FACULTY OF HEALTH SCIENCES
UNIVERSITY OF COPENHAGEN

GLOBAL EXCELLENCE IN HEALTH

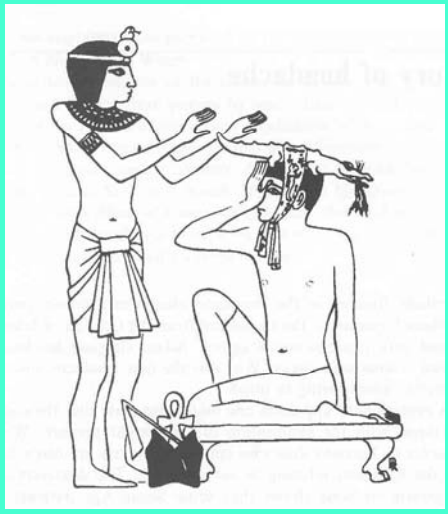
Danish Headache Center

Tension-type headache

Non-pharmacological and pharmacological treatment

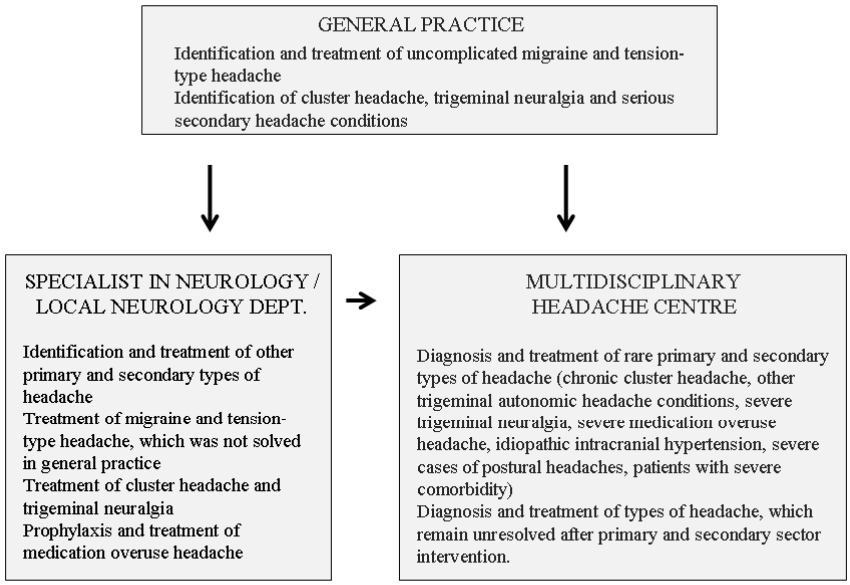
Lars Bendtsen
Associate professor, MD, PhD, Dr Med Sci
Danish Headache Center, Department of Neurology
Glostrup Hospital, University of Copenhagen, Denmark
European Headache School, Belgrade, May, 2012

Treatment



1200 BC

Drawing by P. Cunningham



Danish Headache Center

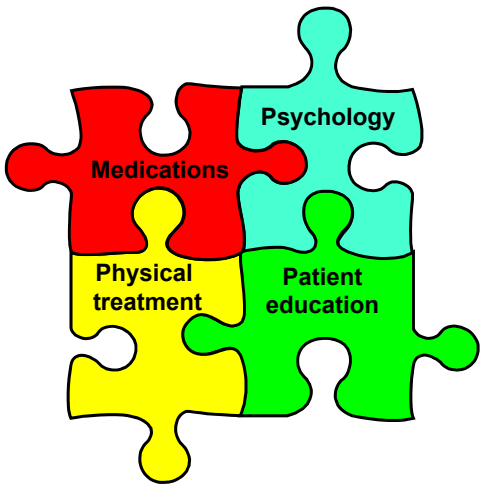
- Inaugurated 2001
- Multidisciplinary headache centre
- Focus on difficult-to-treat and rare types of headache and facial pain
- National treatment and research centre
- 1,076 new patients per year
- 2,655 ongoing patients
- 11,424 contacts (8,258 physical visits + 3,166 telephone contacts) per year

