

SKIN IQ SOLUTION GUIDE

Advanced microclimate management

PROVIDING AN OPTIMAL ENVIRONMENT FOR SKIN INTEGRITY



Pressure injuries are a continual challenge for patients and caregivers

20% of all acute care patients develop a pressure injury*

Pressure ulcers present a global challenge to health care providers, causing unnecessary suffering to patients and creating a serious financial burden for health care facilities. Costs associated with pressure injuries exceed \$11 billion every year in the U.S. alone.¹

Risk factors that can lead to pressure injuries include:²



*Source: Moore Z. A randomized controlled clinical trial of repositioning, using the 360 tilt, for the prevention of pressure ulcers. Journal of Clinical Nursing. 2011.

Moisture

Excessive moisture on the surface of the skin reduces patient resilience to withstand pressure, shear and friction, some of the key risk factors that lead to the development of a pressure injury.³



Excessive moisture can be generated due to multiple factors including:

- Perspiration due to elevated body temperature
- Fluids from incontinence
- Wound drainage
- Factors specific to a patient's clinical condition

By addressing and applying the appropriate solutions and protocols, pressure injuries within health care environments can be successfully prevented and treated.

Skin IQ microclimate management: For the prevention and treatment of pressure injuries*

Skin

Skin IQ[®] microclimate management

The *Skin IQ* family of products are powered mattress covers that utilize state-of-the-art Negative Airflow Technology (NAT) to continually draw away excess moisture from the skin/surface interface, for superior microclimate management.

These products can be used in conjunction with most support surfaces for effective pressure injury prevention and treatment.



Managing moisture and temperature

Excess moisture is passed through the vapor-permea antimicrobial top layer and into the middle layer space material via an evaporative effect. The top layer also serves as a barrier to fluid and bacteria.⁴



Negative Airflow Technology

Negative Airflow Technology (NAT) pulls moisture vapor through the top layer into the middle layer's open-construction spacer material with a vacuum effect.

Negative Airflow Technology provides:

- Improved laminar airflow that eliminates surface billowing, as experienced with standard air pumps
- Increased air velocity beneath the patient, for maximal moisture control



^{*}Skin IQ is indicated for use in conjunction with a pressure redistribution surface in order to aid in the prevention and treatment of skin breakdown and pressure ulcers (stages I-IV) for patients who require microclimate management of the skin.

The Skin IQ family addresses your clinical and safety needs

The Arjo *Skin IQ* family of products is the only skin integrity solution that utilizes Negative Airflow Technology to enlist advanced microclimate management by controlling excess moisture and heat at the patient's skin/surface interface, thereby optimizing pressure injury management, which can lead to improved clinical outcomes, risk mitigation and improved workflow for staff.

Prevention and treatment of pressure injury



Effective moisture and temperature control: *Skin IQ* reduces and regulates temperature at the skin/mattress interface, thereby reducing the risk of excess moisture and preventing tissue breakdown.



Reduced shear and friction: By managing interface temperature, *Skin IQ* reduces friction and shear for effective pressure injury prevention and treatment.

Increased patient safety



Increased patient comfort



Fall prevention initiatives are supported, due to *Skin IQ*'s low height profile.

Patient comfort is assured due to *Skin IQ*'s noise-reduction technology and low height profile, which does not affect pressure redistribution surface performance.⁵



The National Pressure Ulcer Advisory Panel recommends that support surfaces be used as a part of a total prevention and treatment program. Patients should be provided with a support surface that is properly matched to their individual needs for pressure redistribution, sheer reduction and microclimate control.²¹



Adaptability

Skin IQ is designed for compatibility with most pressure redistribution mattresses on the market today.



Versatility

Skin IQ is available in multiple versions to best fit your facility's needs: disposable, reusable or bariatric.



Improved workflow

Skin IQ is easy to attach and remove, for an improved workflow.



Effective odor control

Skin IQ significantly reduces odor, compared to the same surface without Negative Airflow Technology.⁶

Skin IQ family features

	Skin IQMCM (single use)
Vapor-permeable top layer facilitates removal of excess patient moisture, serves as a barrier to fluid and bacteria, ⁴ and provides a smooth surface for reduction of friction and shear ⁷	
Negative Airflow Technology continuously draws moisture away from the skin surface and helps manage skin temperature	
Excellent moisture vapor transmission rate (MVTR) that is significantly greater than the average 79.2 g/m ² /hr of conventional powered air surfaces ^{8,9}	
Single patient use coverlet to help address concerns with cross-contamination for use with patients weighing up to 500 lbs (227 kg)	
Multiple patient use (reusable) coverlet capable of being disinfected between patients via either laundry or wipe-down	
Single patient use coverlet to help address concerns with cross- contamination for use with patients weighing up to 1,000 lbs (454 kg)	

Skin IQ MCM, Skin IQ 365 and Skin IQ 1000

Electrical

All: Voltage 100-240 VAC All: Frequency 50/60 Hz *Skin IQ* MCM and 1000: Ampere rating 0.5A *Skin IQ* 365: Ampere rating 0.3A

