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Prevention and management of pressure ulcers in adults and the elderly

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FOREWORD

This conference was organised and conducted in accordance with the method recommended by the French *Agence Nationale d'Accréditation et d'Évaluation en Santé* (ANAES).

The conclusions and recommendations contained in this document were drawn up by an independent conference jury. ANAES is in no way responsible for their content.

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THE QUESTIONS

QUESTION I

HOW SHOULD THE VARIOUS STAGES OF PRESSURE ULCERS BE DEFINED AND ASSESSED?

QUESTION II

WHAT ARE THE RISK FACTORS AND WHAT RISK SCALES CAN BE USED?

QUESTION III

WHAT GENERAL PREVENTIVE MEASURES CAN BE TAKEN?

QUESTION IV

HOW CAN PRESSURE ULCERS BE MANAGED?

QUESTION V

WHAT SUPPORT SURFACES CAN BE USED TO PREVENT AND MANAGE PRESSURE ULCERS?

QUESTION VI

WHAT ARE THE PSYCHOSOCIAL REPERCUSSIONS AND IMPACT ON QUALITY OF LIFE, AND WHAT IS THEIR ECONOMIC IMPACT?

QUESTION VII

WHAT TYPE OF EDUCATION, TRAINING AND INFORMATION DO PATIENTS AND THEIR FAMILIES NEED?

INTRODUCTION

A pressure ulcer is an ischaemic skin lesion related to compression of soft tissue between a hard surface and a bony prominence. Pressure ulcers are divided into three types, depending on the context:

- “accidental” pressure ulcers related to a temporary problem with mobility and/or mental awareness;
- “neurological” pressure ulcers caused by a chronic motor and/or sensory problem;
- “multifactorial” pressure ulcers in patients with multiple disorders who are confined to bed and/or to a chair.

Pressure ulcers mainly cause pain and infection but can also make patients feel humiliated. They lead to increased use of care and resources. Their incidence has not yet been clearly determined and varies according to the clinical context. They occur in 17-50 % of patients admitted to long-term care units, 5-7 % of patients admitted for a short stay, 8 % of patients who have surgery lasting for more than three hours, and 34-46% of patients with spinal injuries (within two years of an accident). In most cases, pressure ulcers can be prevented.

These good practice guidelines are based on the current state of knowledge and on professional experience. They are being distributed widely in order to help those involved in health care, patients and decision-makers to improve the prevention, management and prognosis of pressure ulcers in adults and the elderly.

QUESTION I. How should the various grades of pressure ulcers be defined and assessed?

Pressure ulcers must be defined and assessed jointly by the nurse and doctor right from the start of care and during follow-up as part of the patient's global management (grade C¹). The initial and follow-up assessments are complementary but their aims and the methods used differ. How often a pressure ulcer should be assessed depends on its stage, complications and the dressings used. The ulcer should be assessed daily if there is necrosis.

- **An initial description and assessment** are essential to choosing a management and care strategy. They form the baseline reference for subsequent assessments. They specify the number of pressure ulcers and, for each of them, the location, grade, area and depth of the wound, appearance of the skin around the lesion, assessment of severity of pain and whether pain is constant or related to care.
- **The anatomical and clinical classifications** describing the stages of a pressure ulcer have not been adequately validated. The 4-stage classification of the National Pressure Ulcer Advisory Panel (NPUAP) (*Table 1*) is nevertheless proposed (grade C), with the following modifications:
 - a stage 0 should be added (skin intact but risk of pressure ulcer);
 - the type of necrosis in stage III (dry or moist) should be specified;
 - warning signs in stage IV pressure ulcers should be added (undermining, bone involvement, fistula and infection).

Clinical research is needed to validate this classification.

¹ A *grade A guideline* is based on scientific evidence established by trials of a high level of evidence. A *grade B guideline* is based on presumption of a scientific foundation derived from studies of an intermediate level of evidence. A *grade C guideline* is based on studies of a lower level of evidence. In the absence of scientific evidence, the guidelines are based on *agreement among professionals* as expressed by the jury.