www.danishheadachecenter.dk

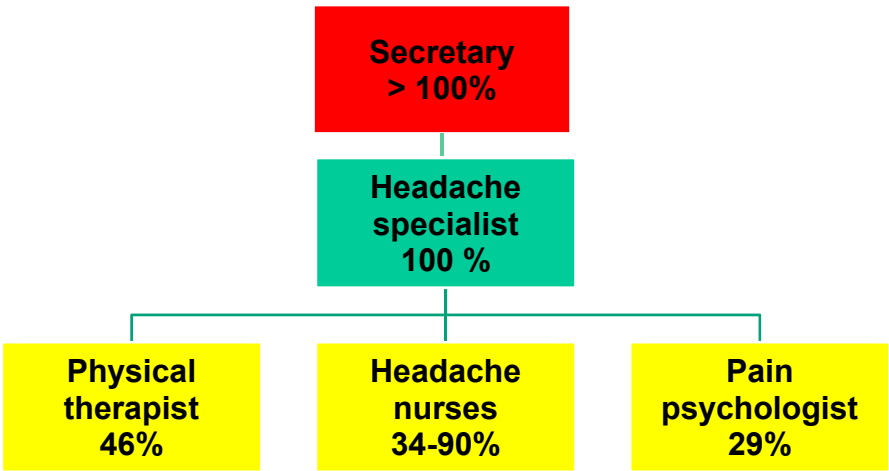
Danish Headache Center

- Staff
  - 8 neurologists specialized in headache (all part time), 3 nurses, 3 psychologists, 3 physical therapists, 1 psychiatrist (part time) and 8 secretaries
- Collaboration with
  - Neurosurgeons
  - Gynaecologist
  - Dentist
  - Anaesthesiologist

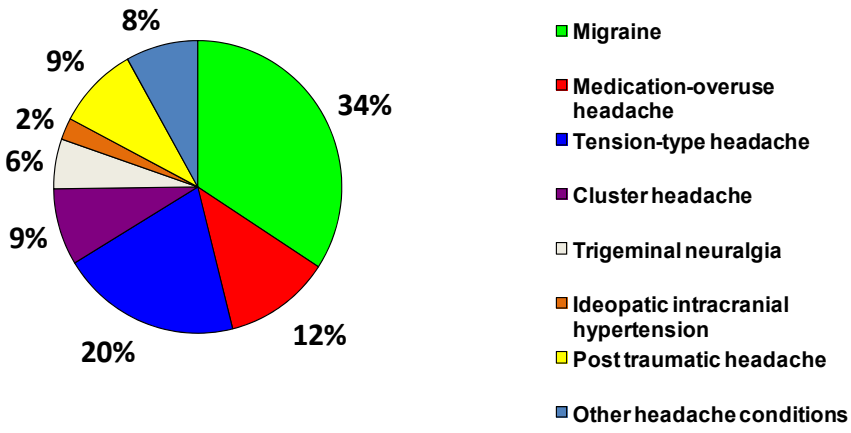
Multidisciplinary management



Organization in DHC



Danish Headache Centre
Relative frequencies of diagnostic categories in 2011



EFNS treatment guideline

European Journal of Neurology 2010, **17:** 1318–1325 doi:10.1111/j.1468-1331.2010.03070.x

EFNS GUIDELINES/CME ARTICLE

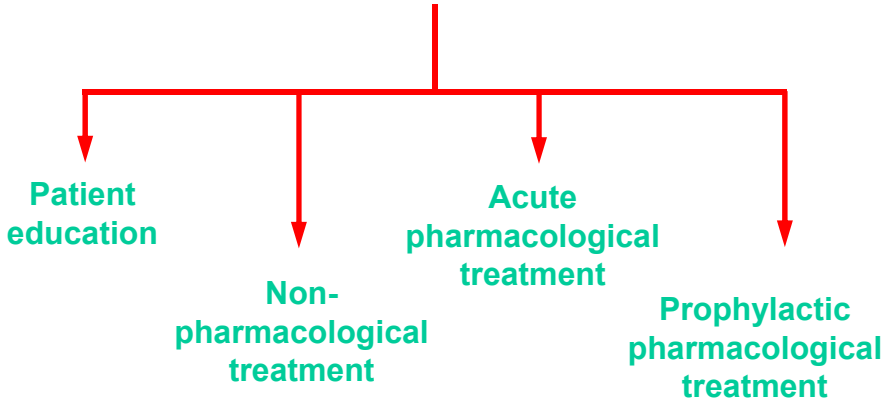
EFNS guideline on the treatment of tension-type headache – Report of an EFNS task force

