Complete Summary

GUIDELINE TITLE

Evaluation, management and treatment of sunburn in adults.

BIBLIOGRAPHIC SOURCE(S)

University of Texas, School of Nursing, Family Nurse Practitioner Program. Evaluation, management and treatment of sunburn in adults. Austin (TX): University of Texas, School of Nursing; 2007. 24 p. [20 references]

GUIDELINE STATUS

This is the current release of the guideline.

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Sunburn

Note: Sunburn is defined as a common acute reaction of the skin to damage by ultraviolet (UV) light exposure

GUIDELINE CATEGORY

Evaluation
Management
Treatment

CLINICAL SPECIALTY

Dermatology
Family Practice
Geriatrics
Internal Medicine
Nursing

INTENDED USERS

Advanced Practice Nurses
Nurses
Physician Assistants
Physicians

GUIDELINE OBJECTIVE(S)

- To provide specific recommendations for the evaluation, management and treatment of sunburns for adult patients
- To offer evidence-based, step-by-step decision protocols for the evaluation, management and treatment of sunburn

TARGET POPULATION

Adults with sunburn in ambulatory, outpatient settings

INTERVENTIONS AND PRACTICES CONSIDERED

Evaluation

1. Evaluation of persons presenting with sunburn
2. Pain assessment, including patient's self-report, use of pain assessment tools (Numeric Rating Scale [NRS], Faces Scale); and assessment for physiological and behavioral indicators of pain
3. Evaluation and documentation of skin pathology
4. Communicating findings of skin pathology and pain assessment with the patient, patient's family and the healthcare team

Management/Treatment

1. Establishing a plan for sunburn management
2. Pharmacological management of tissue destruction and pain
    - Selecting appropriate analgesics
    - Analgesics, such as acetaminophen, nonsteroidal anti-inflammatory drugs (NSAID's) such as ibuprofen; or opioids such as meperidine
    - Use of the World Health Organization's (WHO) step-wise approach to pain relief
    - Selecting appropriate anti-infectives
    - Monitoring for safety, efficacy, side effects, and toxicities of medications
    - Anticipation and prevention of common side effects of opioids
    - Patient and family education regarding pain, prevention and treatment of medication side effects

    - Effective documentation
    - Referral to another healthcare provider for complicated patients
3. Non-pharmacological management of tissue destruction and pain (e.g. superficial cold compresses, topical aloe vera, relaxation, imagery)
4. Education for prevention and recognition of infection

MAJOR OUTCOMES CONSIDERED

- Effectiveness of sunburn management strategies
- Safety and side effects of medications/treatments used to manage sunburn

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

A systematic literature search in addition to a structured Internet search yielded supportive evidence in the form of grade A, B, C, D, and I recommendations. After a quality appraisal was completed (see "Methods Used to Assess Quality and Strength of the Evidence" and "Rating Scheme for the Strength of the Evidence" fields), 18 documents were identified as high quality, relevant guidelines appropriate for use in the development of this best practice guideline. The articles were written in the English language, had reported a controlled trial or randomized trial. When articles on the specific topic did not meet the above criteria, they were evaluated with regard to rigor, context and content which the panel identified as being important in terms of the data they required.

NUMBER OF SOURCE DOCUMENTS

18 documents were reviewed

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

Quality of Evidence (Based on the U.S. Preventive Services Task Force Ratings)

- **Good**: Evidence includes consistent results from well-designed, well-conducted studies in representative populations that directly assess effects on health outcomes.
- **Fair**: Evidence is sufficient to determine effects on health outcomes, but the strength of the evidence is limited by the number, quality, or consistency of the individual studies, generalizability to routine practice, or indirect nature of the evidence on health outcomes.

- **Poor**: Evidence is insufficient to assess the effects on health outcomes because of limited number or power of studies, important flaws in their design or conduct, gaps in the chain of evidence, or lack of information on important health outcomes.

METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

The panel reviewed all relevant literature from printed sources as well as electronic sources within the last 6 years that contained the keyword ***sunburn***. Each of the 18 source documents were reviewed with and compared to each other with regard to quality of the study, content of material, and reputation/reliability of the originating source. Preference was given to high quality systematic reviews and clinical trials published since 2000. Consensus of the panel members then included or excluded the source. In addition reviews of articles in alternative medicine journals were considered if the content would not induce harm to tissues if the methods used were employed by a person of normal intelligence.

