



GP Research in Hungary. The State of the Art

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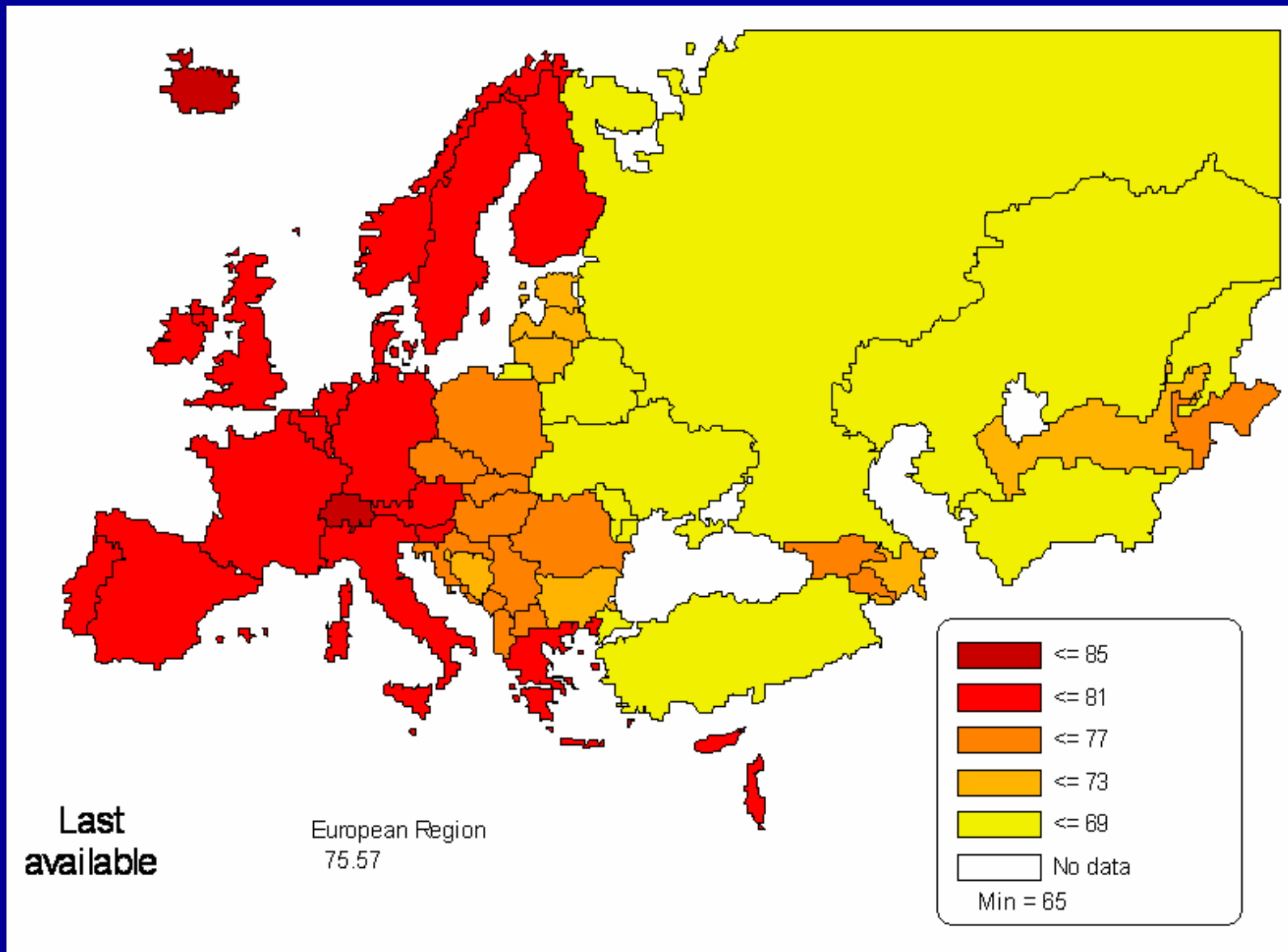
About Us ...