Table 1. *National Pressure Ulcer Advisory Panel* classification of pressure ulcer stages (NPUAP, 1998)^a

Stage I: A Stage I pressure ulcer is an observable pressure related alteration of intact skin whose indicators as compared to the adjacent or opposite area on the body may include changes in one or more of the following: skin temperature (warmth or coolness), tissue consistency (firm or boggy feel) and/or sensation (pain, itching). The ulcer appears as a defined area of persistent redness in lightly pigmented skin, whereas in darker skin tones, the ulcer may appear with persistent red, blue, or purple hues.

Stage II: Partial thickness skin loss involving epidermis, dermis, or both. The ulcer is superficial and presents clinically as an abrasion, blister or shallow crater.

Stage III: Full thickness skin loss involving damage to, or necrosis of, subcutaneous tissue that may extend down to, but not through, underlying fascia. The ulcer presents clinically as a deep crater with or without undermining of adjacent tissue.

Stage IV: Full thickness skin loss with extensive destruction, tissue necrosis, or damage to muscle, bone, or supporting structures (e.g. tendon, joint capsule). Undermining and sinus tracts also may be associated with Stage IV pressure ulcers.

^a www.npuap.org

- **A follow-up assessment** is useful for continuity of care, for making consistent and relevant decisions about management and for adjusting them subsequently. The follow-up assessment will monitor the development of the pressure ulcer.

Anatomical and clinical classifications do not apply to the various stages of tissue reconstruction. Classifications do exist which are suitable for pressure ulcers as they heal, but their sensitivity to changes in wound status has not been sufficiently well demonstrated. In practice, it is suggested that follow-up should include:

- an assessment of the colour of the wound and the respective proportions of areas of different-coloured tissue, after the wound has been cleaned, using a 3- or 5-colour scale;
- measurement of the area of tissue loss, using a millimetre rule or scale;
- measurement of depth, using a stylus and millimetre rule;
- topography of the wound, using a diagram.

Methods which involve moulding the wound, photography or stereophotogrammetry should be reserved for evaluating the efficacy of treatment in the context of clinical research.

The assessment should be completed by looking for warning signs such as infection, undermining of adjacent tissue, bone involvement, fistula and an assessment of severity of pain and whether or not the pain is constant or related to care.

A pressure ulcer is infected:

- if two of the following symptoms are present:
redness, sensitivity or swelling of the wound margins,
- with one of the following findings:
organism isolated from culture of fluid obtained by aspiration or biopsy of the ulcer margin; organism isolated by blood culture. Infection suspected from the presence of local signs is confirmed at a level of more than 10^5 organisms/ml (or gram of tissue) in samples (fluid or soft tissue biopsy) and/or blood culture.

The intervals at which follow-up assessments should be done have not been clearly established. They depend on the stage of development of the pressure ulcer, any complications, and the dressings used. Ulcers should be assessed on a daily basis so long as there are areas of necrotic or fibrous debris, or signs of infection.

- **Patient history and record:** An assessment of the pressure ulcer should also include details about the patient and his or her medical, social and family environment, i.e. the mechanisms causing the pressure ulcer and risk factors; comorbidities; degree of mobility and lifestyle;

psychological and cognitive status, in particular capacity for self-management, motivation for managing the pressure ulcer; life plan; age; degree of family involvement, and arrangements for care.

A detailed description of the pressure ulcer and wound assessment should be recorded in the patient's file to ensure continuity of management, particularly when the patient is discharged home or transferred.

- **International Classification of Diseases (ICD):** A proposal should be made to the WHO regarding the inclusion of the NPUAP classification of pressure ulcer stages in the ICD-10 codes, adding codes for “patient at risk of pressure ulcer”, “pressure ulcer with undermining”, “infected pressure ulcer” and “pressure ulcer with bone involvement”. Until such additions are made to the ICD-10 classification, it is proposed that pressure ulcers appear together with “concomitant diagnoses” so that any complications can be described using the codes currently available (see the *Thésaurus de la Société Française de Gériatrie et Gérologie*).