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

The panel proceeded to develop an algorithm of the recommendations from the 2 selected clinical practice guidelines. Practice recommendations were extracted or adapted from those guidelines that ranked the highest in rigor, context, content, and application. The panel adapted practice recommendations within these guidelines in order to ensure their applicability to best clinical practice. Systematic and narrative reviews of the literature were used in the development of practice recommendations that could not be extracted from existing guidelines. Panel consensus was obtained for each recommendation.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Strength of Recommendations (Based on the U.S. Preventive Services Task Force Ratings)

A. There is good evidence that the recommendation improves important health outcomes. Benefits substantially outweigh harms.

B. There is at least fair evidence that the recommendation improves important health outcomes. Benefits outweigh harms.

C. There is at least fair evidence that the recommendations can improve health outcomes but the balance of benefits and harms is too close to justify a general recommendation.

D There is at least fair evidence that the recommendation is ineffective or that harms outweigh benefits.

I. Evidence that the recommendation is effective is lacking, of poor quality, or conflicting, and the balance of benefits and harms can not be determined.

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

A draft guideline was submitted to Dr. D. Schaefer, Board Certified Dermatologist for review. The feedback received was reviewed and incorporated into the final draft guideline.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Strength of recommendations (A, B, C, D, I) and quality of evidence (good, fair, poor) are defined at the end of "Major Recommendations" field.

Practice Recommendations - Part A: Evaluation and Treatment

Recommendation 1

Methods to Reduce Inflammation

- Cooling, ice packs (Han, 2004)
- Nonsteroidal anti-inflammatory drugs (NSAIDs), acetaminophen (Morgan, 2000)
- Topical corticosteroids (Duteil et al., 2002; Han, 2004)
- Systemic corticosteroids (not recommended) (Han, 2004)

(*Grade of recommendation = A; Quality of Evidence = Good*)

Recommendation 2

Methods to Prevent Infection in Sunburn

- Diligent wound care with mild soap and water (Hudspith & Rayatt, 2004; Morgan, 2000)
- Application of non-adherent dressings if open areas present (Dowsett, 2002)

- Sterile saline soaks (Dowsett, 2002)
- Care of blisters, blebs (keep intact if possible and cover open wounds with sterile dressings) (Dowsett, 2002; Morgan 2000)
- Tetanus prophylaxis for burns deeper than superficial partial thickness (Kagan, 2002; Morgan, 2000)
- Topical antibiotics such as Bacitracin, or Silvadene (Kagan, 2002; Morgan, 2000)
- Simple dressings such as Telfa, Duoderm, Granuflex, Mepitel (Hudspith & Rayatt, 2004)
- Oral or injectable antibiotics (not recommended) (Dowsett, 2002)
- Chlorhexidine, povidone iodine (not recommended) (Morgan, 2000)
- Biologic dressings such as Burnsheild or Rescue Derm (Hudspith & Rayatt, 2004; Martineau & Dosch, 2006)

(*Grade of Recommendation = B; Quality of Evidence= Good*)

Recommendation 3

Comprehensive Pain Assessment

Methods to Evaluate Pain

- Location of pain
- Effect of pain on function and activities of daily living (i.e., work, interference with usual activities, etc.)
- Level of pain at rest and during activity
- Medication usage
- P - provoking or precipitating factors
- Q - quality of pain (what words does the person use to describe pain? - aching, throbbing)
- R - radiation of pain (does the pain extend from the site?)
- S - severity of pain (intensity, 0-10 scale)
- T - timing (occasional, intermittent, constant)

(*Grade of Recommendation = C; Quality of Evidence= Good*)

A standardized tool with established validity is used to assess the intensity of pain.

- Visual Analogue Scale (VAS)
- Numeric Rating Scale (NRS)
- Verbal Scale
- Faces Scale
- Behavioral Scale

(*Grade of Recommendation = C; Quality of Evidence= Good*)

Pharmacological Management of Pain: Selecting Appropriate Analgesics

Using the WHO (World Health Organization) Stepwise Approach to Pain

Ensure that the selection of analgesics is individualized to the person, taking into account:

- The type of pain (acute or chronic, nociceptive and/or neuropathic)
- Intensity of pain
- Potential for analgesic toxicity (age, renal impairment, peptic ulcer disease, thrombocytopenia)
- General condition of the person
- Concurrent medical conditions
- Response to prior or present medications
- Cost to the person and family
- The setting of care

(*Grade of Recommendation = A; Quality of Evidence = Good*)

Recognize that acetaminophen or non-steroidal anti-inflammatory drugs (NSAIDs) such as ibuprofen are used for the treatment of mild pain and for specific types of pain as adjuvant analgesics unless contraindicated.

