Epidemiology and Burden of Headache

EHF Headache Summer school in Belgrade

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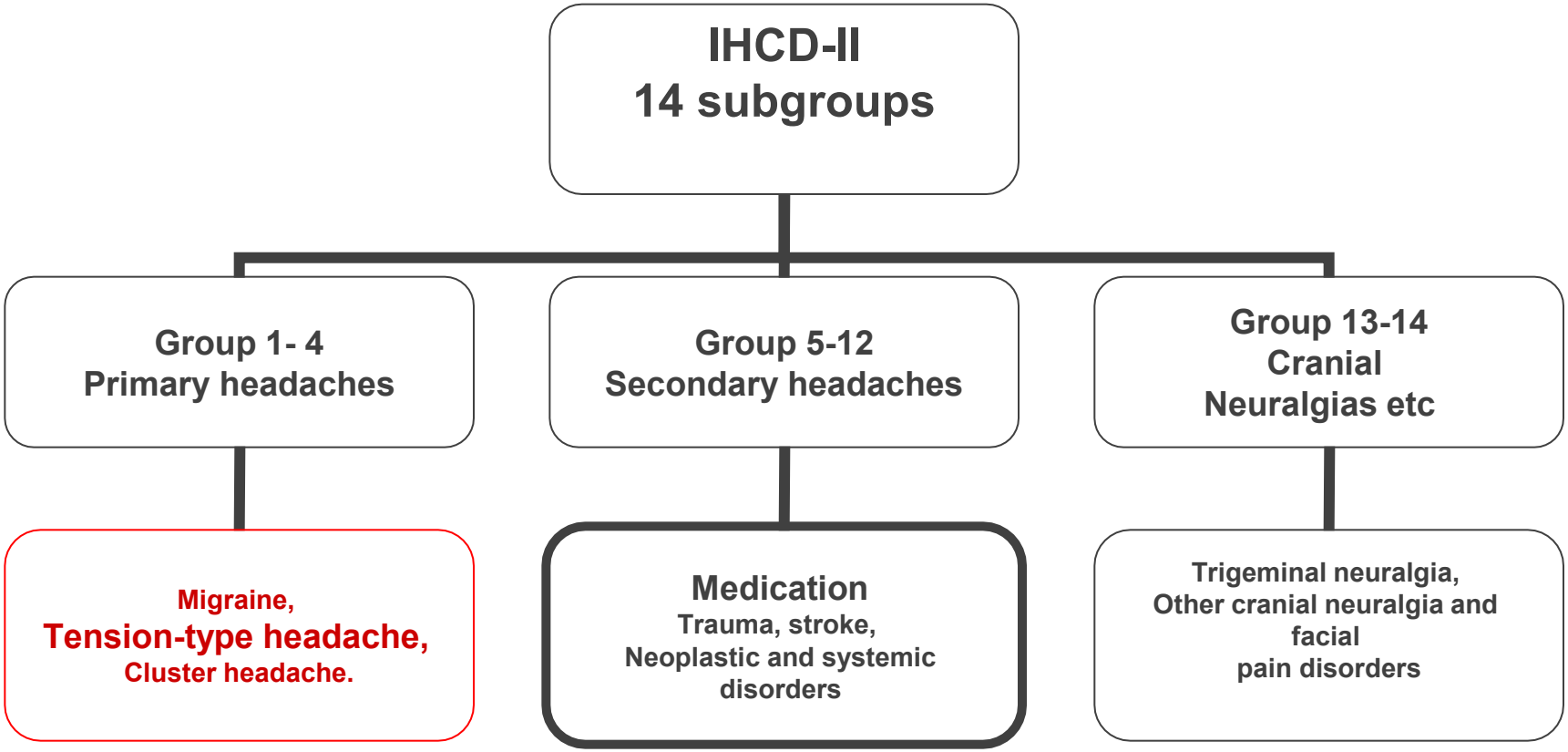
- *Conflicts of Interest: Member of advisory boards: ATI, Medotech, Neurocore, and formerly Allergan Norden. Director in LTB, EHMTIC, and vicepresident iin EHF .*

Agenda

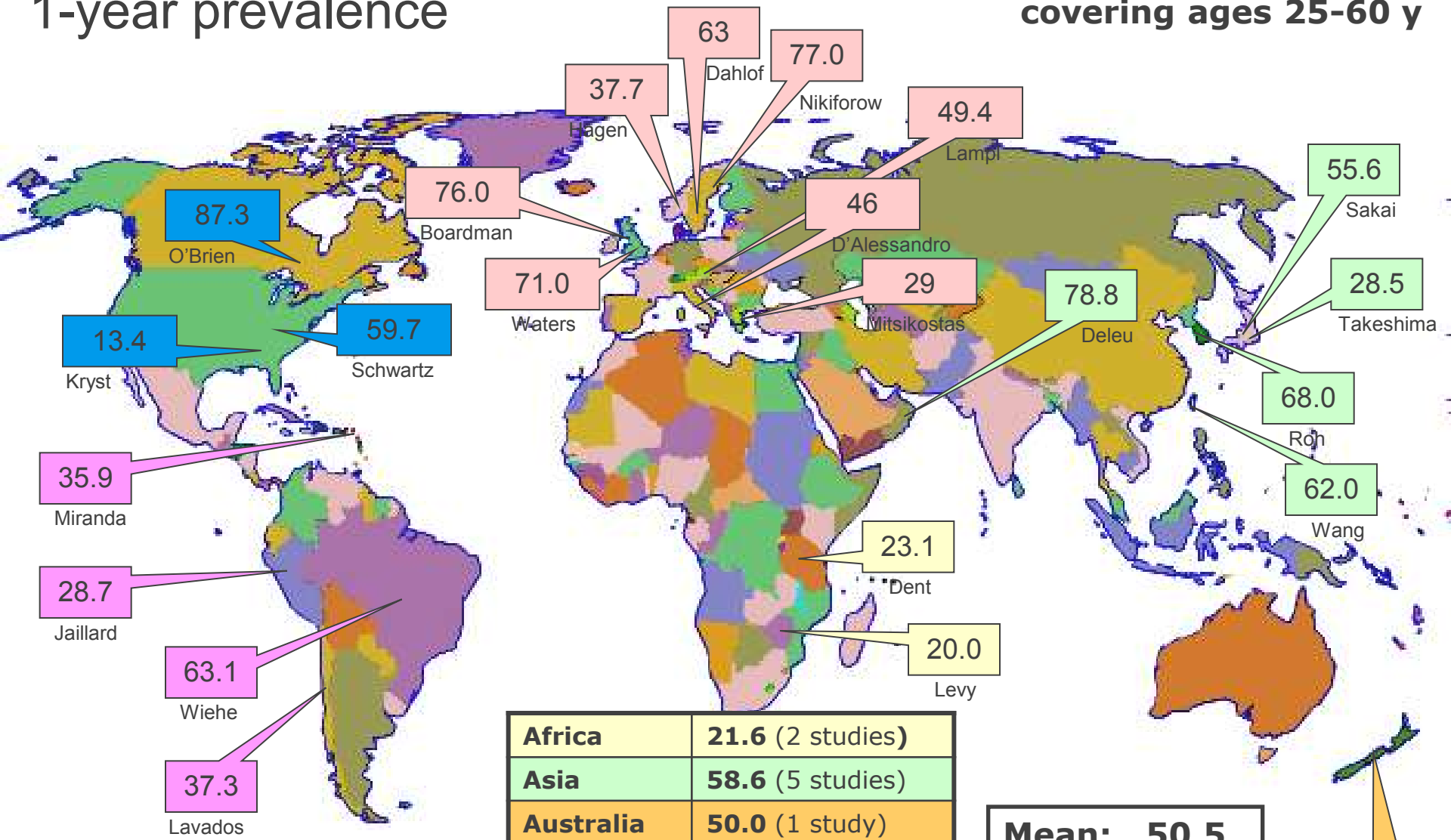
- Epidemiology
- Burden of headache
- What is good headache care
- What are the barriers
- Organization
- Strategy
- Perspectives

