Social Determinants of Noncommunicable Diseases in TURKEY

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BLACK
SEA
BLACK
SEA
REGION
MARMARA REGION
CENTRAL ANATOLIA REGION
EAST ANATOLIA REGION
AEGEAN REGION
MEDITERRANEAN
REGION
SOUTH EASTERN
ANATOLIA REGION
AEGEAN SEA
MEDITERRANEAN SEA

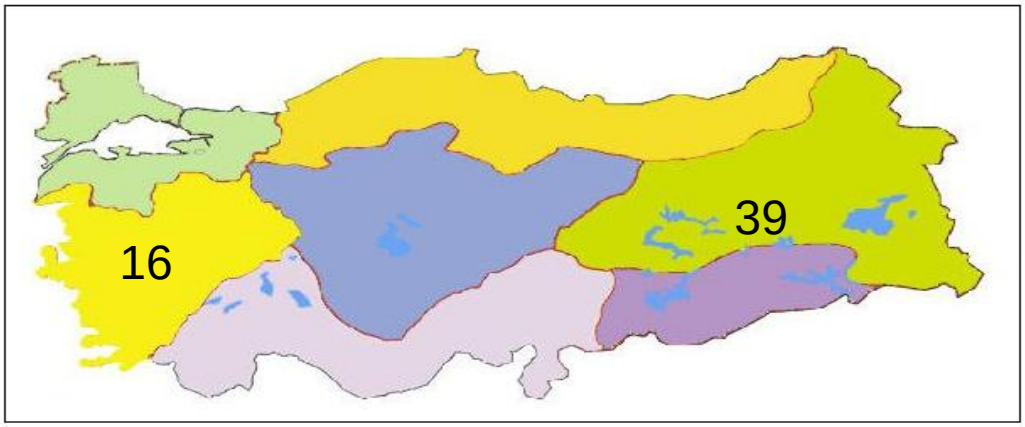
Background information

- **Population**: 75.6 million
- **Urban**: 70.0%
- **Median Age**: 28.3
- Life expectancy at birth: 74
    - Male: 71
    - Female: 76

*Turkish Statistical Institute, 2013

Background Information

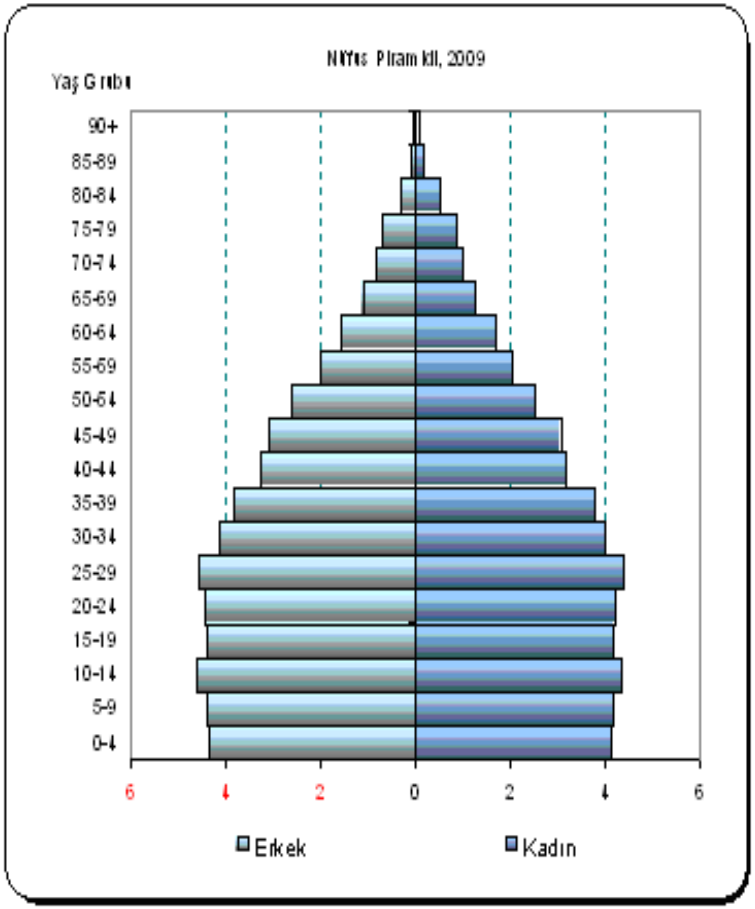
- Infant Mortality Rate is 17 per 1,000 live births in 2008 (HUIPS, 2009:135)
- Maternal Mortality Ratio is 28 per 100,000 live births in 2005 (HUIPS, 2006:56)
- The highest: in Eastern regions
- The lowest : in Western-Central regions of Turkey (2008)



