



Clinical practice guidelines

**Chronic daily headache (CDH) –
Diagnosis, medication overuse,
and management**

September 2004

Synopsis

Title	Chronic daily headache (CDH) – Diagnosis, medication overuse and management
Publication date	September 2004
Requested by	<i>Société française d'étude des migraines et des céphalées Association des neurologues libéraux de langue française</i>
Produced by	ANAES – French National Agency for Accreditation and Evaluation in Healthcare (Guidelines Department)
Intended for	All doctors, especially general practitioners Pharmacists Other health professionals
Assessment method	- Systematic review of the literature (with evidence levels) - Discussion among members of an <i>ad hoc</i> working group - External validation by peer reviewers (see ANAES guide " <i>Recommandations pour la pratique clinique – base méthodologique pour leur réalisation en France – 1999</i> ")
Literature search	January 1993 - July 2004
Project management	Project leader: Dr. Philippe Blanchard (Department head: Dr. Patrice Dosquet) (Literature search: Marie Georget assisted by Sylvie Lascols (Department head: Rabia Bazi)) Secretarial work: Catherine Solomon-Alexander
Author of draft report	Dr Virginie Dousset, neurologist, Toulouse
Collaborations and participants (annex 1)	- Learned societies - Steering committee - Working group (Chair: Professor Gilles Géraud, neurologist, Toulouse) - Peer reviewers
Internal validation	ANAES Scientific Council (Referee: Dr Jean-Claude Farasse, rheumatologist, Cambrai) Validated on Sept. 2, 2004
Other ANAES publications on the topic	<i>Prise en charge diagnostique et thérapeutique de la migraine chez l'adulte et chez l'enfant : aspects cliniques et économiques</i> (Clinical and economic aspects of the diagnosis and management of migraine in adults and children) - published in French only - ANAES, 2002.

Key points

1. What is chronic daily headache (CDH) ?

CDH begins as episodic migraine or tension-type headache and progresses to chronic daily headache, especially in association with medication overuse.

2. How to diagnose CDH

Presence of headache	Headache may be one of 3 types
<ul style="list-style-type: none">• on more than 15 days a month• progressing over > 3 months• lasting > 4 hours daily if untreated• not caused by a lesion	<ul style="list-style-type: none">• symptoms overlap with symptoms of migraine• symptoms overlap with symptoms of tension-type headache• migraine-like attacks occurring in a patient with continuous headache

A headache diary helps to confirm the diagnosis.

3. How to manage CDH

- Investigate and assess:
 - medication overuse
 - factors that encourage headache, e.g. psychological, hormonal and/or musculoskeletal factors
 - resultant disability.
- Withdraw medication in patients with medication overuse, and provide supportive measures, either drug therapy or non-drug therapy (particularly psychotherapy).
- Treat the migraine or tension-type headache and associated factors.
- Provide education on managing headache attacks.

4. How to identify at-risk patients (Primary prevention of CDH)

All patients with migraine or tension-type headache should receive education about managing and treating headache and know that they should not take medication more than twice a week for migraine or headache attacks.

In patients with migraine or episodic tension-type headache, CDH may develop in the following situations:

- increased frequency of headache
- overuse of acute medication
- when several successive migraine treatments have been ineffective
- if there are psychological factors, especially life events with a strong emotional component
- if there is a psychiatric disorder (anxiety or depressive disorder)
- if there is other concomitant chronic pain, especially localised or diffuse musculoskeletal pain
- insomnia.

Guidelines

I. Introduction

I.1 Objective

These guidelines concern chronic daily headache (CDH) in adults but also in children and adolescents despite fewer published data.

I.2 Scope of the guidelines

These guidelines cover the following 5 issues identified by the steering committee:

- definition and diagnosis of CDH
- factors associated with CDH
- management of CDH
- prevention of CDH
- CDH in children and adolescents.

They do not cover two specific, very rare types of CDH:

- new onset CDH
- hemicrania continua.

We would expect these guidelines to be updated in 5 years' time

II. Assessment method

The guidelines were produced using the method described in Annex 2:

- a critical appraisal of the literature published from Jan. 1993 to July 2004
- discussions within a multidisciplinary working group (3 meetings)
- comments by peer reviewers.