QUESTION II. What are the risk factors and what risk scales can be used?

The factors currently regarded as risk factors have been derived from clinical experience. Their relevance and relative weights have not been defined and require further research.

- **The main risk factors** for pressure ulcers are explanatory and may be classified as extrinsic or mechanical, and intrinsic or clinical, i.e. pressure, friction, shear, maceration, immobility, nutritional status, urinary and faecal incontinence, state of the skin, reduced circulation, neuropathy, psychological status, age, previous history of pressure ulcers, dehydration, acute disease, serious chronic disorders and terminal illness. In practice, only immobilisation and poor nutritional status are predictive risk factors for pressure ulcers.
- **Specific factors related to clinical context:**
 - in neurology, orthopaedics and traumatology, there are three fundamental risk factors, namely pressure, loss of mobility and neurological deficit, to which may be added spasticity, incontinence, peroperative risk and lack of co-operation by the patient. In reconstructive surgery, age, smoking, corticosteroids, diabetes, microcirculatory disorders and coagulation disorders impair healing;
 - in geriatrics, the fragility of the skin and subcutaneous tissue and inadequate protein and calorie intake increase the risk of pressure ulcers in cardiovascular disease, hypotension or hyperthermia;
 - in intensive care, frequency of cardiovascular collapse, severity of initial state, faecal incontinence, anaemia and length of stay are risk factors predictive of pressure ulcers.
- **Risk scales:** Using reproducible and validated risk scales combined with an initial clinical assessment make it possible to draw up preventive strategies appropriate to the level of risk. The most commonly used scales are those of Norton, Waterloo and Braden. Their predictive value varies greatly between populations. The Braden scale has been particularly well validated (*Table 2*). Some teams use French-language scales (Peupliers-Gonesse, Angers and Genève) but they have not been validated. Scales are used for training, raising awareness and mobilising care teams in relation to a care plan.
- For assessment of risk of pressure ulcers, it is recommended that a common risk assessment tool be used, combined with clinical judgement, from the initial encounter with the patient (grade C). The use of the Braden scale (grade B) is recommended but its validity in France needs to be studied. Clinical trials need to be carried out to establish and validate French-language risk scales

specific to certain populations such as patients with spinal injuries, patients in intensive care and geriatric patients. These trials should be preceded by epidemiological studies to determine the validity of risk factors.

QUESTION III. What general preventive measures can be taken?

General preventive measures should begin as soon as risk factors have been identified. They apply to all patients whose skin is intact but who are considered to be at risk (grade 0 pressure ulcer, Garches classification). The aim with patients who already have a pressure ulcer is to avoid the onset of new ulcers. All healthcare professionals who come into contact with the patient are involved in implementing general preventive measures.

Preventive measures consist of:

- **Identifying risk factors** by means of clinical judgement (grade C) combined with the use of a validated risk factor identification scale (grade B). A preventive strategy customised for each patient should be drawn up on the basis of the risk assessment made on first encounter with the patient. It has not been established how often the risk needs to be re-evaluated. Nevertheless, it is recommended that a further assessment should be made every time a patient's condition changes (grade C). Caregivers should be experienced in recognising risk factors and trained in the use of a risk identification scale.
- **Reducing pressure** by avoiding long periods without a change of position, by moving the patient, sitting them in a chair, getting them vertical and resuming walking at an early stage. Position changes should be scheduled for every 2-3 hours, or even more frequently (grade B). Shearing and friction should be avoided by adequate positioning and handling of the patient. Lying on the side at a 30° angle to the bed is the best position as it reduces the risk of pressure ulcers on the trochanter (grade C).
- **Using support devices** (mattress, overlays, seat cushions) which are appropriate for the patient and his or her environment, including tables in operating rooms (grade B), and beds in recovery wards.
- **Examining skin condition and risk areas regularly** (at least once a day, at each position change and during personal hygiene care) so that any skin changes are detected early (grade C). Skin inspection should be combined with palpation of the skin to detect any induration or warmth, particularly in darker skins.
- **Maintaining skin hygiene and avoiding maceration** by daily personal hygiene care, repeated if necessary. Massage and friction in risk zones must be avoided (grade B) as they reduce average flow in the microcirculation (grade C). Massage, rubbing, and application of ice or hot air are forbidden.
- **Providing a balanced diet**, by quantitative measurement of food intake (grade C). The benefit of specific nutritional management has not been sufficiently evaluated.
- **Encouraging participation by the patient and those around him or her** in preventing pressure ulcers, by providing information and targeted educational action depending on whether the risk of pressure ulcer is temporary or permanent (self-monitoring, self-lifting).

