

# Peristomal skin health: challenges, impact and innovations

## ABSTRACT

Peristomal skin complications (PSCs) are a major challenge for ostomy patients, affecting up to 73% and leading to significant physical, emotional, and financial burdens. PSCs commonly arise from medical adhesive-related skin injury (MARS) and peristomal moisture-associated skin damage (PMASD), often due to unreliable barrier seals and exposure to alkaline stoma output. Despite advances in skin barrier technology, PSC rates remain high, highlighting the need for improved solutions.

This paper reviews the evolution of ostomy skin barriers, from early materials like karaya gum to modern hydrocolloid-based systems. It focuses on the Dansac TRE™ barrier, a next-generation solution featuring insoluble super-absorbing polymers (iSAP+) and pH-buffering technology. These innovations enable rapid fluid absorption, sustained pH stability, and enhanced erosion resistance, effectively reducing leakage and skin irritation. Clinical studies and case reports demonstrate that the iSAP+ barrier improves peristomal skin health, extends wear time, and decreases reliance on accessories and medications. Patients and clinicians report increased confidence, comfort, and independence, while economic analyses show reduced care costs.

The findings support the transformative potential of advanced barrier technologies in ostomy care, advocating for their broader adoption to standardise effective skin protection and improve patient outcomes. Future research should explore long-term results and person-centered care strategies to further optimise stoma management.

**Keywords** ostomy, leakage protection, skin barriers, peristomal skin complications, superabsorbent polymers

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## ABBREVIATIONS

iSAP – insoluble super absorbent polymer

iSAP+ – a hydrocolloid skin barrier formulation comprised of an insoluble super absorbent polymer with pH buffering

MARS – medical adhesive-related skin injury

PMASD – peristomal moisture-associated skin damage

PSC – peristomal skin complications

SAP – super absorbent polymer

## INTRODUCTION

Living with a stoma presents complex challenges, including adjustments to body image, daily routines, and psychological

well-being.<sup>1</sup> Early adaptation is crucial for managing these changes effectively, with maintaining healthy peristomal skin being one of the most consequential challenges.<sup>2,3</sup> Healthy peristomal skin, which should resemble the rest of the body's skin, is essential for overall comfort and functionality.<sup>2</sup> Many individuals seek help from stoma care nurses specifically for managing peristomal skin, making it a key focus of the specialist nurse's role.<sup>2,3</sup>

The prevention and management of peristomal skin complications (PSCs) remain challenging for both patients and clinicians. PSCs significantly affect quality of life (QoL) and impose financial burdens on healthcare systems.<sup>2,3,4</sup> However, advancements in barrier technologies offer promise for improving outcomes in clinical practice and enhancing patients' lives.

## INCIDENCE AND CAUSES OF PSCS

PSCs are a major source of emotional and physical distress for individuals with a stoma, with occurrence rates reported between 36% and 73%.<sup>3</sup> A multinational survey (13 countries) found that 73% of 4227 individuals with a stoma experienced PSCs within six months,<sup>4</sup> highlighting the need for better preventive care, including stoma care nurse support and

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appropriate skin barrier selection. PSCs often result from two primary causes:

- **Medical adhesive-related skin injury (MARSII):** This occurs when adhesives bond more strongly to the skin than the skin cells adhere to each other, causing skin stripping, blisters, and tears. Repeated removal of skin barriers can strip away microscopic skin cells, disrupting the epidermis and leaving the skin vulnerable to damage.<sup>2,5</sup>
- **Peristomal moisture-associated skin damage (PMASD)** This occurs when moisture, from perspiration, occlusion caused by a skin barrier, or stoma output (faecal or urinary) contacts the skin.<sup>2,6</sup> The stratum corneum, the epidermis's outermost layer, maintains an acidic pH range of 4–6, forming a protective acid mantle that preserves skin integrity and defends against bacteria and irritants. Stoma output, however, is neutral to alkaline (pH 7–8) and contains digestive enzymes, which disrupt the acid mantle, elevate skin pH, and damage the epidermis, leading to peristomal skin complications (PSCs).<sup>2,6</sup>

The most common cause of PMASD is irritant contact dermatitis,<sup>3,4,8</sup> which results from an unreliable seal around the stoma. This allows output to leak and remain in contact with the peristomal skin for extended periods. Leakage occurs in two forms: seepage, which arises under the barrier near the stoma, and true leakage, which extends beyond the barrier. Both forms pose significant risks, including skin damage, pain, discomfort and social embarrassment that may lead to decreased QoL.<sup>2,3,8,9</sup>

