PU sensor

PU sensor, better assessment of risk to reduce incidents of pressure ulcers

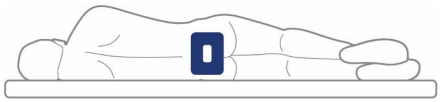
The PU sensor instrument assesses blood flow to the skin, comparing affected skin to unaffected skin. This instrument assesses the way in which blood flow is affected by the body'spressure on the skin. The PU sensor is an objective method based on PPG (photoplethysmogram), which evaluates the patient's individual physiological processes, thereby assessing the risk of pressure ulcers. Preventive measures can then be initiated for those who need them.

Objective method of risk assessment

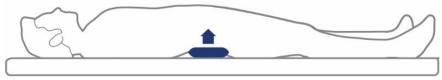
Pressure ulcers occur when there is limited blood flow to the skin due to local pressure [1,2]. The prevalence of pressure ulcers is measured eachyear. In 2019, point prevalence measurements indicated that 12.3% of patients in Swedish hospitals had developed pressure ulcers [9]. PIV (pressure induced vasodilation) is one of the body's response mechanisms, aimed at preventing tissue hypoxia. Local, non-harmful pressure, such as daily sitting or lying down, releases nerve fibres in the skin that affect the endothelium of the vessel walls. The vessels widen and blood flow increases [3,4,5,6,7,8]. Some people are missing this function and PU Sensor can identify these individuals.

One of the methods for observing the circulation of blood in the skin is PPG [10,11,12], where lowintensity light is shone into the skin to register reflected light.

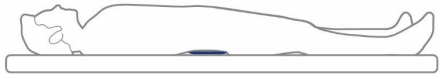
Methods that are currently used, such as the remodified Norton scale, the RAPS scale and the Braden scale, do not assess PIV. These are subjective assessments of the patient's risk of developing pressure ulcers, with low precision [13]. SBU has evaluated the Norton instrument for risk assessment [14]. A combination of the assessment scale and PU sensor increases precision.



1. Inflatable pillow with a sensor place is placed under the patient's lower back.



2. The patient rolls over on his/her back, the pillow is inflated and we measure on unaffected skin.



3. The pillow is deflated and the pressure on the sensor increases and we measure on affected skin.

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