(*Grade of Recommendation = A; Quality of Evidence = Good*)

Recognize that opioids are used for the treatment of moderate to severe pain, unless contraindicated, taking into consideration:

- Previous dose of analgesics
- Prior opioid history
- Frequency of administration
- Route of administration
- Incidence and severity of side effects
- Potential for age related adverse effects
- Renal function

(*Grade of Recommendation = A; Quality of Evidence = Good*)

Consider the following pharmacological principles in the use of opioids for the treatment of severe pain:

- Mixed agonist-antagonists (e.g., pentazocine) are not administered with opioids because the combination may precipitate a withdrawal syndrome and increase pain.
- The elderly generally receive greater peak and longer duration of action from analgesics than younger individuals, thus dosing should be initiated at lower doses and increased more slowly ("careful titration").

(*Grade of Recommendation = B; Quality of Evidence = Good*)

Recommendation 4

Methods to Treat Pain/Discomfort

- Non-steroidal anti-inflammatory drugs, acetaminophen (Morgan, 2000)

- Aspirin (Morgan, 2000)
- Topical anesthetics, analgesics such as Propolis, Solarcaine, or Witch Hazel (Ackerson, 2004; "Sunburn," 2006; Gregory et al., 2002)
- Short course of codeine or oxycodone (Hudspith & Rayatt, 2004; Oldfield & Perry, 2006; Brown, 2004)
- Anti-pruritics; Benadryl, Periactin, Atarax (Han, 2004)
- Bicarbonate of soda baths, Calamine lotion (Morgan, 2000)
- Green tea, cucumber, Echinaea, Mimosa tenuiflora (Duke, 2002; Schar & Altshul, 2003)
- General comfort measures; emollients, cool compresses, oatmeal soaks (Ackerson, 2004; "Sunburn," 2006; Perez, 2006)
- Relaxation and imagery (Kagen, 2002)
- Petroleum jelly, benzocaine, lidocaine, butter or greasy ointments (not recommended) (Perez, 2006)

(*Grade of Recommendations = B; Quality of Evidence = Good*)

Recommendation 5

Methods to Promote Healing

- Healthy diet with adequate protein (Johns Hopkins, 2006)
- Adequate hydration (Kagen, 2002)
- Rest (Johns Hopkins, 2006)
- Avoidance of alcohol (Johns Hopkins, 2006)
- Use of non-perfumed moisturizing lotions once epithelialization occurs to promote natural lubricating mechanisms (Perez, 2006)
- Avoidance of direct intense sun exposure (Perez, 2006)
- Loose comfortable clothing (Johns Hopkins, 2006)

(*Grade of Recommendation = C; Quality of Evidence = Fair*)

Recommendation 6

Alternative Therapies

- Vitamin C, E (Kagen, 2002)
- Aloe Vera (Ackerson, 2004)
- Oatmeal baths (Ackerson, 2004, Perez, 2006)
- Antioxidants (not recommended) (Han, 2004)
- Topical melatonin (not recommended) (Han, 2004)
- Milk ("Post-sunburn soothers," 2005)

(*Grade of Recommendation = C; Quality of Evidence = Fair*)

Practice Recommendations- Part B- Management

Follow-up

- Follow-up one day after initial visit
- Weekly until wound epithelialization begins

- Concurrent evaluation for infection/complications

Patient Teaching

- General care to promote healing and prevent infection
- Signs and symptoms of infection/complications
- Medication/wound care
- When to follow-up
- Sunburn protection

(*Grade of Recommendation = C; Quality of Evidence = Good*)

Definitions:

Quality of Evidence (Based on U.S. Preventative Services Task Force Ratings)

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- **Poor**: Evidence is insufficient to assess the effects on health outcomes because of limited number or power of studies, important flaws in their design or conduct, gaps in the chain of evidence, or lack of information on important health outcomes.

Strength of Recommendations (Based on the U.S. Preventive Services Task Force Ratings)

A. There is good evidence that the recommendation improves important health outcomes. Benefits substantially outweigh harms.

B. There is at least fair evidence that the recommendation improves important health outcomes. Benefits outweigh harms.

C. There is at least fair evidence that the recommendations can improve health outcomes but the balance of benefits and harms is too close to justify a general recommendation.

D There is at least fair evidence that the recommendation is ineffective or that harms outweigh benefits.

I. Evidence that the recommendation is effective is lacking, of poor quality, or conflicting, and the balance of benefits and harms can not be determined.

