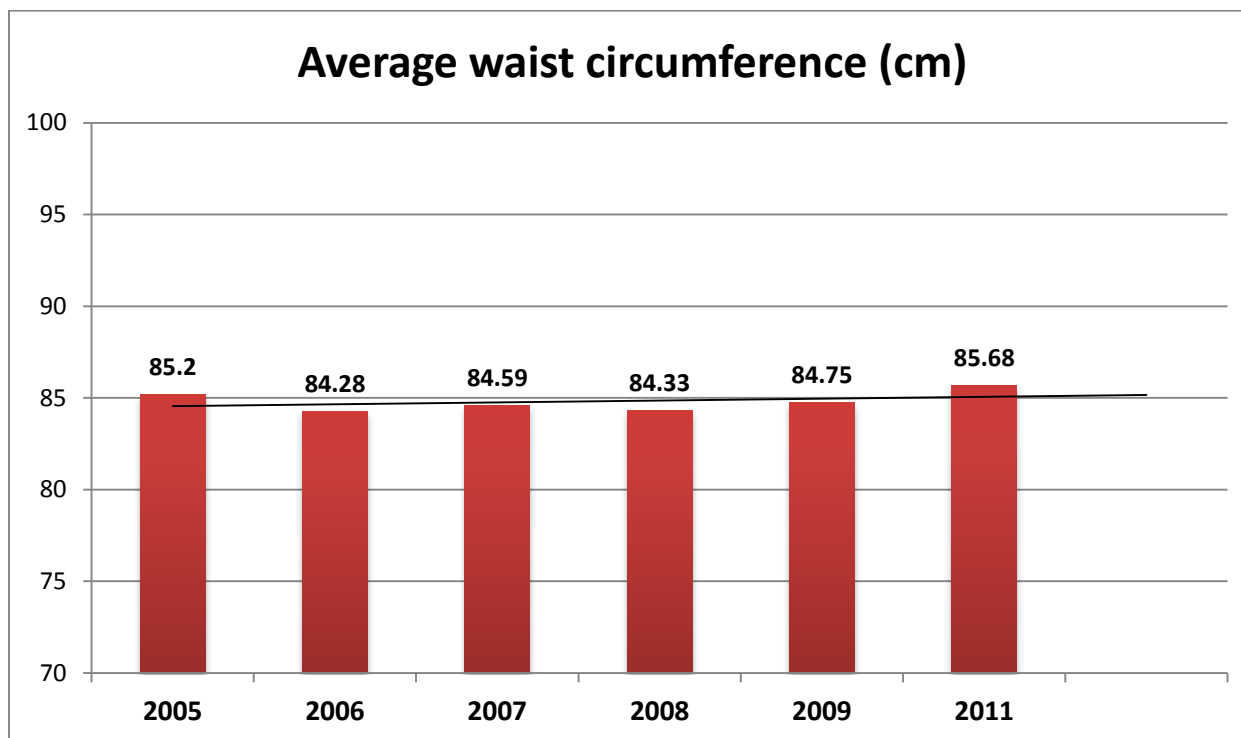


Overweight and obesity

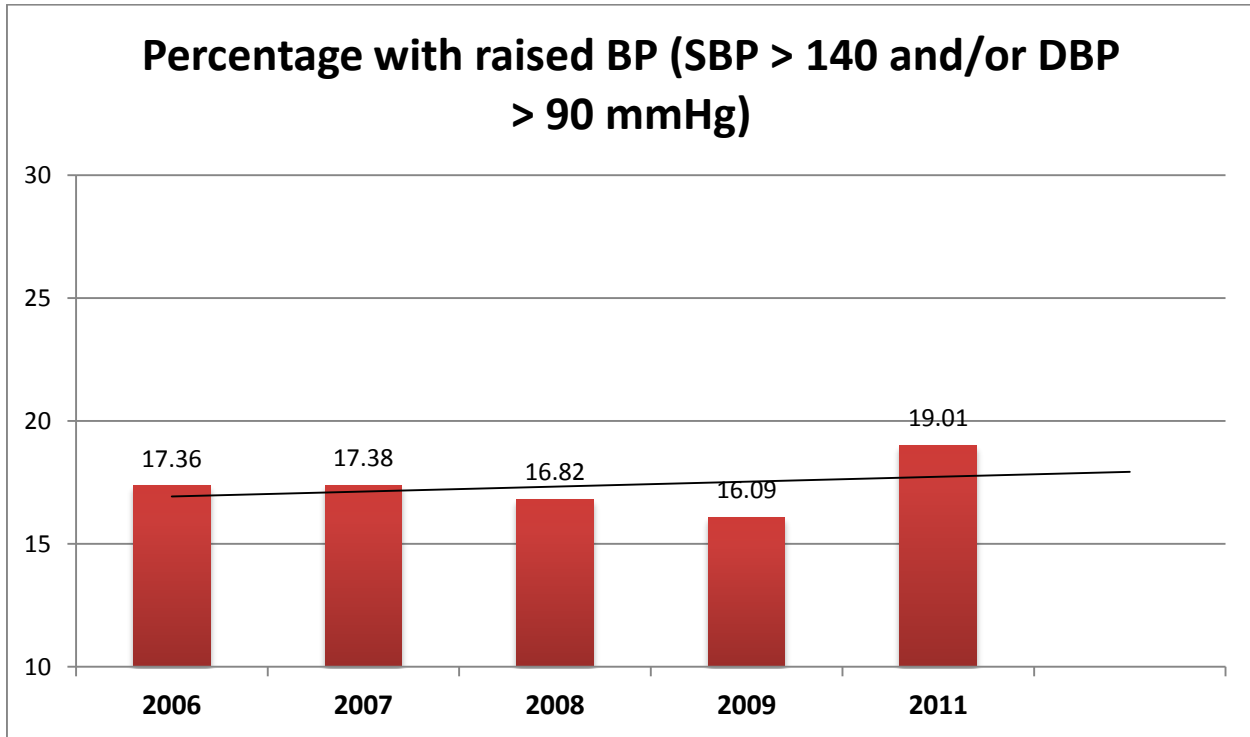




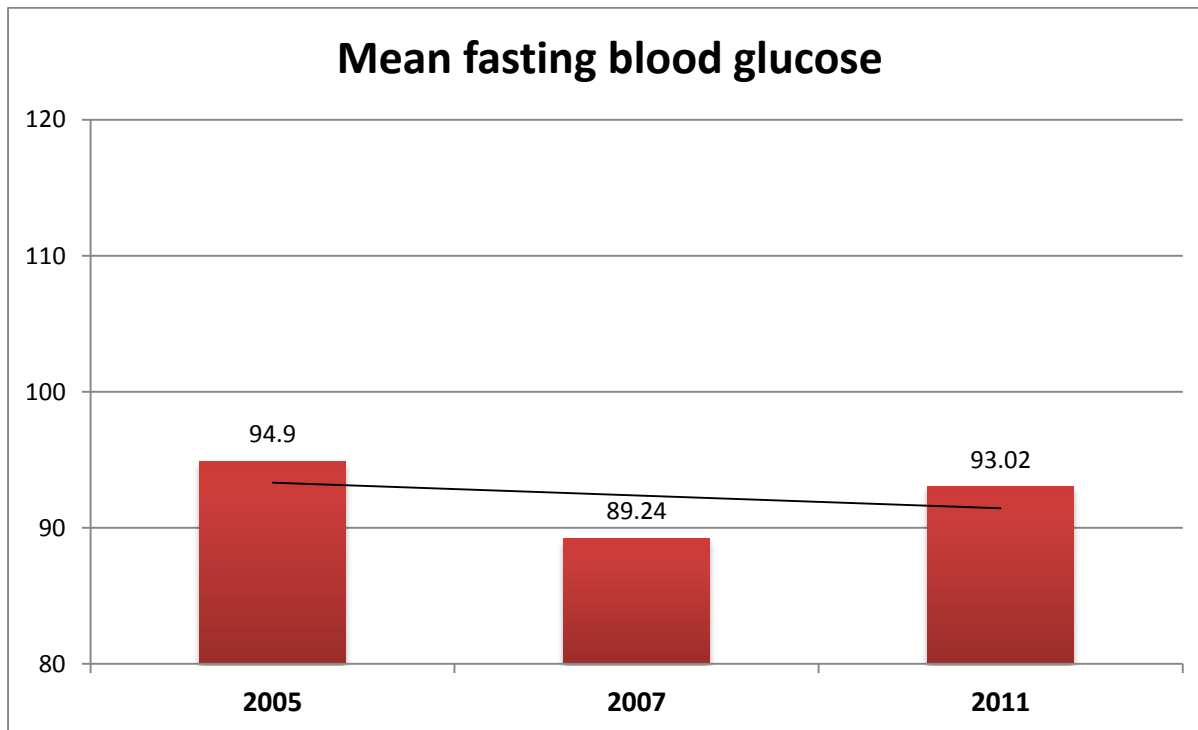


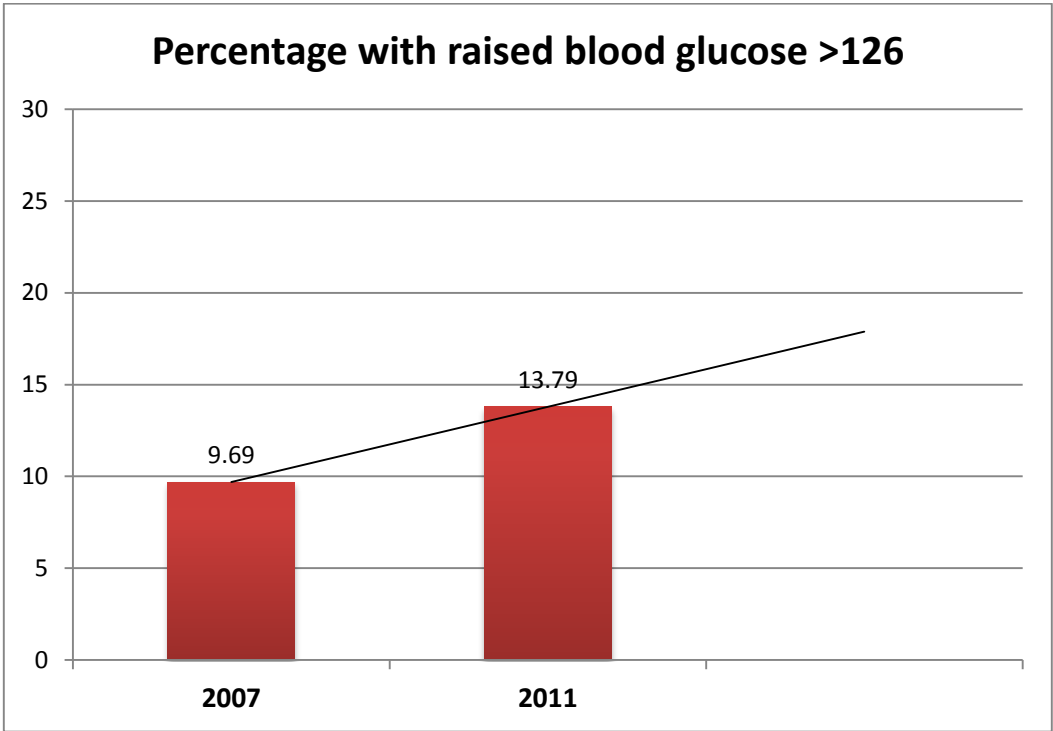