L. Bendtsen[a], S. Evers[b], M. Linde[c], D. D. Mitsikostas[d], G. Sandrini[e] and J. Schoenen[f]

[a]*Department of Neurology, Danish Headache Centre, Glostrup Hospital, University of Copenhagen, Copenhagen, Denmark;* [b]*Department of Neurology, University of Münster, Münster, Germany;* [c]*Institute of Neuroscience and Physiology, The Sahlgrenska Academy, University of Gothenburg, Sweden and Norwegian National Headache Centre, St. Olavs Hospital, Trondheim Norway and Department of Neuroscience, Norwegian University of Science and Technology, Trondheim, Norway;* [d]*Department of Neurology, Headache Clinic, Athens Naval Hospital, Athens, Greece;* [e]*University Centre for Adaptive Disorders and Headache, IRCCS C. Mondino Institute of Neurology Foundation, University of Pavia, Pavia Italy; and* [f]*Department of Neurology, Headache Research Unit, University of Liège, Liège, Belgium*

Bendtsen et al., EJN 2010

Treatment



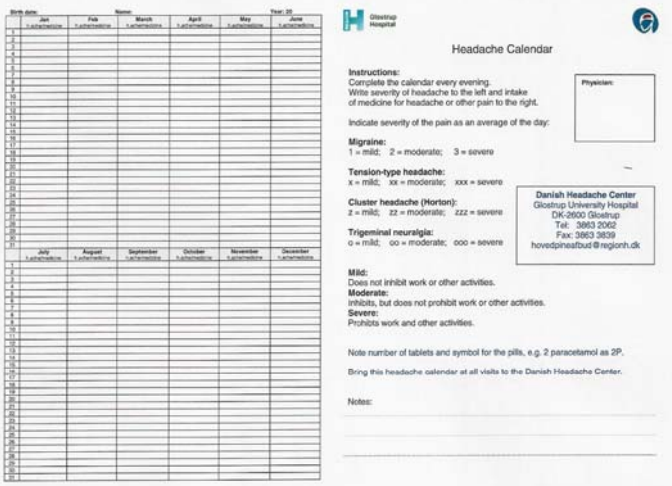
Headache calendar

To monitor:

Effect of treatment

Intake of analgesics

Download: www.dhos.dk



Glostrup Hospital

Headache Calendar

Instructions:
Complete the calendar every evening.
Write severity of headache to the left and intake of medicine for headache or other pain to the right.

Indicate severity of the pain as an average of the day:

Migraine:
1 = mild; 2 = moderate; 3 = severe

Tension-type headache:
x = mild; xx = moderate; xxx = severe

Cluster headache (Horton):
z = mild; zz = moderate; zzz = severe

Trigeminal neuralgia:
o = mild; oo = moderate; ooo = severe

Mild:
Does not inhibit work or other activities.
Moderate:
Inhibits, but does not prohibit work or other activities.
Severe:
Prohibits work and other activities.

Note number of tablets and symbol for the pills, e.g. 2 paracetamol as 2P.

Bring this headache calendar at all visits to the Danish Headache Center.