They were graded on the basis of the strength of the evidence of the supporting studies (Annex 2). If no grade is given, they are based on agreement among professionals within the working group after taking into account the comments of peer reviewers.

III. Definition of CDH

CDH is defined as headache

- without underlying lesions and without symptoms of a disease that might be causing this chronic headache,
- occurring on more than 15 days a month for more than 3 months and lasting for more than 4 hours per day if untreated.

Different types of headache may be involved. In most cases the headache is initially episodic migraine or tension-type headache which progresses to chronic headache, particularly in response to medication overuse or psychological factors (Figure 1).

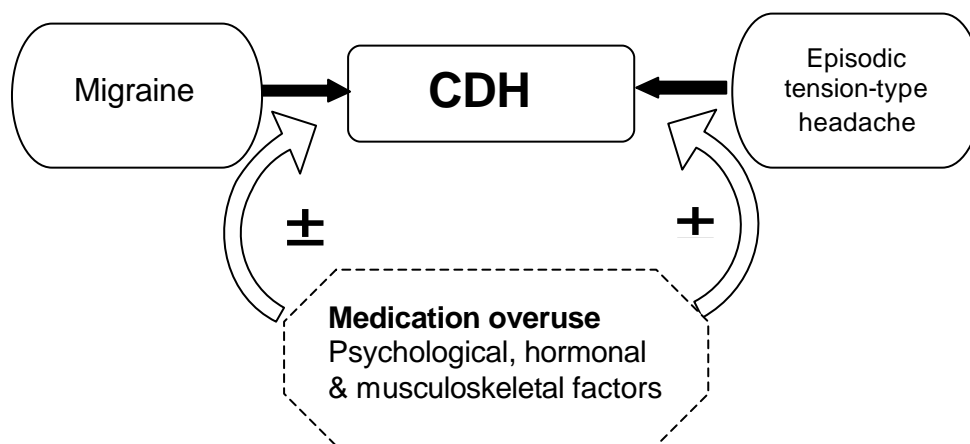


Figure 1. How migraine and tension-type headaches progress to CDH

There is a lack of understanding of CDH by both health professionals and the general public, leading to underdiagnosis and inappropriate management (grade C). In particular, it is little known that medication overuse may cause CDH. This makes effective prevention difficult and occurrence more likely.

CDH is very incapacitating, particularly when there is concomitant medication overuse (grade C). Its greatest socioeconomic impact is on healthcare expenditure. Management consists of withdrawal in the event of medication overuse, combined with appropriate information and education for the patient.

Prevalence of CDH in France is high (3% in adults over 15 years old). It is higher in women than in men (ratio 3:1) (grade C).

III.1 Impact of CDH

- **Quality of life and disability**

In patients with CDH, quality of life is impaired, particularly in the event of medication overuse or if symptoms overlap with those of migraine (grade C). It can also be impaired by psychological factors and the iatrogenic effects of medication overuse. Patients with CDH experience greater disability than migraine patients do (grade C). The impact of CDH on quality of life can be assessed from a basic history (including details of the patient's family, social and work environments) and from a headache diary kept by the patient.

- **Economic aspects**

- Patients with CDH visit their doctor more often than patients with migraine. Psychiatrists and ophthalmologists are the specialists most frequently consulted (grade C).
- Patients with CDH use 6 times more medication than patients with migraine; analgesics are the most commonly used drugs (grade C).

IV. Diagnosis

At the first visit:

- initial and current headache should be reviewed
- medication overuse should be looked for
- psychological factors and the impact of CDH should be assessed.

IV.1 Positive diagnosis

The headache must:

- occur on at least 15 days a month
- progress over a period of at least 3 months
- last for more than 4 hours daily if untreated.

At the first visit, the doctor should ask the patient to keep a headache diary giving dates when headaches occur, how long they last, and details of any medication taken. The diary should be brought to the next visit to confirm the diagnosis of CDH (see Annex 3 for a model headache diary).

There are three possible patterns of headache which may or may not be associated with medication overuse:

- (i) headache with overlapping symptoms of migraine (Table 1)
- (ii) headache with overlapping symptoms of tension-type headache (Table 1)
- (iii) episodes of migraine-like headache in a patient who already has constant headache.