Raised blood pressure

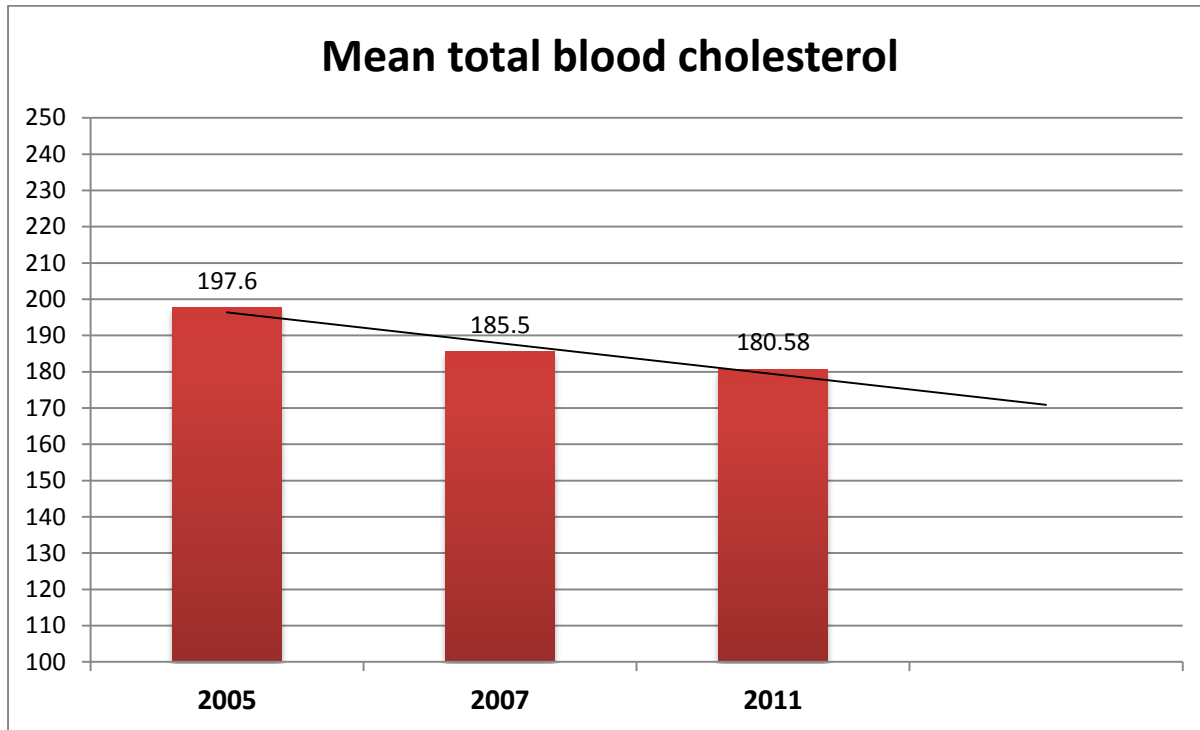


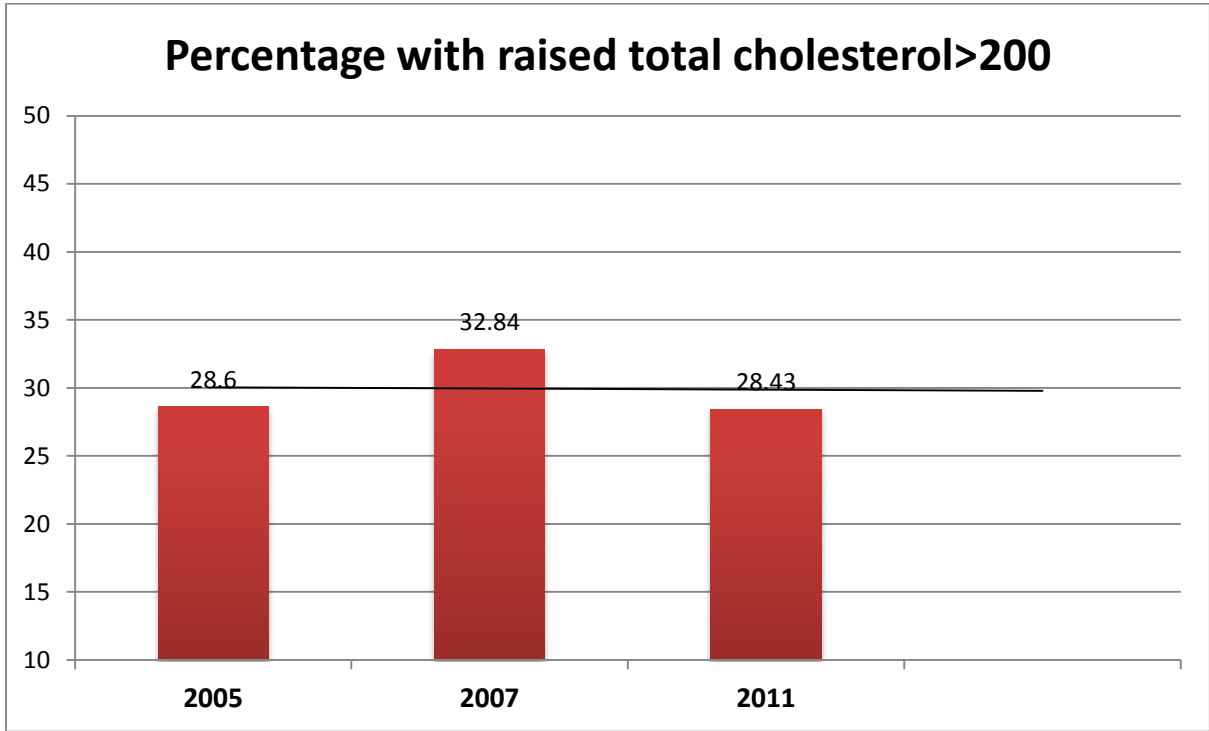
Diabetes



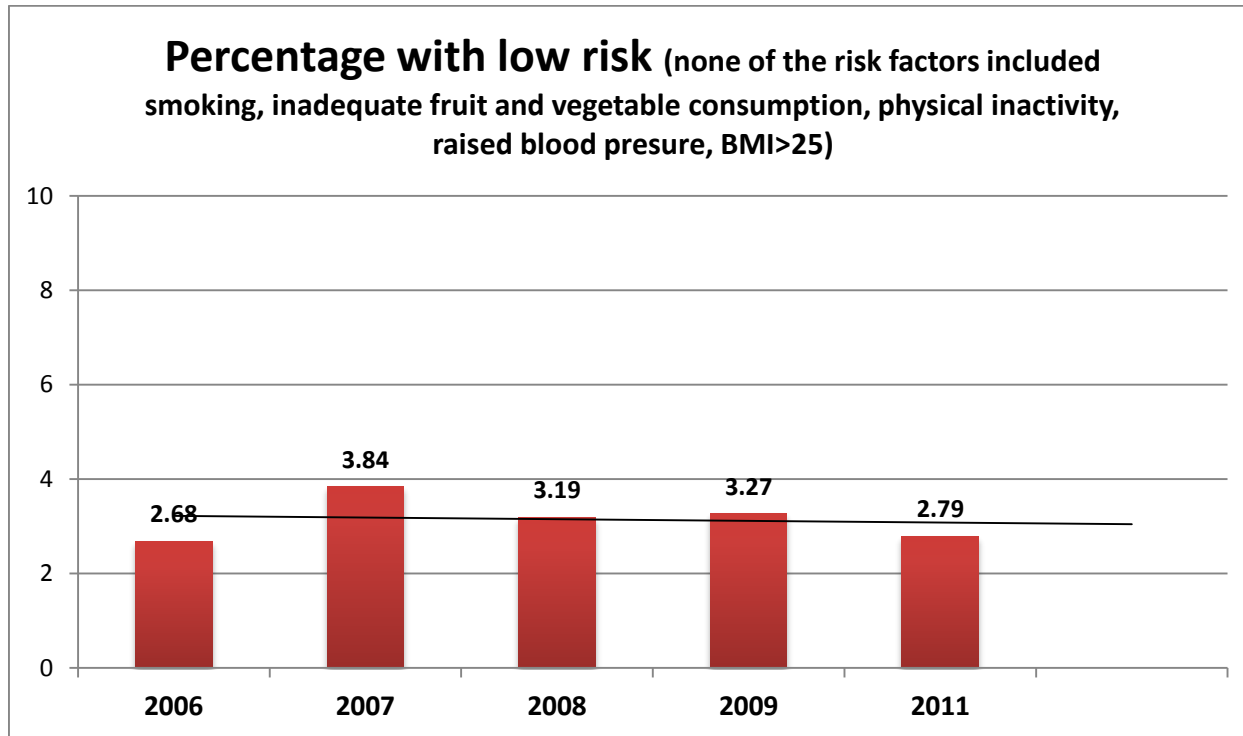


Dyslipidemia

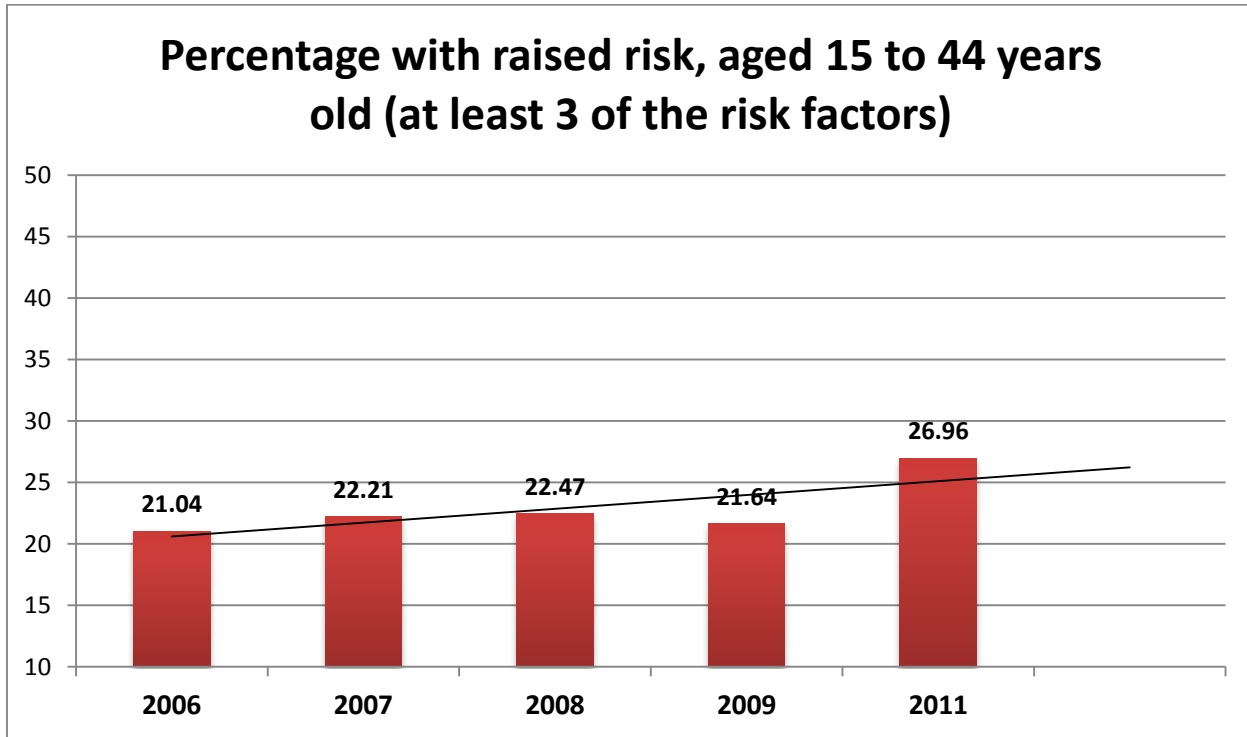