## IMPACT OF PSCS ON QUALITY OF LIFE (QOL)

PSCs greatly affect physical and emotional adaptation to living with a stoma, affecting daily activities and leading to increased anxiety and depression<sup>2,3</sup>. Nichols et al<sup>9</sup> found that health-related quality of life (HRQOL) scores were significantly lower among individuals with severe PSCs (0.60) compared to those with healthy skin (0.75). These effects were observed across four skin assessment domains (healthy skin and mild, moderate, and severe PSC),<sup>9</sup> underscoring the need for effective PSC prevention and management.

## ECONOMIC BURDEN

PSCs also increase healthcare costs.<sup>2,3</sup> Individuals with PSCs require more frequent barrier replacements, accessories and clinical visits.<sup>10,11</sup> Meisner's<sup>11</sup> 2012 study estimated the cost of stoma care over seven weeks at €215 for individuals without PSCs (n=1742) and €263 for those with complications (n=1172). A 2024 report by Hollister Inc<sup>12</sup> projected that PSC-related costs in England amount to £28.1 million annually, with severity levels driving costs from £204 for mild cases to £751 for severe ones.<sup>12</sup> Delayed treatment further compounds costs, emphasising the importance of early intervention and personalised care.<sup>12</sup>

## SKIN BARRIER EVOLUTION

George Deppy, Queen Caroline of Brandenburg-Ansbach and Margaret White are among the earliest documented individuals known to have lived with an ostomy. In those early days, options for managing stomal output were limited. Common waste-collection methods between the 1700s and the 1940s included improvised devices such as washcloths, metal containers, bags, or sponges, secured with elastic bands.<sup>13</sup>

One of the first polymeric materials used for skin adherence in ostomy care was karaya, a naturally occurring gum derived from the sap of the *Sterculia urens* tree. Originally used as a denture adhesive, karaya was repurposed in 1952 by Dr Rupert Turnbull—often referred to as the “father of enterostomal therapy”—because of its absorptive properties. However, karaya alone had limited adhesive strength and required blending with other polymeric materials to achieve adequate skin adherence.<sup>13</sup>

Fortunately, the emergence of synthetic polymers through mass production enabled the development of hydrocolloid skin barriers, marking a meaningful advancement in ostomy care. These new materials provided more reliable adhesion, improved moisture management and better skin protection.<sup>13</sup> Despite advances in ostomy barriers designed to better meet individual needs, PSC rates remain high.<sup>14</sup> An ideal barrier would address these challenges by reducing PSCs, simplifying stoma management, and offering economic benefits through improved skin health, ultimately decreasing the reliance on additional accessories and medications.<sup>14</sup>

## NEXT-GENERATION BARRIERS: KEY DESIGN CHARACTERISTICS AND BENEFITS

Central to contemporary ostomy care is the evolution of barrier technologies designed to protect and preserve skin integrity.<sup>13</sup> Hydrocolloid-based skin barriers, widely employed for their moisture management and adhesive properties, have evolved by incorporating super-absorbing polymers (SAPs). SAPs are polymers capable of absorbing large amounts of fluid, 30x to 1000x, relative to their weight.<sup>13</sup> The SAP formulation can also influence the erosion resistance of the ostomy barrier. Insoluble SAP (iSAP) barriers have demonstrated a lower erosion rate and higher wet integrity than soluble SAP barriers.<sup>13</sup>

Another consideration in the evolution of barrier technology is the barrier's ability to support healthy skin in the event of fluid exposure.<sup>13,14</sup> Maintaining the skin's natural pH balance is essential for overall skin health.<sup>14</sup> Incorporating pH-buffering capabilities into the skin barrier to help preserve the skin's acid mantle, even under prolonged or repeated fluid exposure, can address this need.<sup>14</sup>

The Dansac TRE™ barrier represents a next-generation, insoluble, super-absorbing skin barrier incorporating pH-buffering technology (iSAP+). It is designed to provide enhanced fluid absorption and pH stability, helping maintain the skin's natural acid mantle, even in the presence of continuous or high-volume effluent.