International Headache Classification ICHD- II



Headache in adults: 1-year prevalence

Population or community-based surveys of >500 participants covering ages 25-60 y



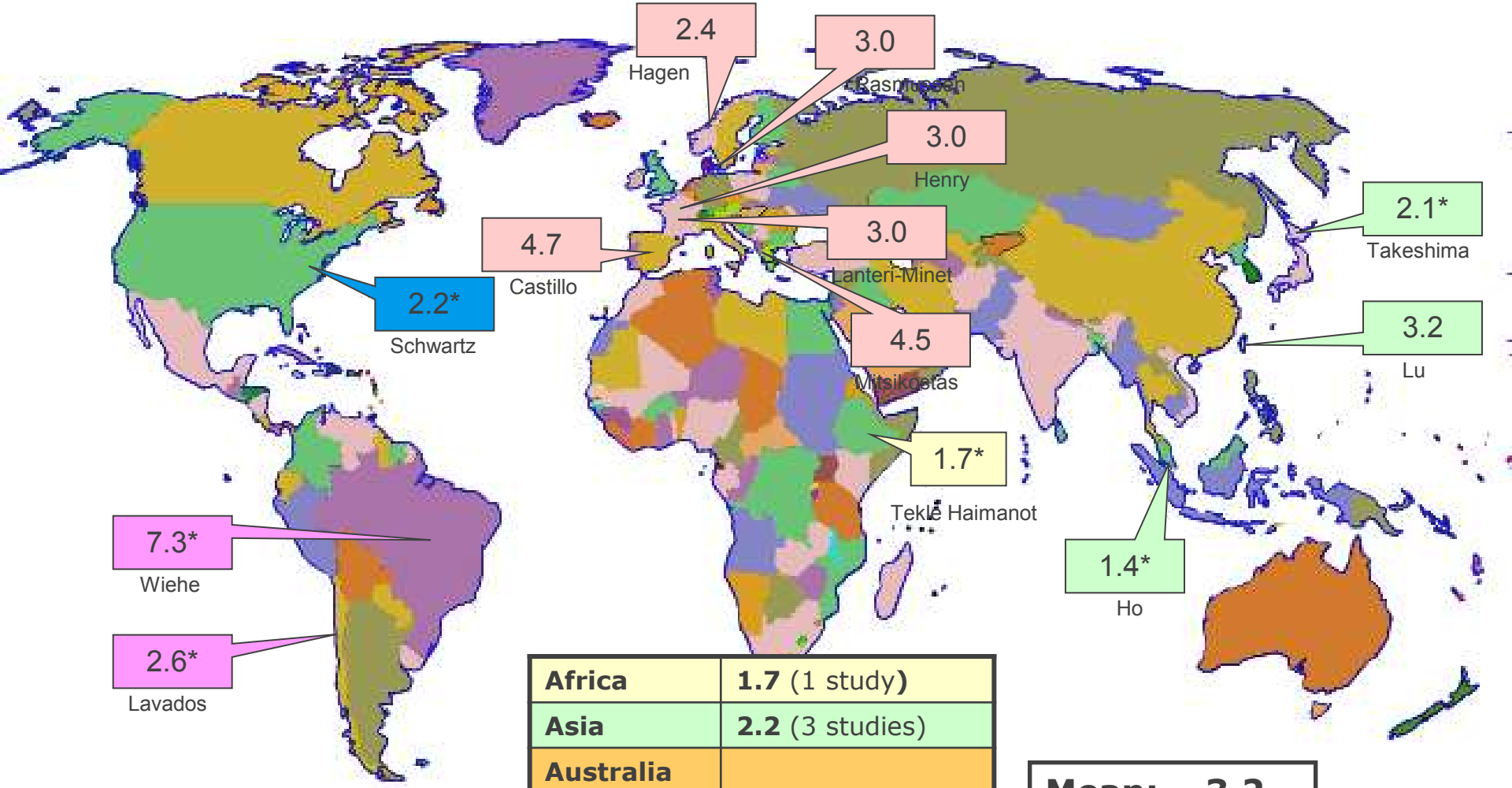
Africa	**21.6** (2 studies)
Asia	**58.6** (5 studies)
Australia	**50.0** (1 study)
Europe	**56.1** (8 studies)
N. America	**53.5** (3 studies)
S. America	**41.3** (4 studies)

Mean: 50.5

Median: 50

Chronic (daily) headache in adults: 1-year prevalence

Population or community-based surveys of >500 participants covering ages 25-60 y



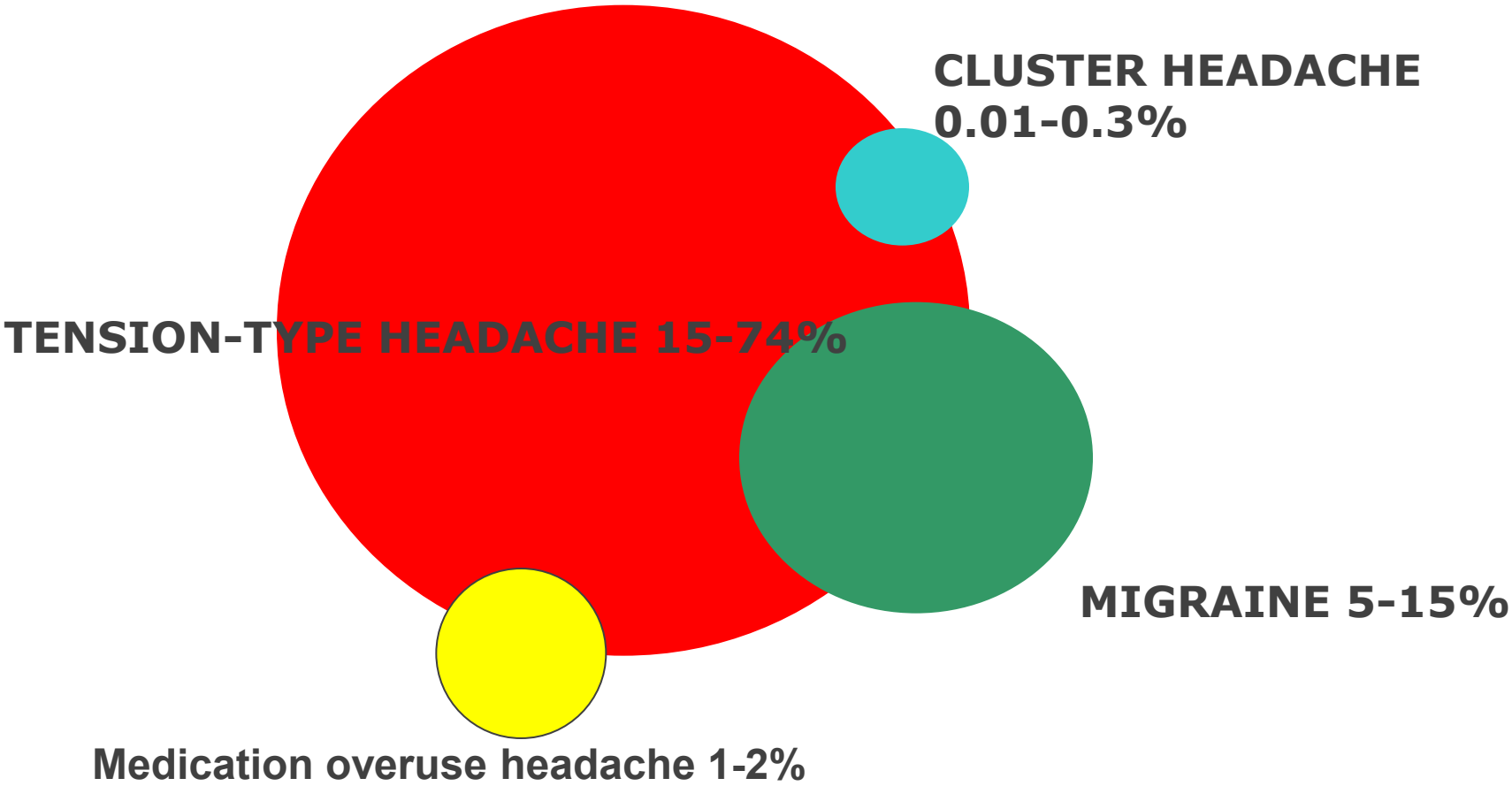
Africa	**1.7** (1 study)
Asia	**2.2** (3 studies)
Australia	
Europe	**3.4** (6 studies)
N. America	**2.2** (1 study)
S. America	**5.0** (2 studies)