It is useful for continuity of care to record risk factors, preventive measures used and skin inspection findings in the patient's file (grade C).

A quality improvement initiative is needed to ensure that preventive measures are adopted (grade C), irrespective of where they are implemented (healthcare establishments, nursing homes for the elderly, at home). A protocol for prevention and management of pressure ulcers needs to be drawn up, and professional practice evaluated. It is recommended that the impact of both preventive measures and quality improvement initiatives should be assessed.

QUESTION IV. How should pressure ulcers be managed?

Management of pressure ulcers includes both local and general treatment, and should take account of the individual and the wound. Treatment success is governed by multidisciplinary management, compliance by caregivers with a care protocol and active participation by patients and those around them.

- Forms of treatment of lesions (cleaning, debridement, choice of dressing) should be defined in care protocols.
- Pain caused during care should be taken into account and relieved.
- The principles of dressing hygiene and prevention of cross-transmission should be applied.
- **Treatment for redness:** remove pressure by repositioning every 2-3 hours. If necessary (urine, maceration), use a semipermeable film or transparent hydrocolloid dressing. Massage, rubbing, and application of ice or hot air are forbidden.
- **Cleaning the lesion and surrounding area:** use physiological saline; there is no indication for using antiseptics. The lesion should not be dried.
- **Treatment of blisters:** evacuate the contents and preserve the blister crust; cover with a hydrocolloid dressing or tulle gras.
- **Treatment of established pressure ulcers:**
 - necrotic and/or fibrous lesions must be debrided. Debridement may be mechanical (avoiding bleeding and pain) or assisted by a dressing, e.g. alginate or hydrogel (grade B);
 - covering the lesion with a dressing maintains a local environment which encourages the process of spontaneous healing. Nothing in the literature supports recommendation of any one dressing rather than another. The choice of dressing should be based primarily on the appearance of the lesion (dry, exudative, bleeding, foul-smelling) and its colour (colour scale) (*Table 3*).
- **Treatment of infected pressure ulcers:** infection should be distinguished from bacterial colonisation. Bacterial colonisation is almost always present in chronic lesions. It is useful to healing and should be controlled by cleaning and careful debridement of necrotic tissue.

The principles of hygiene and prevention of cross-transmission of organisms should be applied. A pressure ulcer is infected:

- if two of the following symptoms are present:
 - redness, sensitivity or swelling of the wound margins;
- with one of the following findings:
 - organism isolated from culture of fluid obtained by aspiration or biopsy of the ulcer margins; organism isolated by blood culture. Infection suspected from the presence of local

signs is confirmed at a level of more than 10^5 organisms/ml (or gram of tissue) in samples (fluid or soft tissue biopsy) and/or blood culture.

The value of antibiotics or local antiseptics has not been demonstrated if there is no confirmed diagnosis of infection in the pressure ulcer.