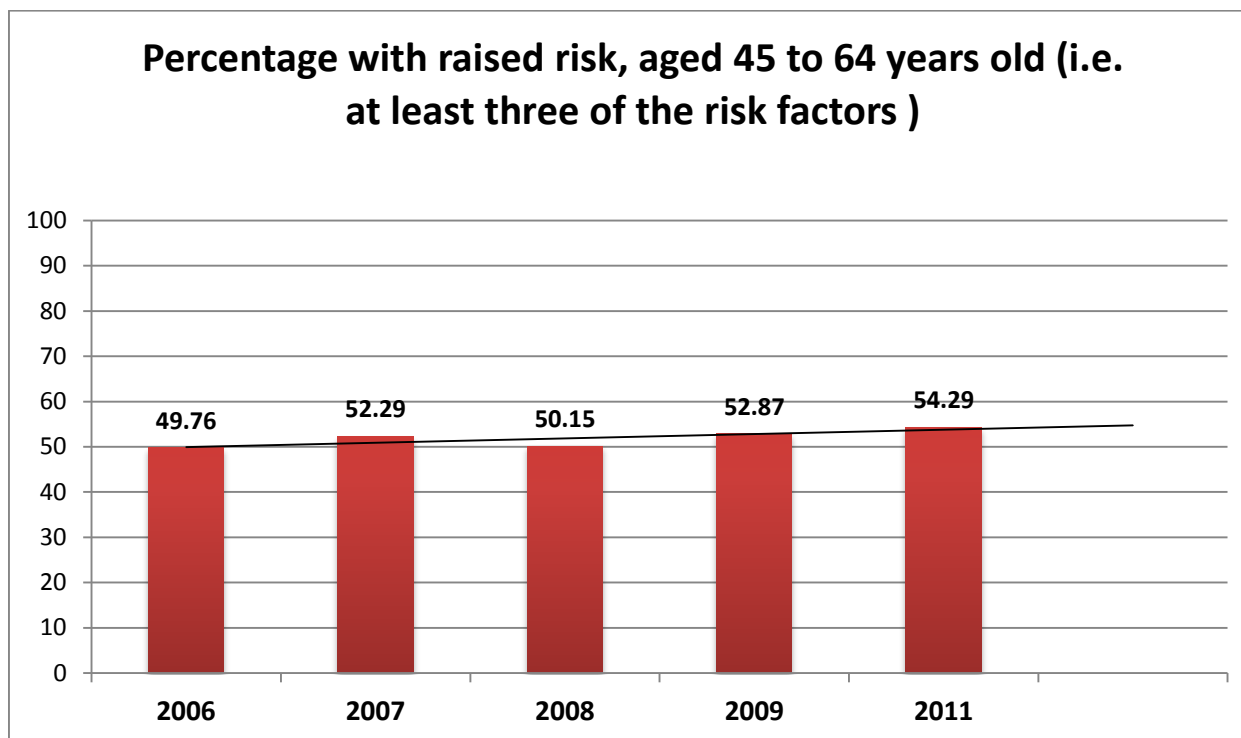


Low risk people



High risk people





گزارش بررسی عوامل خطر بیماری های غیرواگیر در سال ۹۰

معرفی کشور جمهوری اسلامی ایران

- موقعیت جغرافیایی : آسیا، شرق میانه
- همسایگان : افغانستان، ارمنستان، آذربایجان، عراق، پاکستان، ترکمنستان، ترکیه
- مساحت : ۱۶۴۸۱۹۵ کیلومتر مربع.
- جمعیت: ۷۷،۴۴۷،۰۰۰ (۲۰۱۳) ، دومین کشور پرجمعیت در منطقه EMRO
- رشد جمعیت سالانه به طور متوسط : ۱،۲۹٪ (۲۰۱۱)
- سن جمعیت : ۰-۱۵ (۰،۲۳،۳٪) ، ۱۵-۶۵ (۰،۷۰،۸٪) ، ۶۵ به بالا (۰،۵،۷٪) (۲۰۱۱)
- جمعیت شهری: ۷۱،۴٪ (۲۰۱۱)
- امید به زندگی در بدو تولد : ۷۲،۱ (مرد) ، ۷۶،۶ (زن) (۲۰۱۱)

