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HEEL SUPPORTS

The area of the heel is described by many authors as being a particularly frequent location of pressure ulcers. Meehan identifies the heels as the second pressure ulcer development zone after the sacrum, while Hunter considers distribution of pressure ulcers between these two sites as being equal.

RISK FACTORS

→ The study by Blaszczyk highlighted 5 risk factors often associated with the risk of pressure ulcers on the heel.
- Age > 70 years
- Diabetes
- Altered mental state (agitation, confusion, absence of response, stupor)
- Loss of movement in at least one lower member
- Decrease in the level of physical activity.

→ Other factors should also be taken into account, such as stiffness of the knee, vascular problems in the peripheral areas or oedema in a lower member.

→ The immobilisation factor is primordial in the development of pressure ulcers on the heel. Certain pathologies inducing the immobilisation of the lower members are therefore more frequently linked with the occurrence of these sores.
As proof of this, after surgery on the lower members, several studies have shown the frequent occurrence of pressure ulcers, in particular after surgery on the femoral neck.
They report rates of 27% to 42%. Versluysen notes incidence of 32%, including 23% heel pressure ulcers.
These pressure ulcers appear very early, with 18% observed before operating, 16% on the day of the operation and 30% the week following it. Only 13% were recorded in the second week after the operation.

→ In intensive care, a survey conducted in wards in 94 hospitals in France showed that the most frequent location of pressure ulcers was the heels, 44.4% of cases, then the sacrum for 25.9%.
Among the risk factors, immobility of the lower members was essential in this case too.

ARE PRESSURE ULCER PREVENTION OR TREATMENT SUPPORTS EFFECTIVE IN PROTECTING THE AREA OF THE HEEL ?

→ Several studies have shown that the use of pressure ulcer prevention or treatment supports reduced the rate of sacrum pressure ulcers but had little or no influence on the rate of heel pressure ulcers; this observation was the same whatever the support used.

→ Blaszczyk assessed the effect of using pressure ulcer prevention or treatment supports in the intensive care department of a hospital.
He noted a decrease in the incidence of pressure ulcers on the sacrum and an increase in that of pressure ulcers on the heels.

→ Allen compared the pressure exerted on the heels on two supports of the motorised low-pressure active air type.
He found good results for the area of the buttocks, while the pressure recorded on the heels was high (2.67 times higher).

→ Maklebust compared the pressure recorded on a memory foam mattress, an active-air mattress of the low-pressure type and a standard mattress for 64 subjects.
The results were greater than 32 mmhg in all cases.

→ This observation is confirmed in wards equipped with motorised active air supports of the low-pressure type, where the persistence or even an increase in the incidence of heel sores is recorded after the installation of these mattresses.

→ Consequently, it would appear obvious that prevention for the heel area must be considered separately from the pressure ulcer prevention and treatment support in high-risk situations.

ARE TRADITIONAL HEEL SUPPORTS EFFECTIVE IN PREVENTING THE APPEARANCE OF SORES ?

→ Medical staff often use heel supports. There are a large number of models, most of them made of gel, foam, silicon-coated fibres or synthetic sheepskin.
Many studies have shown, however, that this type of device does not distribute pressure sufficiently, judging by the clinical results obtained.

→ Other studies comparing the efficiency of these heel protection systems consider that only those systems that relieve pressure completely seem to offer real efficiency when the conditions of use allow.

→ When this is not the case or when inappropriate use of the pressure-release systems is noted (reduced or complete mobility of the lower members), the use of accessories attached to the foot and placed at the bottom of the bed represents an appropriate alternative given the lesser risk related to the mobility factor.

THE SYST'AM® HEEL SUPPORT RANGE

Total pressure relief boot

→ The results of the implementation of a post-operation prevention protocol in orthopaedics (hip replacement) and intensive care on 30 patients showed that no heel sores appeared (Cheney and Blaszczyk). In cases where there was a loss of mobility in at least one lower member, education of the patient and total relief of pressure on the heels proves to be very effective.