- **Surgical treatment:** surgery is required if there is major tissue necrosis, exposure of vessels or nerves, tendons, or joint capsules, bone exposure, or infection. Surgery is contraindicated in elderly subjects with pressure ulcers caused by a number of concurrent factors, and if measures to prevent recurrence have not been put in place or have been ineffective. Surgery should be accompanied by a particularly rigorous programme of medical preparation and postoperative care, including monitoring of the local skin condition, appearance of the lesion and sutures, relief of pressure by use of a support device, a balanced diet and balanced water and electrolyte intake.
- **Preventive measures** should be intensified once a pressure ulcer has developed in order to limit the onset of further pressure ulcers. Metabolic and haemodynamic imbalances should be corrected while local treatment is being given.

It is essential to record information about follow-up of the ulcer and choice of dressing so that the health care professionals involved in the patient's management can provide continuity of care. Caregivers should be trained in describing and evaluating pressure ulcers and in the methods used to apply dressings and to treat pain.

- **Treatment of pressure ulcer pain:** Pain caused by a pressure ulcer may or may not be spontaneous, sudden and unexpected, limited to care, repositioning or being moved, or it may be present continuously. Pain is not related to the size of the pressure ulcer.

Pain should be assessed regularly so that management can be adjusted as appropriate. Analysis of the pain should include assessment of

- causes (lesion care, mobilisation, repositioning);
- severity: by self-assessment by the patient, using a validated scale (visual analogue scale, numerical scale, simple verbal scale) completed by clinical observation (posture, facial expression, moaning, adoption of pain-relieving posture, limitation of movement). In patients unable to communicate, the clinical observation described above or the use of a scale such as the Doloplus or ECPA scale is recommended;
- effects on the patient's everyday behaviour and psychological status.

Analgesics should be used in accordance with the WHO three-level approach. A change of level is needed when correctly prescribed drugs from the previous level are inadequate. However, severe pain during pressure ulcer-related care may require the use of a level 3 analgesic immediately (strong opioids). In no case should a patient remain for more than 24 to 48 hours on a level which proves ineffective. Continuous analgesic therapy may be required. The effects of analgesic therapy and side-effects should be assessed regularly until effective analgesia is obtained.

The use of support devices in preventing and treating pressure ulcers reduces pain (grade C). Other complementary measures such as comfortable positioning, cleaning the lesion by washing, choice of dressing, make it possible to leave longer intervals between care and to choose when care will be given, so minimising pain for the patient.

- **Treatment of pressure ulcers during palliative care:** The management of pressure ulcers during palliative care requires the most objective possible assessment of the patient's life expectancy and of the prognosis for the pressure ulcer, which should be reassessed frequently

by the care team. The onset of pressure ulcers, usually more than one, indicates that the patient's general condition has deteriorated.

Respect for the person being cared for should govern the choice of treatment throughout development of the causal disease and changes in the patient's general condition. A number of objectives need to be addressed in this type of situation, where it is crucial to adopt a global approach tailored to the patient:

- prevent the onset of new pressure ulcers;
- limit extension of the pressure ulcers as far as possible and avoid complications and unpleasant symptoms;
- treat the pressure ulcer locally, while remaining attentive to the patient's comfort and pain relief;
- keep the patient clean and reduce as far as possible the physical discomfort and mental distress related to the pressure ulcer.

The use of support devices in preventing and treating pressure ulcers reduces pain.

Decisions about treatment of the disease, management of symptoms, prevention and treatment of the pressure ulcer should be taken after examining the benefit-risk ratio for each of the options available in terms of ability to relieve suffering and to preserve as far as possible the individual's dignity and quality of life, and the patient's preferences. Coordination between all those involved with the patient, and continuity of care, are crucial.

QUESTION V. What support surfaces can be used for preventing and treating pressure ulcers?

Using a suitable support surface for preventing and treating pressure ulcers is one of the priority actions undertaken to limit pressure at the skin-support surface interface and to encourage resumption of mobility. Support surfaces are more effective than standard mattresses in reducing pressure (grade A). They reduce the time the pressure ulcer needs to heal, and they reduce pain (grade C). There are few studies demonstrating the benefit of any one support surface compared with any other, and they are unconvincing (grade C).