100 km

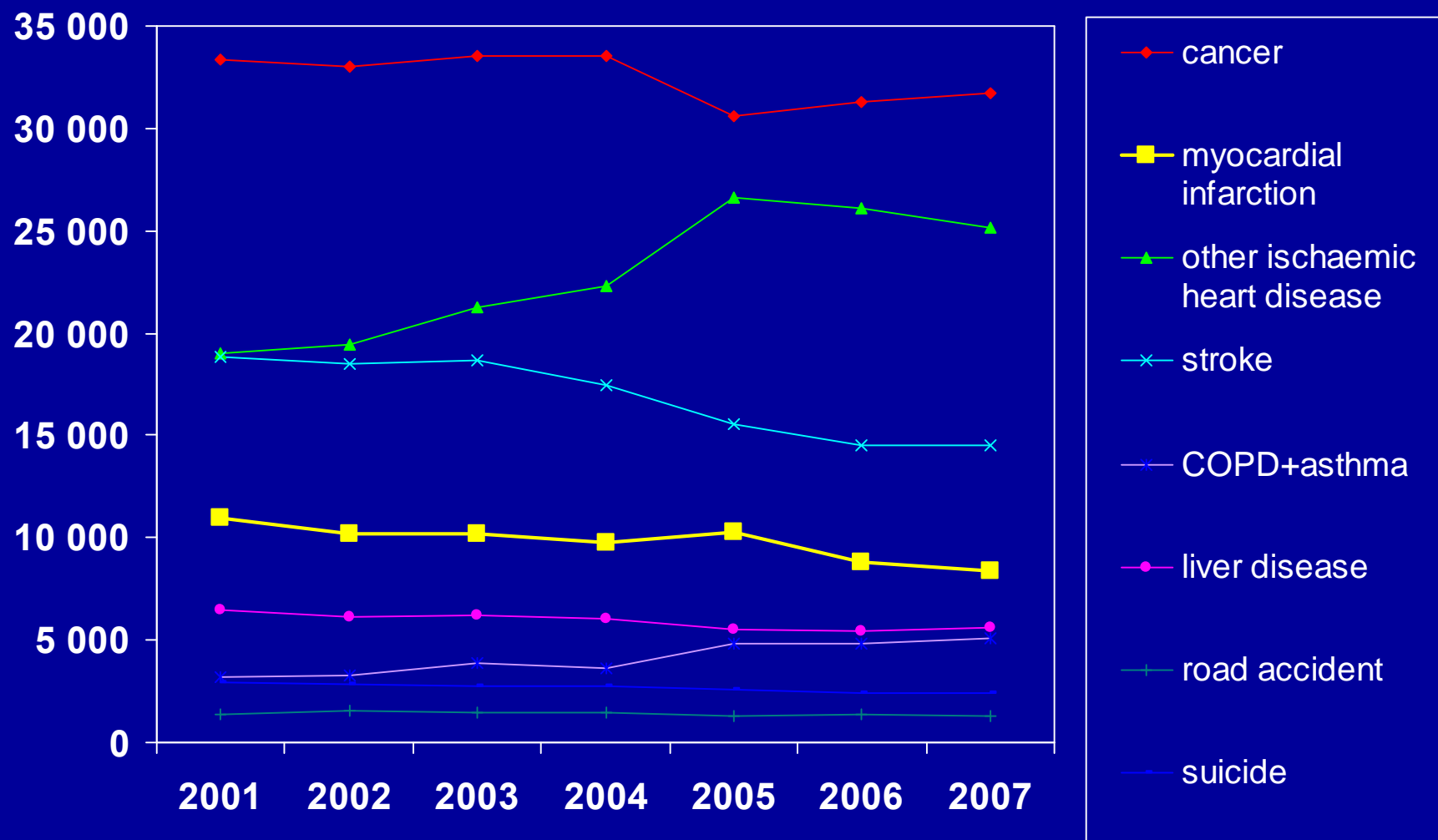
- Area: 93,030 km²
- Population: 10 million
- Population density: 108/km²
- Ratio of urban population: 63%