Table 1. How to distinguish migraine from tension-type headache, after the *International Headache Society (IHS) classification (2nd edn)*

	Typical migraine	Tension-type headache
Location of pain	Unilateral	Bilateral
Type of headache	Pulsating quality	Pressing, tightening
Intensity	Moderate to severe	Mild to moderate
Aggravation by activity	+	0
Nausea/vomiting	+	0/
Photophobia	+	0/+*
Phonophobia	+	+/ 0*
Duration of attack	4-72 hours	30 min - 7 days

* Either photophobia or phonophobia may be present in tension headache, but not both.

CDH is diagnosed from the history. However, a general and neurological examination, and maybe further investigations, should be performed to eliminate symptomatic headache.

IV.2 Differential diagnosis

Further investigations are needed to eliminate symptomatic CDH

- when CDH has been present for less than 1 year (proposal by the working group), with or without a history of headache,
- when an abnormality is found on neurological or general examination.

These further investigations include brain imaging (MRI or CT scan if MRI is not available) and laboratory tests to check for any inflammation.

Daily headache lasting less than 4 hours if untreated is not classified as CDH.

V. Factors associated with CDH

V.1 Medication overuse in CDH

- **Definition of medication overuse**

The current IHS criteria for headache define medication overuse as follows:

1. Medication taken regularly for more than 3 months;
2. Medication taken:
 - for at least 15 days a month for non-opioid analgesics (paracetamol, aspirin, non-steroid anti-inflammatory agents – NSAIDs),
 - for more than 10 days a month for other acute medications (opioids, ergotamine, triptans, analgesics with more than one active ingredient).

- **Drugs involved in overuse**

Any drugs for acute headache may be involved in medication overuse. Over-the-counter analgesics are used twice as often as those requiring a prescription (grade C). Currently, the most commonly used drugs are paracetamol, caffeine, codeine and triptans. The first three are often used in combination drugs (grade C). There may be concomitant overuse of other types of drugs, e.g. hypnotics or tranquillisers (benzodiazepines) (grade C).

The type of drug used is influenced by several factors:

- the psychotropic effect of caffeine, codeine, dextropropoxyphene and tramadol
- self-medication and the ease with which medications can be obtained
- individual susceptibility to addiction.

- **Overuse rates**

From 60 to 80% of patients with CDH visiting specialist headache clinics present medication overuse (grade C). Overuse is less common in the general population and concerns an estimated one-third of patients with CDH (grade C).

- **Role of overuse in CDH**

The only way to establish that CDH is caused by medication overuse is by observing the effects of withdrawing medication. The attempts of a patient to discontinue medication can lead to rebound headache, which reinforces their need to continue. In subjects without headache, analgesic overuse for chronic pain other than headache does not lead to CDH (grade C).

V.2 Psychological factors in CDH

- **Anxiety and depressive disorders**

Anxiety and depressive disorders should be looked for routinely as they are common in patients with CDH. Half the patients seeing a specialist have an anxiety disorder and half or a third have a mood disorder. Patients with CDH in the general population are probably less likely to be anxious or depressed.

CDHs due to migraine or medication overuse are associated with anxiety and depressive disorders more often than other types of CDH (grade C). The presence of an anxiety or depressive disorder has a significant impact on disability, quality of life and prognosis (grade C).

- **Addiction**

The term addiction includes all abnormal substance use characterised by:

- loss of control
- continued use even though the patient understands its harmful effects.

Medication overuse in patients with CDH often includes both these aspects and can therefore be classed as addiction, particularly when psychotropic substances such as caffeine (often combined with analgesics) or opioids (codeine is often used by headache sufferers) are used. In patients with CDH due to medication overuse, any addiction to medication other than that causing CDH (particularly benzodiazepines) or to coffee, tobacco, alcohol and/or drugs should be investigated.

- **Personality disorders**

Certain patients with CDH (two-thirds of those seeing a specialist) have a personality disorder. The disorder is usually neurotic.

- **Life events**

Life events are often the root cause of progression to CDH and to patients seeking treatment for CDH. The events involved are usually negative (death, divorce) but may be positive (promotion at work, marriage etc.).

V.3 Other factors in CDH

- **Hormonal factors: menopause**

Migraine and tension-type headache may become worse at menopause (grade C). However, as studies have used different designs, it is not yet possible to determine:

- the proportion of migraines or tension-type headaches that worsen at menopause;
- the effect of spontaneous or surgical menopause on progression from episodic headache to CDH;
- the effect of hormone replacement therapy on progression.

