

## Waterlow Score

**Purpose** : Assessment of risk for the development of pressure sore or ulcer

**Admin time** : 5-10 min

**User Friendly** : High

**Administered by** : Nurses, healthcare professionals and carers at the patient/client interface

**Content** : Seven known risk factors that contribute towards the development of pressure ulcers.

These risk factors include the patient's:

- age and gender
- body mass index (BMI)
- level of continence
- skin condition (healthy or broken)
- appetite
- level of mobility (fully mobile to bed-bound)
- individual risk factors, e.g. medication, surgery and trauma

The patient is then allocated a score for each of the above criteria. The total score, in conjunction with the nursing staff's clinical expertise, places the patient into one of three pressure sore risk categories:

- a score of 10-14 indicates "at-risk"
- a score of 15-19 indicates "high risk"
- a score of 20 and above indicates "very high risk"

**Author** : Judy Waterlow, 1985

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<https://www.cgakit.com/waterlow-score>

## WATERLOW PRESSURE ULCER PREVENTION/TREATMENT POLICY

Ring scores in table, add total. More than one score/category can be used.

BUILD/WEIGHT FOR HEIGHT		SKIN TYPE VISUAL RISK AREAS		SEX AGE		MALNUTRITION SCREENING TOOL (MST) (Nutrition vol.15, no.6 1999—Australia)			
AVERAGE BMI = 20-24.9	0	HEALTHY	0	MALE	1	A - HAS PATIENT LOST WEIGHT RECENTLY YES - GO TO B NO - GO TO C UNSURE - GO TO C AND SCORE 2	B - WEIGHT LOSS SCORE 0.5 - 5KG = 1 5 - 10KG = 2 10 - 15KG = 3 > 15KG = 4 UNSURE = 2		
ABOVE AVERAGE BMI = 25-29.9		TISSUE PAPER	1	FEMALE	2				
OBESSE BMI > 30		DRY	1	14 - 49	1				
BELOW AVERAGE BMI < 20	1	OEDEMATOUS	1	50 - 64	2	C - PATIENT EATING POORLY OR LACK OF APPETITE 'NO' = 0, 'YES' = 1			
BMI=WT(KG)/HT (m2)		CLAMMY, PYREXIA	1	65 - 74	3				
	2	DISCOLOURED	2	75 - 80	4	NUTRITION SCORE IF > 2 REFER FOR NUTRITION ASSESSMENT/ INTERVENTION.			
		GRADE 1	2	81 +	5				
	3	BROKEN/SPOTS	3						
		GRADE 2-4	3						
				SPECIAL RISKS					
COMPLETE/ CATHETERISED URINE INCONT. FAECAL INCONT. URINARY + FAECAL INCONTINENCE	0 1 2 3	FULLY RESTLESS/FIDGETY APATHETIC RESTRICTED BEDBOUND e.g. TRACTION CHAIRBOUND e.g. WHEELCHAIR	0 1 2 3 4 5	TISSUE MALNUTRITION		NEUROLOGICAL DEFICIT			
				TERMINAL CACHEXIA	8	DIABETES, MS, CVA			4-6
				MULTIPLE ORGAN FAILURE	8	MOTOR/SENSORY PARAPLEGIA (MAX OF 6)			4-6
				SINGLE ORGAN FAILURE (RESP, RENAL, CARDIAC)	5				4-6
				PERIPHERAL VASCULAR DISEASE	5	MAJOR SURGERY OR TRAUMA			
				ANAEMIA (HB < 8)	2	ORTHOPAEDIC/SPINAL			5
SMOKING	1	ON TABLE > 2 HR#			5				
		ON TABLE > 6 HR#			8				
MEDICATION—CYTOTOXICS, LONG TERM/HIGH DOSE STEROIDS, ANTI-INFLAMMATORY—MAX OF 4									

SCORE
10 + AT RISK
15 + HIGH RISK
20 + VERY HIGH RISK

# Scores can be discounted after 48 hours, provided patient is recovering normally.

## Waterlow user guide

**Gender:** There is a higher incidence of pressure ulcers in females and this is thought to relate to demographic trends; where females live longer than males. Waterlow, however, suggests that this may be related to the anatomical shape of the pelvis.