Mean: 3.2

Median: 3.0

***Specifically chronic tension-type headache**

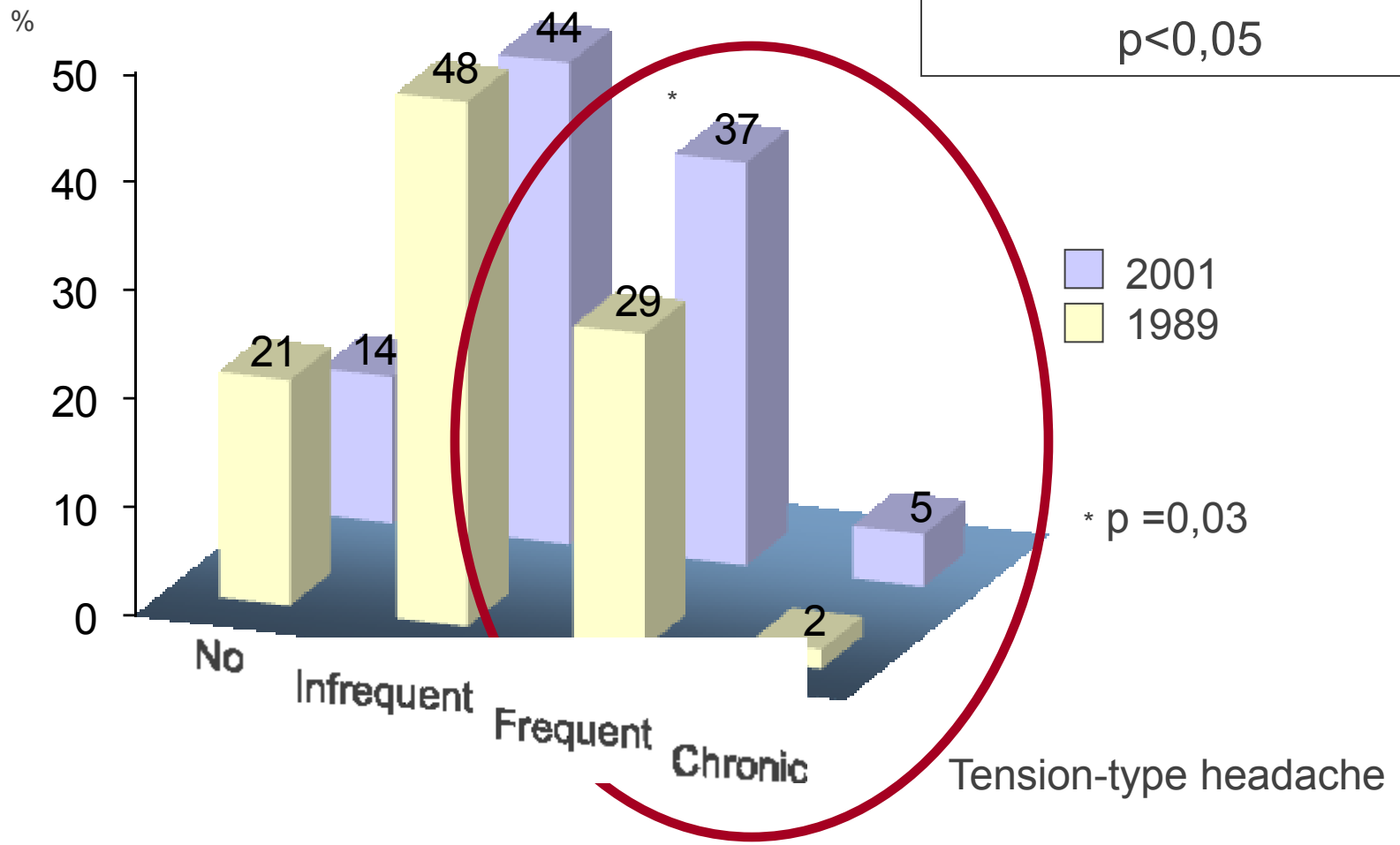
EPIDEMIOLOGY
One-year period prevalence



Robbins and Lipton Sem Neurology 2010

One year prevalence 1989-2001