→ On the basis of this data, SYST'AM® has developed a boot with an innovative anatomical shape, made of very high density viscoelastic memory foam, ensuring the reduction of pressure peaks and good comfort levels in use.

Integral heel support or heel pad

→ In cases of normal or reduced mobility, the risk of sores is lower but still exists if we take into account the other risk factors such as diabetes, mental state, age or vascular problems.
The use of heel pressure-relief systems is not efficient in such cases as the patient does not use them correctly (difficult to keep the heel firmly in place in the boot); in such cases, it is better to use systems that allow the lower members to move, such as devices attached to the foot or positioned at the bottom of the bed.

→ For patients with normal mobility but suffering from cognitive disorders and movements that engender friction phenomena, it is necessary to use a heel support attached to the foot.

→ For these sorts of cases, SYST'AM® has developed two models made with very high-density viscoelastic memory foam – a support pad to be placed on the bed and a model that is attached to the foot.

AN EXCELLENT PREVENTION SUPPORT IS ONLY EXCELLENT WHEN IT IS USED PROPERLY !

In order to make it easier to choose the right support for the heel area, SYST'AM® suggests that you use the decision-making grids below.
This is not the only approach however, and other criteria linked with comfort, particular pathologies or morphology may require a different choice.

1/ **Determine the total score of patient-related risk factors F**
by marking the value "1" in the column if the patient is concerned by the criterion in question, and "0" if not. Add up the score for each risk factor and determine the total F score.
2/ **Choose the right heel support**
by determining the level of mobility of the lower members of the patient.

2 possible cases:
→ **In preventive strategy:** compare the mobility criteria with the F Total (risk factors) calculated previously to work out which model to use.
→ **To assist treatment of an existing sore:** compare the mobility criterion with the indications provided in the treatment assistance column to find the best-suited model.

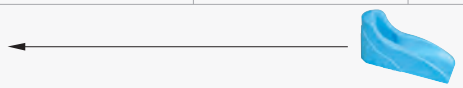
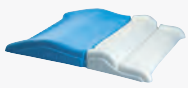
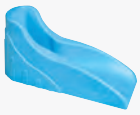
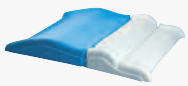
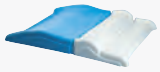
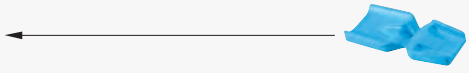
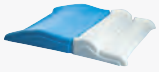
NB: take into account any particular cases requiring specific indications.

DETERMINING THE NUMBER OF RISK FACTORS

If the patient is concerned, mark 1 (if not, 0)

- Age > 70 ..... ☐
- Diabetes ..... ☐
- Vascular problems in the lower members ..... ☐
- Agitated, confused, absence of response, state of stupor ..... ☐
- Œdema in lower member ..... ☐
- Stiffness of the knee (<5°) ..... ☐

TOTAL risk factors **F =** ☐

LEVEL OF MOBILITY OF LOWER MEMBERS		RISK FACTORS		
		TO ASSIST PREVENTION		TO ASSIST TREATMENT OF EXISTING SORE
		if F < 2	if F > 2	
NO MOBILITY OF LOWER MEMBERS				
LIMITED MOBILITY OF LOWER MEMBERS				Sore of stager > 2 
				Sore of stager <2 
NORMAL MOBILITY OF LOWER MEMBERS		no particular device necessary		
				If fragile skin / friction 
PERMANENT MOVEMENT / AGITATION OF LOWER MEMBERS				
PARTICULAR CASES				
Particular case n°1: Case of patient in intensive care				
Particular case n°2: Elderly subject post operation (surgery of lower members)	Less than 2-3 weeks after operation, very reduced mobility of lower members			
	More than 2-3 weeks after operation, recovery of mobility of lower members	low mobility 	or	normal mobility