**Continence:** The risks of developing a pressure ulcer are greatly increased if the patient is incontinent of urine but even more so if doubly incontinent (Le Lievre, 1996)

Extract from Royal Marsden (Crook et al 2014) Excess moisture on the skin's surface causes softening and erosion of the epidermal layer, breaking the skin's barrier function. The link between excess skin moisture levels and pressure ulcers is widely acknowledged (Crook et al, 2014).

The source of excess moisture – whether incontinence, perspiration or wound drainage – should be eliminated where possible. When moisture cannot be controlled, interventions such as regular personal care using a pH - neutral cleanser and an application of barrier products is recommended (Haesler, 2014).

**Age:** The older a person gets, the more likely it is that skin will alter; losing its elasticity and plumpness, subcutaneous layers and so becomes tissue paper thin, and easily damaged. Therefore, age is significant to the prevention of tissue damage.

**MUST:** Poor nutrition leads to a reduction in skin elasticity and subcutaneous tissue, reducing tolerance to pressure loads and allowing it to become more vulnerable to damage. There is evidence that older people recovering from an illness appear to develop fewer pressure ulcers when given nutritional supplementation (Bourdel-Marchasson et al, 2000.)

**Mobility:**

**Restless/Fidgety:** could lead to skin tears from friction, needs assistance to move safely

**Apathetic:** lethargy due to illness; medical or psychological illness can lead to continual sitting or lying without moving.

**Restricted:** Mobility is restricted due to medical needs. The risk is usually short term in these patient groups as they will usually become mobile as their condition stabilises.

**Bed Bound:** These patients are unable to move themselves and will need frequent changes where ever possible in their positions based on skin assessment. In the community this may include patients with chronic degenerative conditions which impact on their ability to move.

**Chair bound/Recent deterioration in Mobility status:** As 70-75% of a person's body weight is concentrated on the buttocks and ischium when sitting in a chair it is vital to ensure these patients are moved frequently.

A person who is not used to sitting will have a lower tissue tolerance for sitting than someone who is.

**Waterlow**  
**Waterlow Pressure Sore risk assessment** - Refer to page 1 for most recent MUST score

GENDER	<input type="checkbox"/> N/A <input type="checkbox"/> Male (1) <input type="checkbox"/> Female (2)
AGE	<input type="checkbox"/> N/A <input type="checkbox"/> 14 - 49 (1) <input type="checkbox"/> 50 - 64 (2) <input type="checkbox"/> 65 - 74 (3) <input type="checkbox"/> 75 - 80 (4) <input type="checkbox"/> 81 + (5)
MALNUTRITION SCREENING TOOL NB: If Nutrition Score is more than 2 then nutritional assessment/intervention is required	<input type="checkbox"/> N/A <input type="checkbox"/> Low - 0 (0) <input type="checkbox"/> Medium - 1 (1) <input type="checkbox"/> High - 2 (2) <input type="checkbox"/> High - 3 (3) <input type="checkbox"/> High - 4 (4) <input type="checkbox"/> High - 5 (5) <input type="checkbox"/> High - 6 (6)
CONTINENCE	<input type="checkbox"/> N/A <input type="checkbox"/> Complete / Catheterised (0) <input type="checkbox"/> Urinary Incontinence (1) <input type="checkbox"/> Faecal Incontinence (2) <input type="checkbox"/> Urinary and Faecal Incontinence (3)
SKIN TYPE - Visual Risk Areas	<input type="checkbox"/> N/A <input type="checkbox"/> Healthy (0)
SKIN TYPE - Visual Risk Areas	<input type="checkbox"/> N/A <input type="checkbox"/> Tissue Paper (1)
SKIN TYPE - Visual Risk Areas	<input type="checkbox"/> N/A <input type="checkbox"/> Dry (1)
SKIN TYPE - Visual Risk Areas	<input type="checkbox"/> N/A <input type="checkbox"/> Oedematous (1)
SKIN TYPE - Visual Risk Areas	<input type="checkbox"/> N/A <input type="checkbox"/> Clammy/Pyrexia (1)
SKIN TYPE - Visual Risk Areas	<input type="checkbox"/> N/A <input type="checkbox"/> Pain over bony prominence (2)
SKIN TYPE - Visual Risk Areas	<input type="checkbox"/> N/A <input type="checkbox"/> Discoloured / Grade 1 (2)
SKIN TYPE - Visual Risk Areas	<input type="checkbox"/> N/A <input type="checkbox"/> Broken / Spots / Grade 2-4 (3)
MOBILITY	<input type="checkbox"/> N/A <input type="checkbox"/> Fully (0) <input type="checkbox"/> Restless / Fidgety (1) <input type="checkbox"/> Apathetic (2) <input type="checkbox"/> Restricted (3) <input type="checkbox"/> Bed Bound e.g. Traction (4) <input type="checkbox"/> Chair Bound or Recent Deterioration in Mobility Status (5)
TISSUE MALNUTRITION - CENTRAL AND PERIPHERAL CIRCULATION	<input type="checkbox"/> N/A <input type="checkbox"/> Terminal Cachexia (8)
TISSUE MALNUTRITION - CENTRAL AND PERIPHERAL CIRCULATION	<input type="checkbox"/> N/A <input type="checkbox"/> Multiple Organ Failure / Shock / Sepsis (8)
TISSUE MALNUTRITION - CENTRAL AND PERIPHERAL CIRCULATION	<input type="checkbox"/> N/A <input type="checkbox"/> Single Organ Failure e.g. Renal / Heart (5)
TISSUE MALNUTRITION - CENTRAL AND PERIPHERAL CIRCULATION	<input type="checkbox"/> N/A <input type="checkbox"/> Peripheral Vascular Disease (5)