Background Information

Age distribution

- 67% Working age (15- 64)
- 26% 0-14 age
- 7 % 65 and older



Background Information

- Income per capita: 15,392 USD (2010)*
- Gross National Income:1.2 Trillion USD (2010
- (increasingly developing regional economy)
- Turkey is ranked 92nd according to the Human Development Index (HDI) in 2011**
- However, there is not a cross match between GNI and HDI.
- Population below national poverty line is 18.1% between the years 2000-2011***

- *TROG, 2010:32
- **UNDP, 2011:128
- ***UNDP, 2011:136,143

Background Information

- Turkish health system
- Last decade ⟶ a unique period
- Major structural change
- “Health Transformation Program”
- The private sector ⟶ an increasing role

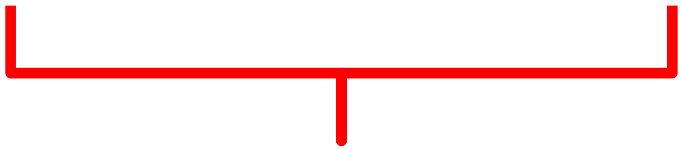
- NCDs ⟶ no country wide early detection and screening programs

METHOD

- Literature search
- Pubmed, google academic, library of The Scientific and Technological Research Council of Turkey
- **Key words:** NCDs, gender, age, education, social class, socioeconomic, occupation, inequalities

CONTENT

NCDs
Metabolic Risk Factors
Behavioural Risk Factors



AGE
GENDER
SOCIOECONOMIC INEQUALITIES

NCDs ACCORDING TO THE SOCIAL DETERMINANTS

CARDIOVASCULAR DISEASES

CORONARY HEART DISEASE

- **AGE AND GENDER**

CHD prevalence

- Men (7.5% –17.4%)
- Women (1.7%–8.3%)

- Increasing with age for both genders

CORONARY HEART DISEASE

- **REGION**

- Over 20 years (Onat, A. 1991)
- All age groups (National Household Study, 2003)
- Over 15 years (Turkish Statistical Institute, 2008,2010)

CORONARY HEART DISEASE

- **INCOME**

CHD prevalence

- **Low Income** High Income
- (in Konak district of Izmir)
- Table 1: Prevalence of CHD according to income and gender (Demiral, Y. 2006)

	LOW INCOME	HIGH INCOME
WOMEN	17.2%	10.1%
MEN	10.9%	6.5%

CEREBROVASCULAR DISEASE

- **AGE AND GENDER**

CVD prevalence

- Men (1.7%–2.8%) ; Women (1.1%– 2.1%)

- Increasing with age for both genders

CEREBROVASCULAR DISEASE

- **REGION**

CVD prevalence

- Urban Rural
- All age groups (National Household Study, **2003**)
- Over 15 years (Turkish Statistical Institute, **2010)**

HYPERTENSION

Table 2: Hypertension prevelance in men according to age groups, Turkey

Research	Year	35-44	45-54	55-64	65-74	75 over	Total
TARF	1990	18.1	23.6	39.1	53.2	30.8	28.4
TURDEP 1	1997	22.2	35.4	54.9	64.0	69.9	39.2
PATENT	2003	20.5	30.3	49.3	60.9	62.7	37.7
PATENT	2007	34.0	47.6	61.9	74.0	70.5	52.2
TRABZON	2003	39.0	56.3	70.2	75.4	86.2	54.3
KONAK	2007	34.1	48.9	63.4	95.0	80.0	56.3
BHS	2008	14.7	30.8	48.5	65.2	76.9	41.4