Life expectancy at birth in Europe, years



Source: HFA-DB/Europe, July 2008

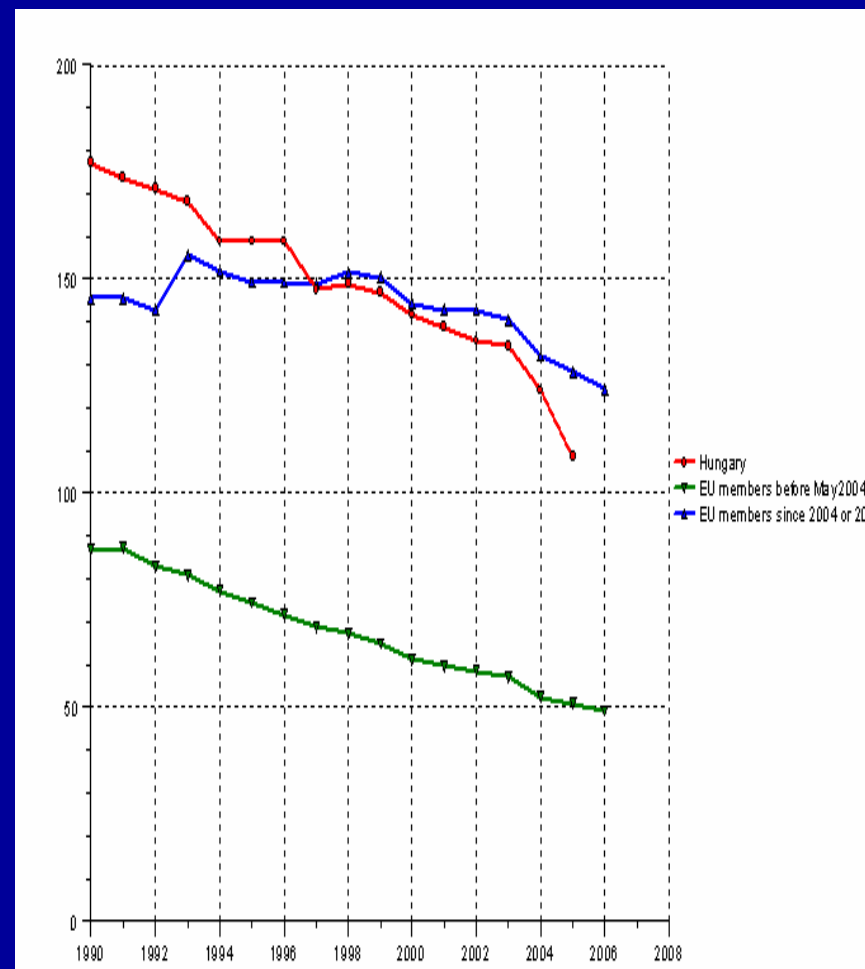
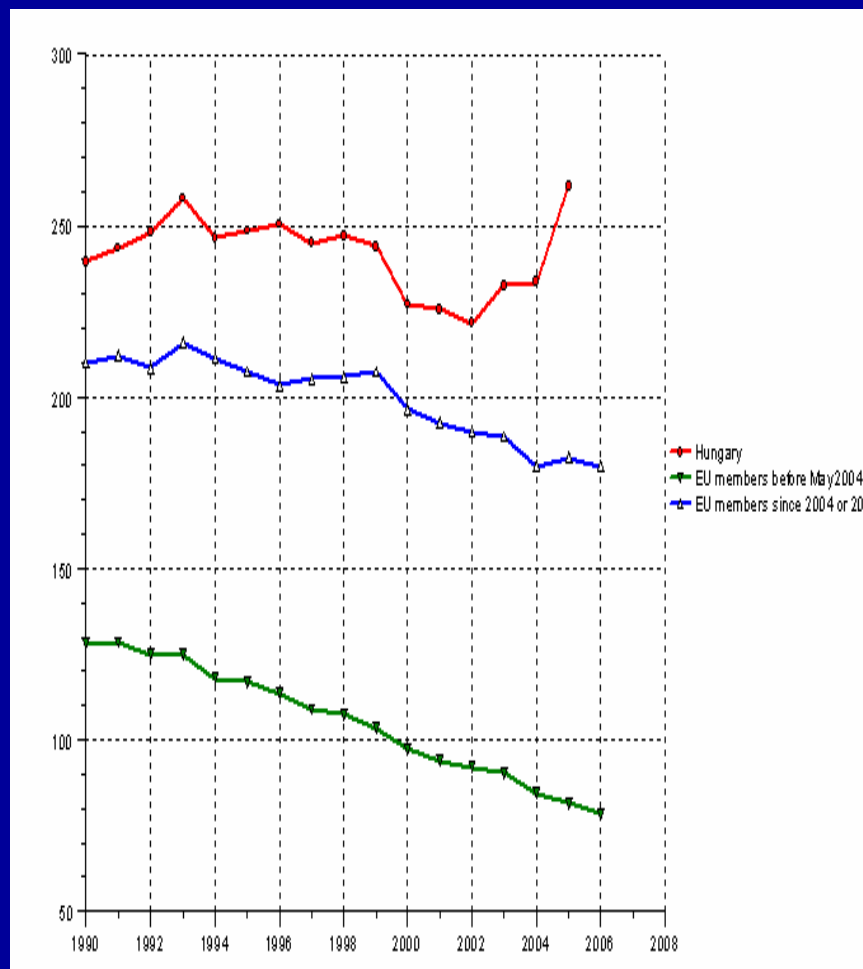
Main causes of death in Hungary 2001-2007