**Tissue malnutrition**

**Terminal Cachexia:** Patients who are in multiple organ failure, including end stage of life patients. Many end of life stage patients develop ulcers as a consequence of multiple organ failure including skin changes at life's end (SCALE).

**Multi organ failure/shock/sepsis:** CKD, end stage lung/heart failure, must have more than one co-morbidity

**Single organ failure:** as above but only one co-morbidity e.g. CKD stage 3. Please consider the degree of organ failure. It must be severe or uncontrolled to impact on the patients Waterlow score e.g. CKD stage 3 or multiple acute exacerbations of the condition.

**Skin type: May be multiple options e.g. dry/oedematous**

Tissue paper and dry skin is more prone to trauma and friction- ensure emollients are in place

Oedematous skin is at more risk because of loss of collagen and poor circulation leading to a thinning epidermis which is easily damaged.

Clammy skin may result in maceration or excoriation in the skin. Staff must ensure skin is kept clean and dry especially between skin folds

Discoloured skin over any bony prominence, is a warning of pressure damage occurring. Off load (remove) the pressure from the affected area and monitor closely ensuring increased movements will prevent further damage.

If there is evidence of a Grade 2-4 pressure ulcer, off load pressure, control effects of incontinence, move with a slide sheet and treat/dress the wound appropriately.

## Waterlow user guide

**Motor/ sensory:** This may include paraplegic, tetraplegic and quadriplegic patients. Many of these patients will have been managed in specialist centres and advised about pressure relief and skin care. It is important for us to acknowledge their own autonomy and knowledge and routine in maintaining their skin.

**Reduced cognition:** A patient may be unable to comprehend their risk of developing pressure sores and therefore unable to concord with minimising this risk. Capacity assessment (Imosphere-Face) and safeguarding may need to be considered.

**Motivation:** A patient may lack motivation to move. Mental health support may be considered along with other lifestyle support e.g. referral to dietician.

**Peripheral vascular disease:** Any condition that can compromise the quantity and quality of blood reaching tissues will impact tissue tolerance and resistance to pressure. Cardiac disorders such as ischemic heart disease, atherosclerosis, and congestive cardiac failure can result in low oxygen levels and inadequate cardiac output which fails to maintain a healthy perfusion of peripheral tissue.

**Anaemia:** A patient with a history of long standing anaemia indicates they have chronically devitalized tissue and so is at risk of developing pressure ulcers (Torrance, 1983)

**Smoking:** Smoking causes the build-up of carbon dioxide and reduces oxygen levels (Barton and Barton, 1981) found pressure ulcers on heels four times more likely than non-smokers.

**Diabetics** are particularly at high risk because of sensory peripheral neuropathy, which reduces their perception of pressure and pain. Many diabetics will also have micro and occasionally macro vascular disease, commonly suffering from peripheral vascular disease or arteriosclerosis which compromises their circulation. Use scale of 4-6 if well v's poorly controlled diabetic.

### Multiple Sclerosis

This is a progressive, unpredictable condition commonly complicated by bilateral corticospinal tract involvement which can lead to increased tone, spasticity, contractures and weakened movements. Loss of sensation and awareness of position is common which frequently leads to poor posture. Use scale 4-6 depending on level of disease progression.