Notes:

Physician:

Danish Headache Center
Glostrup University Hospital
DK-2600 Glostrup
Tel: 3863 2062
Fax: 3863 3839
hovedpineafbud@regionh.dk

Fig. 2 Headache calendar. Available for download at http://www.dhos.dk. Fold around the centre to A5 format; however, it may also be folded twice to A6 format to fit a pocket book or similar such book

Bendtsen et al., J Headache Pain 2012

Non-pharmacological management

- Information and reassurance
- Avoidance of trigger factors (stress, sleep disorders, irregular meals, caffeine, reduced physical exercise)
- Identification and treatment of co-morbid disorders, e.g., migraine, depression and anxiety

Treatment of tension-type headache with medication-overuse

- Multidisciplinary treatment
- Most patients (80-90%) detoxified during Headache School
- Complicated patients (10-20%) detoxified during 2 weeks in hospital

Medication-overuse headache Headache School

- Run by specialized nurses
- 6 sessions of 2 hours
- 6-7 patients per course
- Synchronous and abrupt start of the detoxification period
- Exchange of experiences among the patients
- Lectures by the Multi-Disciplinary Team

Headache School
The Programme

Week -4	Week 0		Week +2	Week +3	Week +4	Week +8
Introduction Information	Withdrawal plan	Start-up	Follow-up Nurse Psychologist	Follow-up Nurse Education	Follow-up Nurse Physiotherapist	Follow-up Nurse Education

•Presentation of each member of the group

•Individual guidance 10-15

•Patients share experiences

•Guidance and advice from

•Psychologist give lecture o
- Pain Coping Strategies:
- accepting vs. defying beh

•Nurse Lecture on treatment of migraine and TTH
- Acute medication
- Prophylactic medication

•Lectures on prevention of new Medication Overuse Headache

Non-pharmacological therapies

- Physical therapies, probably effective
  - Relaxation and exercise programs
  - Improvement of posture
- Physical therapies, probably not effective
  - Hot and cold packs
  - Ultrasound
  - Spinal manipulation
  - Greater occipital nerve blocks
- Muscle trigger point therapy?
- Oromandibular treatment (occlusal splints)?
- Acupuncture, possibly effective

Non-pharmacological therapies

- Psychological therapies (stress and pain management)
  - Biofeedback
  - Relaxation training
  - Cognitive-behavioral therapy - increased efficacy when combined with TCA (Holroyd)

Physical therapies at DHC

- Individual physical examination
- Instruction in improvement of posture
- Training in individual exercise programs based on findings from physical examination
- Selected patients are offered group-based relaxation instruction and training plus biofeedback
- Relaxation and exercise programs performed at home
- Typically 4-8 follow-up visits

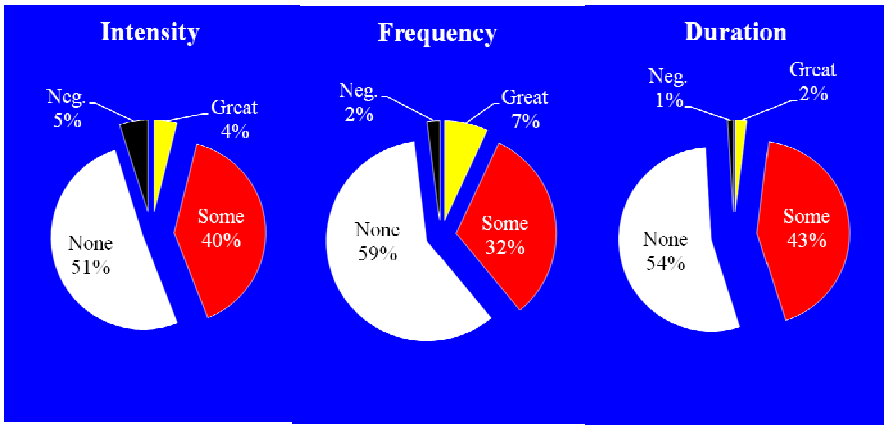
Psychological therapies at DHC

- Cognitive-behavioral therapy and relaxation training
- Mainly group therapy
- Main aims
  - To reduce headache
  - To increase quality of life