خلاصه روش اجرا

نظام مراقبت عوامل خطر بیماری های غیر واگیر در ایران (براساس رویکرد گام به گام) پیشنهاد شده از سوی سازمان بهداشت جهانی مسئول پایش وضعیت عوامل خطر غیر واگیر در کشور است. نظام مراقبت عوامل خطر بیماری های غیر واگیر ایران به عنوان یک نظام جامع کشوری با همکاری دانشگاههای علوم پزشکی ، جهت به دست آمدن شواهد معتبر و مداوم برای کمک موثر به برنامه های پیشگیری و کنترل در جمعیت ۱۵-۶۴ ساله به مرحله اجرا درآمده است.

اهداف:

- توسعه زیرساخت برای مراقبت عوامل خطر بیماریهای غیر واگیر و تقویت پایش و ارزشیابی برنامه ها
 - فراهم نمودن منبع اطلاعاتی به روز و قابل اعتماد در سطح ملی از عوامل خطر و ترسیم شیوع، روند و توزیع آن
 - فراهم نمودن یک ابزار تصمیم گیری بهداشت عمومی مبتنی بر شواهد با هدف نهایی کاهش همه گیری بیماری های غیرواگیر
 - فراهم نمودن زیرساخت حمایتی برای پژوهش در زمینه پیشگیری
 - ارتقاء سطح دانش ، تقویت و افزایش ظرفیت بهداشت عمومی در پیشگیری بیماری های غیر واگیر
- برنامه ریزی و اجرای پیمایش براساس رویکرد گام به گام سازمان بهداشت جهانی به عنوان دور ششم در ایران در سال ۱۳۹۰ پایه ریزی شد. فرم اطلاعاتی جمع آوری داده ها طی فرایندی سه مرحله ای به شرح زیر تکمیل گردید :
- مرحله ۱:** مصاحبه حضوری بر اساس عوامل خطر فردی و رفتاری از جمله مصرف دخانیات، رژیم غذایی، فعالیت بدنی، سابقه فشار خون ، دیابت
- مرحله ۲:** سنجش جسمانی عوامل خطر سلامت از جمله فشار خون ، توده بدن و دور کمر
- مرحله ۳:** سنجش بیوشیمیایی عوامل خطر سلامت از جمله قند خون ناشتا و چربی خون .
- روش اجرا :**

ششمین دوره پیمایش ملی در اردیبهشت ۱۳۹۰ براساس رویکرد گام به گام سازمان بهداشت جهانی برای پایش عوامل خطر مشترک بیماری های غیر واگیر با توجه به جمع آوری اطلاعات استاندارد شده به مرحله اجرا درآمد. جمعیت مورد مطالعه ۱۰۰۰۰ ایرانی در گروه سنی ۷ تا ۷۰ سال از ۳۱ استان در کشور بودند. همه افراد انتخاب شده با دریافت فرم رضایتنامه دعوت به همکاری شده بودند. همه شرکت کنندگان توسط مصاحبه گران آموزش دیده ملاقات شدند و همه افراد انتخاب شده به شرکت در هر سه مرحله دعوت شدند. لازم به ذکر است که تحلیل های این گزارش برای سن ۱۵ تا ۶۴ سال انجام شده است.

مراحل جمع آوری اطلاعات :

فرم اطلاعاتی اصلی در ۳ مرحله بدون تغییر باقی مانده است. عناوین اضافی مربوط به کنترل و پیشگیری بیماریهای غیر واگیر با موافقت تیم بررسی کننده شامل پرسش های اختیاری و بسط داده شده بود.

- **مرحله اول :** ارزیابی رفتاری و بوم شناختی

داده های مرحله اول در ۶ حوزه مختلف جمع آوری شدند: اطلاعات عمومی خانوار، رژیم غذایی، فعالیت جسمانی، مصرف دخانیات، سابقه فشارخون و دیابت. شغل، جنس، سن، استان و محل سکونت در اطلاعات دموگرافیک شامل می شود و اطلاعات رژیم غذایی شامل مصرف میوه و سبزیجات روزانه در یک هفته معمولی و نوع متداول روغن یا چربی مصرفی خانوار می باشد.

- **مرحله دوم:** سنجش های جسمانی

وزن، قد، دور کمر و فشارخون مورد بررسی قرار گرفت. ابزار اندازه گیری شامل اندازه گیری وزن با لباس سبک بدون کفش توسط وزنه الکترونیک (دیجیتال) پرتابل کالیبره، قد توسط قدسنج پرتابل، میله قابل حمل مدرج مخصوص اندازه گیری قد (به جز خانم های شرکت کننده که باردار هستند) کالیبره اندازه گرفته شد.

اندازه گیری فشار خون: فشار سنج دیجیتال امرون M7 در ۳ نوبت متوالی به فاصله ۵ دقیقه اندازه گیری و میانگین آن به عنوان فشارخون ثبت شده است.

کنترل کیفیت برای هر اندازه گیری از طریق بررسی دوره ای که توسط ناظرین تیم در استان انجام شد.