In vitro testing demonstrated that the Dansac TRE™ barrier absorbed fluid up to four times faster than traditional hydrocolloid skin barriers.<sup>13</sup> This rapid absorption reduces the duration of contact between stoma output and the skin, which is critical in preventing leakage and promoting consistent barrier performance during prolonged wear.

Additional in vitro testing showed that the barrier maintained a skin-friendly pH range when exposed to alkaline saline, simulating the elevated pH of stoma effluent. These findings are detailed further in a paper by Defante.<sup>13</sup>

In addition to their technical advantages, these barriers can foster greater patient confidence and reduce anxiety about leakage. An observational user evaluation of 440 clinicians (2018 to 2020) found that the iSAP+ barrier effectively reduced leakage-related issues, decreasing the severity and incidence of PSCs and improving HRQoL.<sup>14</sup> Its benefits include extended wear time and reduced dependence on ostomy accessories and topical skin medications, simplifying stoma management and enhancing overall outcomes.<sup>14</sup>

The next-generation Dansac TRE™ barriers offer a groundbreaking innovation in ostomy care. They provide extended protection against digestive enzymes through extended moisture absorption, sustained pH-buffering capacity, greater erosion resistance, and reliable adhesion.<sup>13</sup> By keeping peristomal skin dry and reducing leaks and irritation, iSAP+ barriers have the potential to safeguard skin integrity, minimise complications, and improve quality of life. Backed by clinical assessments, they can enhance comfort, confidence, and overall well-being, setting new standards in stoma care.<sup>13,14</sup>

## EVIDENCE AND OUTCOMES

Clinical and scientific studies highlight the iSAP+ barrier's exceptional fluid absorption capabilities. Visual absorption studies revealed high absorption rates within the first 15–20 minutes of use, effectively managing excess fluid and safeguarding the barrier seal. Absorbing fluid up to four times faster than other barriers prevents prolonged skin contact with stoma output and plays a vital role in leak prevention.<sup>13,15</sup> Quantitative and visual studies further confirmed consistent absorption performance across multiple lots, outperforming competitors in dry-to-touch performance. This superior performance is attributed to the iSAP+ barrier's advanced formulation, incorporating reinforcing microfibres for enhanced structural integrity. The insoluble super-absorbing barrier enhances leak prevention and overall barrier effectiveness by rapidly and reliably managing excess fluid.<sup>13,15</sup>

The user evaluation by Summa et al<sup>14</sup> demonstrated meaningful improvements in skin health for patients transitioning from traditional ostomy barriers to the iSAP+ barrier. Statistically significant findings included a 56% reduction in DET scores (a validated peristomal skin assessment tool for discolouration, erosion, and tissue overgrowth) and a 62% decrease in pain scores, indicating marked reductions in peristomal skin damage, irritation, and discomfort.

The same study found that these barriers could lower ostomy care costs by extending wear time and reducing the use of accessories and medications. Among 900 patients, 38% experienced longer wear times, with a 34% increase in those achieving two days or more of wear. Additionally, the number of patients changing their pouch more than once daily decreased by 55%, reducing monthly pouch usage from 31.2 to 23.7.<sup>14</sup>

Accessory use declined significantly post-evaluation, with the percentage of patients not requiring any accessories rising from 24.6% to 34.5% ( $p < 0.001$ ), a relative increase of 40.2%. Usage of adhesive removers, seals, pastes, and other ostomy-related products also decreased. Of the 52 patients using topical peristomal skin medications, 50% reported reduced usage during the evaluation period.<sup>14</sup> These findings highlight the economic and practical benefits of the barrier, simplifying ostomy care while improving patient outcomes.

## IMPLICATIONS FOR PATIENT CARE

The iSAP+ barriers offer transformative benefits in ostomy care, combining superior absorption with meaningful improvements in clinical outcomes and quality of life. These advancements can alleviate physical, emotional and financial burdens, empowering patients to lead more confident and comfortable lives. On a broader scale, the widespread adoption of insoluble super-absorbing barriers could standardise effective skin protection, elevating the overall quality of ostomy care.

While laboratory testing demonstrates the barrier's potential for enhanced absorption and pH control, clinical outcomes are best understood through real-world application. The following case studies describe patient experiences from nursing practice, offering practical insight into how this advanced barrier performed in supporting peristomal skin health, reducing leakage and improving patient comfort and confidence.