Maximum electrical leakage

All: (100 uA at 115 VAC 60Hz) and (200 uA at 230 VAC 50Hz) Skin IQ MCM and 1000: Power cord length 19.69' (6 m) Skin IQ 365: Power cord length 20.0' (6.1 m)

Environmental conditions operation Skin IQ MCM and 1000: Temperature range 57.2° F (14° C) to 95° F (35° C) Skin IQ 365: Temperature range 32° F (0° C) to 104° F (40° C)

Transport/storage *Skin IQ* MCM and 1000: Temperature range 20.2° F (-29° C) to 140° F (60° C) *Skin IQ* 365: Temperature range -20.2° F (-29° C) to 167° F (75° C)

Skin IQ (single use) product information

Maximum safe working load 500 lbs (227 kg)

Recommended duration of use for single patient is not more than 60 days for patients weighing up to 380 lbs (172.37 kg). Duration of use for patients weighing 380 lbs (172.37 kg) to 500 lbs (227 kg) is not to exceed 30 days. Moisture vapor transmission rate (MVTR) 130 $(g/m^2)/hr.^{10}$

Compatibility

The *Skin IQ* MCM is designed to fit on a pressure redistribution surface that is 80-84" (203.2-213.4 cm) long by 35-36" (88.9-91.4 cm) wide by 7-8" (17.8-20.3 cm) high.

Consult product labeling for the pressure redistribution surface and/or bed frame for compatibility.

Additional weight limitations may apply.

Skin IQ 365 (reusable)	Skin IQ 1000 (single use)

Skin IQ 365 (reusable) product information

Maximum safe working load 500 lbs (227 kg)

Useful life of this product is one year or 35 laundry cycles, whichever comes first. Moisture vapor transmission rate (MVTR) 171 $(g/m^2)/hr$.¹¹

Compatibility

Skin IQ 365 is designed to fit on a pressure redistribution surface that is 80-84" (203.2-213.4 cm) long by 35-36" (88.9-91.4 cm) wide by 7" (17.8 cm) high.

Consult product labeling for the pressure redistribution surface and/or bed frame for compatibility.

Additional weight limitations may apply.

Skin IQ 1000 (single use) product information

Maximum safe working load 1,000 lbs (453.59 kg)

Recommended duration of use for single patient is not to exceed 60 days for patients weighing up to 1,000 lbs (453.59 kg). Moisture vapor transmission rate (MVTR) 165 $(g/m^2)/hr$.¹²

Compatibility

Skin IQ 1000 is designed to fit on a pressure redistribution surface that is 80-84" (203.2-213.4 cm) long by 48" (121.9 cm) wide by 7" (17.8 cm) high.

Consult product labeling for the pressure redistribution surface and/or bed frame for compatibility.

Additional weight limitations may apply.

The clinically proven standard of care

Outstanding moisture vapor transmission rate

Compared with currently available LAL surfaces, the *Skin IQ* coverlet provides the highest MVTR and the most temperature reduction.^{9*}

High moisture removal for reduced skin maceration

Studies show that the *Skin IQ* coverlet removes 3.8 times more moisture at the skin/mattress interface than the same mattress without the *Skin IQ* coverlet,¹³ which may help reduce the incidence of periwound maceration.^{14,15}

Reduces temperature at skin/mattress interface

Studies show that the *Skin IQ* coverlet reduces temperature at the skin/mattress interface by more than 1° C in 45 minutes.⁹ This translates to a 10% reduction in tissue metabolism rate.¹⁶

Reduces shear and friction

The *Skin IQ* coverlet's top layer material reduces shear and friction to help prevent and treat pressure ulcers.¹⁷

Helps control odor

Studies show that the *Skin IQ* coverlet significantly reduces odor at the skin/mattress interface, when compared to the same surface without Negative Airflow Technology (NAT).⁶

Doesn't diminish pressure redistribution effectiveness

Pressure mapping testing shows that the *Skin IQ* coverlet does not diminish the pressure redistribution properties of the underlying mattress.⁵



Odor reduction at 30 days⁹



*Surfaces tested include: Encompass[®] AccuMax Quantum[®], SenTech[®] Stage IV[®] 2000, Gaymar[®] SPR Plus[®] III, Stryker[®] Impression[®], Hill-Rom[®] TotalCare[®] P500, Hill-Rom[®] Envision[®], Hill-Rom[®] cuCair[®] and Skin IQ MCM. A control plastic sheet was used on all surfaces.

Case study^{18*}

Patient A 78-year-old male with head and neck cancer.

Diagnosis

Patient suffered from dysphagia and incontinence, resulting in skin breakdown and a high risk of pressure injury.



Initial skin breakdown

Initial treatment with Skin IQ

The patient was placed on a *Skin IQ* coverlet on a pressure redistribution mattress at admission and remained on the *Skin IQ* coverlet for 27 days, with follow-up at day 30.

Progress, discharge and follow-up

Skin breakdown was resolved and patient was discharged.



Follow-up at day 30

"The introduction of recent microclimate (MCM) technology into this facility has the potential to decrease rental costs while treating and preventing pressure injuries and moisture-related breakdown."

