



Complete Summary

GUIDELINE TITLE

Early management of patients with a head injury. A national clinical guideline.

BIBLIOGRAPHIC SOURCE(S)

Early management of patients with a head injury. A national clinical guideline. Edinburgh (Scotland): Scottish Intercollegiate Guidelines Network (SIGN); 2000. 43 p. (SIGN publication; no. 46). [147 references]

COMPLETE SUMMARY CONTENT

SCOPE
METHODOLOGY - including Rating Scheme and Cost Analysis
RECOMMENDATIONS
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CATEGORIES
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SCOPE

DISEASE/CONDITION(S)

Head injury

GUIDELINE CATEGORY

Diagnosis
Evaluation
Management

CLINICAL SPECIALTY

Critical Care
Emergency Medicine
Family Practice
Internal Medicine
Nephrology
Neurological Surgery
Pediatrics

INTENDED USERS

Advanced Practice Nurses
Nurses
Physician Assistants
Physicians

GUIDELINE OBJECTIVE(S)

1. To present evidence-based recommendations for the early management of patients with a head injury.
2. To specifically address the following questions:
 - How should head injured patients be assessed and classified?
 - What are the indications for referral to hospital of a patient with a recent head injury?
 - What are the principles of care during transport and during assessment in Accident and Emergency Departments (A&E)?
 - What are the relative merits of skull radiography (x-ray) and computed tomographic scanning in the recently head injured patient?
 - Who should undergo radiological investigations, and what technique is appropriate?
 - Who should be admitted to hospital for observation?
 - Who can be discharged from Accident and Emergency Departments?
 - How should observation be continued in hospital or after discharge?
 - Who should be discussed with the regional neurosurgical unit?

TARGET POPULATION

Patients with a head injury

INTERVENTIONS AND PRACTICES CONSIDERED

Assessment

1. Clinical assessment based on Glasgow Coma Scale and Glasgow Coma Score (GCS)
2. Assessment of indications for referral to hospital

Management

1. Management according to the principles of Advanced Trauma Life Support (ATLS) for adults and Advanced Paediatric Life Support (APLS) in children
2. Imaging with skull x-ray, head computed tomographic scan, and/or cervical spine films
3. Verbal and written discharge instructions for patients discharged home from Accident and Emergency (A&E) departments
4. Evaluation for hospital admission
5. Inpatient observation, including regular clinical observation and recording of Glasgow Coma Score, neck movement, limb power, pupil reaction, and other cranial nerves and signs of basal skull fracture or neurological deterioration
6. Written discharge plan for patients discharged from inpatient observation

7. Referral and transfer to a neurosurgical unit, if applicable
8. Follow up arrangements and discharge letter to general practitioner

MAJOR OUTCOMES CONSIDERED

- Neurological damage

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Searches were mostly restricted to meta analyses, systematic reviews, and randomised controlled trials, but were extended to cover observational studies in areas where other types of study were weak or nonexistent. Inclusion criteria were the management, diagnosis and treatment of injuries to the head or neck from accident site through to discharge or transfer from the Accident and Emergency Department. Intensive care of head injured patients, or maxillofacial injuries, were specifically excluded.

Initial searches were carried out on the Cochrane Library, Embase, Healthstar, and Medline from 1985 through to September 1997. The main searches were supplemented by material identified by individual members of the development group and the evidence base for the guideline was updated during the course of development.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Statements of Evidence:

I a: Evidence obtained from meta-analysis of randomized controlled trials.

I b: Evidence obtained from at least one randomized controlled trial.

II a: Evidence obtained from at least one well-designed controlled study without randomization.

II b: Evidence obtained from at least one other type of well-designed quasi-experimental study.

III: Evidence obtained from well-designed non-experimental descriptive studies, such as comparative studies, correlation studies and case studies.

IV: Evidence obtained from expert committee reports or opinions and/or clinical experiences of respected authorities.

METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

The Scottish Intercollegiate Guidelines Network (SIGN) carries out comprehensive systematic reviews of the literature using customized search strategies applied to a number of electronic databases and the Internet. This is often an iterative process whereby the guideline development group will carry out a search for existing guidelines and systematic reviews in the first instance and, after the results of this search have been evaluated, the questions driving the search may be redefined and focused before proceeding to identify lower levels of evidence.

Once papers have been selected as potential sources of evidence, the methodology used in each study is assessed to ensure its validity. SIGN has developed checklists to aid guideline developers to critically evaluate the methodology of different types of study design. The result of this assessment will affect the level of evidence allocated to the paper, which in turn will influence the grade of recommendation it supports.

Additional details can be found in the companion document titled "SIGN 50: A Guideline Developers' Handbook." (Edinburgh [UK]: Scottish Intercollegiate Guidelines Network. [SIGN publication; no. 50]). Available from the [SIGN Web site](#).

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

The process for synthesizing the evidence base to form graded guideline recommendations is illustrated in the companion document titled "SIGN 50: A Guideline Developer's Handbook." (Edinburgh [UK]: Scottish Intercollegiate Guidelines Network. [SIGN publication; no. 50]), available from the SIGN website.

Evidence tables should be compiled, summarizing all the validated studies identified from the systematic literature review relating to each key question. These evidence tables form an important part of the guideline development record

and ensure that the basis of the guideline development group's recommendations is transparent.

In order to address how the guideline developer was able to arrive at their recommendations given the evidence they had to base them on, SIGN has introduced the concept of considered judgement.

Under the heading of considered judgement, guideline development groups are expected to summarise their view of the total body of evidence covered by each evidence table. This summary view is expected to cover the following aspects:

- Quantity, quality, and consistency of evidence
- Generalisability of study findings
- Applicability to the target population of the guideline
- Clinical impact (i.e., the extent of the impact on the target patient population, and the resources need to treat them.)

Guideline development groups are provided with a pro forma in which to record the main points from their considered judgement. Once they have considered these issues, the group are asked to summarise their view of the evidence and assign a level of evidence to it, before going on to derive a graded recommendation.

The assignment of a level of evidence should involve all those on a particular guideline development group or subgroup involved with reviewing the evidence in relation to each specific question. The allocation of the associated grade of recommendation should involve participation of all members of the guideline development group. Where the guideline development group is unable to agree a unanimous recommendation, the difference of opinion should be formally recorded and the reason for dissent noted.

The recommendation grading system is intended to place greater weight on the quality of the evidence supporting each recommendation, and to emphasise that the body of evidence should be considered as a whole, and not rely on a single study to support each recommendation. It is also intended to allow more weight to be given to recommendations supported by good quality observational studies where randomised controlled trials (RCTs) are not available for practical or ethical reasons. Through the considered judgement process guideline developers are also able to downgrade a recommendation where they think the evidence is not generalisable, not directly applicable to the target population, or for other reasons is perceived as being weaker than a simple evaluation of the methodology would suggest.

On occasion, there is an important practical point that the guideline developer may wish to emphasise but for which there is not, nor is their likely to be, any research evidence. This will typically be where some aspect of treatment is regarded as such sound clinical practice that nobody is likely to question it. These are marked in the guideline as "good practice points." It must be emphasized that these are not an alternative to evidence-based recommendations, and should only be used where there is no alternative means of highlighting the issue.

Grades of Recommendations

Grade A: Requires at least one randomized controlled trial (RCT) as part of a body of literature of overall good quality and consistency addressing the specific recommendation (Evidence levels Ia, Ib).

Grade B: Requires the availability of well conducted clinical studies but no randomised clinical trials on the topic of recommendation (Evidence levels IIa, IIb, III).

Grade C: Requires evidence obtained from expert committee reports or opinions and/or clinical experiences of respected authorities. Indicates an absence of directly applicable clinical studies of good quality (Evidence level IV).

Good Practice Points: Recommended best practice based on the clinical experience of the guideline development group.