Psychological therapies at DHC
Groups of 8 patients, nine sessions, 2 hours each

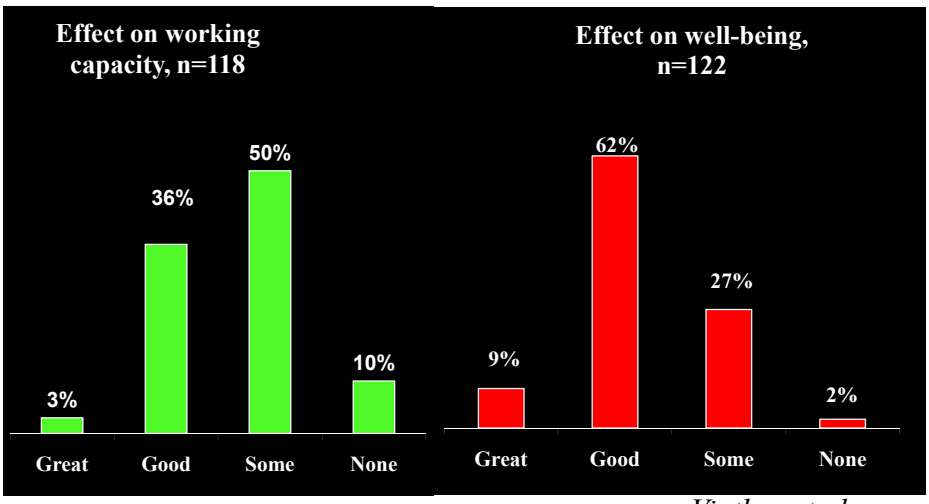
1. Stress and tension, how to recognize and control
2. EMG biofeedback
3. Pain behavior, pain accept
4. Cognitive restructuring
5. Feelings, how to handle
6. Thoughts, avoid negative circles
7. Communication. Headache, relationships and social life
8. Problem solving methods
9. Summary, plan ahead

Effect on headache



Vinther et al.

Effect on working capacity and well-being



Vinther et al.

Non-pharmacological management
EFNS guideline conclusions

- Non-drug management should always be considered
- Information, reassurance and identification of trigger factors may be rewarding
- EMG biofeedback has a documented effect
- Cognitive-behavioral therapy and relaxation training are most likely effective
- Physical therapy and acupuncture may be valuable

Bendtsen et al., EJN 2010

Acute drug treatment

- Drugs with documented effect, recommended doses
  - Ibuprofen 200-800 mg
  - Ketoprofen 25 mg
  - Aspirin 500-1000 mg
  - Naproxen 375-550 mg
  - Diclofenac 12.5-100 mg
  - Paracetamol 500-1000 mg
  - Caffeine combinations 65-200 mg

Bendtsen et al., EJN 2010

Acute drug treatment
EFNS guideline conclusions

- Simple analgesics and NSAIDs are drugs of first choice
- Combination analgesics containing caffeine are drugs of second choice
- Triptans, muscle relaxants and opioids should not be used
- Avoid frequent use of analgesics to prevent medication-overuse headache

Bendtsen et al., EJN 2010

Prophylactic drug treatment

- Should be considered in frequent episodic and chronic TTH

Drugs with documented effect, recommended doses

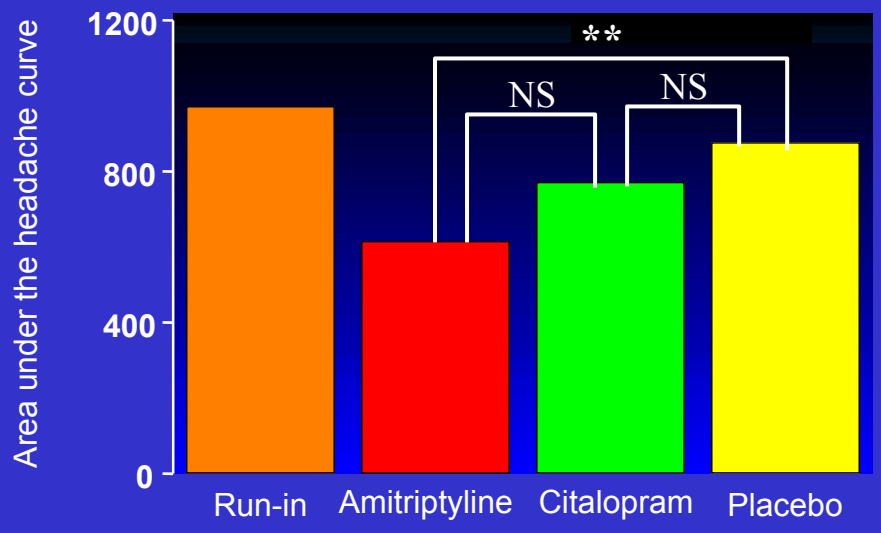
- Drug of first choice
  - Amitriptyline 30-75 mg
- Drugs of second choice
  - Mirtazapine 30 mg
  - Venlafaxine 150 mg
- Drugs of third choice
  - Clomipramine 75-150 mg
  - Maprotriline 75 mg
  - Mianserin 30-60 mg