### Case study 1: managing a urostomy with a highly exudative wound in a postoperative ICU setting

#### Patient overview

A 64-year-old male underwent surgery for bladder cancer, resulting in the creation of a urostomy and a midline laparotomy wound. Initial postoperative recovery showed no complications with the abdominal wound or stoma. The abdominal wall was firm, and the peristomal skin was flat and intact. The stoma was round, protruding and healthy, with no evidence of mucocutaneous separation or issues with the surgical stitches. Two ureteral stents were placed and secured for approximately 15 days.

#### Clinical complications

Several days postoperatively, the patient developed sepsis and required intensive care, including artificial ventilation, abdominal lavage, and high-dose antibiotic therapy. The abdominal wound was reopened and left to heal by secondary intention due to a severe abdominal infection. Throughout

ICU care, the patient lost approximately 10kg of body weight and became immobile. Initially round and protruding, the stoma flattened and became oval due to abdominal wall laxity. The proximity of the stoma to the abdominal wound further complicated management, as stoma materials and wound dressings overlapped.

### Management and pouching system selection

Initially, a one-piece soft convex urostomy pouch was selected to accommodate the patient's abdominal contours. However, as the abdominal wound worsened and the need for frequent dressing changes increased, a two-piece pouching system was adopted to separate stoma care from wound care while adhering to hygiene guidelines.

- **Two-piece system in ICU:** The Dansac TRE™ two-piece iSAP+ system effectively maintained a secure seal and protected the peristomal skin despite the highly exudative wound and liquid urostomy output. Regular pouch changes were performed every 4–5 days without leakage or peristomal skin issues. Nurses in the ICU expressed confidence in the barrier seal, which minimised time-consuming interventions and reduced patient discomfort.
- **Transition to a one-piece system:** After the patient's wound therapy was modified to alginate dressings and super-absorbent materials, the Dansac TRE™ one-piece soft convex urostomy pouch was reintroduced. This system provided an optimal fit around the flattened stoma, ensuring skin health while accommodating the high wound exudate.

### Clinical outcomes

- **Peristomal skin protection:** The iSAP+ barrier consistently prevented contamination of the peristomal area by wound exudate or urine. Moisture from the wound was absorbed and locked into the barrier, while the stoma area remained dry and secure. There were no signs of redness, maceration, or irritation (Figure 1).
- **Barrier performance:** The soft convex iSAP+ barrier expanded upon contact with moisture, creating a visible rippled effect that ensured a snug seal around the stoma. Despite the flat stoma and liquid output at the skin level, the barrier's super-absorbing properties prevented leakage.



Figure 1. Pouch adhering to skin. No visible skin problems and moisture locked into the barrier.

The barrier edges, frequently exposed to wound exudate, maintained their structural integrity and did not dissolve or lift. The barrier was removed in one piece while leaving no residue on the skin (Figure 2).

- **Ease of use:** ICU nurses, including those with limited experience managing urostomies, found the barrier material easy to handle. Training on the behaviour and application of the iSAP+ barrier enhanced their confidence, particularly in managing a flat stoma in the context of substantial wound exudate and immobile abdominal contours.

### Patient independence and long-term care

As the patient transitioned out of the ICU, mobility improved, and he was trained to manage his urostomy independently. The Dansac TRE™ pouching system's flexibility and secure seal accommodated the changing contours of the patient's abdomen as he regained movement and weight. Adding a support belt provided extra comfort without compromising the system's performance.

In the weeks following discharge, the patient reported no leakage or skin irritation issues and could perform regular pouch changes independently. The soft, convex pouching system remained easy to handle and continued to provide a secure fit, ensuring no leaks, long-term confidence and comfort.

### Discussion

Managing a urostomy in the presence of a highly exudative and substantial abdominal wall wound changes poses unique challenges. A soft, convex barrier with insoluble, super-absorbing properties and pH-buffering capabilities was critical for maintaining peristomal skin health and providing a reliable seal, despite the liquid output and complex wound environment.



Figure 2. Barrier absorbing not only moisture from the urostomy, but also midline wound exudate.

Postoperative weight loss, immobility and abdominal wall laxity often necessitate the selection of a flexible, adaptable pouching system. The barrier's swelling and rippling effect upon moisture absorption ensured a secure seal and prevented contamination, even under challenging conditions.

This case underscores the importance of choosing a pouching system that accommodates postoperative anatomical changes and high-output stomas. Proper training of nursing staff and patients further supports optimal outcomes by ensuring consistent and confident application of the system.