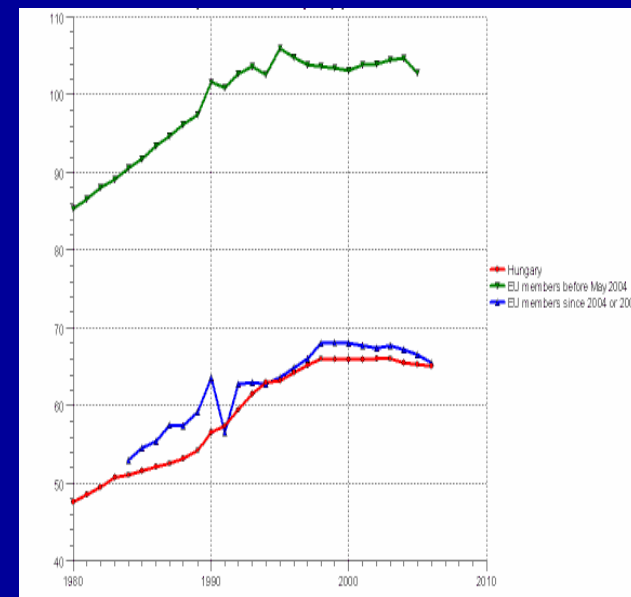
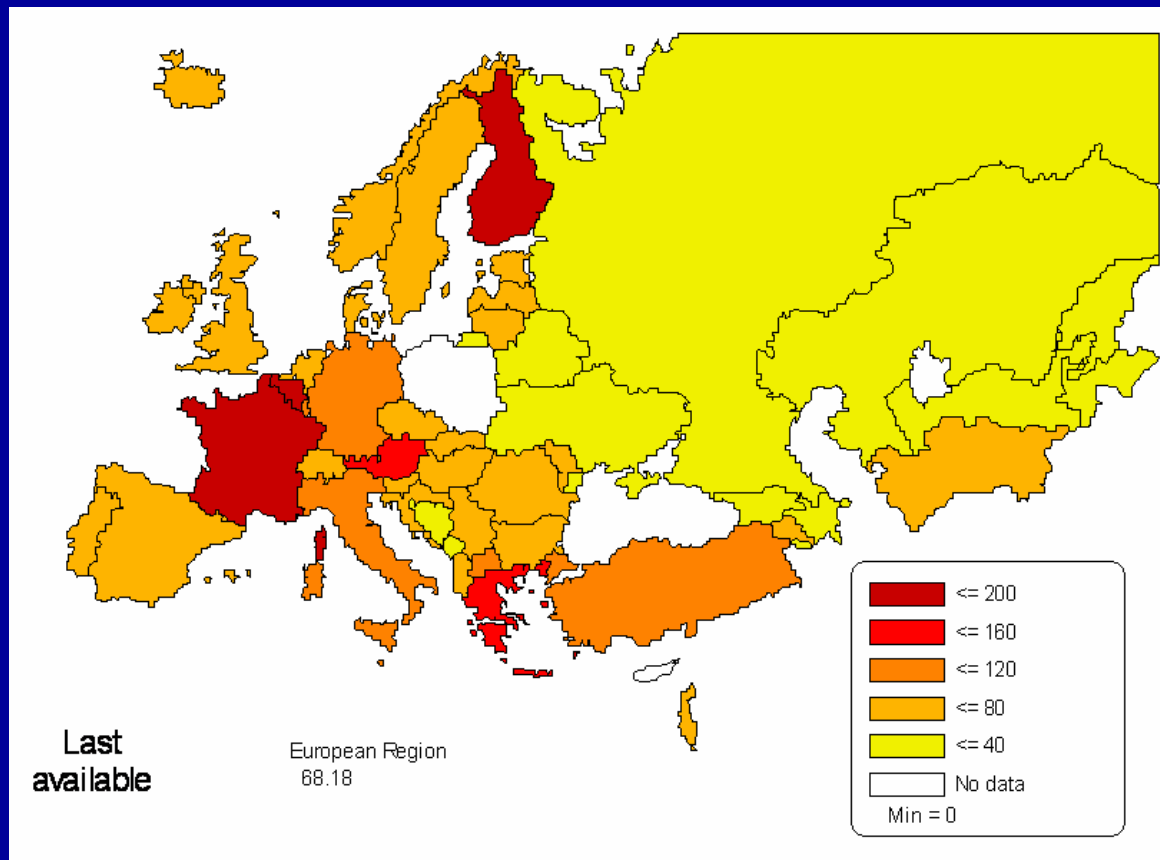
Source ESKI, Hungary, 2008

Standardised death rates in Europe and Hungary (per 100,000)

ischaemic heart disease cerebrovascular diseases



General practitioners in Europe per 100,000



Source: HFA-DB July 2008

Family practices in Hungary

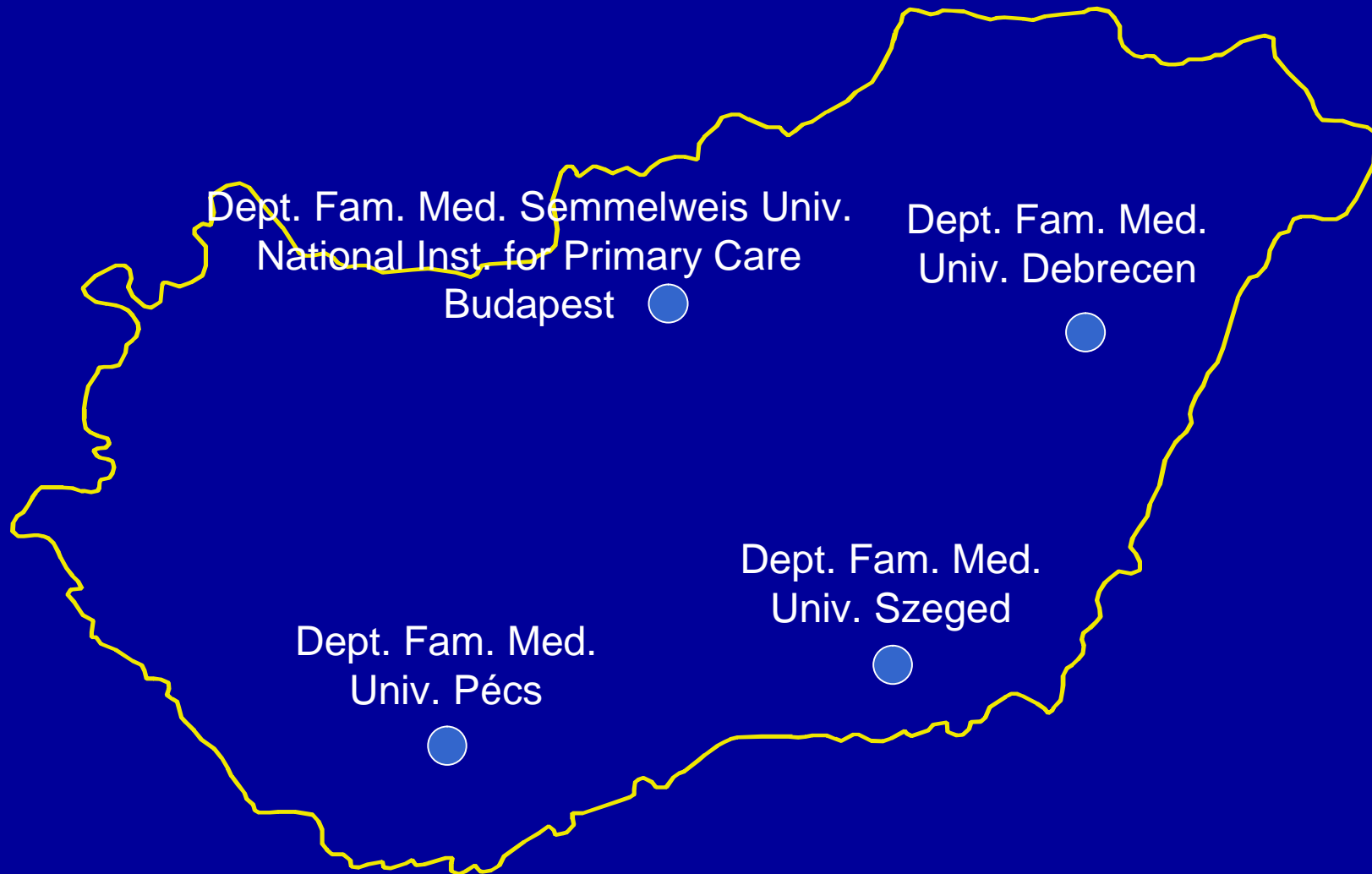
- No. of practices: 6834 (1500 persons per practice)
 - Adult : 3304
 - Paediatric: 1533
 - Mixed: 1550
- 95% of practices are privatised
- Financing: on average 2600-3500 € per month