- **Types of support surface:** There are a number of types, i.e. beds, mattresses, overlays, seat cushions and positioning devices. They can be classified according to mode of action and similarity in global performance:
 - static support in a material which moulds to the patient;
 - dynamic support functioning intermittently;
 - dynamic support functioning continuously.
- **The choice of support device** is the responsibility of the care team, and it should be based on explicit decision criteria. It should take account of the patient's risk factors and personal situation, human resources and materials available, and organisational constraints.
 - *The decision criteria for a mattress or overlay* are level of risk, number of hours spent in bed, patient's degree of mobility, frequency of position changes, ability to make these changes particularly at home, and whether or not bed/chair transfers are possible (*Table 4*). If dynamic devices are used, the instructions for use should be complied with (time needed to inflate the device, alarm function).

- *The decision criteria for a seat cushion* are difficult to define. It is harder to reduce interface pressure as bodyweight is distributed over a small area. The materials and principles of operation are the same as for mattresses. Gel cushions are not recommended as their cover leads to a harmful hammock effect. Air cushions are difficult to regulate. Their thickness has to be taken into account to avoid the cushion being crushed. Seat height, the patient's weight, and the chair's angle of inclination should be used to improve the patient's position in the chair and avoid inappropriate use of seat cushions. The choice is made according to type of chair (wheelchair or not), the patient's ability to move and degree of mobility, and the length of time spent sitting.
- *Additional criteria for selecting support surfaces* may be used, particularly for patients whose condition requires prolonged or permanent use of a support surface. The cost of purchase, possibility of renting, device lifetime, upkeep and maintenance, ease of use, weight of the device, stability provided by the support surface, comfort, and pain relief, are also factors which will impact on the choice of support surface. The patient's opinion should be obtained before a support surface is purchased. These criteria based on professional experience are given for guidance only in *Table 5*; they need to be validated by studies.

All care establishments should draw up a strategy for providing support surface to reduce interface pressure.

Comparative clinical trials designed to specify the indications for the use of all support surfaces proposed need to be established.

QUESTION VI. What are the psychosocial repercussions and impact on quality of life, and what is their economic impact?

Pressure ulcers cause pain and mental and physical suffering; they restrict functional capacity (making it impossible to walk or sit for a long time). As a result, autonomy, outings and freedom are reduced. The presence of the lesion, and any discharge or odour caused by it, also alter self-image and relationships with others.

Although little is currently known about the quality of life of patients with pressure ulcers and about their psychosocial consequences, the presence of pressure ulcers should be regarded as a major and disabling disease for the patient. They can induce a feeling of impending death in elderly patients, or pain and discomfort, both mental and physical, in adults. A carer's actions should always be guided by the need to preserve the patient's positive image and their dignity. Management of pressure ulcers should prevent the onset of depression, or stop it getting worse.

In addition, the current lack of knowledge of the global financial impact of pressure ulcers is holding back the establishing of a rational care strategy. Pressure ulcers are a far from negligible cost for health systems, although figures given in the literature are only a guideline. Costs such as hospital services and outpatient care are not clearly specified in the literature, and the economic consequences in terms of hours of work lost, quality of life, and psychological damage experienced by the patient are not known. A review of the results of economic studies confirms that prevention programmes need to be set up. This will not only save money but also improve quality of life and reduce pain.

Epidemiological studies are needed to measure the prevalence and incidence of pressure ulcers. Economic studies are needed to improve our knowledge of the costs related to pressure ulcers and

to compare costs and efficacy of prevention, treatment, and of existing devices (supports, dressings).

QUESTION VII. What type of education, training and information do patients and their families need?

The care team informs patients and their families and educates them so that they can participate in preventing and treating pressure ulcers, particularly when the patient is discharged home. The approach adopted when providing information and education should take account of whether the risk of pressure ulcers is temporary or permanent, and should be tailored to each patient's individual ability.