The effect of menopause on progression from episodic headache to CDH may be related to complex relationships between hormonal and neurobiological, and psychological and cultural factors (grade C).

- **Musculoskeletal factors**

Muscle tension may be a factor in the persistence of CDH. It can be diagnosed by palpation of scalp and facial muscles and the cervical musculature. If muscle tension

is present, causal factors such as posture (especially at work), trauma, temporomandibular joint dysfunction, etc., should be investigated.

Psychological factors such as anxiety, by increasing muscle tone, also contribute to musculoskeletal factors becoming chronic (grade C).

VI. Management of CDH with medication overuse

A key step before treatment is patient assessment (see Box). The doctor should pay special attention to this assessment.

Key factors to be assessed

- medication overuse and its quantification, if present
- psychological factors
- musculoskeletal factors
- disability in working, family and social life

VI.1 Withdrawal

Management of CDH due to medication overuse must include withdrawal (grade C).

- **Management in or out of hospital**

Withdrawal may be managed on an outpatient basis or in hospital (grade C). Hospital management is preferable in the following cases:

- overuse of a number of drugs or severe overuse
- overuse of psychotropic substances
- severe psychiatric comorbidity
- unfavourable family environment.

Hospital stay is generally 5-10 days.

Withdrawal in hospital must be part of multidisciplinary management (grade C). This should include supportive measures (pharmacological or other) to alleviate withdrawal syndrome (grade C).

- **Withdrawal syndrome**

Withdrawal syndrome may consist of rebound headaches, gastrointestinal disturbances (nausea and/or vomiting), hyperaesthesia, sleep disorders and exacerbation of anxiety with irritability. The severity and duration of the withdrawal syndrome varies according to the patient and the drug involved. Withdrawal syndrome lasts longer than average after analgesic overuse and less long after triptan overuse (grade C).

- **Induction of withdrawal**

- If the patient is in hospital, overuse should be discontinued from the start.
- If the patient is managed in an outpatient setting, medication may be withdrawn completely or gradually (by 10%/ week according to some authors).

VI.2 Supportive measures

• **Drug therapy**

Drug therapy should not be used routinely. Most studies have included few patients and their poor design and low statistical power cannot support the preferential use of any specific class of drug.

- *Drug therapy during hospital withdrawal.* There is no strong published evidence for any particular drug. The working group proposed intravenous (IV) amitriptyline as first-line therapy (25-100 mg/day). Other options such as sodium valproate may be considered, especially when amitriptyline is poorly tolerated or contraindicated. Other antiepileptics are being assessed.
- *Drug therapy during outpatient management of withdrawal.* The working group proposed amitriptyline as first-line therapy (25 to 100 mg/day given orally).
- *Management of rebound headache.* Non-drug therapy should be used. Drug therapy should be reserved for severe migraine-like rebound headache; migraine attacks should be treated as described in the ANAES 2002 guidelines³ (NSAIDs, triptans) and the withdrawal period should be extended accordingly.

• **Psychotherapy**

Psychotherapy is particularly necessary when psychotherapeutic factors play a significant role, for example in the case of anxiety and depressive disorders, personality disorders and major stress factors. Four types of psychotherapy are proposed:

- (i) Support sessions when patients can talk about their problems and the therapist can offer support and encouragement. This is always useful:
 - during withdrawal
 - after withdrawal to avoid early regression
- (ii) Relaxation (grade C)
- (iii) Cognitive behavioural therapy, which consists of:
 - educating the patient about analgesic overuse
 - self-observation by keeping a diary
 - relaxation, with or without biofeedback
 - stress management
 - management of medication use.Four controlled trials (of which one randomised) have confirmed that this type of management is effective in both the short- and long-term (grade B). It is more effective in patients who do not have constant headache
- (iv) Analytical psychotherapy, which may be advised in certain cases.

• **Other supportive measures**

Other measures are being combined with withdrawal and initiation of treatment for the initial headache:

- neurostimulation by acupuncture (grade C)
- physiotherapy (grade C)
- acupuncture
- manual therapies.

³ Clinical and economic aspects of the diagnosis and management of migraine in adults and children (in French)

VI.3 Follow-up and preventing renewed medication overuse

- ***Use of a diary***

A diary in which the patient records details of headaches and of any medication taken is an essential tool during follow-up after withdrawal.