Pediatric Practice Points: Highlight specific aspects of management with may differ in children (age

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

External Peer Review
Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

1. National open meeting discusses the draft recommendations of each guideline.
2. Independent expert referees review the guideline.
3. The Scottish Intercollegiate Guidelines Network (SIGN) Editorial Board reviews the guideline and summary of peer reviewers' comments.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Note from the Scottish Intercollegiate Guidelines Network (SIGN) and National Guideline Clearinghouse (NGC): In addition to these evidence-based recommendations, the guideline development group also identifies points of best clinical practice in the original guideline document. A number of 'paediatric practice points' are also included in the original guideline document to highlight specific aspects of management that may differ in children (age <16 years unless specified otherwise).

The strength of recommendation grading (A-C) and level of evidence (Ia-IV) are defined at the end of the 'Major Recommendations' field.

Assessment and Classification

B: The management of head injured patients should be guided by clinical assessments and protocols based on the Glasgow Coma Scale and Glasgow Coma Score.

Indications for Referral to Hospital

B: A head injured patient should be referred to hospital if any of the following is present:

- Impaired consciousness (Glasgow Coma Score <15/15) at any time since injury
- Amnesia for the incident or subsequent events
- Neurological symptoms, such as:
 - severe and persistent headache
 - nausea and vomiting
 - irritability or altered behaviour
 - seizure
- Clinical evidence of a skull fracture (e.g., cerebrospinal fluid [CSF] leak, periorbital haematoma)
- Significant extracranial injuries
- A mechanism of injury suggesting:
 - a high energy injury (e.g., road traffic accident, fall from height)
 - possible penetrating brain injury
 - possible non-accidental injury (in a child)
- Continuing uncertainty about the diagnosis after first assessment
- Medical co-morbidity (e.g., anticoagulant use, alcohol abuse)
- Adverse social factors (e.g., no-one able to supervise the patient at home)

Principles of Management

C: A head injured patient should initially be assessed and managed according to clear principles and standard practice as embodied in the Advanced Trauma Life Support (ATLS) system and for children the Advanced Paediatric Life Support (APLS) system.

Imaging

B: Selection for imaging should be based on known 'risk' factors for the presence of a skull fracture or an intracranial lesion.

C: Computed tomography (CT) scanning should be readily available, on a 24 hour basis, to Accident and Emergency Departments responsible for assessing head injured patients.

B: Doctors who interpret and make clinical decisions based upon skull films or scans should be trained to do so. All imaging should be reviewed by an experienced radiologist as soon as possible.

B: Transport or transmission of images should be used to communicate about patients in whom the appropriate management is not otherwise clear.

B: Computed tomographic scanning should be done in a patient who has any of the following features:

1. The patient is eye opening only to pain or does not converse (Glasgow Coma Score 12/15 or less)
2. A deteriorating level of consciousness or progressive focal neurological signs
3. Confusion or drowsiness (Glasgow Coma Score 13 or 14/15) followed by failure to improve within at most four hours of clinical observation
4. Radiological/clinical evidence of a fracture, whatever the level of consciousness
5. New focal neurological signs which are not getting worse
6. Full consciousness (Glasgow Coma Score 15/15) with no fracture but other features, such as:
 - severe and persistent headache
 - nausea and vomiting
 - irritability or altered behaviour
 - a seizure

B: Skull films should be carried out if any of the following apply and if computed tomographic scanning is not being performed:

- a. If the patient is alert and oriented and obeying commands (Glasgow Coma Score 15/15) but:
 - the mechanism of injury has not been trivial; or
 - consciousness has been lost; or
 - the patient has loss of memory or has vomited; or
 - the scalp has a full thickness laceration or a boggy haematoma; or
 - the history is inadequate

or

- b. If the level of consciousness is impaired (Glasgow Coma Score \leq 14/15).

B: Imaging of the cervical spine, including the cervico-thoracic junction should be carried out:

- in a fully conscious patient (Glasgow Coma Score 15/15) if clinical symptoms or signs or the mechanism of injury indicate the possibility of injury
- in a patient with persisting impaired consciousness (Glasgow Coma Score 14/15 or less)
- in an unconscious patient, not localising pain (Glasgow Coma Score 6/15 or less) computed tomographic scanning of the cervical spine down to C2 should be undertaken routinely, at the time of head scanning.