(Source: Central Bureau of Statistics)

Scientific Organisations in Primary Care

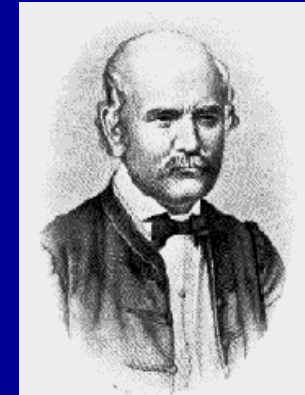
- Scientific Society of Hungarian General Practitioners (MÁOTE) est. 1967
- Research Organisation of Hungarian Family Physicians (CSAKOSZ) est. 2001
- College of Hungarian Teaching Family Physicians (MOCSAK) est. 1998
- International relationships: WONCA, EURACT, European Forum for Primary Care, IAAMRH, EURIPA

Primary Care Research Centres





The Semmelweis University Budapest



Ignác Fülöp Semmelweis 1818-1865

Department of Family Medicine Research Activity



Founded in 1992

- Cardiovascular Research Group
 - Effective treatment of hypertension
 - Serum uric acid as a CV risk factor
 - Management of stroke patients
- Depression
- Sleep apnoea syndrome (OSAS)
- Immunology – hepatology
- Alternative medicine

2004-2008: Number of publications:
41, cumulative impact factor:
26.337

Department of Family Medicine, University of Debrecen Research Activity



- **Cardiovascular research**
- Cardiovascular risk, Metabolic syndrome
- **Paediatric primary care, prevention and research**
- Infant feeding, Allergy, Smoking in childhood
- **Childhood obesity research**
- Metabolic disorders, Glucoregulation disorders, Treatment of childhood obesity

Department of Family Medicine, University of Pécs

Research activity



- Hospice care of terminally ill patients
- Chronic stress in cancer patients
- Childhood obesity
- Screening of cardiovascular risk factors
- Compliance of patients with hypertension
- Smoking cessation
- Side-effect of medication