Bendtsen et al., EJN 2010

How to use amitriptyline

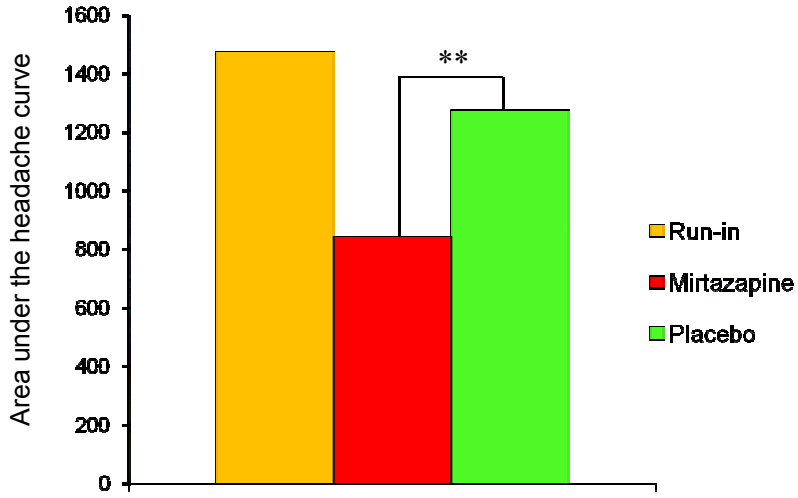
- Inform about mechanisms and side effects (effect is not related to depression)
- Start low, go slow
- Start with 10-25 mg before bedtime
- Increase with 10-25 mg per week to 10-100 mg daily
- Usual maintenance dose 30-75 mg daily
- Whole dose should be taken before bedtime
- Asses efficacy with calendar
- Discontinue after 1 month if ineffective
- Consider mirtazapine or venlafaxine
- If effective consider to taper off every 6-12 months

Prophylactic treatment of chronic tension-type headache



Bendtsen et al., JNNP 1996

Mirtazapine in chronic tension-type headache



Bendtsen and Jensen, Neurology 2004

Prophylactic drug treatment
EFNS guideline conclusions

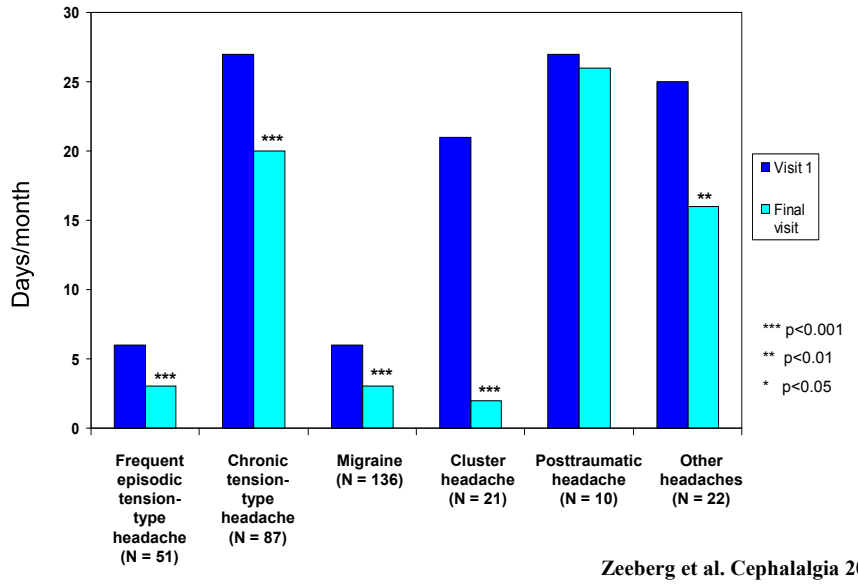
- Amitriptyline is drug of first choice
- Mirtazapine and venlafaxine are drugs of second choice