Admission or Discharge?

B: A patient should be admitted to hospital if:

- the level of consciousness is impaired (Glasgow Coma Score <15/15)
- the patient is fully conscious (Glasgow Coma Score 15/15) but any of the following risk factors are present:
 - continuing amnesia (for at least five minutes after injury)
 - continuing nausea and/or vomiting
 - a seizure at any time after injury
 - focal neurological signs
 - irritability or abnormal behaviour
 - clinical or radiological evidence of a recent skull fracture or suspected penetrating injury
 - an abnormal computed tomographic scan
 - severe headache or other neurological symptoms
- the patient has significant medical problems, e.g. anticoagulant use
- the patient has social problems or cannot be supervised by a responsible adult

B: A patient can be discharged from the Accident and Emergency Department for observation at home if fully conscious (Glasgow Coma Score 15/15) with none of the additional risk factors above or other relevant adverse medical and social factors.

Inpatient Observation

B: Any of the following examples of neurological deterioration should prompt urgent reappraisal by a doctor:

- the development of agitation or abnormal behaviour
- a sustained decrease in conscious level of at least one point in the motor or verbal response or two points in the eye opening response of the Glasgow Coma Score
- the development of severe or increasing headache or persisting vomiting
- new or evolving neurological symptoms or signs, such as pupil inequality or asymmetry of limb or facial movement

Indications for Referral to a Neurosurgical Unit

B: A head injured patient should be discussed with a neurosurgeon:

- when a computed tomographic scan in a general hospital shows a recent intracranial lesion
- when a patient fulfills the criteria for computed tomographic scanning but this cannot be done within an appropriate period
- irrespective of the result of any computed tomographic scan, when the patient has clinical features that suggest that neurosurgical assessment, monitoring, or management are appropriate

B: Features suggesting that neurosurgical assessment, monitoring, or management are appropriate include:

1. Persisting coma (Glasgow Coma Score 8/15 or less) after initial resuscitation
2. Confusion which persists for more than four hours
3. Deterioration in level of consciousness after admission (a sustained drop of one point on the motor or verbal subscales, or two points on the eye opening subscale of the Glasgow Coma Score)
4. Progressive focal neurological signs
5. A seizure without full recovery
6. Compound depressed skull fracture
7. Definite or suspected penetrating injury
8. A cerebrospinal fluid leak or other sign of a basal fracture.

B: Transfer of the patient should follow the principles set out by the Association of Anaesthetists of Great Britain and Ireland and the Neuro-anaesthesia Society of Great Britain and Ireland.

Follow-Up

B: A discharge letter should be sent to the general practitioner about every patient, whether or not admitted to hospital.

Definitions:

Grades of Recommendations:

- A. Requires at least one randomised controlled trial as part of a body of literature of overall good quality and consistency addressing the specific recommendation. (Evidence levels Ia, Ib)
- B. Requires the availability of well conducted clinical studies but no randomised clinical trials on the topic of recommendation. (Evidence levels IIa, IIb, III)
- C. Requires evidence obtained from expert committee reports or opinions and/or clinical experiences of respected authorities. Indicates an absence of directly applicable clinical studies of good quality. (Evidence level IV)

Statements of Evidence:

I a: Evidence obtained from meta-analysis of randomized controlled trials.

I b: Evidence obtained from at least one randomized controlled trial.

II a: Evidence obtained from at least one well-designed controlled study without randomization.

II b: Evidence obtained from at least one other type of well-designed quasi-experimental study.

III: Evidence obtained from well-designed non-experimental descriptive studies, such as comparative studies, correlation studies and case studies.

IV: Evidence obtained from expert committee reports or opinions and/or clinical experiences of respected authorities.

CLINICAL ALGORITHM(S)

An algorithm is provided for the use of radiographic investigations in patients (older than 5 years of age) with a head injury.