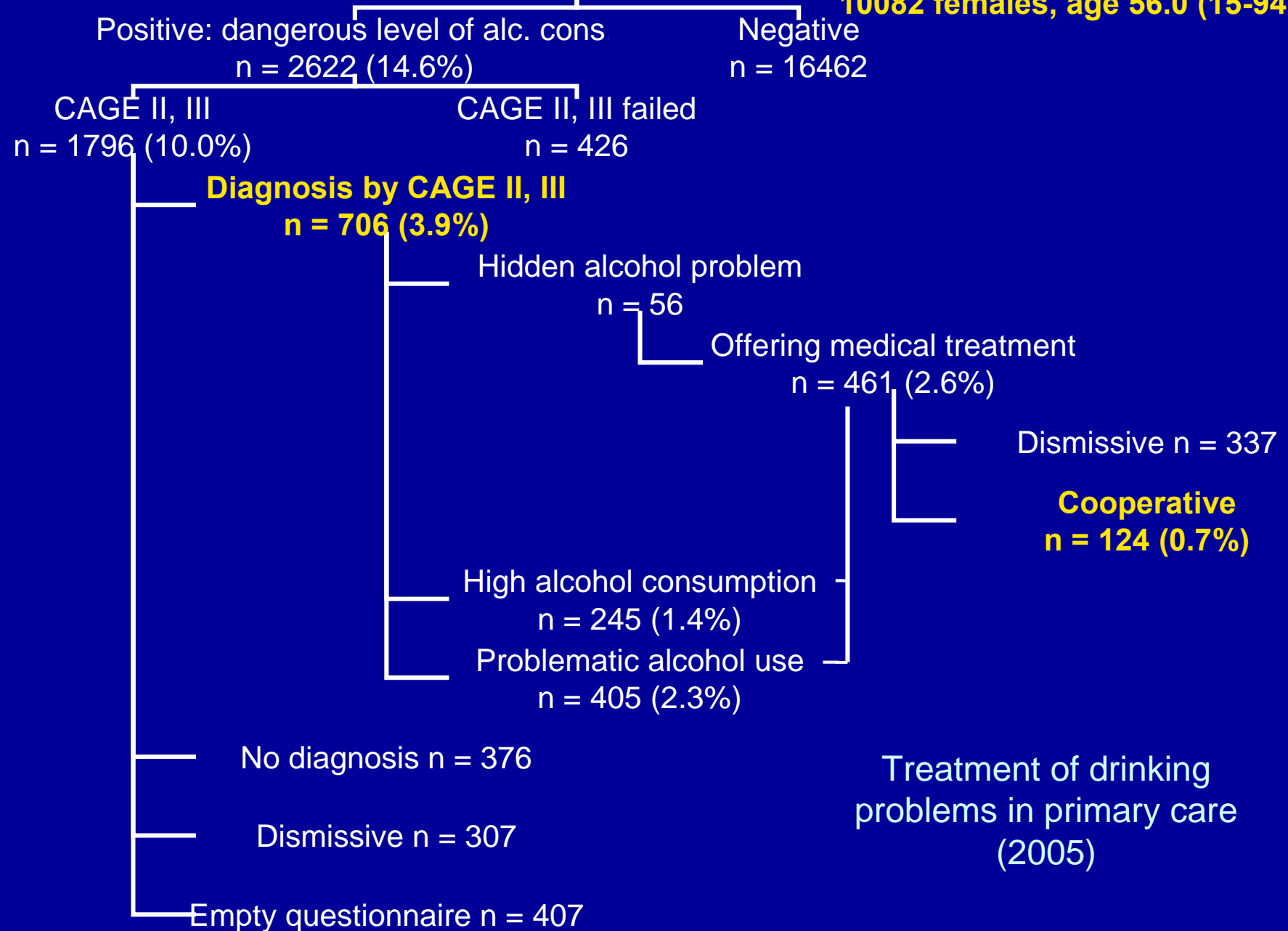
Research Activity - The State of Art

- Most studies are epidemiologic
- Mostly descriptive studies
- Much less experimental or interventional studies
- Few presentations and publications at international forums

Care of stroke patients in Hungarian family practices

	2001	2004	Difference
No. of practices	750	300	
No. of patients	7346	2305	
Combined antihypertensive therapy	2.08%	2.46%	p = 0.299
Platelet aggregation inhibitors	73.1%	78.1%	p <0.0001 OR: 0.762 (95% C.I: 0.682-0.852)
Lipid-lowering therapy	23.0%	72.4%	p <0.0001 OR: 0.114 (95% C.I: 0.102-0.127)
Able to work	7.4%	8.0%	p = 0.7576
Hospital readmission rate	6.1%	3.7%	p <0.0001 OR: 1.761 (95% C.I: 1.385-2.239)

CAGE I questionnaire n = 17924 7842 males, age 49.5 (14-96) yr
10082 females, age 56.0 (15-94) yr



Hungarian Uric Acid Study (HURAC) 2007

Aims:

- To determine the prevalence of high blood uric acid level in Hungarian population
- To assess the association of hyperuricaemia with cardiovascular diseases

Patients:

- 11254 patients over 40 years from 360 practices

Prevalence of hyperuricaemia

Men n = 4129	Women n = 5871
1315 (31.8%)	1243 (21.2%)
Serum uric acid \geq 390 umol/l	Serum uric acid \geq 360 umol/l

Association of hyperuricaemia with cardiovascular diseases

	Men (n = 4129)			Women (n = 5871)		
	OR	95% C.I.	p	OR	95% C.I.	p
Hypertension	1.678	1.434-1.963	<0.0001	3.772	3.120-4.560	<0.0001
Diabetes	1.044	0.909-1.200	0.542	2.045	1.792-2.334	<0.0001
Dyslipaemia	1.364	1.193-1.558	<0.0001	1.688	1.484-1.920	<0.0001
Ischaemic heart disease	1.377	1.186-1.600	<0.0001	2.080	1.817-2.381	<0.0001
Atrial fibrillation	1,462	1.125-1.899	0.004	2.444	1.934-3.089	<0.0001
Heart failure	1.676	1.349-2.083	<0.0001	3.169	2.619-3.835	<0.0001
Peripheral vascular disease	0.971	0.798-1.180	0.764	1.773	1.457-2.158	<0.0001