- **مرحله سوم:** سنجش عوامل خطر بیوشیمیایی

قند خون ناشتا، تری گلیسیرید، کلسترول، لیپوپروتین با دانسیته بالا، لیپوپروتین با دانسیته پایین، سنجیده شد. پرسنل آزمایشگاه در وزارت بهداشت و دانشگاه افرادی هستند که با پروتکل مرحله سوم آشنا بودند و مسئول کنترل کیفیت و نظارت بر روند کار بودند.

پردازش فرمهای اطلاعاتی و روش تجزیه و تحلیل :

جمع آوری داده ها در ۳۱ استان توسط تیم STEP مرتبط انجام شد و در نرم افزار پایگاه داده ها EpiInfo6 پس از انجام data cleaning توسط اعضاء STEP وارد رایانه شد. همه داده ها از نظر ثبت تکراری، کد نامعتبر و ناقص مورد بررسی قرار گرفتند، وزن دهی داده های نظر سنجی بر اساس سرشماری ملی ۲۰۰۶ ایران با در نظر گرفتن وزن داده های از دست رفته، برای مطابقت با سن، جنس و استان ها، محاسبه شد. آنالیز داده ها با استفاده از نسخه ۱۰ نرم افزار STATA و تخمین فرکانس وزن دهی ارائه شده به فاصله اطمینان ۹۵٪ و P values کمتر از ۰,۰۵ برای تمام متغیرها برای ۵ گروه سنی و جنس در هر استان انجام شد.

نتایج اصلی

مصرف دخانیات

- شیوع مصرف سیگار در حال حاضر (present smoke consumption) ۱۰,۹۱٪ بود با نسبت بالاتر برای مردان (۲۰,۸۴٪) نسبت به زنان (۰,۹۰٪).

- شیوع مصرف سیگار در حال حاضر در منطقه شهری ۱۰,۹۸٪ بود. با نسبت بالاتر برای مردان (۲۱,۰۵٪) نسبت به زنان (۰,۸۳٪) .
- شیوع مصرف سیگار در حال حاضر در منطقه روستایی ۱۰,۷۷٪ بود. با نسبت بالاتر برای مردان (۲۰,۴۰٪) نسبت به زنان (۱,۰۷٪) .
- در میان تمام پاسخ دهندگان، ۹,۹۳٪ مصرف کننده روزانه سیگار (daily smoker) بودند: ۱۹,۱۶٪ مردان و ۰,۶۳٪ زنان
- در میان تمام پاسخ دهندگان در منطقه شهری، ۱۰,۰۸٪ مصرف کننده روزانه سیگار بود: ۱۹,۵۳٪ مردان و ۰,۵۶٪ زنان
- در میان تمام پاسخ دهندگان در منطقه روستایی، ۹,۵۹٪ مصرف کننده روزانه سیگار بود: ۱۸,۳۳٪ مردان و ۰,۷۸٪ زنان
- متوسط سن شروع مصرف سیگار ۲۱,۲۳ سال بود.
- متوسط سن شروع مصرف سیگار در منطقه شهری ۲۱,۲۱ بود
- متوسط سن شروع مصرف سیگار در منطقه روستایی ۲۰,۸۲ بود
- در میان سیگاری ها متوسط تعداد نخ سیگار مصرفی در روز ۱۰,۱۵ ، بود. ۱۲,۵۳ در مردان و ۷,۷۴ در زنان .
- در میان سیگاری ها متوسط تعداد نخ سیگار مصرفی در روز در منطقه شهری ۹,۵۶ ، بود ۱۱,۹۳ در مردان و ۷,۱۷ در زنان .
- در میان سیگاری ها متوسط تعداد نخ سیگار مصرفی در روز در منطقه روستایی ۱۳,۵۹ ، بود ۱۴,۲۸ در مردان و ۱۲,۶۳ در زنان .

مصرف میوه و سبزیجات

- به طور کلی شیوع مصرف میوه و سبزیجات کمتر از ۵ واحد در روز ۸۸,۱۵٪ گزارش شده بود: ۸۹,۵۰٪ در مردان و ۸۶,۷۸٪ در زنان.
- به طور کلی شیوع مصرف میوه و سبزیجات کمتر از ۵ واحد در روز در منطقه شهری ۸۷,۰۷٪ گزارش شده بود: ۸۸,۶۰٪ در مردان و ۸۵,۵۱٪ در زنان .
- به طور کلی شیوع مصرف میوه و سبزیجات کمتر از ۵ واحد در روز در منطقه روستایی ۹۰,۵۳٪ گزارش شده بود : ۹۱,۷۰٪ در مردان و ۸۹,۳۶٪ در زنان .

فعالیت جسمانی

- بطور کلی شیوع فعالیت بدنی کم (<600 MET-minutes/week) ۴۰,۱۲٪ بود : ۳۱,۵۳٪ در مردان و ۴۸,۸۲٪ در زنان می باشد .
- میانگین متوسط دقایق فعالیت جسمانی روزانه ۹۲,۴۲ دقیقه می باشد . میزان بیشتر در میان مردان با ۱۳۴,۸۳ دقیقه نسبت زنان با ۴۹,۴۲ دقیقه می باشد.
- میانگین متوسط دقایق فعالیت جسمانی روزانه در منطقه شهری ۸۳,۳۱ می باشد. میزان بیشتر در میان مردان با ۱۲۱,۸۳ دقیقه نسبت زنان با ۴۴,۲۵ دقیقه می باشد .
- میانگین متوسط دقایق فعالیت جسمانی روزانه در منطقه روستایی ۱۱۴,۴۴ می باشد. میزان بیشتر در میان مردان با ۱۶۶,۵ دقیقه نسبت زنان با ۶۱,۶۴ دقیقه می باشد .