- ***Follow-up schedule***

In the case of withdrawal in hospital, the first follow-up visit should take place within 2-6 weeks, and earlier than this after outpatient withdrawal. Follow-up visits should then take place at regular intervals, especially during the first 6 months following withdrawal, when the risk of renewed medication overuse is greatest (grade C). It is useful for patients to be able to contact their caregiver(s) by telephone.

- ***Types of follow-up***

Drug therapy. If the patient has pre-existing migraine, prophylactic therapy should be started at the end of withdrawal. Patients should be given information on how to manage migraine attacks with appropriate drug therapy. The prescription supplied at the end of the withdrawal period should state that 2 doses per week should not be exceeded on a regular basis. The patient should be helped to achieve this by the use of non-drug therapies (e.g. ice bags) for mild attacks.

Psychotherapy may be continued if necessary.

Musculoskeletal approach. If there is any muscle tension, the methods mentioned earlier may be used.

VII. Management of CDH without medication overuse

Management involves

- basic treatment for the migraine or tension headache. The working group proposed tricyclic antidepressants as first-line therapy, i.e. oral amitriptyline 25 to 100 mg/day (grade A for chronic tension-type headache);
- treatment of any concomitant psychological or musculoskeletal factors, using the methods given above (cognitive behavioural therapy: grade B).

VIII. Primary prevention of CDH

VIII.1 Identifying and managing patients at risk of CDH

In patients with migraine or episodic tension-type headache, CDH may develop in the following situations:

- increased frequency of headache
- overuse of acute medication
- lack of efficacy of several types of prophylactic therapy for migraine
- psychological factors, especially life events with a strong emotional component
- migraine or tension-type headache associated with psychiatric comorbidity
- chronic headache associated with other chronic pain, especially musculoskeletal pain, whether localised or diffuse (grade C)
- insomnia.

A diary (record of headaches and drugs taken) helps measure objectively the number of days when the patient has a headache (see ANAES 2002 guidelines⁴).

When a patient has coexisting migraine-like + tension-type headache (formerly called “mixed headache”), prevention of CDH involves diagnosing each type of headache and combining their treatments.

All patients suffering from migraine, tension-type headache or both will benefit from education about managing drug therapy for their attacks. Prescriptions should specify that 2 doses per week should not be exceeded on a regular basis.

VIII.2 Increasing awareness among patients and health professionals

- ***Increasing awareness among patients***

The working group suggested:

- producing posters and booklets designed to raise awareness in users;
- distributing information booklets in co-operation with national insurance bodies and private insurance;
- that pharmacists identify headache sufferers who use over-the-counter analgesics regularly and advise them to see their doctor about the problem;
- that primary healthcare providers (particularly pharmacists) use posters to increase awareness in people who use more than 2 to 3 acute medications a week for headache, and advise them to see their doctor.

- ***Increasing awareness among health professionals***

Information on CDH and its relationship with medication overuse is inadequate. There is a need for information designed specifically for those professionals who are in the best position to increase patient awareness, i.e. community pharmacists and general practitioners. The specialists who are often consulted by patients with CDH (neurologists, psychiatrists, ophthalmologists, and ENT and emergency medicine specialists) also need to be better informed.

IX. CDH in children and adolescents

The definition of CDH in children and adolescents is the same as for adults. The prevalence of CDH in children in the general population is unknown. As with adults, more of the children and adolescents who see a specialist are female (grade C). CDH is the reason for seeing a doctor in 40% of cases in specialist paediatric headache clinics. New daily persistent headache, i.e. headache that is chronic from the outset, is more common in children than in adults (grade C).

Mean age at the start of management in these specialist clinics is 12 years. Underlying migraine is diagnosed in 80% of cases (grade C).

⁴ Clinical and economic aspects of the diagnosis and management of migraine in adults and children (in French)

As in adults, CDH can be caused by medication overuse. The active ingredients most commonly involved are paracetamol (by far the most common), NSAIDs and combination drugs (grade C). Overuse of caffeine as a result of soft drink consumption should be sought (grade C).

The impact on academic performance needs to be assessed.