CLINICAL ALGORITHM(S)

An algorithm is provided in the original guideline document for "Depth assessed (appearance, bleeding, blistering, capillary refill, sensation)."

EVIDENCE SUPPORTING THE RECOMMENDATIONS

REFERENCES SUPPORTING THE RECOMMENDATIONS

References open in a new window

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

These recommendations were based primarily on sources such as national guidelines, meta-analysis review, and evidenced-based, randomized, controlled research studies. Guidelines and statements are synthesized to make them applicable to the treatment of sunburn.

The type of supporting evidence is identified and graded for each recommendation (see "Major Recommendations").

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

- This best practice guideline is intended to provide direction to practicing physicians, physician assistants, nurse practitioners, nurses, and healthcare workers in all care settings, both institutional and community, in the assessment, and management of sunburn, including treatment.
- Guideline implementation is intended to help relieve patients' pain, promote healing of tissue, increase patient satisfaction and improve quality of life.
- Nurse practitioners, nurses, physicians, physician assistants, and other healthcare professionals and administrators who are leading and facilitating practice changes will find this document valuable for the development of policies, procedures, protocols, educational programs, assessment and documentation tools, etc.

POTENTIAL HARMS

Side Effects and Toxicities of Medications Used to Manage Sunburn

- Common side effects of opioids include nausea and vomiting, constipation and drowsiness. Persons with acute pain may be at particular risk for respiratory depression depending on the dose of opioid prescribed. Caution should be taken with the elderly as drug interactions occur more frequently.
- Non-steroidal anti-inflammatory drugs should be used with caution for persons with a history of peptic ulcer disease, bleeding disorders, abnormal and/or diminished renal function and concomitant use of steroids and anticoagulants. Extra precautions are required in the long-term use of nonsteroidal anti-inflammatory drugs in the elderly.
- Persons who are sensitive or allergic to the recommended topical medications may experience adverse skin reactions such as, increased erythema, swelling, pain and delayed healing. Caution should be taken with persons with multiple existing allergies.

CONTRAINDICATIONS

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Co-morbidities or medication allergies/sensitivities that may preclude treatment (see "Major Recommendations" field).

QUALIFYING STATEMENTS

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- This guideline is to be used in the care of healthy adults without extensive co-morbid complications. Physicians, advanced practice registered nurses, and physician assistants working in specialty areas such as pediatrics should use further practice direction from clinical practice guidelines in their unique area of focus.
- Any reference throughout the document to specific pharmaceutical products as examples does not imply endorsement of any of these products.
- This guideline is to be used for the care of the healthy adult with a superficial epidermal or superficial partial thickness burn from exposure to ultraviolet (UV) light. It is not intended for use with patients who have deep partial thickness or full thickness burns from ultraviolet exposure or from other thermal burn injury, chemical burn injury, electrical burn injury, intense cold burn injury, or hot liquid injuries. It is expected that the advanced practice registered nurses (APRNs) and physician assistants will seek appropriate consultation in instances where the patient's care needs surpass the ability of the individual practitioner to act independently. It is acknowledged that effective patient care depends on a coordinated interdisciplinary approach incorporating ongoing communication between health professionals and patients, ever mindful of the personal preferences and unique needs of each individual patient.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

IMPLEMENTATION TOOLS

Clinical Algorithm

For information about availability, see the "Availability of Companion Documents" and "Patient Resources" fields below.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

University of Texas, School of Nursing, Family Nurse Practitioner Program. Evaluation, management and treatment of sunburn in adults. Austin (TX): University of Texas, School of Nursing; 2007. 24 p. [20 references]

ADAPTATION

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

DATE RELEASED

2007

GUIDELINE DEVELOPER(S)

University of Texas at Austin School of Nursing, Family Nurse Practitioner Program - Academic Institution

SOURCE(S) OF FUNDING

University of Texas at Austin, School of Nursing, Family Nurse Practitioner Program

GUIDELINE COMMITTEE

Practice Guidelines Committee

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Guideline Development Panel Members: Vicki Greene, RN, MSN, FNP; Patricia Roberts, RN, MSN, FNP; Beth Weidner, RN, MSN, FNP

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline.

GUIDELINE AVAILABILITY

Electronic copies: None available

Print copies: Available from the University of Texas at Austin, School of Nursing. 1700 Red River, Austin, Texas, 78701-1499

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

This NGC summary was completed by ECRI Institute on August 23, 2007. The information was verified by the guideline developer on November 9, 2007.

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