

# INVACARE® MATRX® CLINICAL SEATING & POSITIONING GUIDE

Skin breakdown is a result of external forces and internal factors so a support surface should be designed to minimize the negative effects of external forces, optimize positioning to facilitate physiological functions and ensure oxygen gets to the tissues.

## EXTERNAL FORCES



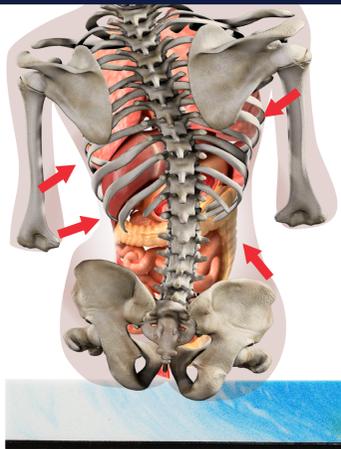
### Pressure

A vertical force that occurs at a 90° angle.



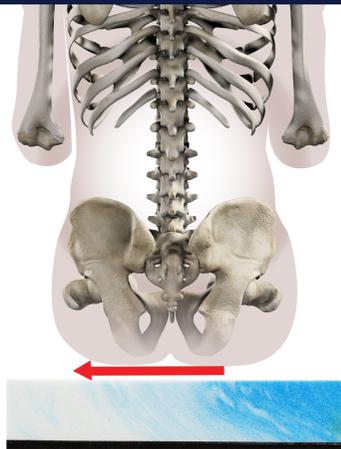
### Shear

Parallel forces, sometimes described as stretching forces occurring within the tissues near bony prominences.



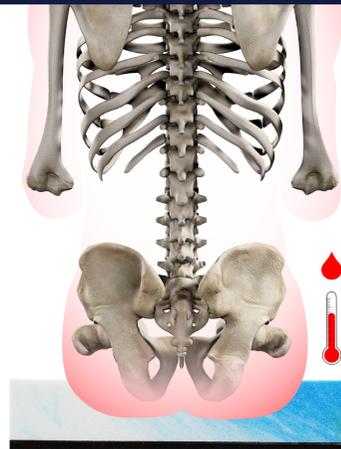
### Compression

Postural collapse that can impede the function of the internal organs.



### Friction

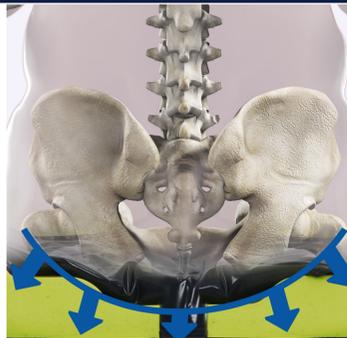
The resistance that arises when one surface rubs against another.



### Temperature/Moisture

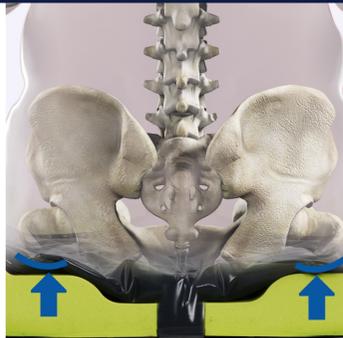
Raised body temperature and higher humidity that can contribute to tissue damage.

## MATRX® - UNIQUE DESIGN



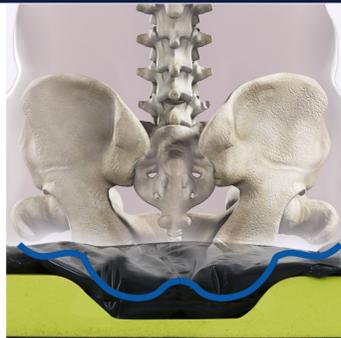
### Immersion

Maximizes surface contact area in order to reduce peak pressures. Pressure = Force/Area.



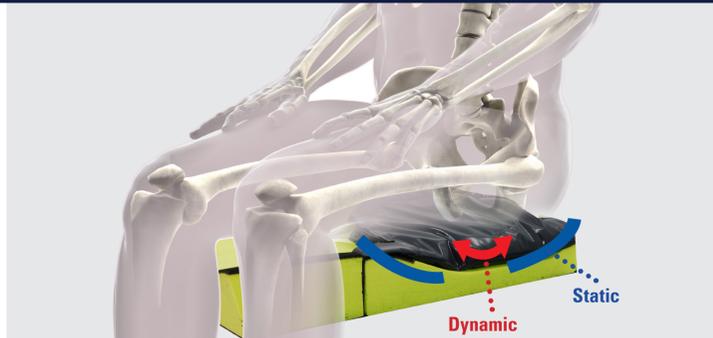
### Off-Loading

Transfers forces away from the ischial tuberosities with greater weight bearing on the trochanters, hips and thighs.



### Envelopment

Material able to conform and completely surround the bony prominences, even during position changes.



### Shear Management

Static: Support surface contour that prevents sliding and downward migration of the pelvis.

Dynamic: Flow of materials surrounding the bony prominences during functional activities such as wheelchair propulsion, accommodating movement within a specific range.

### Pelvic Stability

Contouring of the pelvic well provides lateral trochanteric support and anterior/posterior pelvic stability, promoting spinal extension for improved upper extremity function, head control and physiological function.



### Adjustability

Ability to modify the Invacare® Matrx® cushions to accommodate or correct postural issues or changes over time.

## OTHER FACTORS TO CONSIDER

- Many internal factors impact general health and the body's ability to deliver oxygen to the tissues – cardiac, respiratory, digestive etc. User health is also affected by lifestyle factors such as smoking, nutrition, exercise, etc.
- Repositioning is an important part of a skin health program - through user weight shifts and/or position changes
- Optimal product design should provide consistent performance in various environmental conditions such as altitude, heat, cold etc.
- Product performance will be greatly impacted by any necessary product maintenance requirements

### Invacare Matrx Seating Objectives

- Facilitate postural stability while allowing purposeful movement to promote effective function and support healthy resting postures.
- Respect 3 dimensional anatomical shapes, working to match contours for optimal support and pressure redistribution.
- Wherever possible, support postures from within the contours of the seating system in order to maintain skin integrity and to promote stability, balance and function, complemented with additional external components as needed.

### Invacare Matrx Guiding Principles

- The effect that seated posture has on breathing and swallowing should be a primary concern.
- Long term sitting can cause secondary complications such as tissue trauma, back and neck pain, postural deformities and joint contractures.
- A comprehensive evaluation, including a physical assessment in both supine and sitting, is the foundation of all effective seating solutions.
- The position of the pelvis directly impacts the spine, which in turn influences the position of the head and extremities.
- The pelvis is the foundation for seated function and the PSIS must be supported in order to achieve postural control.
- Determining if a posture is fixed or flexible is vital for selecting appropriate seating solutions.
- The opportunity to trial seating solutions in static and dynamic situations is important for identifying the most effective overall seating solution.

For more information, visit [www.invacare.com](http://www.invacare.com).

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SEATING SERIES