Logistic regression: Hypertension, male

Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)	95,0% C.I.for EXP(B)	
							Lower	Upper
Step a 1								
AGE	,063	,007	78,619	1	,000	1,065	1,051	1,081
BMI	,066	,023	8,202	1	,004	1,068	1,021	1,118
RR_SYST	,052	,007	50,353	1	,000	1,053	1,038	1,068
RR_DIAST	,026	,011	5,929	1	,015	1,027	1,005	1,048
PULSE	-,004	,010	,153	1	,695	,996	,978	1,015
ABD_CIRC	,016	,008	4,279	1	,039	1,016	1,001	1,031
URICACID	,002	,001	6,898	1	,009	1,002	1,001	1,004
ALCOHOL	,042	,064	,430	1	,512	1,043	,920	1,182
CHOLESTE	-,062	,151	,168	1	,682	,940	,698	1,265
TRIGLYC	,038	,057	,439	1	,507	1,039	,928	1,163
HDL_CHOL	,127	,250	,258	1	,611	1,135	,696	1,852
LDL_CHOL	-,016	,156	,011	1	,918	,984	,726	1,335
SGOT	-,011	,006	3,096	1	,078	,989	,978	1,001
SGPT	,007	,004	2,896	1	,089	1,007	,999	1,016
GGT	,001	,001	2,112	1	,146	1,001	1,000	1,002
CN	,026	,042	,375	1	,540	1,026	,944	1,115
KREATINI	-,003	,002	1,803	1	,179	,997	,993	1,001
Constant	-15,281	1,252	149,002	1	,000	,000		

a. Variable(s) entered on step 1: AGE, BMI, RR_SYST, RR_DIAST, PULSE, ABD_CIRC, URICACID, ALCOHOL, CHOLESTE, TRIGLYC, HDL_CHOL, LDL_CHOL, SGOT, SGPT, GGT, CN, KREATINI.

Logistic regression: Hypertension, female

Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)	95,0% C.I. for EXP(B)	
							Lower	Upper
Step a 1								
AGE	,060	,006	98,244	1	,000	1,062	1,050	1,075
BMI	,038	,019	3,779	1	,052	1,039	1,000	1,079
RR_SYST	,058	,007	79,876	1	,000	1,060	1,046	1,073
RR_DIAST	,018	,010	3,407	1	,065	1,018	,999	1,038
PULSE	,017	,009	3,365	1	,067	1,017	,999	1,035
ABD_CIRC	,023	,007	10,998	1	,001	1,023	1,009	1,037
URICACID	,004	,001	16,809	1	,000	1,004	1,002	1,005
ALCOHOL	,019	,083	,054	1	,817	1,019	,866	1,200
CHOLESTE	,218	,159	1,890	1	,169	1,244	,911	1,697
TRIGLYC	,011	,083	,016	1	,898	1,011	,860	1,188
HDL_CHOL	-,247	,213	1,335	1	,248	,781	,514	1,187
LDL_CHOL	-,312	,164	3,632	1	,057	,732	,531	1,009
SGOT	,006	,009	,432	1	,511	1,006	,989	1,023
SGPT	,002	,006	,070	1	,792	1,002	,990	1,014
GGT	-,001	,001	,664	1	,415	,999	,997	1,001
CN	,127	,042	9,234	1	,002	1,136	1,046	1,233
KREATINI	-,006	,004	1,949	1	,163	,994	,987	1,002
Constant	-17,187	1,157	220,605	1	,000	,000		

a. Variable(s) entered on step 1: AGE, BMI, RR_SYST, RR_DIAST, PULSE, ABD_CIRC, URICACID, ALCOHOL, CHOLESTE, TRIGLYC, HDL_CHOL, LDL_CHOL, SGOT, SGPT, GGT, CN, KREATINI.

Logistic regression: Peripheral artery disease, male

Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)	95,0% C.I.for EXP(B)	
							Lower	Upper
Step 1								
AGE	,041	,008	24,448	1	,000	1,042	1,025	1,060
BMI	,061	,026	5,728	1	,017	1,063	1,011	1,118
RR_SYST	-,013	,008	2,624	1	,105	,987	,973	1,003
RR_DIAST	-,012	,012	,978	1	,323	,988	,964	1,012
PULSE	,056	,011	24,870	1	,000	1,058	1,035	1,081
ABD_CIRC	-,013	,009	1,880	1	,170	,988	,970	1,005
URICACID	-,002	,001	5,130	1	,024	,998	,996	1,000
ALCOHOL	,305	,081	14,261	1	,000	1,356	1,158	1,589
CHOLESTE	-,224	,175	1,628	1	,202	,799	,567	1,127
TRIGLYC	,064	,062	1,079	1	,299	1,066	,945	1,204
HDL_CHOL	-,332	,321	1,066	1	,302	,718	,382	1,347
LDL_CHOL	,249	,183	1,862	1	,172	1,283	,897	1,836
SGOT	-,009	,008	1,202	1	,273	,991	,975	1,007
SGPT	,001	,006	,052	1	,820	1,001	,989	1,013
GGT	,001	,001	4,481	1	,034	1,001	1,000	1,003
CN	,100	,045	5,007	1	,025	1,105	1,013	1,207
KREATINI	,000	,002	,053	1	,818	1,000	,995	1,004
Constant	-6,471	1,345	23,146	1	,000	,002		

a. Variable(s) entered on step 1: AGE, BMI, RR_SYST, RR_DIAST, PULSE, ABD_CIRC, URICACID, ALCOHOL, CHOLESTE, TRIGLYC, HDL_CHOL, LDL_CHOL, SGOT, SGPT, GGT, CN, KREATINI.

