

## Appendix L: Emerging health technologies for assessment and detection

Table 22 outlines additional or emerging health technologies which may be available for the assessment and early detection of pressure injuries. It does not represent an exhaustive list.

**Table 22: Emerging health technologies for assessment and detection**

TECHNOLOGY	DESCRIPTION	KEY REFERENCES/RESOURCES
<b>Movement monitoring (including wearable devices)</b>	Devices which may be wearable or integrated into support surfaces to monitor a person's movement to determine risk of pressure injury development. May also be used as a preventative intervention by encouraging movement.	Moore Z, Avsar P, O'Connor T, et al. A systematic review of movement monitoring devices to aid the prediction of pressure ulcers in at-risk adults. <i>International Wound Journal</i> . 2023 Feb;20(2):579–608.  Crotty A, Killian JM, Miller A, et al. Using wearable technology to prevent pressure injuries: An integrative review. <i>Worldviews Evid Based Nurs</i> [Internet]. 2023; 20(4): 351-360.
<b>Laser doppler</b>	Laser doppler can be used to evaluate blood flow. Resulting images are analyzed for perfusion.	Scafide KN, Narayan MC, Arundel L. Bedside Technologies to Enhance the Early Detection of Pressure Injuries: A Systematic Review. <i>J Wound Ostomy Continence Nurs</i> . 2020 Mar;47(2):128–36.
<b>Reflectance spectrometry</b>	White light is applied to the skin's surface and reflectance is measured and converted to an erythema index based on an algorithm. This provides a proximity measure of perfusion based on erythema.	Scafide KN, Narayan MC, Arundel L. Bedside Technologies to Enhance the Early Detection of Pressure Injuries: A Systematic Review. <i>J Wound Ostomy Continence Nurs</i> . 2020 Mar;47(2):128–36.

TECHNOLOGY	DESCRIPTION	KEY REFERENCES/RESOURCES
<p><b>Artificial intelligence and machine learning</b></p>	<p>There are many emerging technologies that use machine learning for pressure injuries. The majority of the technologies are focused on predictive models to identify risk factors, posture detection and recognition and image analysis for wound classification and assessment.</p>	<p>Jiang M, Ma Y, Guo S, et al. Using machine learning technologies in pressure injury management: Systematic review. <i>JMIR med inform</i> [Internet]. 2021; 9(3):e25704. Available from: <a href="http://medinform.jmir.org/2021/3/e25704/">http://medinform.jmir.org/2021/3/e25704/</a></p> <p>Lau CH, Yu KH, Yip TF, et al. An artificial intelligence-enabled smartphone app for real-time pressure injury assessment. <i>Front Med Technol</i> [Internet]. 2022 Sep 23;4:905074. Available from: <a href="https://www.frontiersin.org/articles/10.3389/fmedt.2022.905074/full">https://www.frontiersin.org/articles/10.3389/fmedt.2022.905074/full</a></p>