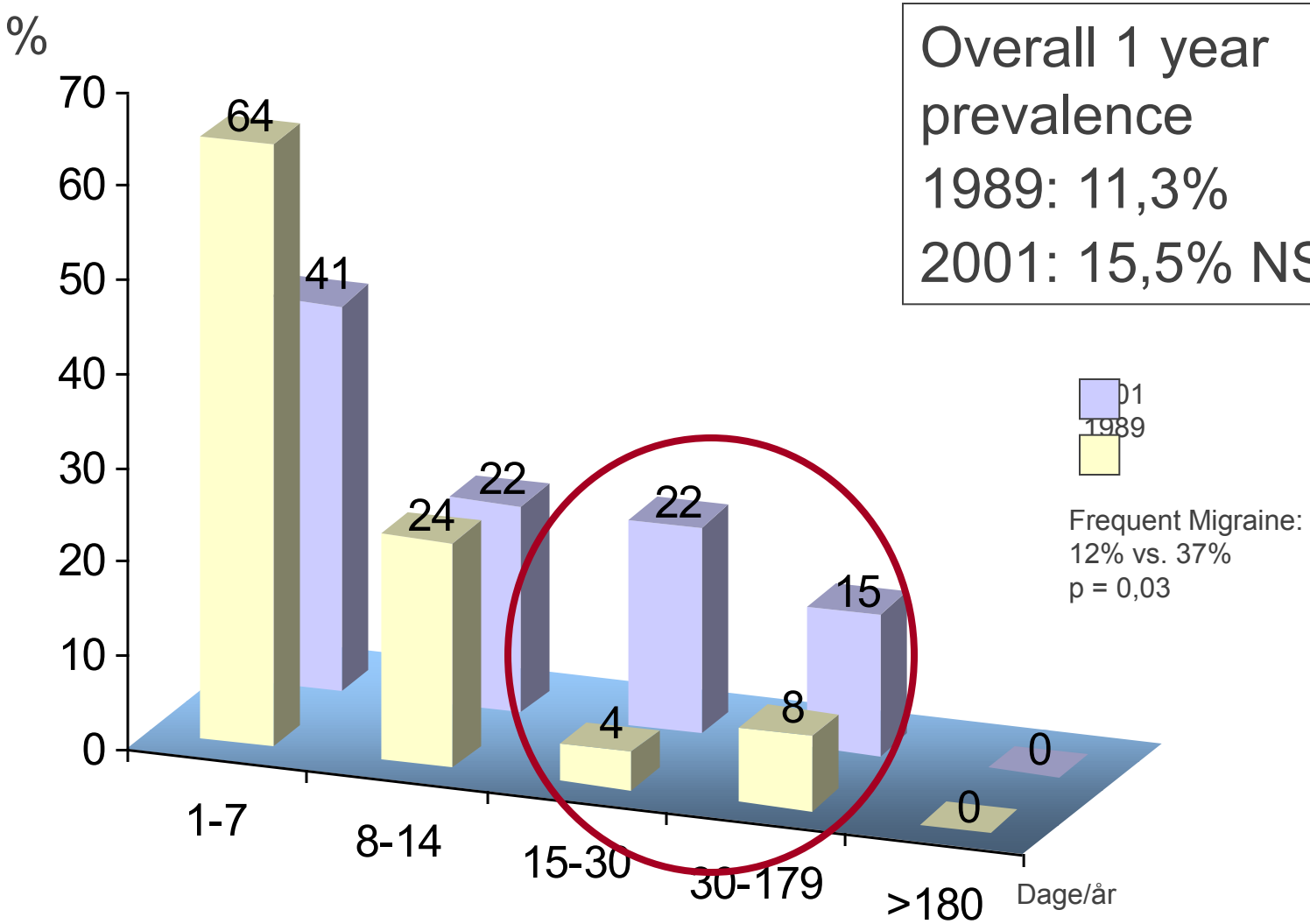
1989: 79%
2001: 87%
p<0,05



Lyngberg et al., Eur J Epidemiol 2005

Migraine

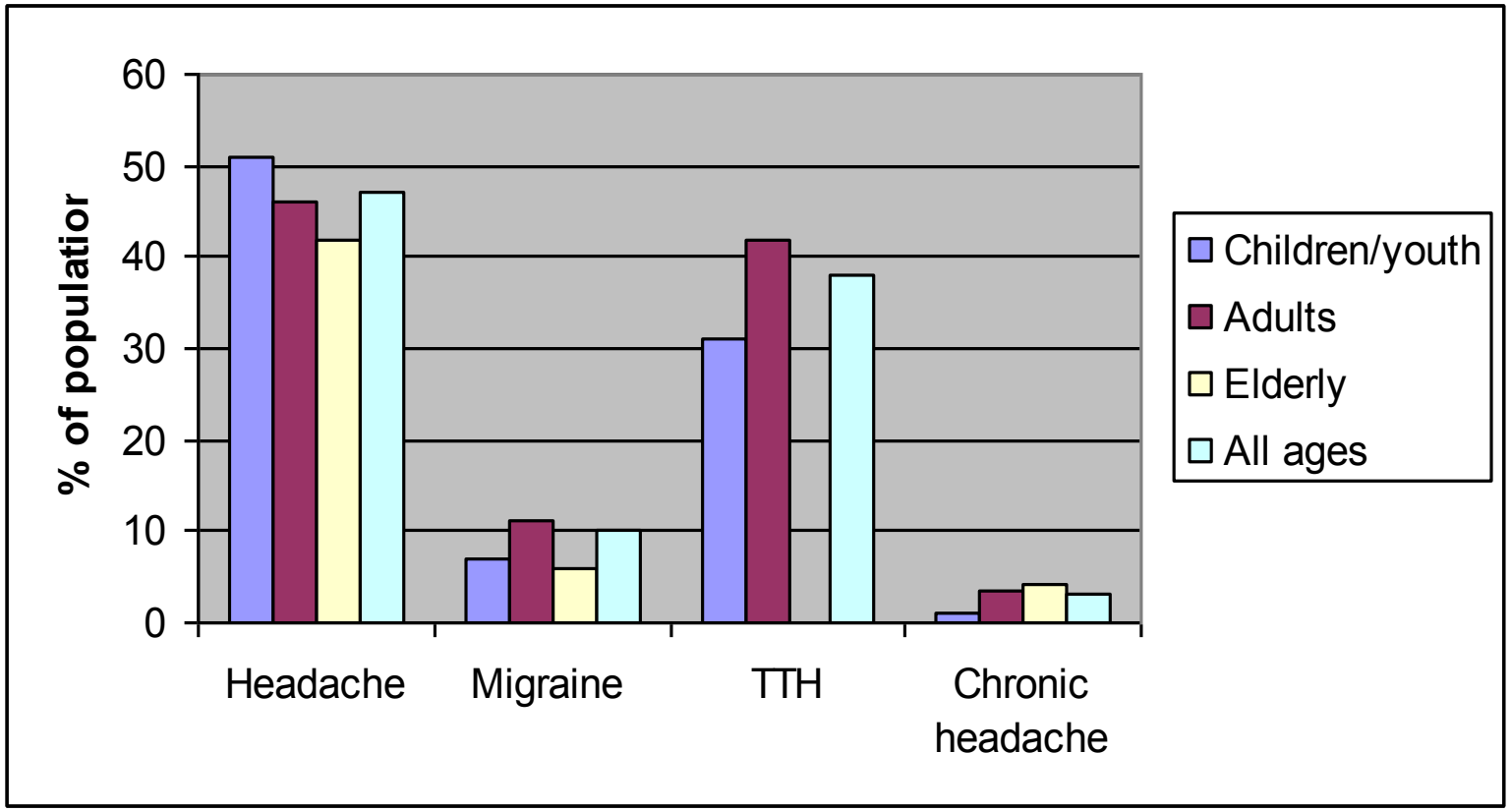
2011 Han Le: Similar increase of Frequent migraine in a 10 Year follow up study of twins