HYPERTENSION

Table 3: Hypertension prevelance in women according to age groups, Turkey

Research	Year	35-44	45-54	55-64	65-74	75 over	*Total*
TARF	1990	19.9	39.4	53.1	64.0	70.0	*38.0*
TURDEP 1	1997	32.6	54.3	69.5	75.8	79.4	*52.7*
PATENT	2003	28.3	50.5	67.2	76.2	72.3	*50.0*
PATENT	2007	37.8	59.5	75.9	84.7	84.6	*60.3*
TRABZON	2003	46.5	67.5	84.8	87.8	87.9	*64.2*
KONAK	2007	34.3	59.0	72.4	90.0	88.9	*61.0*
BHS	*2008*	*11.6*	*35.2*	*61.9*	*81.5*	*88.0*	*45.0*

HYPERTENSION

- **AGE AND GENDER**

Hypertension prevalence

- Women (%32.3)

Men (%30.9)

- Turkish Diabetes Epidemiology Study 2, 2010

HYPERTENSION

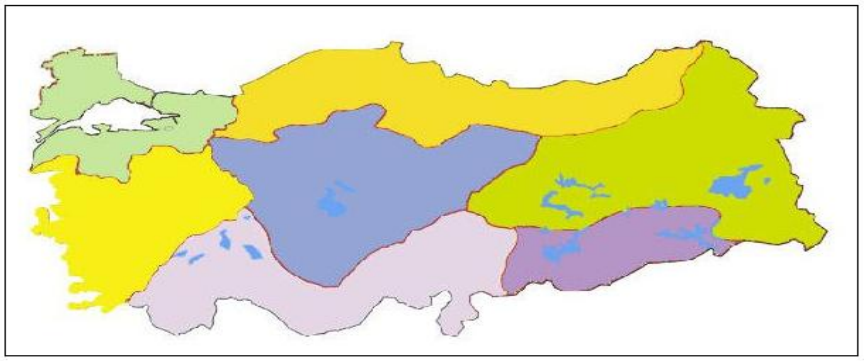
- **REGION**

Hypertension prevalence

Nothern Region %32

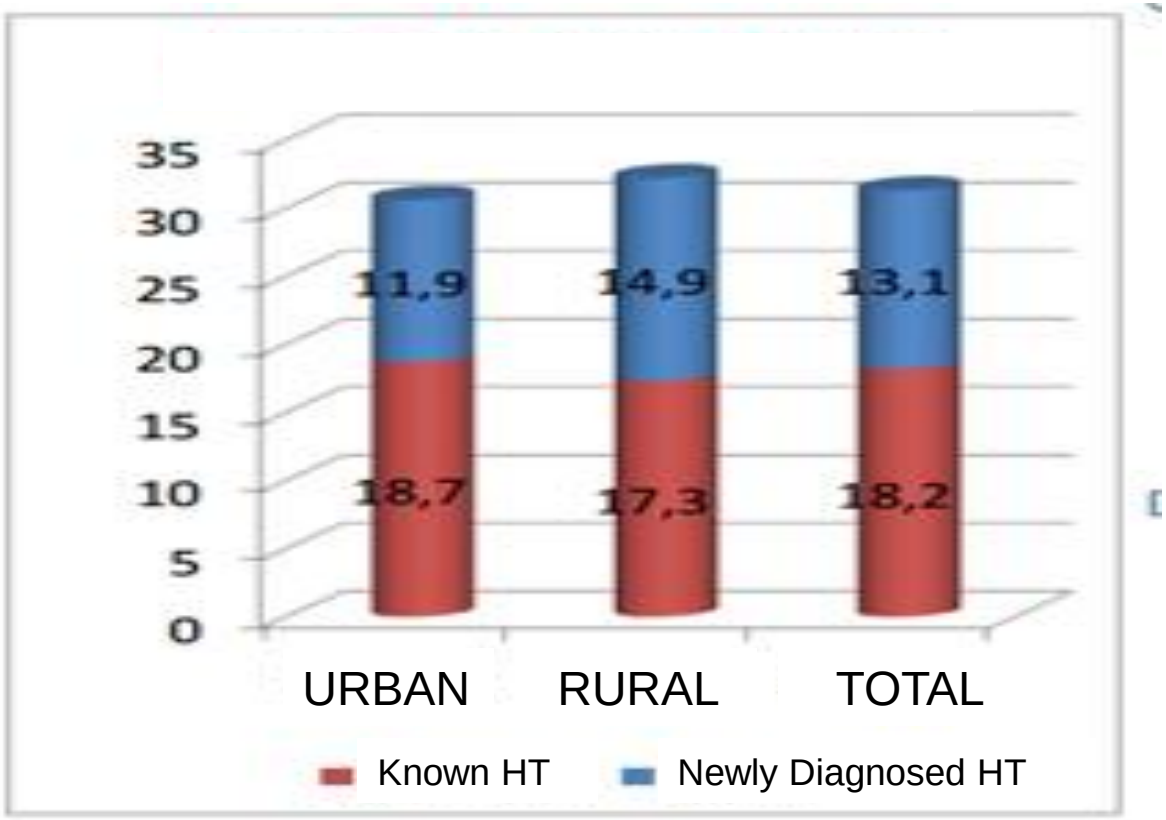
Western Region %26

- Regional differences are more prominent among **women** than men (TURDEP-1,2002)



HYPERTENSION

Figure 1:Hypertension Prevalence in the Urban and the Rural Regions (Turdep 2, 2010)



DIABETES

- TURDEP 1, **2002**
  Diabetes prevalence
  7.2%

Women 8.0%

Men 6.2%

- TURDEP 2, **2010**
  Diabetes prevalence
  16.7%

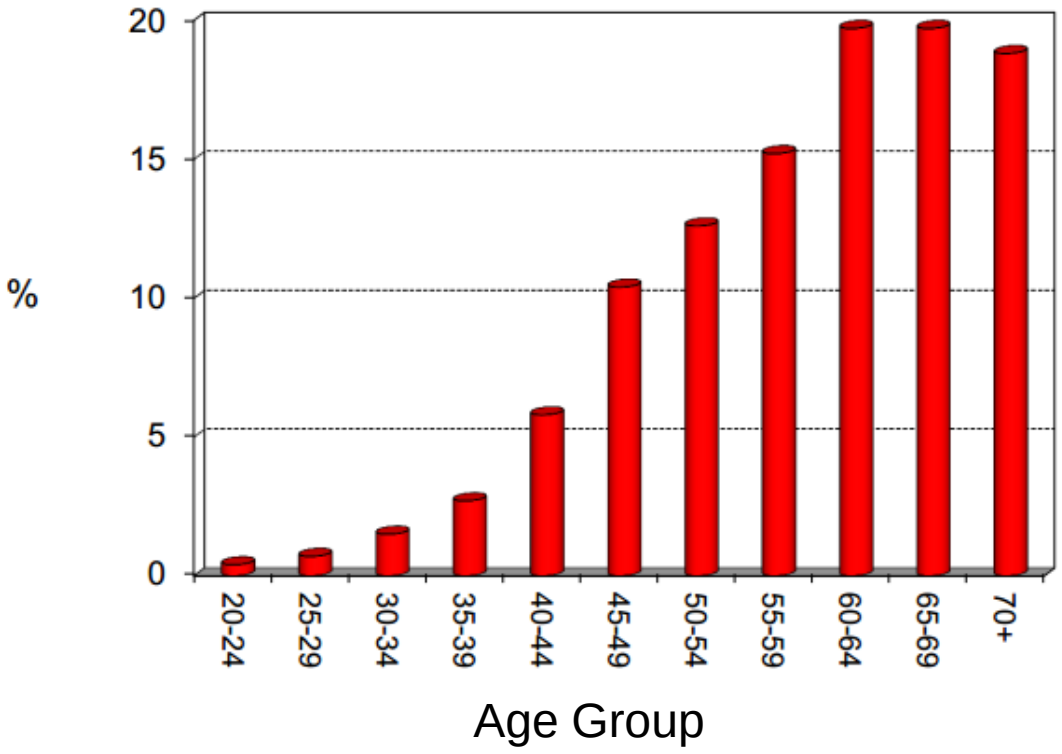
Women 17.2%

Men 16%

Diabetes Prevalence 4.75% (Women:5.75% and Men:3.42%)
*National Household Study (MoH, **2003**)

