

# Most Innovative Non-Invasive Diagnostics Technology Developer 2023 – Israel

Israel based IR-Med Inc. has developed an incredible handheld device that is designed to detect pressure injuries affecting skin and underlying tissue. This revolutionary device, known as PressureSafe™, uses infrared spectroscopy and AI based analysis technology to power point-of-care decision support. Bio-healthcare information is non-invasively gathered from patient blood and tissue to help detect and monitor various disease conditions. The company's overarching aim is to improve patient care through technology and drive equitable healthcare for all.

Pressure Injuries (PI) are currently costing the US \$26.8B in healthcare spending, and result in 60,000 deaths a year in the US alone. The handheld PressureSafe device developed by IR-Med is designed to detect PI early, regardless of skin tone. This should help to reduce the toll and cost of PI, simply by the use of harmless infrared spectroscopy technology. The infrared tech gathers information from biomarkers in the skin through optical scanning. This information is then evaluated using AI technology, to help determine whether a particular area of skin is healthy or diseased.

Target customers for IR-Med's innovative new device include hospitals, home care and nursing homes. To this end, the company is launching a major usability study within the Methodist Healthcare network of hospitals in Texas. Its ultimate aim is of course to improve patient outcomes, and the company is very proud it has developed a platform and product that should be able to positively contribute to the resolution of healthcare inequities.

PressureSafe is particularly focused on the PI market where patients with darker skin tones are disproportionately adversely affected. It has been noted (2023 study in *Advances in Skin & Wound Care*) that black patients have the highest prevalence of the most severe pressure injuries, while white patients have the lowest. IR-Med is working to achieve good quality care for all, and believes that PressureSafe will play a pivotal role in so doing, especially as existing methods for identifying early stage PI fall particularly short for individuals with a darker skin tone.

The infrared tech used by IR-Med is the same technology that is used to explore the outer reaches of our galaxy in space. The company took this tech, miniaturized it, and transformed it into a handheld device that can non-invasively sense changes beneath skin. It uses AI-based algorithms to interpret the information gathered and provide actionable information for healthcare professionals. So far, PressureSafe has demonstrated >90% sensitivity in the detection of early stage PI!

As a medical technology company, all devices go through a rigorous scientific process to ensure they are safe and ready to bring to market. Its ~90% sensitivity rating is therefore a hugely significant achievement. The technology platform offered by IR-Med can also be utilised to address a wide array of other medical needs, many of which contribute to unmet multi-billion-dollar problems. IR-Med believes its expertise in the interaction between infra-red light and scanning the human body for bio markers is unchallenged, and therefore that is what makes it stand out in its field. It has patented the PressureSafe device, which is expected to be commercially available in 2024.

The innovative technology it owns allows the company the option of producing new products that utilise the miniature electro optic chips, hardware, software and mechanical design it has created. This could be integral in the development and building of other high



tech medical devices, especially considering the relentless culture of scientific innovation at IR-Med. The passionate team behind the tech are determined to turn scientific research into products that improve healthcare for millions. Some of Israel's most successful biotech and med-tech innovators are employed by the company.

Future products under consideration include helping to address unmet needs in diabetic foot ulcer (DFU), pediatric ear infections, non-invasive monitoring of drug levels in blood, and profiling a wide range of biomarkers to assess disease and drug efficacy. The company is looking forward to a bright future, and remains strong in its conviction that it can truly change the paradigm of detection and timely treatment of a range of health conditions.

IR-Med Inc. has been recognised as the Most Innovative Non-Invasive Diagnostics Technology Developer 2023 – Israel. Certainly, with its PressureSafe device alone it has the potential to significantly improve care for patients, and improve healthcare equity overall.

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