Overall 1 year prevalence
1989: 11,3%
2001: 15,5% NS

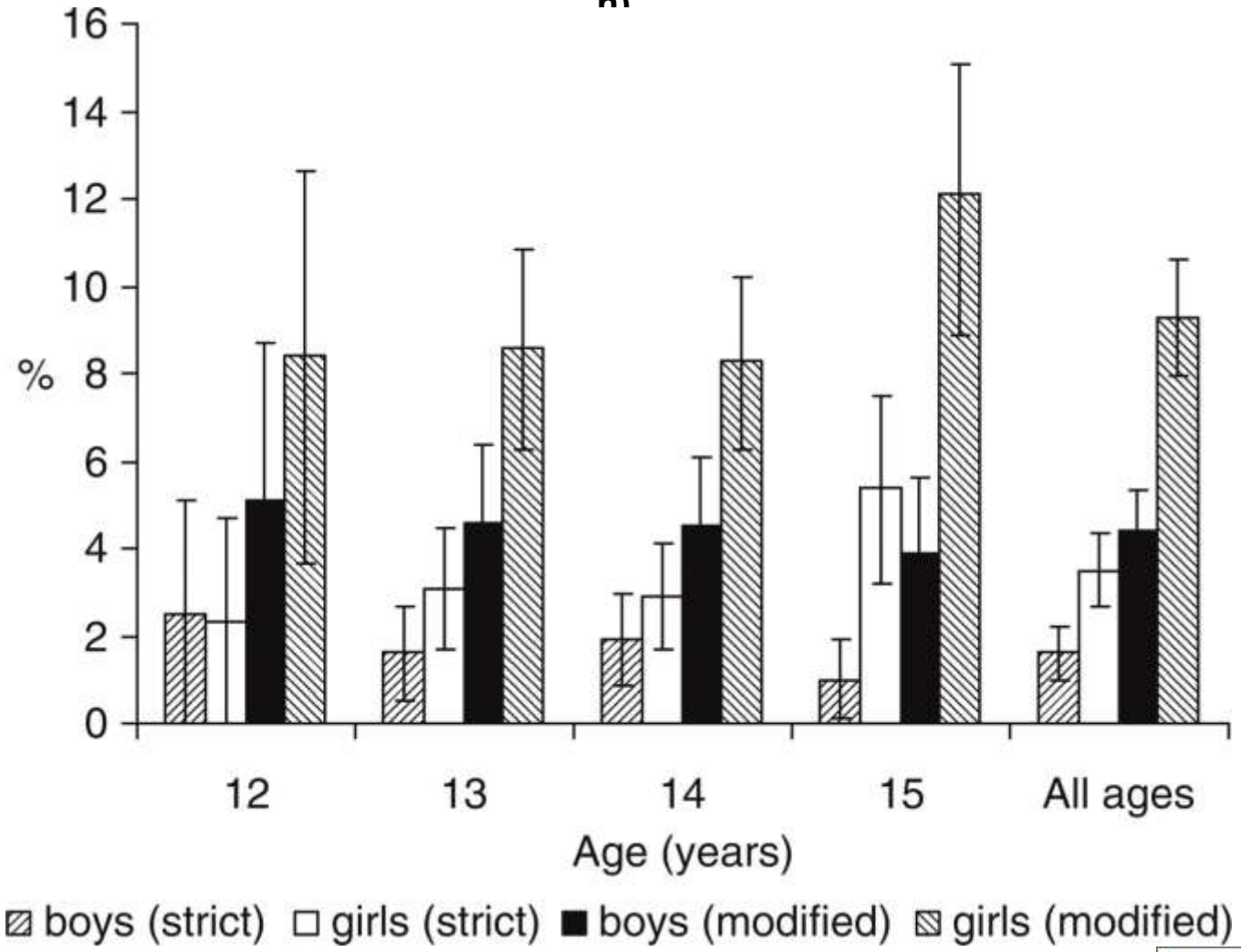
Frequent Migraine:
12% vs. 37%
p = 0,03

Frequency of headache in relation to age



LTB Headache Atlas 2011

Figure 1 Prevalence of migraine in boys and girls according to strict International Headache Society criteria for adults and to modified criteria (headache duration >30 min instead of ≥4 h)



Fendrich K et al. Cephalalgia 2007;27:347-354

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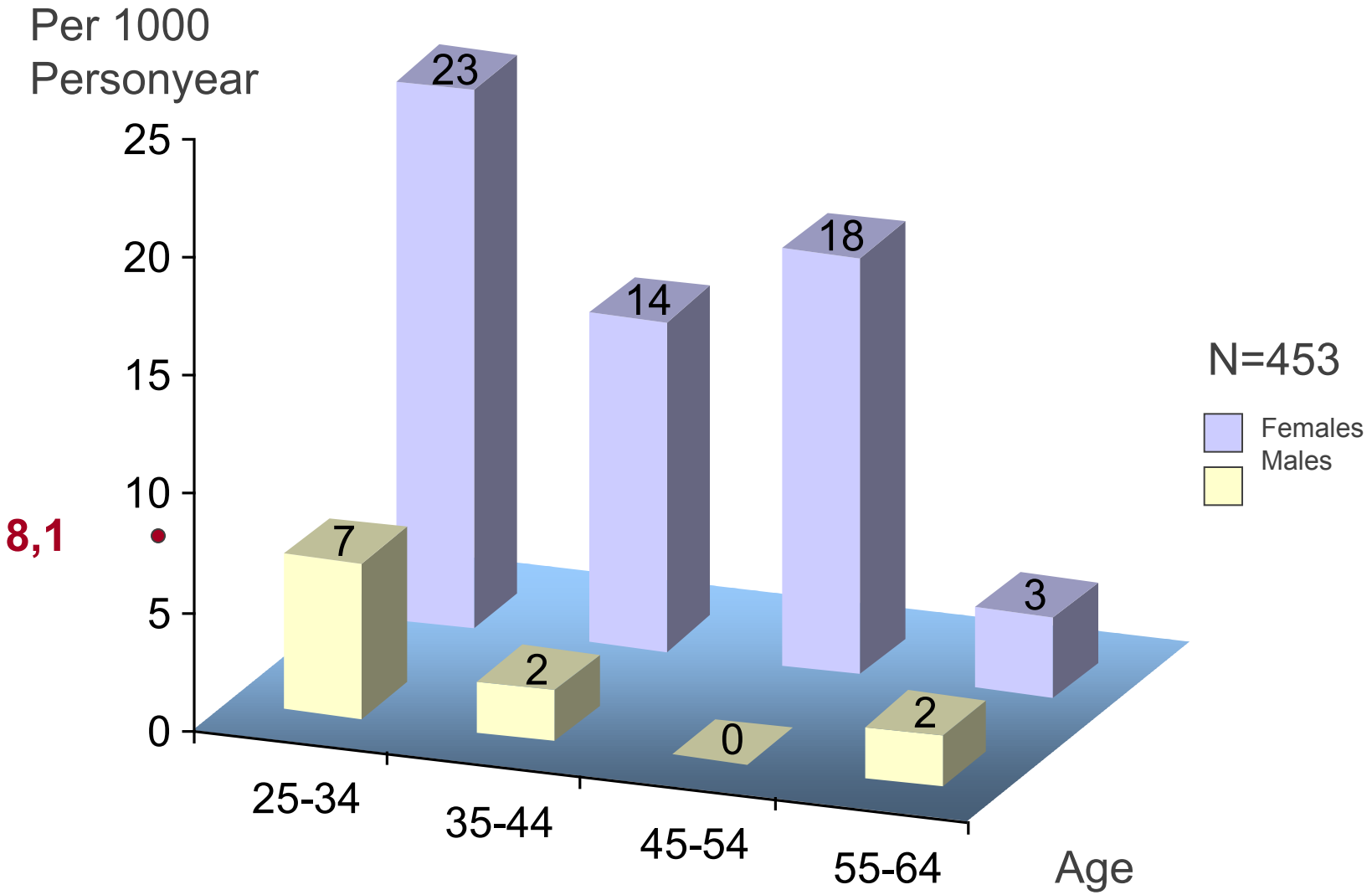
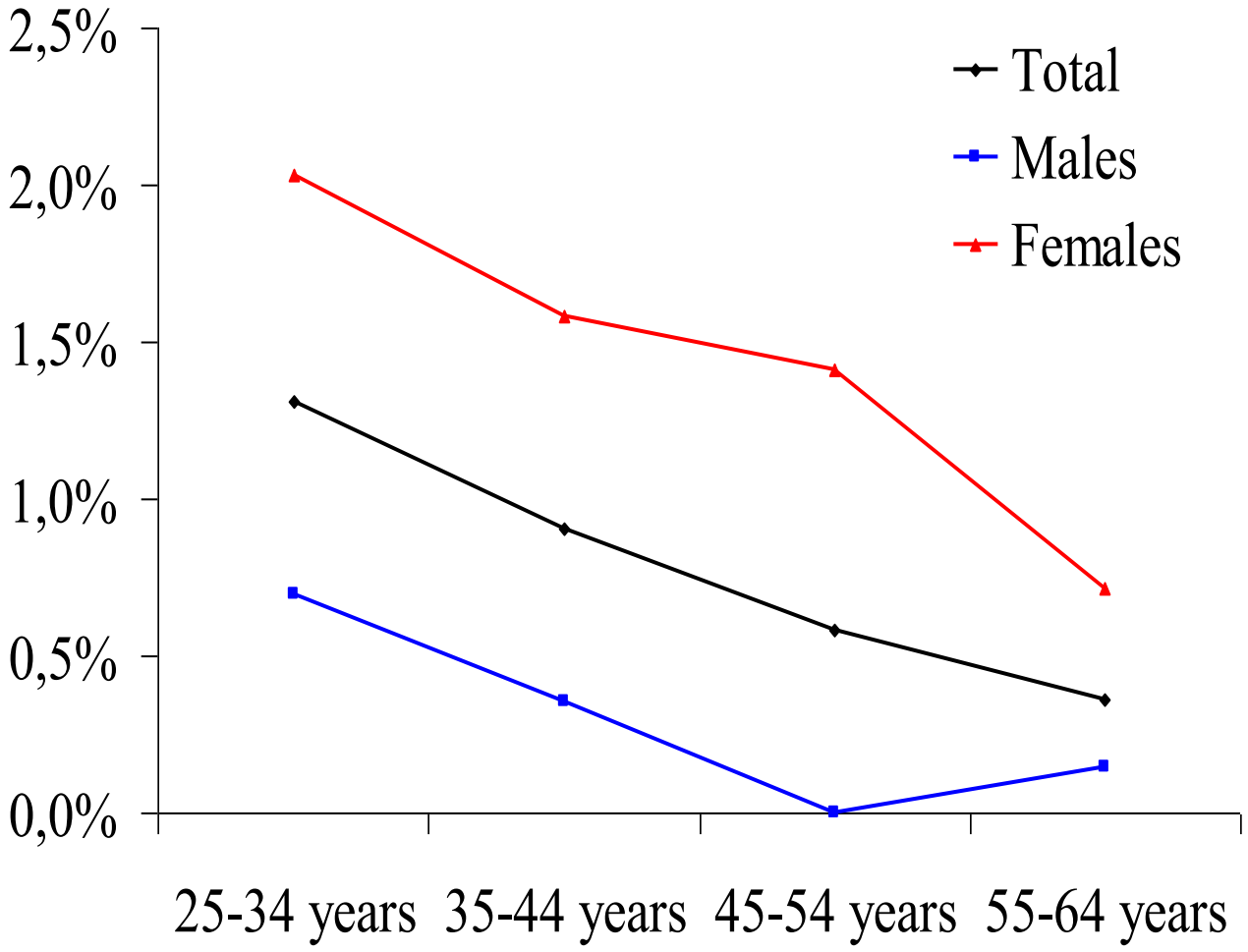
Migraine incidence