Logistic regression: Female, ischaemic heart disease

Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)	95,0% C.I. for EXP(B)	
							Lower	Upper
Step 1 ^a								
AGE	,077	,008	103,824	1	,000	1,080	1,064	1,096
BMI	,060	,022	7,389	1	,007	1,061	1,017	1,108
RR_SYST	-,014	,007	4,325	1	,038	,986	,973	,999
RR_DIAST	,019	,011	2,952	1	,086	1,019	,997	1,041
PULSE	,029	,011	6,998	1	,008	1,029	1,007	1,051
ABD_CIRC	-,003	,008	,138	1	,710	,997	,983	1,012
URICACID	,002	,001	3,854	1	,050	1,002	1,000	1,004
ALCOHOL	-,148	,122	1,471	1	,225	,862	,678	1,096
CHOLESTE	,064	,199	,102	1	,749	1,066	,721	1,574
TRIGLYC	,082	,078	1,098	1	,295	1,085	,931	1,264
HDL_CHOL	-,084	,277	,092	1	,761	,919	,534	1,582
LDL_CHOL	-,316	,206	2,362	1	,124	,729	,487	1,091
SGOT	,012	,010	1,352	1	,245	1,012	,992	1,032
SGPT	-,005	,007	,489	1	,484	,995	,983	1,008
GGT	,000	,001	,143	1	,705	1,000	,998	1,001
CN	-,025	,041	,377	1	,539	,975	,899	1,057
KREATINI	,001	,004	,091	1	,763	1,001	,993	1,009
Constant	-9,164	1,265	52,484	1	,000	,000		

a. Variable(s) entered on step 1: AGE, BMI, RR_SYST, RR_DIAST, PULSE, ABD_CIRC, URICACID, ALCOHOL, CHOLESTE, TRIGLYC, HDL_CHOL, LDL_CHOL, SGOT, SGPT, GGT, CN, KREATINI.

Dept. Fam. Med. Debrecen:
Measurement of cardiovascular risk and risk factors in untreated adults

	Female	Male	All	p	18-34 years	35-60 years	p
Smoking habits (n = 1319)							
Continued smoking	24.5%	38.0%	30.3%	<0.0001	32.5%	29.2%	<0.001
Never smoked	67.7%	45.4%	58.2%		62.4%	56.4%	
Quit smoking	7.8%	16.6%	11.5%		5.1%	14.4%	
Systolic blood pressure (n = 1313)							
< 140 Hgmm	72.6%	65%	69.4%	<0.05	89.9%	60.2%	<0.01
140-159 Hgmm	21.4%	28.2%	24.3%		8.6%	31.3%	
160-179 Hgmm	4.4%	5.2%	4.7%		1.2%	6.3%	
≥ 180 Hgmm	1.6%	1.6%	1.6%		0.3%	2.2%	
Serum cholesterol level (n = 1310)							
≤ 5,2 mmol/l	52.4%	44.8%	49.2%	<0.01	69.5%	40%	<0.001
> 5,2 mmol/l	47.6%	55.2%	50.8%		30.5%	60%	
Blood glucose level (n = 1285)							
≤ 6,0 mmol/l	89.7%	87.3%	88.6%	NS	97.7%	84.5%	<0.01
≥ 6,1 mmol/l	10.3%	12.8%	11.4%		2.3%	15.5%	

cont'd

	Female	Male	All	p	18-34 years	35-60 years	p
Estimated cardiovascular risk (n = 1286)							
Low (<5%)	42.8%	23.1%	34.4%	<0.001	83.5%	12.2%	<0.01
Moderate (5-10 %)	26.7%	20.6%	24.1%		13.0%	29.1%	
Medium (10-20 %)	25.6%	33.7%	29.1%		2.7%	41.0%	
High (20-40 %)	4.5%	21.7%	11.8%		0.5%	16.9%	
Very high (>40 %)	0.4%	0.9%	0.6%		0.3%	0.8%	

Jancsó Z., Márton H., Simay A., Újhelyi I., Ilyés I.: Orv. Hetil. 144., 1433-1439., 2003.

Department of Family Medicine, Pécs University
Hospice care of terminally ill patients,
Attitudes of American and Hungarian GP-s

Aim:

- To come to know and compare the attitudes of GPs in the USA and Hungary towards hospice care of terminally ill patients

Methods:

- Questionnaires with 29 questions were posted to 300 US and 339 Hungarian GPs.

Results and Conclusions:

- American GPs know hospice care better we do
- American GPs are able to discuss the prognosis with the patient more truthfully
- Hungarian GPs are more likely to pursue curative treatment until the patient dies

Major issues and drawbacks of conducting research in primary care

- Lack of independent financing
- Dependence on financial support from pharmaceutical companies
- Ageing and increasing retiring of GPs, along with insufficient supplementation with freshly graduated doctors who would potentially be committed in research
- Heavy workload in the single office structure
- Mean age of GP-s: 57 years, >10% are pensioners
- Practices without GP: 130-160
- Rigorous application of scientometric indices in allocating financial support for research



**Thank you for your
kind attention!**