

EXECUTIVE SUMMARY

Innovation Launch Pad

Medical Equipment Leika Ltée, partner distributor of Nubatech and exclusive distributor for its innovative therapeutic surfaces Mensa.

As part of the Innovation Launch Pad program, Medical Equipment Leika Ltée (Leika) submits the product MENSEA: an **innovative and unique therapeutic surface** thanks to its patented technology, which meets the growing needs of Canadian citizens in wound care, whether in hospitals, long-term care centers, or home care. Thanks to a strategic alliance with its **Canadian supplier Nubatech and as a 100% Quebec & Canada distributor**, Leika stands out for its national commitment and unique ability to offer a complete range of solutions adapted to the requirements of the healthcare sector.

Leika is dedicated to the sale, rental, and management of therapeutic mattresses as well as the provision of medical equipment for wound treatment and pain relief. With recognized clinical expertise for 40 years, Leika is committed to supporting healthcare environments and its clientele with cutting-edge solutions to ensure optimal user care.

Leika holds the **exclusive distribution of the Mensa product**, a Class 1 product, compliant with Health Canada standards. The Mensa is designed to offer optimal support and effective prevention of pressure injuries. This innovative product is part of our commitment to providing adapted, reliable, and high-quality solutions to patients in Canada, while supporting the country's economy. Additionally, with three strategically located warehouses in Quebec and regional partners covering all of Canada, Leika is perfectly equipped to serve the entire country, ensuring delivery times and service standards (SLA) that meet the expectations and requirements of each province. We also offer training and educational support to facilitate the use of the products and optimize their effectiveness.

Our promise is based on a customer experience focused on exemplary service. We make every effort to ensure **constant availability** of our products and quick and efficient handling, from order to delivery, including transport. This product requires no special installation. Our service is **available 24/7**, with continuous technical support 365 days a year, in French and English. Our dedicated experts also provide clinical support and assistance to ensure optimal use of the equipment.

Leika offers several options according to the client's needs: purchase, short-term and long-term rental, consignment, and loan of therapeutic surfaces. This **adaptability** allows us to precisely meet the diverse expectations of patients and healthcare establishments. Our solid reputation in the industry, professionalism, and commitment to quality make Leika a reliable and essential partner. We will be honoured to actively contribute to the improvement of healthcare services in Canada by collaborating with Mohawk Medbuy, while allowing you to choose a Canadian supplier and distributor.

ABOUT MENSEA

New technology constitutes a significant improvement compared to all preventive and curative surfaces on the market, in the same product category.

Currently available in Quebec since mid June 2009 and ready to be marketed now in Canada.

Directly or indirectly used in the provision of clinical care to patients. Today, it serves patients in hospitals, long-term care facilities, and home care in Quebec.

Compliant with distribution standards for Class I surfaces.

Measurable (cost savings) and progressive advantages for patient care.



WHAT MAKES MENSA DIFFERENT AND BETTER

Innovation in the service of comfort

Designed to meet the most demanding needs in the prevention and treatment of pressure injuries, the MENSA therapeutic mattress stands out as a revolutionary solution, combining advanced technology, ergonomic comfort, and clinical efficiency. **Designed for high-risk patients, it provides a comprehensive response from stage 1 to stage 4 of pressure injuries.**

A unique architecture for unmatched pressure reduction

At the heart of the MENSA system is a polymer foam structure carved into cubes, with embedded cavities which conform to every contour of the body in a localized manner. This design allows individual adaptation to risk areas without affecting adjacent surfaces. The result: optimal pressure point reduction and continuous relief from head to toe. The integrated cube cavities work in synergy with protruding pure silicone knobs, intelligently distributing pressure and preventing shear forces transfer to the body. Up to 70% of the body is always pressure-free, and the remaining 30% is finely managed by the innovative mattress reactive foam structure.

Therapeutic comfort at all times

Thanks to a flexible and durable elastomer, the MENSA ensures superior comfort while adapting to all bed positions. It minimizes shear forces and the need for frequent manual rotation, thus reducing the workload of caregivers while ensuring patient safety. The firm and reinforced contour facilitates transfers, increasing patient stability and autonomy. The heels, a critical area for pressure injuries, receive special attention with targeted pressure reduction foam. Pressure maps show a median pressure over the body of around 11 to 15 mm Hg.

An intelligent and protective cover

The two-way Dartex cover, stretchable, waterproof, antimicrobial, and mould-resistant, ensures impeccable hygiene while maintaining a healthy environment. Its protected seams and sealed option guarantee product durability and an effective barrier against pathogens.

