

# Wheelchair Cushion Fact Sheet

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## Fact Sheet

Produced by



A Special Interest Group of



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A wheelchair cushion provides the user a base from which their wheelchair positioning stems from, with comfort, pressure relief and ulcer prevention, shock absorption, and assists with postural alignment to improve user function. A pressure ulcer can develop when prolonged pressure is placed over a bony prominence which leads to skin, muscle, and vessel breakdown. Individuals with sensation deficits, paralysis, and difficulty with skin integrity are at higher risk for the development of pressure ulcers.

## Cushion Types and Considerations

**Foam**<sup>1</sup>: Foam cushions provide structure and stability and can conform to each user's body type individually. Foam cushions are easy to transport and lightweight.

Advantages:

- Lightweight & generally low maintenance
- Available in a wide variety of sizes, densities, thickness
- Affordable, least expensive

Disadvantages:

- Fairly quickly can lose their shape & deform under a load
- May need frequent replacement<sup>2</sup>
  - Visual inspection<sup>3</sup> – Reduced cushion height, wearing of the cover, position of patient in wheelchair (pelvic obliquity), crumbling, or mold may indicate need for replacement.
- Increase in temperature & moisture retention<sup>4</sup>
- Can develop an odor & can't be washed
- Less apt to distribute pressure compared to air & gel cushions<sup>5,6</sup>

**Air**<sup>1</sup>: Commonly used to disperse weight to avoid prolonged pressure. The cushion consists of cells or chambers which are inflated with air to fit each individual.

Advantages:

- Air can travel between cells which allows the cushion to contour to the user as they move<sup>7</sup> or be locked in certain chambers to provide specific pressure relief to specific areas.
- Provides shock absorption and is lightweight
- Cells are adjustable for each user.<sup>2,7</sup> Cells can be shorter or higher.

Disadvantages

- More expensive but will unload more pressure than foam cushions.<sup>5</sup>
- Cells can deflate which will require refilling.
- Cushion must be inflated correctly with manual pump to have pressure relieving effects.<sup>2,7</sup>
- Higher maintenance; requires knowledgeable user.
- Frequently, harder to transfer on/off<sup>2</sup>
- Requires user to have postural stability because it does not provide postural correction/stability.<sup>2</sup> Great for pressure relief, not for positioning.

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**Honeycomb<sup>1</sup>:** This type of cushion is formed in matrix pattern similar to honeycomb. Made from thermoplastic, the honeycomb cushion remains lightweight and flexible.<sup>1</sup>

Advantages:

- Lightweight, flexible, & easy to clean
- Increases airflow and temperature regulation compared to a foam cushion.
- Decreased moisture retention<sup>2</sup>

Disadvantages:

- Increased potential shear force which can cause damage to skin.
- May not provide adequate pressure relief for many people with spinal cord injury presentations – specific users.

**Gel<sup>1</sup>:** Gel cushions have a gel pocket surrounded by a foam base.

Advantages:

- Increased comfort with cooling effects
- Gel is located to alleviate weight from bony prominences
- May have a contoured base to provide better posture and stability
- Better for active individuals and will decrease shear forces<sup>2</sup>
- More expensive, provide better pressure distribution than foam<sup>2</sup>

Disadvantages:

- Heavy
- Gel pocket can leak
- May require gel to be redistributed back under bony prominences
- May be harder to transfer on/off

**Combination Air/Foam Cushion<sup>8</sup>:**

Advantages<sup>8</sup>:

- Stability of contoured foam & pressure relief of an air cushion
- Increased stability for transfers
- Can be used by patients with current skin breakdown or pressure ulcers

Disadvantages<sup>8</sup>:

- Not for those with significant pelvic asymmetry (>1 inch)
- Similar to cushions which are only foam or air

### **Patient Resources**

- Spinal Cord Essentials <http://www.spinalcordessentials.ca/>
- Patient Fact Sheets from the Model Systems Knowledge Translation Center:
  - <https://msktc.org/sci/factsheets/wheelchairs/Getting-The-Right-Wheelchair>
  - <https://msktc.org/sci/factsheets/maintenance-guide-users-manual-and-power-wheelchairs>

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