Bendtsen et al., EJN 2010

Treatment of Tension-Type Headache
Take home messages

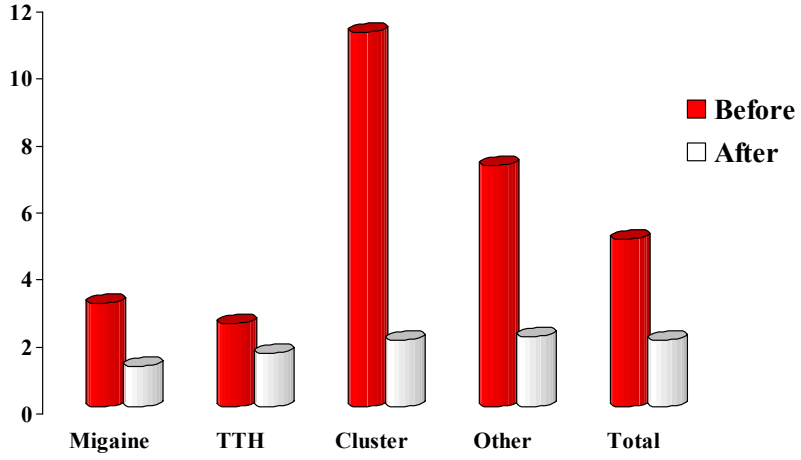
- Correct diagnosis (TTH, migraine, MOH, depression)
- Non-pharmacological
  - Avoidance of trigger factors
  - EMG biofeedback, cognitive-behavioral therapy, relaxation training
  - Physical therapy
- Pharmacological treatment
  - Acute - simple analgesics and NSAIDs
  - Prophylactic - antidepressants (TCA, SN)
- Does it help?

Treatment outcome, Danish Headache Center



Zeeberg et al. Cephalalgia 2005

Treatment outcome, Danish Headache Center
Effect on the absence rate (n=1,326)



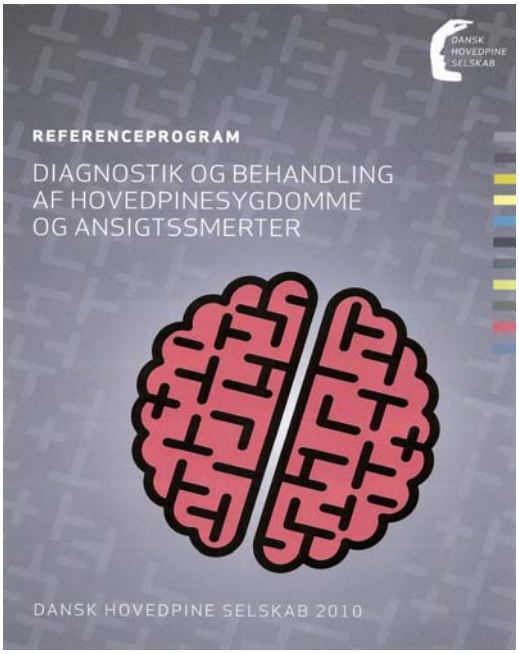
Jensen et al., Cephalalgia 2010

Reference programme of the Danish Headache Society, 2010.

Can be downloaded at www.dhos.dk as pdf with hyperlinks.

Has been sent to all neurologists in DK.

Most important tables have been sent to all GP's in DK.



Danish Headache Society
Reference Programme

J Headache Pain (2012) 13 (Suppl 1):S1–S29
DOI 10.1007/s10194-011-0402-9

GUIDELINES

Reference programme: Diagnosis and treatment of headache disorders and facial pain. Danish Headache Society, 2nd Edition, 2012

Lars Bendtsen · Steffen Birk · Helge Kasch · Karen Aegidius · Per Schmidt Sørensen · Lise Lykke Thomsen · Lars Poulsen · Mary-Jette Rasmussen · Christina Kruuse · Rigmor Jensen

Bendtsen et al., J Headache Pain 2012