Supporting surface material – an innovation unlike any other

The cube foam structure layer is made from moulded polyurethane foam produced with high quality control manufacturing processes, ensuring stable mechanical properties and durability. The foam base is carved to provide body adaptation capabilities and mattress flexibility to adapt to various bed inclinations. Protruding knobs are fused on the foam superior surface to allow for skin vascularization, air circulation, and they act as a barrier to shield the body from shear forces due to their hyper elasticity.

Versatility and adaptability

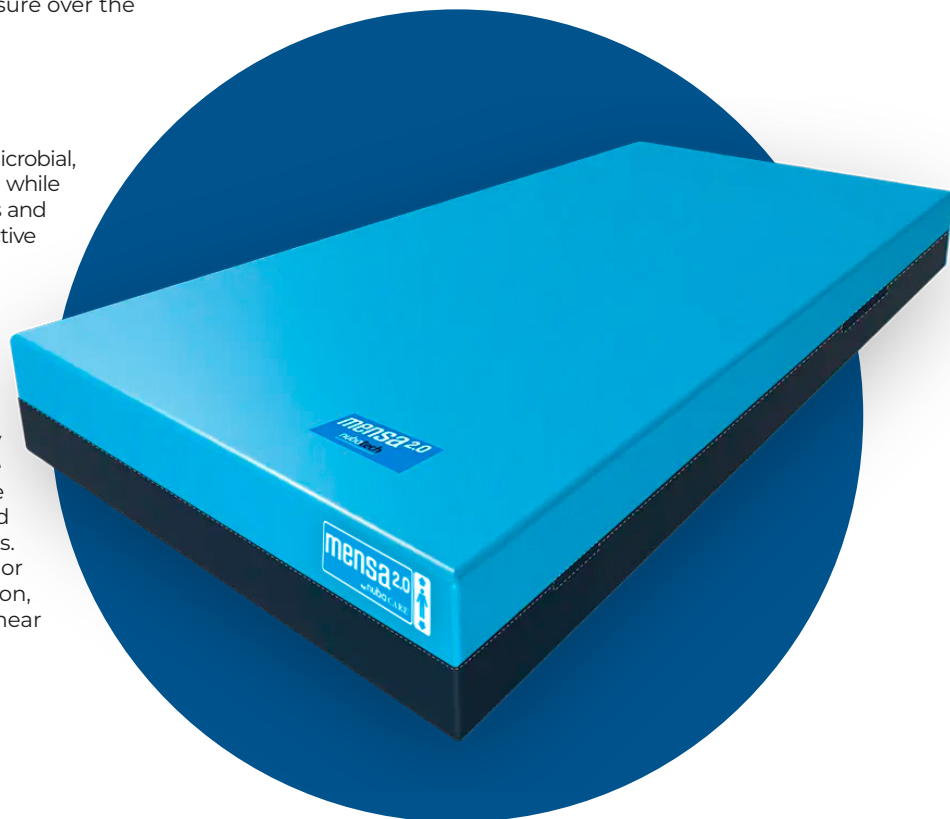
Available in several standard dimensions (35" x 78" x 6") or custom-made, the MENSA mattress adapts to all types of beds with standard bedding and accepts the use of pique without adverse effect. It is suitable for patients up to 400 pounds and is offered for purchase or rental, depending on the needs of the establishments.

Stretcher size

Patented technologies that provide MENSA superior performance are mechanically tailored to thinner support surfaces used for stretcher applications.

Sustainability

Use of moulded polyurethane foam minimizes manufacturing residues and practically eliminates material non-conformity. It provides longer durability compared to the standard bulk foam manufacturing process. The silicone protruding knobs are made of platinum cured silicone, ensuring high purity, improved physical properties and high durability. Outgassing is inexistent, with no byproducts and volatile organic compounds during the curing process. Both materials can be recycled, or they can be considered for energy recovery. Platinum cured silicone is non-biodegradable, thereby preventing environmental contamination - an essential element in medical treatment and wound care. Mattress parts are either fused or water-base glued, with no toxic chemicals. Mattresses are made in Canada under highly controlled manufacturing conditions, with raw material quality control.



1. Describe the main problem or opportunity that your product/solution addresses.

According to best practices from RNAO (2024), in response to Recommendation Question #2 — “Should a specific repositioning frequency be recommended over another frequency for persons with pressure injuries or those at risk of developing them?” — the expert panel suggests that nurses and healthcare providers reposition at-risk individuals every 2 to 4 hours. This repositioning schedule is made more feasible using support surfaces, whether active (powered) or reactive (non-powered/static).

