Giraffe® takes the pressure off

Giraffe® Pressure Diffusing Mattress*

Ensuring an infant’s comfort and health is an ongoing challenge in neonatal care. The unique design of the Giraffe Pressure Diffusing Mattress takes the next step in creating the ideal environment for premature and critically ill infants.

The result of extensive research, advanced design and an ongoing commitment to positive outcomes, the Giraffe Pressure Diffusing Mattress is our most advanced development in neonatal mattress technology.

Designed to help:

- Promote infant comfort by providing a softer support surface
- Relieve pressure points
- Preserve skin integrity
- Provide basic topical, antimicrobial and anti-fungal protection
- Improve clinical efficiency by reducing or eliminating additional bedding expense

*Patent Pending
The Clinical problem: Ensuring an infant’s comfort and health

Consider the following:

• Neonatal skin is fragile across all gestational ages. 21% of very low birth weight babies suffer skin breakdown during the first week of life.¹

• Developmental care practices, which limit handling, may actually exacerbate the problem of skin breakdown, as clinicians may be reluctant to disturb the baby for “routine” repositioning.

• Current technologies like ECMO, high-frequency ventilation and procedures like surgery may also limit repositioning, leading to pressure-related skin injury and breakdown.²

• Many clinicians believe that some bedding materials reduce pressure against the skin, whereas current research shows that these materials may actually increase pressure exerted against the skin.³

• Skin and tissue nutrition may be affected when critical capillary pressure exceeds 28-32 millimeters of mercury (mmHg).³

The Solution: GE’s Giraffe Pressure Diffusing Mattress

The mattress is designed to fit both Giraffe OmniBeds and Giraffe Incubators to ensure better clinical efficiency. Our pressure diffusion technology reduces skin breakdown that leads to pressure sores and ulcers.

Further, the Giraffe Pressure Diffusing Mattress features a practical, user-friendly design that provides peace of mind. It is radiolucent, can be used on either side, and is easily cleaned and disinfected between patients.

A new, convenient “pillowcase” cover sheet is also available, which makes the mattress usable on both sides and helps to prevent the hammock effect.

How it works:

The innovative Giraffe Pressure Diffusing Mattress consists of three critical layers:

• Inner support foam layer of high-resilience foam provides appropriate support and firmness to prevent sagging and uneven wear, and to ensure long-lasting comfort and durability.

• Microconvoluted outer foam layers are separate from the support layer to provide a soft, supportive, pressure-relieving surface, redistribute pressure evenly and allow the mattress to be used on either side.

• Multi-directional stretch cover fits loosely and is separate from the underlying layers to eliminate stretching or “hammocking” and prevent stress and discomfort on the infant’s skin.
**Pressure Distribution Patterns in Appropriately Weighted Mannequins (Supine Position)**

These graphs show the rate and severity at which peak pressures build against an infant's skin over a period of two hours. The Giraffe Pressure Diffusing Mattress exerts less pressure against the mannequin's body and sustains a significantly lower pressure over time than other mattresses on the market.

### Peak Pressures (680 g)

- **Giraffe Pressure Diffusing Mattress**
- **Sheep Skin**
- **Gel Mattress (Warmed to 37°C)**
- **Conventional Foam Mattress**

### Peak Pressures (3600 g)

- **Giraffe Pressure Diffusing Mattress**
- **Sheep Skin**
- **Gel Mattress (Warmed to 37°C)**
- **Conventional Foam Mattress**

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**Pressure Mapping Results**

*Conventional Foam Mattress*

![Pressure Distribution Patterns](image)

- Weight: 3600 g
- Peak Pressure: 30 mmHg
- Average Pressure: 15 mmHg
- Time: 120 minutes

†Giraffe Pressure Diffusing Mattress

![Pressure Distribution Patterns](image)

- Weight: 3600 g
- Peak Pressure: 15 mmHg
- Average Pressure: 8 mmHg
- Time: 120 minutes

The Conventional Foam Mattress is an average of three conventional foam mattresses currently being used in microenvironments.
Proven in practice

In user validation studies at various sites, the Giraffe Pressure Diffusing Mattress received excellent reviews in regard to its overall ease of use, softness, thickness, comfort and protection of skin integrity.

Clinic comments include:

“Excellent for comfort”
“Great - soft, but supportive”
“A benefit to skin integrity”

User validation study sites:

• All Children’s Hospital, St. Petersburg, FL
• Holy Cross Hospital, Silver Spring, MD
• Presbyterian Children’s Hospital, New York, NY
• University of Michigan C.S. Mott Children’s Hospital, Ann Arbor, MI
• Women & Infants Hospital, Providence, RI

REFERENCES


