

## Recurrent headache in children & adolescents



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## Adolescent report of common health problems

- Injuries (sports etc)
- Skin problems (acne)
- Recurrent headaches
- Tiredness, sleep problems

## Headache prevalence in childhood & adolescence

- Reports of increase in prevalence of migraine & nonmigrainous headaches in young school-children (Finland)
- Increase in reports of frequent headaches among adolescent girls (Sweden)-WHO study

## Prevalence of headaches-continued

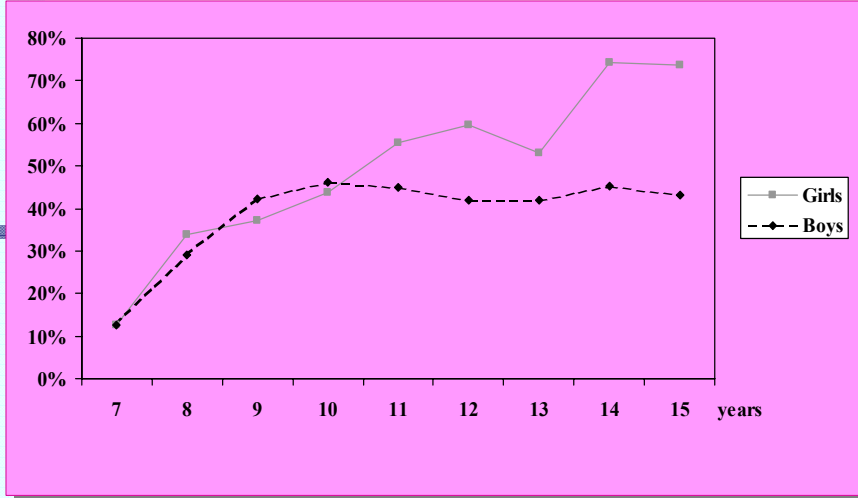
	Migraine	Tension-type
Preadolescence	3-5%	3-15%
Adolescence	5-10%	10-35%

Chronic TTH: 1-3% (adolescence)

Before puberty no sex difference

Puberty: Girls >> boys

## One-year-prevalence of headache-Uppsala 2003



OE0 4/04

## Quality of life-impairment

- Frequent abdominal, back, limb pain & headaches associated with lower QoL
- The more intense or severe pain, the lower QoL
- Few specific problems because of recurrent headaches!

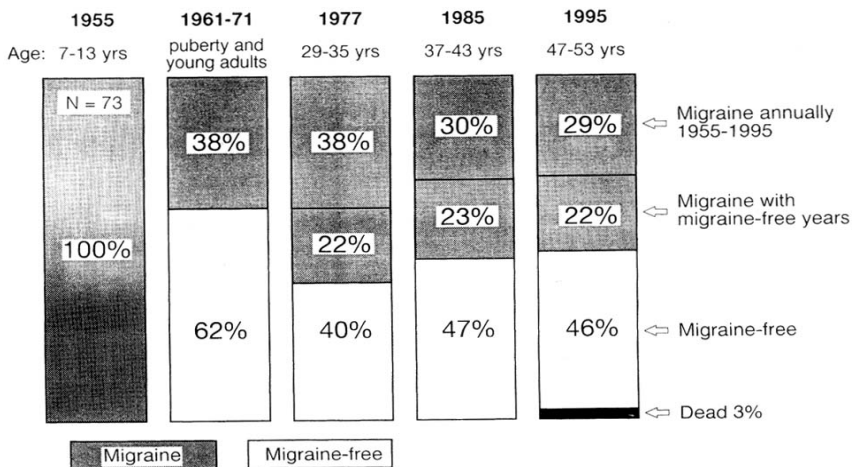
## QoL-Continued

- Increased school absence in migraine (vs TTH)
- Increased use of analgesic drugs (overconsumption > 3 tabl/week)
- Poorer peer relations
- Parental divorce more common among children with TTH (?)

## Prognosis of recurrent headaches in school-aged children

- Migraine: Most individuals continue to suffer (prepuberty & adolescence)
- Frequent headaches (> 1/week):  
50% continue to have such headaches after 1-year
- Minimal reduction in waiting-list groups when frequent headaches assessed by diaries (10-12 months)

# A 40 yr follow-up of 71 school children with migraine (Bille 1997)



## Headache assessment

- Prospective diary recordings 3-4 weeks before & after treatment;
- VAS or verbal description (0-5 intensity x4 daily)  
Medication usage, palliative
- Children 8-12 years+parent support
- Adolescent self-report



## Treatment of recurrent headaches in children & adolescents

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- No evidence today that traditional psychotherapy, family therapy, acupuncture work for these children!
- Very limited evidence on the management of recurrent headaches by general practitioners, pediatricians, nurses!

## Drug treatment- palliative & prophylactic

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- Paracetamol=Ibuprofen (NSAID)>placebo for migraine attacks
- Triptans: sumatriptan-nasal spray effective for migraine in children, tablets?