Jean de Leon, MD, Director, Wound Care Clinic, Baylor Specialty Hospital, Dallas, Texas

Case study^{18*}

Patient

A 54-year-old African-American female with human immunodeficiency virus (HIV) presented with a complaint of a clogged tracheostomy.

Diagnosis

The patient had acute renal insufficiency along with Methicillin-sensitive Staphylococcus aureus (MSSA) pneumonia.



Initial skin breakdown

Initial treatment with Skin IQ

The patient was placed on the *Skin IQ* coverlet in conjunction with a pressure redistribution mattress and remained on the *Skin IQ* coverlet for two weeks.

Progress, discharge and follow-up

Skin breakdown resolved and patient was discharged to acute rehabilitation.



Two weeks post Skin IQ coverlet

"... Skin IQ can simplify surface selections, expedite therapy (stored on each unit) while providing outstanding clinical results."

Rose Raizman, CNS, Director, Surgical Program, Rouge Valley Health System, Toronto, Canada

The cost-efficient, environmentally friendly solution

Pressure injuries represent a major financial strain for health care providers. Pressure injury costs include extended patient stays, expensive treatment and the draining of valuable caregiving resources.

The introduction of Skin IQ to your facility can reduce excess costs associated with:

- Increased length of patient stay
- Adverse events such as patient falls and entrapment
- Patient readmissions
- Treatment requirements

Skin IQ can offer a cost-effective and comprehensive pressure injury prevention and treatment alternative, particularly when compared with other powered air surfaces.

Skin IQ is designed to help reduce indirect costs for facilities.

May see indirect annual savings from reduced:

- Pressure injury incidence
- Patient infections
- Patient falls
- Patient length of stay
- Power consumption
- Labor costs
- Use of creams/emollients, dressings/pads
- Readmission rates

Surface purchase option



Based on average sales price and equitable life of product

Less energy

Skin IQ saves over \$30 in electrical costs per hospital bed per year, consumes 83% less coal and emits 83% less greenhouse gases from power generation.^{19,20}

In addition to a low carbon footprint, *Skin IQ* is also:

- Latex free
- PVC free
- DEHP free
- Mercury free



"... Selection of an appropriate support surface should take into consideration factors such as the individual's level of mobility within the bed, his/her comfort, the need for microclimate control, and the place and the circumstances of care provision."

The National Pressure Ulcer Advisory Panel (NPUAP) and Pressure Ulcer Prevention Quick Reference Guide

Energy cost comparison¹⁹ Low air-low mattress Skin IQ

0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 \$

CO₂ emission comparison²⁰

		Lo	w air-lov	w mattre	ess				
			Skin	IQ					
0 100	200	300	400	500	600	700	800	900	lbs

Skin IQ 365 (reusable)	Description
SIQCPRUS1UN	Complete Skin IQ 365 kit containing coverlet, fan and power supply
Skin IQ 365 spare parts	
SIQCORUS1UN	Coverlet only
SIQFNRU04UN	Fan only. Comes in 4-pack only
SIQPSRU04UN	Power supply only. Comes in 4-pack only
Skin IQ (single use)	
SIQCPST04US	Complete Skin IQ kit containing coverlet, fan and power supply (4-pack)
SIQCOST04UN	Original Skin IQ mattress coverlet only (4-pack)
SIQPSST04UC	Original Skin IQ spare part. Power supply only (4-pack)
SIQCPSTS1US	Complete Skin IQ kit containing coverlet, fan and power supply (1-pack)
Skin IQ 1000 (single use)	
SIQCPBAS1US	Original Skin IQ 1000 kit containing coverlet, fan, and power supply (1-pack)
SIQCOBASIUN	Original Skin IQ 1000 mattress coverlet (1-pack)

References:

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- 3. Clark M, Romanelli M, Reger S, et al. London: Wounds International, 2010.3.
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- 5. Arjo data on file.
- 6. Arjo data on file.
- 7. Arjo data on file.
- 8. Reger S et al. Arch Phys Med Rehabil. 2001; 82(5):597-603.
- 9. Arjo data on file.
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- 16. Flam E and Raab L. European Pressure Ulcer Advisory Panel, Aberdeen, Scotland. May 5-7, 2005. http://www.epuap.org/aberdeen/page3.htm.
- 17. Arjo data on file.
- 18. Case studies courtesy of Jean de Leon, MD, Medical Director, Baylor Specialty Hospital.
- 19. Arjo data on file.
- 20. Arjo data on file.
- 21. European Pressure Ulcer Advisory Panel, National Pressure Ulcer Advisory Panel. Prevention and treatment of pressure ulcers: quick reference guide. Washington, DC: National Pressure Ulcer Advisory Panel; 2000 Jan.

At Arjo, we are committed to improving the everyday lives of people affected by reduced mobility and age-related health challenges. With products and solutions that ensure ergonomic patient handling, personal hygiene, disinfection, diagnostics, and the effective prevention of pressure ulcers and venous thromboembolism, we help professionals across care environments to continually raise the standard of safe and dignified care. Everything we do, we do with people in mind.

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