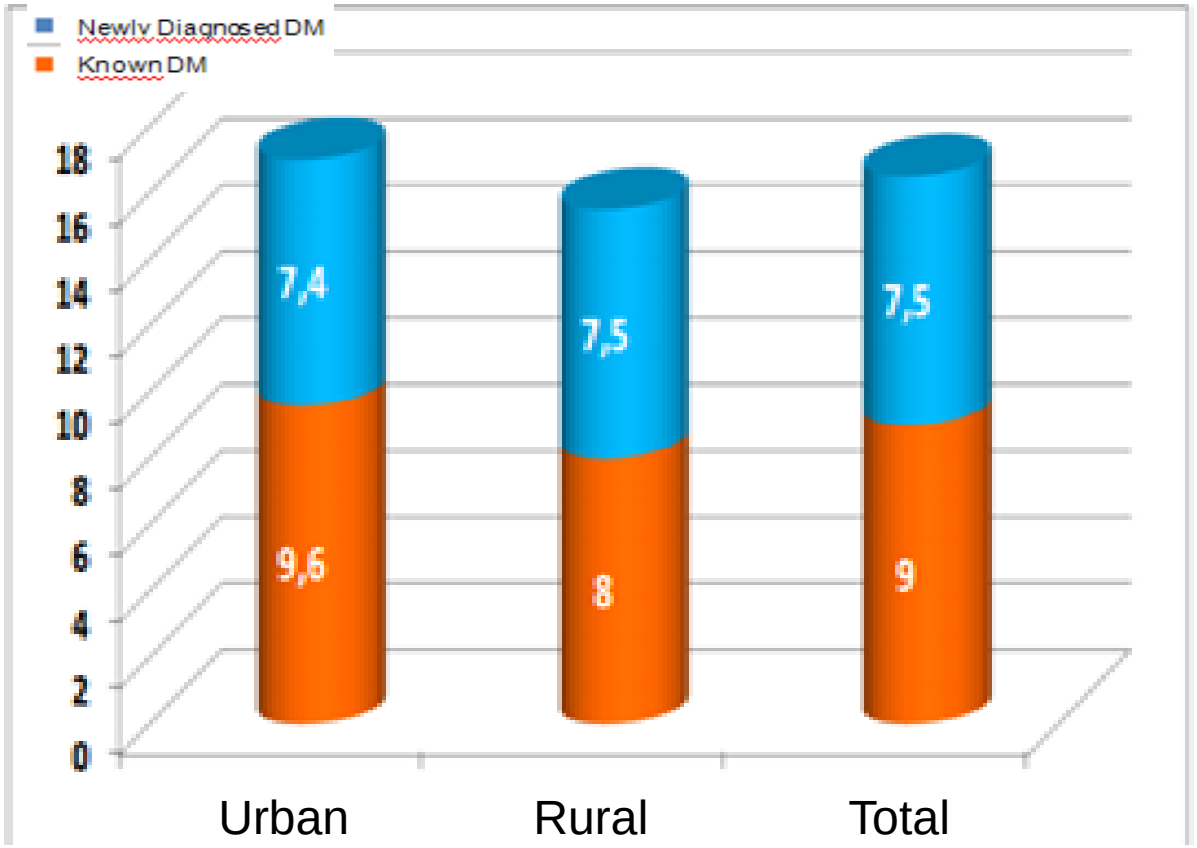
DIABETES

- Figure2:Diabetes Prevalence according to age groups (Turdep-1, 2003)



DIABETES

- Figure 4: Diabetes Prevalence according to regions (Turdep-2, 2010)



DIABETES

- **Social Class**

- Living in the central region for men
- Living in a rural area for women
- Increasing level of education

} protective effect

(TURDEP-1, 2003)

DIABETES

Table 4: Prevalence of Diabetes in TARF Study in terms of regions

	Total			Men			Women			
	DM	Cohort	%	DM	Cohort	%	DM	Cohort	%	p
Southeast Anatolia	55	285	19.3	26	145	17.9	29	140	20.7	ns
Black Sea	55	400	13.8	29	201	14.4	26	199	13.1	ns
Mediterranean	44	356	12.4	27	161	16.8	17	195	8.7	0.022
Marmara	107	904	11.8	54	463	11.7	53	441	12.0	ns
Central Anatolia	77	731	10.5	28	352	8.0	49	379	12.9	0.029
East Anatolia	26	277	9.4	9	139	6.5	17	138	12.3	0.095
Aegean	40	448	8.9	22	222	9.9	18	226	8.0	ns
Total	404	3401	11.9	195	1683	11.6	209	1718	12.2	ns