## Prophylactic drug treatment of migraine in children

- Positive effects of prophylactic treatment for children with frequent migraine? (2/20 studies-Cochrane, 2004)
- Indication: >2-4 attacks/month:  
beta-blockers (propranolol)

## Recent reviews on nonpharmacological and drug treatment of children and adolescents with migraine

- Damen et al, 2006  
Relaxation/biofeedback treatment  
better than placebo

Drugs: Flunarizin-some support  
Propranolol (?)  
Topiramate  
(15mg-200mg/d); side effects?



## Psychological treatment of recurrent headaches in children & adolescents

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- 1st controlled study:  
Labbé & Williamson, 1984  
-autogenic training for children with migraine (vs waiting-list control)
- Very positive results! Do children with migraine respond better than adults?

## Do psychological treatments work for recurrent headaches in children & adolescents?

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- Holden et al., 1999:  
Relaxation/self-hypnosis is a well-established and efficacious treatment for recurrent headaches
- Eccleston et al., 2002:  
“.. strong evidence that this treatment should be offered to patients with headaches in routine care”

## Headache improvement- diary-based criteria

- Common criteria for “success” & clinical-social relevance:  
50% reduction of total headache activity (pre-post change)-too conservative?
- How much improved after treatment??  
“Very much”/“Much improved”?
- Within normal variation?

## Treatment assessment- adolescent headache

- **Credibility ratings**  
-end of 1st session: “How likely is it that this treatment will help you?”
- **Treatment satisfaction** (last session):  
“Would you recommend this treatment to a friend with the same problems?”

## Psychological treatments for migraine & TTH

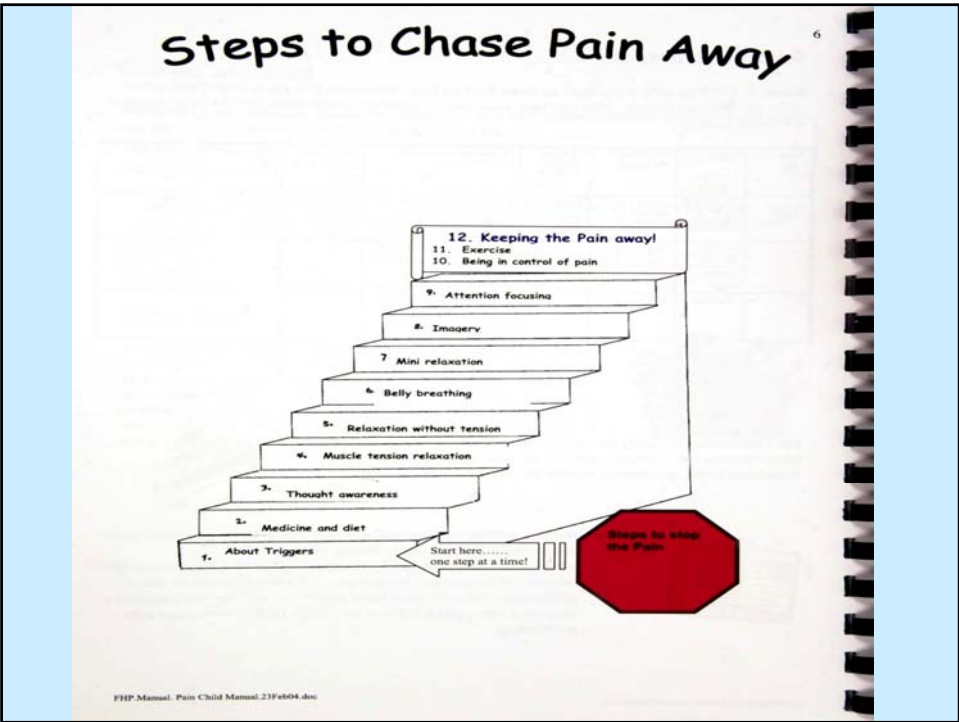
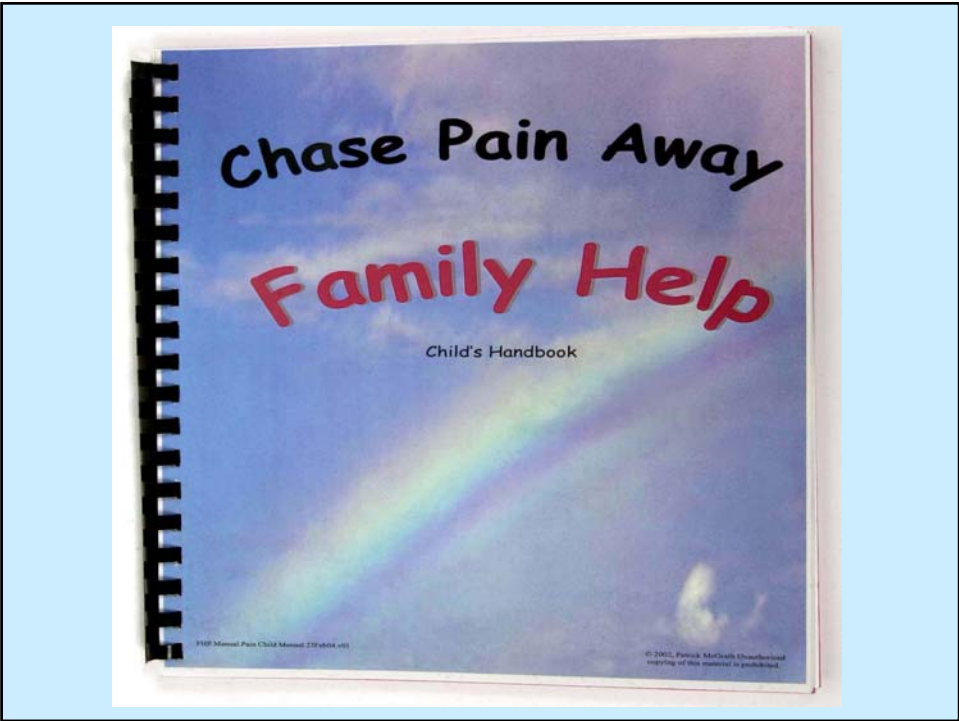
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- Information on headaches
- Support, identifying triggers
- Prospective headache diary recordings (3w to 2-3 months)