Annual migraine incidence rate



Lyngberg et al 2005

Migraine
riskfactors for incidence

	Odds Ratio	95% CI
Gender (female)	6,6	3,0 - 14,8
Age (per 10 year)	0,6	0,4 - 0,8
Familiar disposition	3,1	1,6 - 6,2
Frequent TTH	2,5	1,3 - 5,0
Low education	2,9	1,5 - 5,7
High workload	2,2	1,1 - 4,3

Analysed in multivariate models. All riskfactors are adjusted for age and sex.

Frequent tension-type headache
risk factors for incidence

Riskfactor*	Odds Ratio	95% CI	P
Sex (female)	2,9	1,6 - 5,4	0,0006
Age (per 10 year)	0,6	0,4 - 0,8	0,001
Poor selfrated health	3,7	1,7 - 8,3	0,001
No of hours sleep (per hour less)	1,4	1,1 - 2,0	0,03
Difficult to relax after work	3,1	1,1 - 8,7	0,03

controlled for age and sex

Table 1. Six-months prevalences of migraine, medication overuse headache and two definitions of chronic migraine, according to study region.

	Dortmund health study		KORA Augsburg	SHIP Pomerania		Total
Headache type	35–75 years $n = 1134$	*(25–75 years)* ($n = 1312$)	35–75 years $n = 2805$	35–75 years $n = 2597$	*(25–88 years)* ($n = 3300$)	35–75 years $n = 6536$
Migraine, %	8.00	*(8.46)*	7.91	4.39	*(4.31)*	6.53
Medication overuse, % headache	0.88	*(0.91)*	0.96	1.04	*(1.03)*	0.98
Chronic migraine A*, %	0.09	*(0.23)*	0.32	0.23	*(0.27)*	0.28
Chronic migraine B†, %	0.00	*(0.00)*	0.14	0.08	*(0.09)*	0.09

*Complete criteria for chronic migraine are fulfilled including individuals also fulfilling medication overuse headache (MOH) criteria.
†Complete criteria for chronic migraine are fulfilled excluding individuals also fulfilling MOH criteria.
SHIP, Study of Health in Pomerania.

Straube A et al. Cephalalgia 2010;30:207-213

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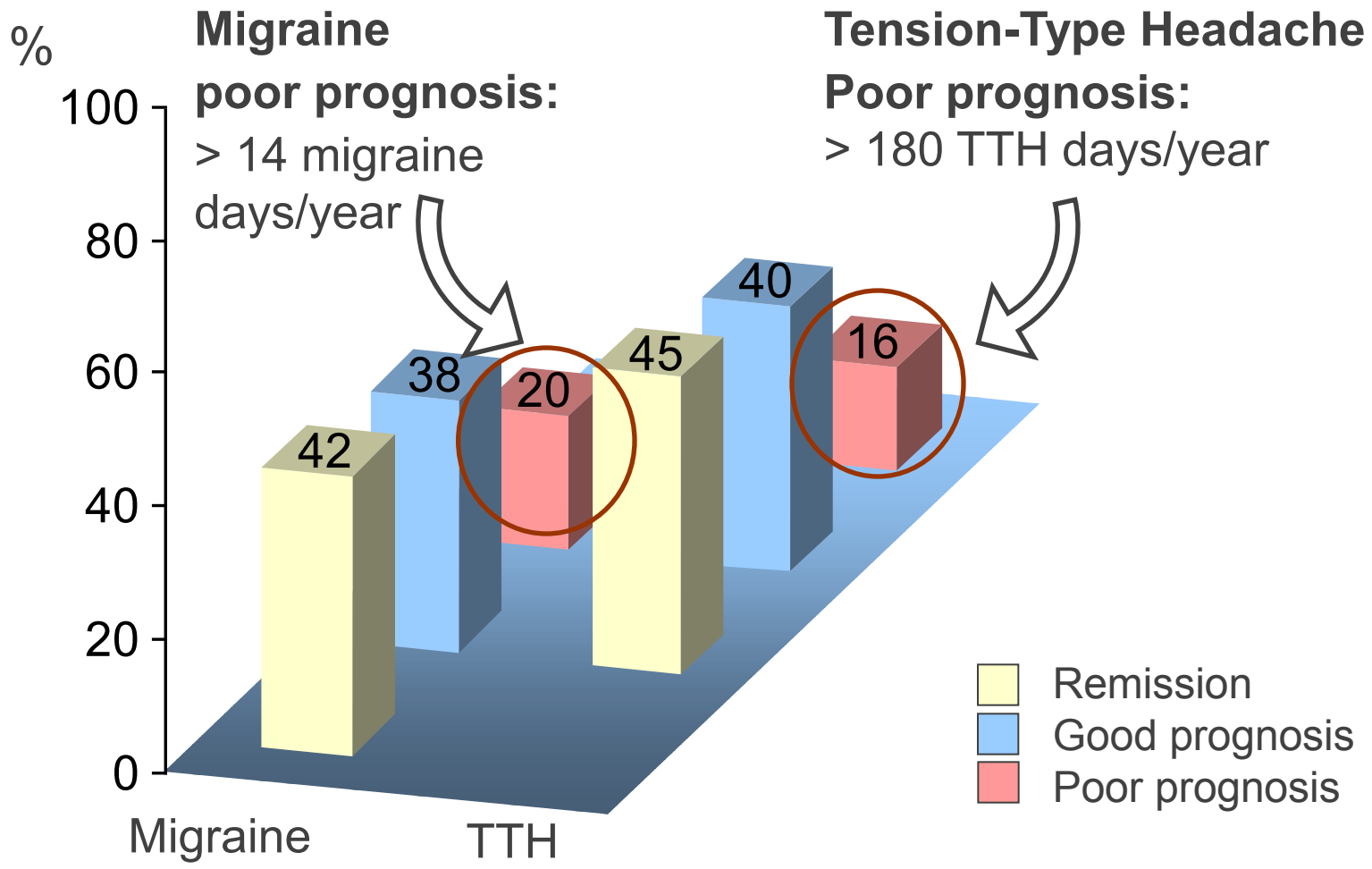
Coexisting Migraine and Tension-type headache in Europe

- In the general population:
  - 66% of CTTH suffered from pure CTTH and had no coexisting migraine
  - The remaining 34% had coexisting CTTH and episodic migraine
  - No individuals with chronic migraine (without MOH) were identified
- In the tertiary headache clinic:
  - 80-95% of patients have both TTH and migraine
  - 2-5 % had chronic migraine (ICHD-II)
  - 20-25% have Medication Overuse Headache-

Katsarava et al 2008,Rasmussen et al 1992; Lyngberg et al 2006

Prognosis (12 year follow-up study from the general population)

(Lyngberg et al. NEUROLOGY 2005;65:580–585)



Prognosis risk factors
(Lyngberg et al Neurology 2005)

Migraine	**Odds Ratio**	**(95% CI)**
High migraine frequency	15,5	1,8-134,4
Debut under the age of 20 y	5,8	1,4-25,2

TTH	**Odds Ratio**	**(95% CI)**
Chronic TTH	6,1	1,7 - 22,3
Migraine	5,3	1,9 - 14,5
Not being married	3,8	1,5 - 9,8
Sleeping problems	2,7	1,1 - 6,4

Analysed in multivariate models. All riskfactors adjusted for age and sex.