### Case study 1 conclusion

In this case, the Dansac TRE™ soft convex urostomy pouching system effectively managed a urostomy with a highly exudative wound. The barrier maintained peristomal skin integrity, prevented contamination, and adapted to complex anatomical and functional changes during recovery. Nurses and patients reported confidence in the system's performance, highlighting its utility in both acute and long-term stoma care.

### Case study 2: managing a challenging ileostomy in a patient with significant weight loss and peristomal skin complications

#### Patient background

A 76-year-old woman underwent an emergency colectomy with formation of an end ileostomy due to colon ischemia. Initially, the stoma was round and well-protruding, the patient's abdominal area was firm with no creases or folds, and the peristomal skin was intact. A flat barrier with a ring and a high-output pouch provided a secure seal during the early postoperative period.

In the first week postoperatively, as abdominal distension resolved, the patient developed soft abdominal contours with deep folds and creases, consistent with a history of significant weight loss (20kg). Although the stoma remained functional and well-positioned, it diminished slightly in size.

Prior to discharge, the patient was transitioned to a two-piece system with a flat barrier and ring, which had remained secure and effective during the hospital stay. However, inconsistent application by home care providers, combined with the patient's limited mobility and further weight loss, led to frequent leakage and progressive peristomal skin irritation. She developed redness, burning and itching, which went unaddressed. Fearing leaks, the patient restricted her diet and fluids, further contributing to weight loss and social withdrawal.

#### Clinical challenges

At seven weeks post-op, the patient presented to the outpatient clinic with severe peristomal skin breakdown, leakage and deep creases around the stoma. She was physically and emotionally distressed, lacking confidence in her ability to manage the stoma.

#### Intervention

The pouching system was switched to the Dansac TRE™ iSAP+ one-piece soft convex barrier. This system was selected to

accommodate the challenging peristomal anatomy, as its gentle convexity provided a broader pressure plateau that flattened creases and folded around the stoma, creating a more stable surface for adhesion. The iSAP+ barrier absorbed moisture, neutralised effluent pH and supported healing.

#### Clinical outcomes

- **Immediate effectiveness:** The iSAP+ barrier demonstrated excellent performance on the first day of use. Visual inspection revealed discolouration and rippling on the barrier surface, indicating active absorption of effluent and moisture. Notably, the peristomal skin showed no stool residue, redness, or signs of moisture damage during pouch changes. The secure seal prevented further leakage and allowed the peristomal skin to begin healing (Figure 3).
- **Skin recovery:** The peristomal skin healed rapidly, with resolution of redness and irritation within days. The pH-buffering properties of the iSAP+ barrier effectively managed the aggressive ileostomy effluent.
- **Improved confidence and quality of life:** With supporting education, the patient regained control over her stoma care, resumed normal eating, regained energy and re-engaged in daily activities.
- **Ease of use:** Home care nurses, including those with limited experience, found the iSAP+ barrier easy to apply. Education on correct application and interpretation of visual cues, such as rippling and swelling indicative of fluid absorption, enhanced caregiver confidence and improved consistency in pouching technique.

#### Discussion

This case underscores the critical need to select pouching systems that are appropriately tailored to patients presenting with complex peristomal anatomy and pronounced postoperative body changes. The iSAP+ soft convex barrier effectively managed creased, unstable peristomal surfaces while protecting vulnerable skin through rapid absorption and pH control.

Additionally, addressing the emotional impact of leakage and loss of control is critical. The patient's improved confidence and independence underscore the role of effective product



Figure 3. Barrier removed. Skin was not cleaned when picture was taken. No visible skin irritation.

selection and education for both patients and providers in achieving successful outcomes.

### Case study 2 conclusion

The Dansac TRE™ iSAP+ soft convex barrier proved effective in managing a complex ileostomy case. It supported peristomal skin healing, prevented leakage, and contributed to improving the patient's quality of life. This case highlights the value of individualised pouching solutions and structured support in post-acute stoma care.

### Case study 3: end colostomy management in a patient with high-output liquid stool

#### Patient overview

A 63-year-old male underwent emergency surgery for sigmoid diverticulitis with perforation, resulting in the creation of an end colostomy. Postoperatively, the patient experienced high-output liquid stool secondary to systemic inflammation and antibiotic therapy, which posed challenges for pouching system management and peristomal skin protection. The patient also expressed dissatisfaction with the appearance of the newly created stoma and requested a long-wear system to minimise daily care requirements.