- **Information** for patients and families concerns patients whose mobility has been temporarily reduced and who have a risk of pressure ulcers for a limited period. The aim is to explain the patient's state of health to them, to describe the nature and pattern of care and to provide patients with knowledge that will allow them to take informed decisions.
- **Education** of patients and families should be routine for all patients with permanently reduced mobility, including dependent elderly persons, who have a permanent risk of pressure ulcers. The educational approach consists of:
 - tailoring the education to the patient's knowledge and identifying factors which facilitate or limit their acquisition of skills;
 - agreeing with the patient on the skills it would be most useful for them to acquire, incorporating the following elements as appropriate: pressure ulcer risk factors specific to the patient, self-monitoring of the skin at pressure points, mobilisation and repositioning, water and food intake, skin hygiene, urination and/or passing stools, dressing, adjusting to their environment, management of pain and participation in wound care;
 - suggesting practical measures to the patient for preventing and treating pressure ulcers, and if appropriate to those close around him or her;
 - evaluating the successes and problems of implementing these measures on an everyday level.

The return home of a patient with a pressure ulcer that has not yet healed over should be prepared for by educating patients and their families, by giving detailed information to the patient's own doctor and nurses, and by preparing a specific document and designating a doctor or nurse who can act as a main contact. Health-care providers at the hospital and home should cooperate in the preparation of the care plan.

CONCLUSION

We lack information supported by an adequate level of evidence to assess, prevent and manage pressure ulcers. Studies and research on these subjects need to be encouraged, starting with pilot teams. Information and both initial and continuous training on pressure ulcers need to be encouraged for all health-care professionals likely to be involved with at-risk populations.

Prevention and management of pressure ulcers in adults and the elderly

Table 2. Braden scale for predicting pressure sore risk

Patient's name	Evaluator's name:			Date of assessment:				
SENSORY PERCEPTION Ability to respond meaningfully to pressure-related discomfort	1. Completely limited: Unresponsive (does not moan, flinch, or grasp) to painful stimuli, due to diminished level of consciousness or sedation OR limited ability to feel pain over most of body surface.	2. Very limited: Responds only to painful stimuli. Cannot communicate discomfort except by moaning or restlessness, OR has a sensory impairment which limits the ability to feel pain or discomfort over half of body.	3. Slightly limited: Responds to verbal commands but cannot always communicate discomfort or need to be turned, OR has some sensory impairment which limits ability to feel pain or discomfort in one or two extremities.	4. No impairment: Responds to verbal commands. Has no sensory deficit which would limit ability to feel or voice pain and discomfort.				
MOISTURE degree to which skin is exposed to moisture	1. Constantly moist: Skin is kept moist almost constantly by perspiration, urine, etc. Dampness is detected every time patient is moved or turned.	2. Very moist: Skin is often, but not always moist. Linen must be changed at least once a shift.	3. Occasionally moist Skin is occasionally moist, requiring an extra linen change approximately once a day.	4. Rarely moist: Skin is usually dry; linen requires changing only at routine intervals.				
ACTIVITY Degree of physical activity	1. Bedfast: Confined to bed.	2. Chairfast: Ability to walk severely limited or non-existent. Cannot bear own weight and/or must be assisted into chair or wheelchair.	3. Walks occasionally: Walks occasionally during the day, but for very short distances, with or without assistance. Spends majority of each shift in bed or chair.	4. Walks frequently: Walks outside the room at least twice a day and inside room at least once every 2 hours during waking hours.				
MOBILITY Ability to change and control body motion	1. Completely immobile: Does not make even slight changes in body or extremity position without assistance.	2. Very limited: Makes occasional slight changes in body or extremity position but unable to make frequent or significant changes independently.	3. Slightly limited: Makes frequent but slight changes in body or extremity position independently.	4. No limitation: Makes major and frequent changes in position without assistance.				
NUTRITION Usual food intake habits	1. Very poor: Never eats a complete meal. Rarely eats more than 1/3 of any food offered. Eats 2 servings or less of protein (meat or dairy products) per day. Takes fluids poorly. Does not take a liquid dietary supplement, OR is NPO ¹ and/or maintained on clear liquids or IV for more than 5 days.	2. Probably inadequate: Rarely eats a complete meal and generally eats only about half of any food offered. Protein intake includes only 3 servings of meat or dairy products per day. Occasionally will take a dietary supplement, OR receives less than optimum amount of liquid diet or tube feeding.	3. Adequate: Eats over half of most meals. Eats a total of 4 servings of protein (meat, dairy products) each day. Occasionally will refuse a meal, but will usually take a supplement if offered, OR is on a tube feeding or TPN regimen, which probably meets most of nutritional needs.	4. Excellent: Eats most of every meal. Never refuses a meal. Usually eats a total of 4 or more servings of meat and dairy products. Occasionally eats between meals. Does not require supplementation.				
FRICITION AND SHEAR	1. Problem: Requires moderate to maximum assistance in moving. Complete lifting without sliding against sheets is impossible. Frequently slides down in bed or chair, requiring frequent repositioning with maximum assistance. Spasticity, contractures, or agitation leads to almost constant friction.	2. Potential problem: Moves feebly or requires minimal assistance. During a move skin probably slides to some extent against sheets, chair, restraints, or other devices. Maintains relatively good positioning in chair or bed most of the time but occasionally slides down.	3. No apparent problem: Moves in bed and in chair independently and has sufficient muscle strength to lift up completely during move. Maintains good position in bed or chair at all times.					
					Total score			