USE OF HEALTH CARE SERVICES

Medical consultation for headache :

- 76% of subjects with coexisting mig and TTH
- 66% of subjects with pure migraine
- 44% of subjects with pure TTH

- Rates of all cause consultations and absences were higher for individuals with headache compared with subjects without headache.
- The higher rates were most markedly for those with coexisting migraine and TTH

Cluster Headache

- Diagnosis is clinical
  - Characterized by short-acting unilateral severe orbital headache attacks lasting 15-180 minutes
  - Cranial parasympathetic hyperactivity.
  - Motor activity agitation

Episodic Cluster Headache : Cluster periods separated by pain free periods.

Chronic Cluster Headache : Attacks > 1 year
Remissions < 1 month

Affects 0.1-0.3 /1000
>5000 in DK

M/F ratio: 4/1

Underdiagnosed and undertreated

9 years diagnostic delay in DK (Jensen et al 2006)

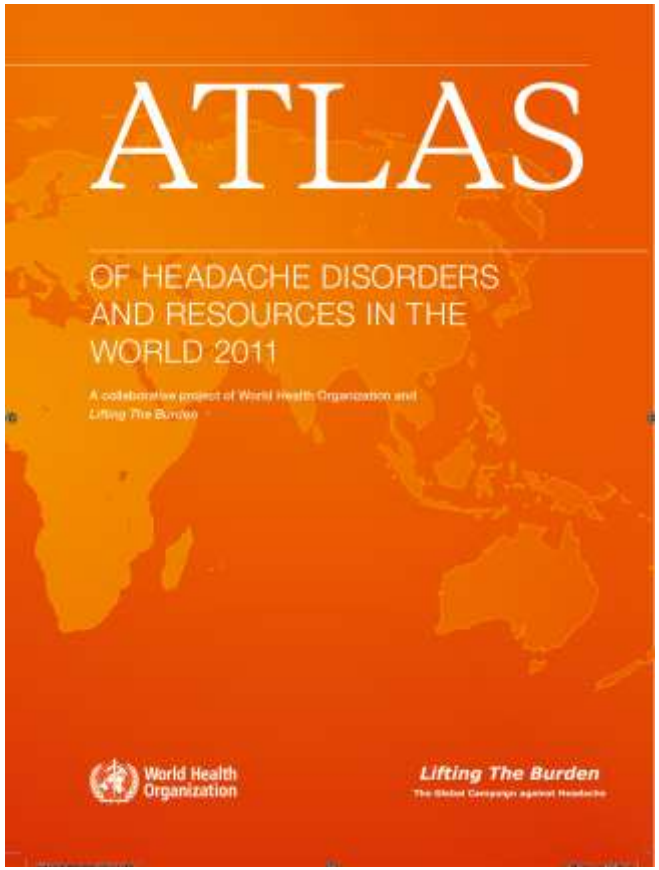
Annual costs 12.550 €/CCH patient in Germany (Gaul et al 2011)

Epidemiology Summary

- Tension-type headache is the most frequent but the least studied type of headache
- Prevalence of frequent TTH is increasing
- Prevalence of frequent migraine is increasing
- The majority of patients have coexisting Migraine and TTH

- Prognosis
  - Frequent episodic TTH has a fairly favourable prognosis
  - Chronic TTH and coexisting migraine predict poor outcome

RELEVANCE OF HEADACHE MANAGEMENT



Olesen et al Cost of brain disorders in Europe Eur J Neurol 2011

43 million Migraine sufferers in EU and annual cost: 43.000 million € (2010)

Migraine no.9 of most costly diseases in EU, headache no.3

Headache disorders costs more than MS, Epilepsy and PD together

Most frequent neurological disorder

Can be challenging but also very rewarding to treat

Unmet need for organization, education and better treatment

What are the barriers to good headache care?

Lack of:

Awareness

Academic interest

Pharmaceutical interest

Education

Political support

Ressources

What are the barriers to good headache care?

Headache training

Pregraduate in Universities 4 hrs

Postgraduate for specialist 37 hrs

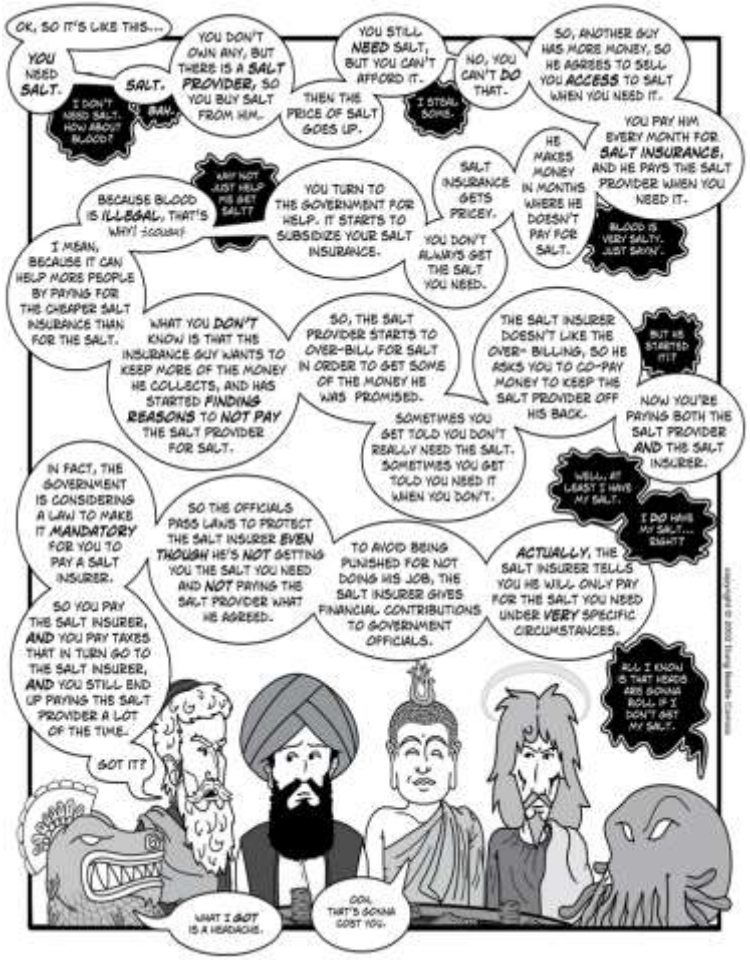
National H-organisations 67% of included countries(16-76%)

Political lobbyism 13% (5-19%)

LTB and WHO Headache Atlas

What is Good Headache Care?