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The specific type of supporting evidence is explicitly identified in each section of the guideline.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

The early management of patients with a head injury might:

- Lead to the detection of lesions before they lead to neurological deterioration
- Reduce the delay in the detection and treatment of acute traumatic intracranial injury, which can produce better outcomes

Neurosurgical unit referral:

- Referral to a neurosurgical unit can benefit a patient due to the specialized skills and facilities for patient assessment, management, and surgery

Follow-up:

- Head injured patients may benefit from advice and treatment given by a variety of experts

POTENTIAL HARMS

Imaging:

- Disadvantages of performing early computed tomographic scans include the possible hazards and inconvenience of transfer to a scanner and the possible need for general anaesthesia to obtain satisfactory images.

Neurosurgical unit referral:

- The potential disadvantages of secondary transfer include the possible exposure to secondary insults or added delay in action

Subgroups Most Likely to be Harmed:

Patients with serious multiple injuries whose continuing care requires ready access to a range of expertise are at the most disadvantage when considering transfer to a neurosurgical unit.

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

This guideline is not intended to be construed or to serve as a standard of medical care. Standards of medical care are determined on the basis of all clinical data available for an individual case and are subject to changes as scientific knowledge and technology advance and patterns of care evolve. These parameters of practice should be considered guidelines only. Adherence to them will not ensure a successful outcome in every case, nor should they be construed as including all proper methods of care or excluding other acceptable methods of care aimed at the same results. The ultimate judgment regarding a particular clinical procedure or treatment plan must be made by the doctor in light of the clinical data presented by the patient and the diagnostic and treatment options available.

Significant departures from the national guideline as expressed in the local guideline should be fully documented and the reasons for the differences explained. Significant departures from the local guideline should be fully documented in the patient's case notes at the time the relevant decision is taken.

The guideline does not discuss the detailed management of more severe injuries, either pre- or in-hospital, which are already incorporated in publications from the American College of Surgeons, the American Association of Neurosurgeons/Brain Trauma Foundation, the European Brain Injury Consortium, and the Association of Anaesthetists/British Neuroanaesthesia Society.

The guideline is based on a thorough review of available evidence (see Annex 1 in the original guideline document). A particular problem in conducting rigorous prospective studies of diagnostic investigations and triage policies in head injury is that the absolute risk of serious or catastrophic complications is actually relatively low, so that very large numbers of patients are required. Many decisions in head injury management are designed to minimise risks that are rare. The factors relevant to these risks have been identified and quantified rigorously, but prospectively collected evidence from randomised studies of the consequences of different decisions is lacking. Many recommendations therefore reflect an appraisal of what is rational, authoritatively advocated, and apparently widely accepted.

The guideline development group considers that its recommendations are appropriate to most head injured patients in Scotland, and as relevant to primary care clinicians as to the staff of acute hospital, but will require interpretations in the light of local facilities and geography.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better

IOM DOMAIN

Effectiveness
Patient-centeredness
Timeliness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Early management of patients with a head injury. A national clinical guideline. Edinburgh (Scotland): Scottish Intercollegiate Guidelines Network (SIGN); 2000. 43 p. (SIGN publication; no. 46). [147 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2000 Aug

GUIDELINE DEVELOPER(S)

Scottish Intercollegiate Guidelines Network - National Government Agency [Non-U.S.]

SOURCE(S) OF FUNDING

Scottish Executive Health Department

GUIDELINE COMMITTEE

Not stated

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Guideline Development Group: Professor Graham Teasdale (Chairman); Mr Douglas Gentleman (Secretary); Dr Peter Andrews; Mr Chris Blaiklock; Sister Elma Cruickshank; Mr Tom Donnelly; Mr Patrick Grant; Dr Peter Hendry; Mr David

Johnson; Mr John Logie; Dr John Lyon; Miss Lynn McLeish; Mr Bill Morrison; Dr Leo Murray; Mr David Ross; Dr David Signorini; Mr Ian Swann; Dr Evelyn Teasdale; Mr Allan Turner.