Management consists of:

- withdrawal, in the event of medication overuse
- initiation of acute therapy and prophylactic therapy for migraine, when present, at an effective dose (see ANAES 2002 guidelines on clinical and economic aspects of the diagnosis and management of migraine in adults and children)
- seeking and eliminating trigger factors (food, sports, hypoglycaemia, etc.)
- a healthier way of life
- behavioural therapy for children and their parents, especially in how to use acute medication
- relaxation techniques
- psychiatric and psychological therapy, when necessary.

Annex 1 – Participants

Learned societies consulted

Société française de neurologie
Association des neurologues libéraux de langue française
Agence française de sécurité sanitaire des produits de santé
Société française d'étude des migraines et des céphalées
Société d'étude et de traitement de la douleur
Société nationale française de médecine interne
Conseil de l'ordre des pharmaciens.

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Annex 2 – Assessment method

The ANAES method for producing these clinical practice guidelines⁵ comprised the following steps:

Defining the scope of the guidelines (Steering committee). ANAES invited representatives from learned societies concerned by the topic to take part in a steering committee whose job was to define the scope of the guidelines, to review previous work on the subject and to nominate professionals to take part in a working group or act as peer reviewers.

Literature search (Documentation Department of ANAES): See below

Drafting the guidelines (Working group). The ANAES project manager formed a working group of 15 professionals from a number of disciplines, working in public or private practice, from all over the country. The chair of the working group coordinated the production of the guidelines with the help of the project manager whose job was to ensure conformity with the methodological principles of guideline production. One member of the working group, with the help of two others, identified, selected, and analysed relevant studies (from a literature search performed by the ANAES Documentation Department) and wrote a draft report. This draft report was discussed by the working group over 3 meetings and amended in the light of comments from other members of the working group and from peer reviewers.

External validation (Peer reviewers). Peer reviewers were appointed according to the same criteria as working group members. They were consulted by post after the second working group meeting, primarily with regard to the readability and applicability of the guidelines (scores from 1 to 9). The ANAES project manager summarized their comments and submitted them to the working group prior to the third meeting. Peer reviewers were asked to undersign the final document.

Internal validation (Evaluation Section of the ANAES Scientific Council). A member of the Council acted as referee reporting to the Council, together with the ANAES report manager. The working group finalized the guidelines with due regard to the Council's suggestions.

- ***Literature search and analysis (general procedure)***

The scope of the literature search was defined by the steering committee and the project manager. The search was carried out by the ANAES Documentation Department and focused on searching:

- medical and scientific databases over an appropriate period, with special emphasis on retrieving clinical practice guidelines, consensus conferences,

⁵ Full details are given in *“Recommandations pour la pratique clinique – base méthodologique pour leur réalisation en France – 1999”* (ANAES)

articles on medical decision-making, systematic reviews, meta-analyses and other assessments already published nationally or internationally (articles in French or English)

- specific and/or financial/economic databases, if necessary
- all relevant websites (government agencies, professional societies, etc.)
- the grey literature (documents not identified through the usual information distribution circuits)
- legislative and regulatory texts

Further references were obtained from citations in the articles retrieved above and from working group members' and peer reviewers' own reference sources. The search was updated until the project was completed.

The articles selected were analysed according to the principles of a critical appraisal of the literature, using a checklist, to allocate a level of scientific evidence to each study. Whenever possible, the working group based their guidelines on this review of the literature. Guidelines were graded from A to C as shown in Table 1 depending on the level of the evidence of the supporting studies. If no grading is given, they are based on agreement among professionals.

Table 1. Grading of guidelines

Level of published scientific evidence	Grade
Level 1 Randomised controlled trials of high power Meta-analyses of randomised controlled trials Decision analyses based on properly conducted studies	A: Established scientific evidence
Level 2 Randomised controlled trials of low power Properly conducted non-randomised controlled trials Cohort studies	B: Presumption of scientific foundation
Level 3 Case-control studies	C: Low level of evidence
Level 4 Comparative studies with major bias Retrospective studies Case series	

Annex 3 – Model headache diary

D	January				February				March				April				May				June			
	D	S	TF	Medication	D	S	TF	Medication	D	S	TF	Medication	D	S	TF	Medication	D	S	TF	Medication	D	S	TF	Medication
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D: duration (hours); S: severity (M = mild, MOD = moderate, S = severe); TF: trigger factor; Medication: give name and dose