#### Clinical challenges

The patient's colostomy was round and prominent, with flat peristomal skin under significant tension. Visible surgical stitches surrounded the stoma, but there were no signs of skin irritation, redness, or itching. The primary challenge was securing a reliable pouching system that could withstand high-output liquid stool without compromising peristomal skin integrity or wound healing. The patient's preference for infrequent pouch changes also required a durable and long-lasting barrier.

#### Intervention

The Dansac TRE™ iSAP+ two-piece system was selected to address these challenges. This system provided:

- A secure seal to prevent leakage despite the high liquid output.
- Protection for the surgical stitches supporting wound healing.
- Extended wear-time, reducing the frequency of pouch changes while ensuring peristomal skin health.

The pouching system effectively contained liquid stool from the first application, with no leakage, skin irritation, or barrier breakdown. Unlike traditional materials, which may degrade with prolonged exposure to moisture, the iSAP+ barrier maintained its structural integrity for 4–5 days. Visual inspection revealed swelling and rippling around the stoma; evidence of active absorption, which helped create a secure seal and protect the peristomal skin from effluent (Figure 4).

#### Outcomes

- **Peristomal skin protection:** The barrier successfully

prevented contact between the liquid stool and peristomal skin, maintaining skin integrity without redness, burning, or irritation (Figure 5).

- **Wound and stoma protection:** The iSAP+ barrier covered and protected the surgical stitches, promoting wound healing and preventing contamination.
- **Patient confidence and independence:** The patient was trained on proper barrier application, including moulding the material around the stoma for an optimal fit. This education alleviated his fear of leakage and enabled him to perform pouch changes independently.
- **Extended wear time:** The iSAP+ barrier remained intact for 4–5 days without signs of leakage, material breakdown, or patient discomfort, reducing nursing interventions and improving care efficiency.

#### Nursing implications

Nurses in the hospital ward found the Dansac TRE™ iSAP+ system easy to use and highly reliable in managing liquid output. The iSAP+ barrier minimised leakage risks, preventing time-consuming pouching complications such as skin irritation or frequent changes. Training nurses to appreciate the barrier's visible swelling and rippling helped build confidence in its function, ensuring proper application and long-term patient support.

#### Discussion

Managing high-output liquid stool in a newly created colostomy is challenging, particularly in the early postoperative



Figure 4. Swelling and rippling of the skin barrier helping to provide a secure skin seal.



Figure 5. Barrier absorbing high volumes of fluid. Skin dry on removal and no visible skin irritation.

period when protecting the surgical site and peristomal skin is critical. This case illustrates how selecting a durable, moisture-absorbent barrier significantly improves clinical outcomes by providing a secure seal and extended wear time.

Additionally, patient-centred care played a key role in the successful outcome. By responding to the patient's request for a longer-wearing system and providing education on proper barrier application, the patient gained confidence in managing his stoma, leading to improvements in both clinical outcomes and psychological well-being.

### Case study 3 conclusion

This case illustrates the effectiveness of an iSAP pouching system in managing a high-output colostomy following emergency surgery. The Dansac TRE™ iSAP+ barrier's advanced fluid absorption and sustained structural integrity provided a secure seal, protected peristomal skin and supported wound healing. Early intervention and patient education were critical to long-term success, underscoring the importance of individualised stoma care solutions to optimise clinical outcomes.

### Next-generation skin protection in ostomy care

The iSAP+ barriers represent a notable leap forward from traditional hydrocolloid barriers. While conventional materials can struggle with prolonged exposure to moisture and stoma effluent, the iSAP+ formulation delivers rapid fluid absorption, sustained structural integrity, and pH buffering to protect peristomal skin. These features reduce leakage, extend wear time, and simplify care routines, leading to fewer complications and less reliance on accessories or medications. Just as importantly, this reliability restores patient confidence, reduces anxiety and supports emotional well-being by alleviating the fear of leakage and skin damage.

As ostomy care continues to evolve, the integration of innovative materials and person-centred approaches will be essential in setting new standards for clinical practice. Future research should focus on long-term outcomes, person-reported experiences, and the broader impact of these technologies on care delivery. Ultimately, combining advanced leak protection strategies with holistic, person-centred care offers the most significant promise for optimising outcomes and supporting the well-being of individuals living with a stoma.

### CONFLICT OF INTEREST

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