## Psychological treatments for migraine & TTH

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- Migraine: Temperature biofeedback, relaxation
- TTH: EMG biofeedback, relaxation
- Both: Cognitive-behavioral treatment, coping with pain, cognitive restructuring (negative thoughts, catastrophising)



## Relaxation training-outline

Bernstein & Borkovec 1973; Ost 1987

- Session 1-3: Progressive relaxation
- Session 4-6: Cue-controlled, brief relaxation, differential relaxation
- Session 7-9: Application training in everyday life when feeling tense, stress or headaches

## Relaxation training-outline continued

- Minimum number of sessions: 4-5?
- School-based relaxation:  
8-9 sessions a 45 min, 2/week
- Session 1-3: groups with 3-5 subjects  
4-8 individual training
- Complemented with manuals, audiotapes (CD), home training 1-2/day

## Relaxation-why does it work?

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Studies on adults with TTH (Andrasik & Holroyd, 1980; Rokicki et al., 1997)

Headache improvement related to increase in self-efficacy & cognitive changes-  
*not* to reduction of muscle tension activity (frontal & cervical EMG)!

## Adolescents with chronic TTH

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- Bussone et al., 1998
- EMG-assisted biofeedback relaxation (BFB) vs pseudorelaxation-“sit still and do the best you can” (labtraining only)
- Improvements 6-12 months follow-up: BFB

## Study characteristics- school-based intervention

- 8 RCTs in Uppsala (7) and Göteborg (1) 1981-2001; 90% girls!
- Regular school health service & school hours
- Invitation to frequent headache sufferers
- Information meetings, psychosocial assessment, parent consent, 3-4 week headache diary

## School adolescents-baseline headache

- Diary measures: headache sum, frequency, duration, intensity (peak), medication use
- Younger adolescents less headaches than older ones (10-13 yrs vs. 17-19 yrs)
- TTH>TTH+migraine>migraine  
80% had chronic TTH (headaches almost everyday for more than a year)

## Summary results of school-based relaxation treatment: proportion subjects =>50% pre-post improvement

	All (280)	TTH	Migraine
SR (self-recording)	4%	2%	8%
ATCO (attention -control)	13%	14%	10%
SHR (self-help)	31%	32%	17%
SNAR (school nurse)	39%	52%	13%
TAR (therapist)	60%	72%	52%

## Treatment efficiency

Headache improvement/therapist time in treatment

Attention-control	1,0
Therapist-assisted relaxation	1,6
Self-help relaxation	2,4
School-nurse-assisted relaxation	11,0



## Follow-up results after psychological treatment

- Most treatment gains well maintained after 3-4 years! (TTH & migraine)
- Preventing children/adolescents from becoming adult headache sufferers?

## Cost-effectiveness, real life treatment

- Treatments should not only be effective but also cost-effective/efficient (therapist-time, cost, parent time etc.)
- ....should be readily accessible for children & adolescents with recurrent headaches
- acceptable, credible, consumer's satisfaction (relaxation & CBT)

## Treatment setting- where to deliver treatment?

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- Most studies on children with migraine: tertiary university clinics
- TTH: school-setting (psychologists, nurses under supervision)
- Internet (PC-) based CBT-treatment (manualised with telephone or email support)(Hicks et al., 2005)

## Implications for future research on common recurrent-chronic pain in children and adolescents

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- Effective interventions for children with recurrent stomach, back or limb pain??
- How to optimize management for adolescents with frequent headaches?
  - Addition of biofeedback treatment or cognitive methods??What to do with nonresponders?

## Implications for education and implementation


- Education and training of school nurses (school physicians) administering relaxation training in groups for adolescents with frequent headaches
- Internet-based intervention-interactive programs? Self-help training-CD?



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# Migrän och spännings- huvudvärk hos barn och tonåringar



 Studentlitteratur