DM- diabetes mellitus, NS- nonsignificant

METABOLİC RISK FACTORS

- Obesity
- Metabolic Syndrome

OBESITY

- TURDEP 1, 2002
  Obesity prevalence
  7.2%

Women 32.9%

Men 13.2%

- TURDEP 2, 2010
  Obesity prevalence
  16.7%

Women 44.2%

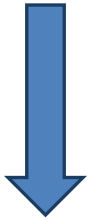
Men 27.3%

37.4% in women, 15.3% in men
(MoH-Chronic Disease Prevalence Study, **2011**)

OBESITY

- **REGION**

Men living in urban areas
Women living in rural areas



higher values for risky BMI

METABOLIC SYNDROME

- World Health Survey 2002
- 3790 women and 4057 men

Age adjusted overweight

48.4% for women 46.1% for men

METABOLIC SYNDROME

For men

- education was not systematically related to overweight
- overweight significantly increased in the highest wealth groups

For women

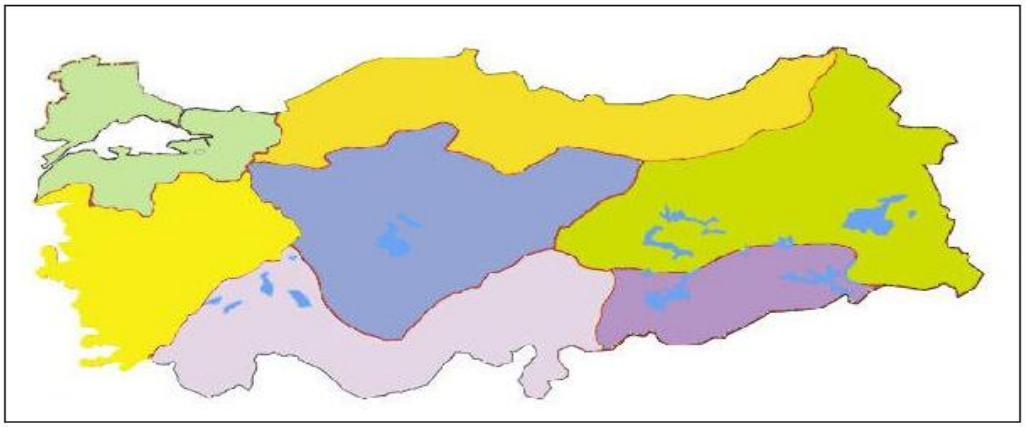
- the prevalence of overweight was highest for low educated and middle wealth groups

*World Health Survey,2002

METABOLIC SYNDROME

REGION

- Small regional variations
- In the East overweight prevalence was more related to higher socioeconomic position than in the other regions (**World Health Survey, 2002**)



BEHAVIOURAL RISK FACTORS

- Tobacco
- Alcohol consumption
- Physical activity

TOBACCO

- **AGE**

2011
highest prevalence

25-44 years

- 2013
- Referance: 15-24 years

- 35-44
- 45-54
- 25-34
- 55-64

*Chronic Disease Survey, MoH

**Palipudi, 2013

TOBACCO

- **MEN**

63.0 %

58.0 %

*1988

**2003

- **WOMEN**

24.0 %

14.0 %

* Nationwide Study

**Health Services Utilization Survey

TOBACCO

- **MEN**

43.8%

37.3%

GATS,2008

GATS,2012

- **WOMEN**

11.6%

10.7%

TOBACCO

REGION

The **Rural** ⟶ protective effect (OR: 0.78 [0.7–0.9])

*Palipudi, 2013

TOBACCO

EDUCATION

High Educated Groups

RISK !!