**CVA** Patients are often affected by weakness or paralysis on one side of the body, usually accompanied by sensory deficiency or inattention. Spasticity of the leg may result in foot plantar flexion and patients are at risk of trauma and heel pressure damage. Use scale of 4-6 depending on level of returned function from CVA.

**Steroids** are recognised for causing thinning of the skin which increases its vulnerability to trauma. Care with movement and handling is paramount so as to avoid a break in the skin which will be slow in healing in this patient group. In addition steroids suppress the normal inflammatory response.

**Beta-blockers** such as Propranolol or Metoprolol can cause vasoconstriction, which can compromise peripheral circulation of the heels (McSorley, 1978).

**Cytotoxics** these drugs will alter the normal cellular response to trauma or the ability to supply oxygen to the tissue. Refer to BNF Section 8.1

**N.B. Nicorandil** often used to treat angina, has been associated with painful peri-anal, vulval and non-healing ulcers. When the treatment is stopped the ulcer usually goes on to heal.

**Paraplegia:** This may include paraplegic, tetraplegic and quadriplegic patients. Many of these patients will have been managed in specialist centres and advised about pressure relief and skin care. Use scale of 4-6 depending on ability of movement

**History of pressure:** Previous pressure ulcer at this category usually indicates increased risk of recurrence as the tensile strength is reduced.

**Surgery/Discharge:** Within the Community post-operative risks are not such a common risk factor. However, a common reoccurring trend has been identified when patients are visiting hospitals for out-patient treatments and are often sitting for hours at a time and so are at increased risk during these periods. These patients require close monitoring particularly if they are already at risk. Also patients recently discharged from acute hospitals are at increased risk in the first 48hrs following discharge and it is important to review these patients as soon as possible to ensure adequate provision of equipment and care on discharge. This factor at next assessment may then not be applicable if the patient has remained at home.

TISSUE MALNUTRITION - CENTRAL AND PERIPHERAL CIRCULATION	<input type="checkbox"/> N/A	<input type="checkbox"/> Single Organ Failure e.g. Renal / Heart (5)
TISSUE MALNUTRITION - CENTRAL AND PERIPHERAL CIRCULATION	<input type="checkbox"/> N/A	<input type="checkbox"/> Peripheral Vascular Disease (5)
TISSUE MALNUTRITION - CENTRAL AND PERIPHERAL CIRCULATION	<input type="checkbox"/> N/A	<input type="checkbox"/> Anaemia (Hb < 8) (2)
TISSUE MALNUTRITION - CENTRAL AND PERIPHERAL CIRCULATION	<input type="checkbox"/> N/A	<input type="checkbox"/> Smoking (1)
DIABETES / MS / CVA	<input type="checkbox"/> N/A	<input type="checkbox"/> 4 (4) <input type="checkbox"/> 5 (5) <input type="checkbox"/> 6 (6)
MOTOR/ SENSORY / REDUCED COGNITION OR MOTIVATION	<input type="checkbox"/> N/A	<input type="checkbox"/> 4 (4) <input type="checkbox"/> 5 (5) <input type="checkbox"/> 6 (6)
PARAPLEGIA (max of 6)	<input type="checkbox"/> N/A	<input type="checkbox"/> 4 (4) <input type="checkbox"/> 5 (5) <input type="checkbox"/> 6 (6)
PREVIOUS HISTORY OF PRESSURE ULCERS GRADE 3-4	<input type="checkbox"/> N/A	<input type="checkbox"/> Yes (5) <input type="checkbox"/> No (0)
SURGERY - ON TABLE > 2 hrs #	<input type="checkbox"/> N/A	<input type="checkbox"/> Yes (5) <input type="checkbox"/> No (0)
FREQUENT TRANSFERS BETWEEN HOSPITALS e.g. travel by ambulance / recent discharge	<input type="checkbox"/> N/A	<input type="checkbox"/> Yes (5) <input type="checkbox"/> No (0)
CYTOTOXICS - ANTI/INFLAMMATORY - LONG TERM / HIGH DOSE STEROIDS	<input type="checkbox"/> N/A	<input type="checkbox"/> Yes (4) <input type="checkbox"/> No (0)
Waterlow pressure sore risk score	<input type="text"/>	

**10+ At Risk    15+ High Risk    20+ Very High Risk**

Mediquip:  
[www.tcesconnections.co.uk](http://www.tcesconnections.co.uk)