چاقی و اضافه وزن

- نمایه توده بدنی طبقه بندی شده بصورت زیر می باشد :
 - کم وزنی و طبیعی ($BMI: <25.0$ kg/m²) ، اضافه وزن ($BMI: 25.0$ to <30.0 kg/m²) ، و چاقی ($BMI: \geq 30.0$ kg/m²) ، محاسبه برحسب وزن (کیلوگرم) تقسیم بر مجذور قد (متر) .

- میانگین نمایه توده بدنی بطور کلی ۲۵,۳۴ بود : ۲۵,۹۳ در زنان و ۲۴,۷۶ در مردان.
- درصد افراد دچار اضافه وزن و چاقی بطور کلی ۴۸,۲۴ بود : ۵۱,۵۹ در زنان و ۴۴,۹۶ در مردان.
- درصد افراد دچار چاقی بطور کلی ۱۶,۸ بود : ۲۱,۹ در زنان و ۱۱,۹ در مردان .

فشار خون بالا

- ۱۹,۰۱٪ از افراد با فشار خون بالا ($SBP \geq 140$ یا $DBP \geq 90$) تحت درمان با دارو (بودند : ۱۹,۲۱٪ در زنان و ۱۸,۸۳٪ در مردان .

شیوع دیابت

- میانگین سطح قند خون ناشتا ۹۳,۰۲ (mg/dl) در هر دو جنس بود : ۹۳,۱۶ (mg/dl) در زنان و ۹۲,۸۷ (mg/dl) در مردان .
- شیوع قند خون ناشتای بالا (تعریف شده براساس میزان بالاتر از ۱۲۶ mg/dl(7.0mmol/L) یا درمان دریافت شده برای دیابت) ۱۳,۷۹٪ بود : در مردان ۱۳,۰۲٪ و در زنان ۱۴,۵۷٪ .

کلسترول

- میانگین کلسترول در هر دو جنس ۱۸۰,۵۸ (mg/dl) بود : ۱۸۴,۳۸ (mg/dl) در زنان و ۱۷۶,۸۲ (mg/dl) در مردان .
- میانگین کلسترول در منطقه شهری ۱۸۲,۱۴ (mg/dl) بود : ۱۸۵,۶۳ (mg/dl) در زنان و ۱۷۸,۶۸ (mg/dl) در مردان .
- میانگین کلسترول در منطقه روستایی ۱۷۷,۳۱ (mg/dl) بود : ۱۸۱,۹۷ (mg/dl) در زنان و ۱۷۲,۶۸ (mg/dl) در مردان .
- شیوع کلسترول بالا (بیش از ۲۰۰ میلی گرم در میلی لیتر یا ۵,۲ میلی مول در لیتر) ۲۸,۴۳٪ بود که ، فراوانی بیشتر در زنان ۳۰,۹۸٪ نسبت به مردان ۲۵,۸۹٪ مشاهده شد.

HDL

- میانگین HDL ۴۴,۳۱ (mg/dl) در هر دو جنس می باشد : ۴۷,۰۳ (mg/dl) در زنان و ۴۱,۶۲ (mg/dl) در مردان می باشد .
- میانگین HDL ۴۳,۷۷ (mg/dl) در منطقه شهری می باشد : ۴۶,۵۹ (mg/dl) در زنان و ۴۰,۹۷ (mg/dl) در مردان می باشد .
- میانگین HDL ۴۵,۳۵ (mg/dl) در منطقه روستایی می باشد : ۴۷,۷۸ (mg/dl) در زنان و ۴۲,۹۴ (mg/dl) در مردان می باشد .

تری گلیسیرید

- میانگین تری گلیسیرید (mg/dl) ۱۴۹,۳۸ در هر دو جنس بود : ۱۴۱,۳۷ در زنان و ۱۵۷,۲۳ در مردان .
- میانگین تری گلیسیرید (mg/dl) ۱۵۶,۷۳ در منطقه شهری بود : ۱۴۶,۳۶ در زنان و ۱۶۶,۹۰ در مردان .
- میانگین تری گلیسیرید (mg/dl) ۱۳۴,۹۸ در منطقه روستایی بود : ۱۳۲,۲۲ در زنان و ۱۳۷,۶۹ در مردان .

افراد پرخطر

- ۵ عوامل خطر مشترک بحرانی برای NCDs شامل موارد زیر می باشد: مصرف روزانه سیگار ، اضافه وزن یا چاقی ، فشار خون بالا ، مصرف میوه و سبزیجات کمتر از ۵ وعده در روز و کم تحرکی (<600 MET-minutes) .
- درصد افراد کم خطر (هیچ یک از عوامل خطر را ندارند) ۲,۷۹٪ که ۳,۰٪ در مردان و ۲,۵۸٪ در زنان می باشد .
- درصد افراد پرخطر (حداقل دارای ۳ عامل خطر) ۴۴-۱۵ سال در هر دو جنس ۲۶,۹۶٪ می باشد: در مردان ۲۶,۰۴٪ و در زنان ۲۷,۹۱٪ می باشد .
- درصد افراد پرخطر (حداقل دارای سه عامل خطر) ۶۴-۴۵ سال در هر دو جنس ۵۴,۲۹٪ می باشد: در مردان ۵۲,۱۳٪ و در زنان ۵۶,۴۸٪ .