NPO: Nothing by Mouth; IV: Intravenously; TPN: Total parenteral nutrition

A total score of 23 points is possible. The lower the score (15 or lower), the more the individual is at risk of developing a pressure ulcer.

Table 3. Types of dressings available

State of the lesion	Type of dressing
Irregular lesion	Hydrocolloid paste or powder Alginate mesh/ hydrofibre mesh Hydrocellular cavity wound dressing
Exudative lesion	Alginate/hydrocellular Hydrofibre
Bleeding lesion	Alginate
Granulation lesion	Tulle gras Hydrocolloid Hydrocellular
Lesion with excessive granulation	Topical corticosteroid * Silver nitrate sticks
Lesion in process of epithelialisation	Hydrocolloid Transparent polyurethane film Hydrocellular, tulle gras
Foul-smelling lesion	Charcoal dressing

**Corticosteroid dressings without antibiotics should be available*

Table 4. Decision criteria for a bed support

Support	Patient's characteristics
Static overlay	No pressure ulcers and low risk of pressure ulcers and patient able to move in bed and spending less than 12 hours a day in bed.
Static mattress	No pressure ulcers and medium risk of pressure ulcers and patient able to move in bed and spending less than 15 hours a day in bed.
Dynamic overlay (alternating system)	Patient with a history of pressure ulcers or with a shallow pressure ulcer (deephithelialisation) or high risk of pressure ulcers and spending more than 15 hours a day in bed and unable to move unaided.
Dynamic mattress, continuous or intermittent function	Patient with high-grade pressure ulcers (> grade II) and unable to move unaided in bed and who do not change position in bed - where they spend more than 20 hours a day - and whose condition is deteriorating.

Table 5. Factors used to establish criteria for choosing a support device

Risk factors related to patient characteristics	<p>Acute/chronic disease, disease duration, severity Degree of mobility and motor function Degree of sensitivity and pain Maceration, body temperature Patient's morphology Level of dependence (self-mobilisation, self-lifting) Presence of one or more pressure ulcers Description of pressure ulcer Location, any surgical therapy State of consciousness, psychological status</p>
Other factors	<p>Lifestyle Level of awareness Financial position Patient's activity level Sociocultural level Human environment Lay-out and special features of patient's residence Details of carers</p>

The full text is available on written request to:
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Available on the ANAES website: www.anaes.fr