Powered support surfaces operate using external electrical power sources and may be classified as active. These surfaces have the ability to alter their pressure distribution over the body by varying contact areas over time, through on and off action of adjacent pneumatic actuators. By continuously shifting body contact areas over time, active support surfaces reduce the amount of time pressure is applied to specific anatomical areas. Although higher contact pressures are allowed at the contact areas, the technology offers the benefit of minimum contact pressure on the rest of the body, at periodic time intervals, to restore body fluid circulation. Common reactive support surfaces instead function by reducing pressure at specific contact areas, yet over a wider area and longer time periods.

Cochrane systematic reviews (Shi et al., 2021; McInnes et al., 2015) indicate no significant difference in pressure injury prevention outcomes between active and reactive surfaces. Hence, both surface technologies may help reduce the need for frequent repositioning, thereby lessening the workload for caregivers.

Yet, with no need for an external power source, the MENSA surface offers **maximal security for unstable patients**. Moreover, **patient comfort is optimized** by avoiding frequent modulation of body contact areas **during the day and night**. The reactive Mensa mattress is not only preventive, but also therapeutic, further reducing the need to change the support surface in the event of a pressure injury.

2. Describe how your product/solution improves healthcare outcomes such as improving patient experience, improving population health, reducing total costs, or improving the professional practice of healthcare practitioners.

Reactive surfaces such as the MENSA enhance patient’s experience, as it remains static and does not move continuously like an active (powered) surface. This **stability** results in **less pain during repositioning and greater comfort**, particularly for patients with high sensitivity or existing pain. Not disturbing the patient with frequent repositioning or constant mattress movements helps promote **better sleep quality**. A stable reactive surface, unlike a powered active surface that regularly shifts, allows the patient to **rest more peacefully, contributing to improved recovery and overall well-being**.

The expert panel of the **RNAO acknowledged that staffing shortages may limit the feasibility of frequent repositioning**, but they emphasized that this does not eliminate the clinical need for it. They also noted that limited access to positioning devices could act as a barrier. No further health equity considerations were identified in relation to this recommendation. The panel concluded that repositioning at intervals of two to four hours may help prevent pressure injuries and early warning signs compared to less frequent repositioning (e.g., every five to six hours). **Based on evidence from this systematic review, one study estimated that repositioning residents every three or four hours resulted in daily cost savings of \$11.05 and \$16.74 per resident, respectively, compared to repositioning every two hours**. These economic benefits were primarily attributed to the **reduction in nursing time required**.

The expert panel of the RNAO acknowledged the analysis assumed that repositioning at two-, three-, or four-hour intervals resulted in a comparable incidence of pressure injuries, as no significant differences were observed across these frequencies.

Health Canada offers guidance on support surfaces and the associated risk of entrapment. According to this guidance, replacing a mattress with a compliant bed system with a powered air mattress may introduce new entrapment risks, even if the original setup met safety recommendations. Therefore, Health Canada advises that the therapeutic benefits of using such devices must clearly outweigh the potential risks of entrapment. Furthermore, manufacturers and suppliers of powered air support surfaces are expected to inform and assist healthcare organizations in identifying and mitigating risks related to entrapment or falls. Unlike alternating (active) surfaces, the reactive Mensa mattress does not pose a risk of entrapment. *Health Canada (2008).*



3. What are the essential features of your product/solution that make it better or new compared to existing practices?

The MENSA mattress features **innovative pressure redistribution technology** clinically validated through research at Université de Sherbrooke. It offers **tool-free adjustability** and integrates easily with existing bed systems to enhance caregiver and orderly efficiency, associated with patient well-being and enhanced security for unstable patients. Entirely **developed, manufactured, and supported in Canada**, the MENSA solution is protected by **patents in both Canada and the U.S.**, ensuring a uniquely Canadian innovation in pressure injury prevention.

4. What steps have you taken to prove that your product/solution achieves the listed outcomes, such as prototypes, concept validation tests, peer-reviewed articles, etc.

Several prototype and laboratory testing experiments were performed in order to validate mechanical performance. Clinical performance was assessed in a clinical study published recently:

- Reeves, I., Breton, L., Lavoie, K., Biuzzi, C., Léger, I., & Rancourt, D. (2022). Study on the effectiveness and costs of an active surface compared to a new reactive surface in the prevention of pressure injuries (PIs). SIDIIEF World Congress. Ottawa

The full-validation tests are presented in the attached document "*Literature & Clinical Study.*"

PATENTS

- (2015) US Patent 9032571 - Cushioning structure for body parts.
- (2020) CA 2922187-C - Cushioning structure for body parts.
- (2016) CA 2651065-A1, - Cushioning structure for body parts.