- Qualified, trained staff
- Access to diagnosis
- Access to treatment
- Diagnostic instruments
- Balanced between under- and overtreatment
- Needs of the patients, the doctors or the society
- Equal access
- Follow-up visits

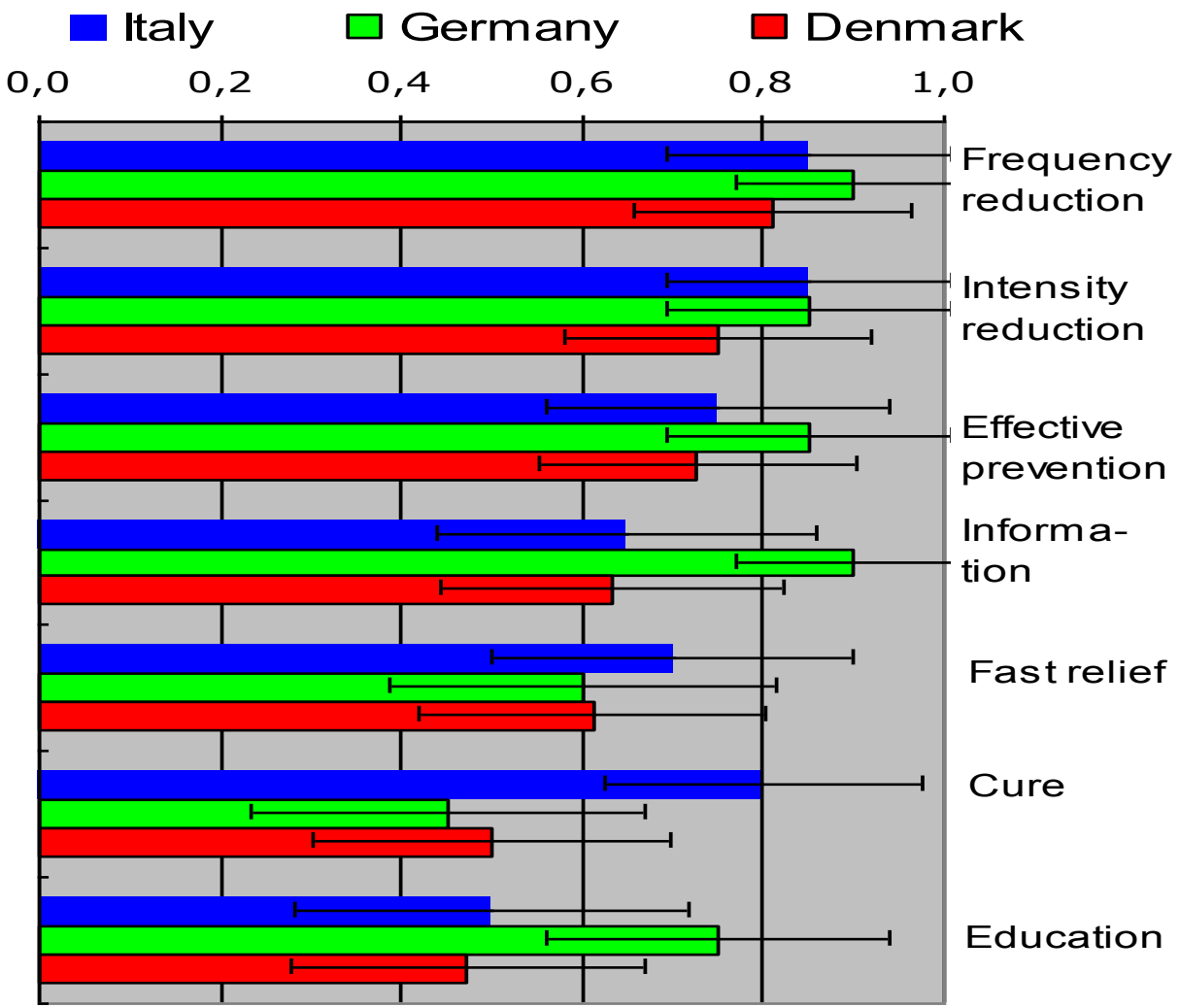


Optimizing headache care for the individual patient

- Interview
- Headache diary
- Evaluation tools
- Disability measures
- Computerized health records
- Allied Health Providers
- Others tools

MOH-patients expectations to treatment

Munksgaard et al JHHP 2010. (n=65)



Differences in Headache Service or in Culture?
Carol-Artal et al. J Neurol Sci 2011 (N=292)

	Spain	**Brazil**
• Prevalence	11%	15.2%
• Attacks/Mth	3.8	7.3
Treatment		
• Analgesics	87.5%	98.2%
• Ergots	7.1%	4.6%
• Triptans	47%	16,3%
• Preventive meds	52.9%	21.9%

- Undertreated/Overtreated? Similar access to care?

in conjunction with

Lifting The Burden

The Global Campaign to Reduce the Burden of Headache Worldwide

Recommendations for headache service organisation and delivery in Europe

T. J. Steiner • F. Antonaci • R. Jensen •

M. Lainez • M. Lanteri-Minet • D. Valade

JHHP (E-pub ahead of print March 2011)

A proposal for stakeholder consultation prepared by a joint working group of the European Headache Federation and *Lifting The Burden*

Proposed Organization of Headache Service

Level 3: Specialised headache centres
Specialised Headache Center
- both inpatient and outpatient treatment
- Multidisciplinary treatment
- Education
- Research

Organisation of networks with levels 1 and 2

Level 2: Headache out-patient service
Secondary care or primary care with special interest in headache disorders
- Completion of special training
- Fulfills national guidelines and requirements for special headache/pain therapy

Level 1: Headache Primary Care
Primary care without special interest in headache disorders
-Following treatment guidelines
-Selecting patients for higher levels (gate-keeper function)
-Provide continuing long-term care after discharge from levels 2 and 3
- Network with level 2 and 3

EUROPEAN HEADACHE FEDERATION
EHF

Good Headache Health care at Level 1. Headache Primary Care

- Identify migraine, tension-type headache, cluster headache and Medication Overuse Headache
- Identify serious secondary headaches
- Treat uncomplicated Migraine and Tension-type headache
- Become familiar with headache diaries and calenders
- Refer the relevant and complicated patients to neurologists or headache specialists

Good Headache Health care at Level 2. Headache Specialists and neurologist

- Identify all primary headaches
- Identify most secondary headaches and neuralgias
- Treat the vast majority of patients with migraine, tension-type headache, cluster headache and MOH
- Use diagnostic instruments as headache diaries and calenders
- Refer the refractory or rare types of headache patients to academic headache centres

Good Headache Health care at Level 3 Academic Headache Centres

- Identify all primary and secondary headaches plus neuralgias
- Treat the complicated and refractory headaches
- Use detoxificationprogramme for MOH
- Use diagnostic instruments as headache diaries and calenders
- Offer multidisciplinary treatment
- Education and teaching activities
- Research

Lifting The Burden;

The Global Campaign to Reduce the Burden of Headache Worldwide

- ”In a world of limited ressources and competing priorities the basis of the healthcare solution for headache in most parts of the world is education”

(www.who.int/mental_health/neurology/headache/en/)

J Headache Pain (2007) 8:S1
DOI 10.1007/s10194-007-0366-y

World Health Organization

Lifting The Burden:
The Global Campaign to Reduce the Burden of Headache Worldwide

in collaboration with

EUROPEAN HEADACHE FEDERATION
EHF

European Headache Federation

Aids for management of common headache disorders in primary care

Dismantling the barriers for good headache service? Strategies?

- Awareness of positive treatment results
- Education of healthcare professionals
- International and national information campaigns
- Guidelines for treatment and organisation
- Collaboration with patients organisations

Perspectives

- Headache is not accepted as a very frequent and costly neurological disorder in most countries
- Increased awareness and acceptance
- Good headache care is provided
- Development of more specific treatment strategies
- Prevention of chronification and medication overuse