Low educated groups

Lower prevalence ⟶ the highest education group

*Palipudi, 2013

TOBACCO

EDUCATION

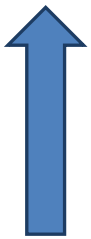
- Nearly half (43%) of secondary school graduates
- 13% of illiterate people

smoked

***Burden of Disease Study, 2003**

TOBACCO

- **WEALTH INDEX**

- Middle wealth group  significant increase (OR:**1.32** [1,1-1,6])

*Palupudi, 2013

ALCOHOL CONSUMPTION

National Disease Burden Study
2003

Lifelong Alcohol Use

Men 34%

Women 8%

Chronic Disease Survey, MoH,
2011

Lifelong Alcohol Use

Men 23%

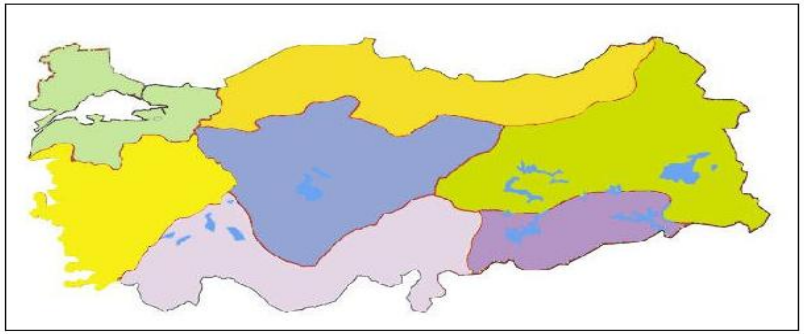
Women 4%

•The highest alcohol use prevalence is in 35-44 age group (MoH,2011)

ALCOHOL CONSUMPTION

REGION

- 11% ⟶ rural areas
- 14% ⟶ urban areas
- The highest alcohol prevalence is 20% in Western Marmara region
- followed by Aegean region and Istanbul
- The lowest consumption is in South-eastern Anatolia region



PHYSICAL INACTIVITY

- **“Let’s eat healthy, Let’s protect our Heart” study, MoH ,2004**
- on 15.468 individuals over 30 years
- Regular physical activity **3.5%**
- **National Burden of Disease study, 2004**
- 20% had a sedentary life
- 16% had inadequate physical activity

PHYSICAL INACTIVITY

- Almost half of men and women

4 hours a day

watching TV (women)
using a computer (men)

*Chronic Disease Prevalence Study, MoH, 2011

PHYSICAL INACTIVITY

REGION

- For both genders, urban has more risk for inactivity than rural
- The highest prevalence for inactivity exists for women at 60-69 age group living in the urban

*Country profiles in infobase of WHO
https://apps.who.int/infobase/CountryProfiles.aspx

**MoH-Chronic Disease Prevalence Study, 2011

INFREQUENT CONSUMPTION OF FRESH VEGETABLES

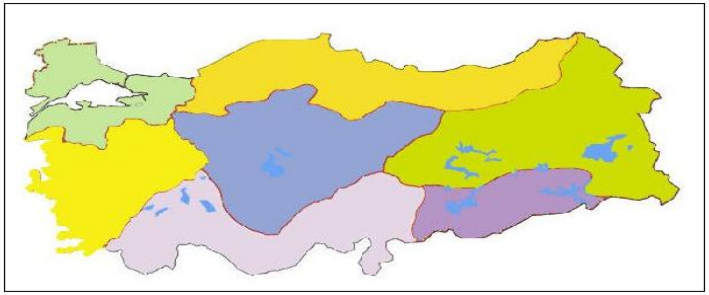
- Men ⟹ 80.7 %
- Women ⟹ 81.3 %

consume low amounts of fruit and vegetables

*Turkish WHS

INFREQUENT CONSUMPTION OF FRESH VEGETABLES

- **Region**
- consumption is highest for Aegean and Mediterranean Regions
- lowest for East part of Turkey



*Turkish National Food and Nutrition Strategy Group Study 2003

INFREQUENT CONSUMPTION OF FRESH VEGETABLES

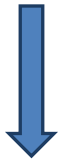
- **Socio-economic Inequalities**
- Low income families ⇒ more bread
- High income families ⇒ more meat and meat products, fresh fruits and vegetables
- The problem is not the unavailability of foods, but its distribution among socio-economic, gender and age groups

*FAO, 2001

CONCLUSION

- Several consistent findings
- Age ⟹ consistent risk factor for almost all

- obesity, hypertension, low physical activity



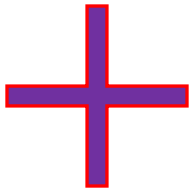
females

- smoking and alcohol ⟹ males

CONCLUSION

- Mass diseases like NCDs and related risk factors require mass intervention

population based approach



high risk group approach

THANK YOU…