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

All members of the Scottish Intercollegiate Guidelines Network (SIGN) guideline development groups are required to complete a declaration of interests, both personal and non-personal. A personal interest involves payment to the individual concerned, e.g., consultancies or other fee-paid work commissioned by or shareholdings in the pharmaceutical industry; a non-personal interest involves payment which benefits any group, unit or department for which the individual is responsible, e.g., endowed fellowships or other pharmaceutical industry support. SIGN guideline group members should be able to act as independently of external commercial influences as possible, therefore, individuals who declare considerable personal interests may be asked to withdraw from the group. Details of the declarations of interest of any guideline development group member(s) are available from the SIGN executive.

GUIDELINE STATUS

This is the current release of the guideline.

This guideline was issued in 2000 and will be reviewed in 2002 or sooner if new evidence becomes available.

Any amendments to the guideline in the interim period will be noted on the [Scottish Intercollegiate Guidelines Network \(SIGN\) Web site](#).

GUIDELINE AVAILABILITY

Electronic copies: Available from the Scottish Intercollegiate Guidelines Network (SIGN) Web site:

- [HTML format](#)
- [Portable Document Format \(PDF\)](#)

AVAILABILITY OF COMPANION DOCUMENTS

The following are available:

- Quick reference guide: Early management of patients with a head injury. Edinburgh (UK): Scottish Intercollegiate Guidelines Network, 2000 Aug. 2 p. Available in Portable Document Format (PDF) from the [Scottish Intercollegiate Guidelines Network \(SIGN\) Web site](#).
- SIGN 50: A guideline developer's handbook. Edinburgh (Scotland): Scottish Intercollegiate Guidelines Network, 2001 Feb. (SIGN publication; no. 50). Electronic copies available from the [SIGN Web site](#).
- Appraising the quality of clinical guidelines. The SIGN guide to the AGREE (Appraisal of Guidelines Research and Evaluation) guideline appraisal

- instrument. Edinburgh (Scotland): Scottish Intercollegiate Guidelines Network, 2001. Available from the [SIGN Web site](#).
- A background paper on the legal implications of guidelines. Edinburgh (Scotland): Scottish Intercollegiate Guidelines Network.

PATIENT RESOURCES

The following, published as annexes to the original guideline, are available from the [Scottish Intercollegiate Guidelines Network \(SIGN\) Web site](#):

1. Annex 3. Example advice leaflet for person taking a patient home from A&E. In: Early management of patients with a head injury. Edinburgh (UK): Scottish Intercollegiate Guidelines Network, 2000 Aug. p. 32. (SIGN publication; no. 46).
2. Annex 4. Example advice leaflet for person allowed home from A&E. In: Early management of patients with a head injury. Edinburgh (UK): Scottish Intercollegiate Guidelines Network, 2000 Aug. p. 33. (SIGN publication; no. 46).
3. Annex 5. Example observation instructions for parents and caregivers. In: Early management of patients with a head injury. Edinburgh (UK): Scottish Intercollegiate Guidelines Network, 2000 Aug. p. 34. (SIGN publication; no. 46).
4. Annex 6. Example advice leaflet for patient discharged home after admission. In: Early management of patients with a head injury. Edinburgh (UK): Scottish Intercollegiate Guidelines Network, 2000 Aug. p. 35. (SIGN publication; no. 46).

Please note: This patient information is intended to provide health professionals with information to share with their patients to help them better understand their health and their diagnosed disorders. By providing access to this patient information, it is not the intention of NGC to provide specific medical advice for particular patients. Rather we urge patients and their representatives to review this material and then to consult with a licensed health professional for evaluation of treatment options suitable for them as well as for diagnosis and answers to their personal medical questions. This patient information has been derived and prepared from a guideline for health care professionals included on NGC by the authors or publishers of that original guideline. The patient information is not reviewed by NGC to establish whether or not it accurately reflects the original guideline's content.

NGC STATUS

This summary was completed by ECRI on October 17, 2001. The information was verified by the guideline developer as of December 17, 2001.

COPYRIGHT STATEMENT

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