Wheelchair Cushion Fact Sheet

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**\(^1\): 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\(^2\)
    - Visual inspection\(^3\) – Reduced cushion height, wearing of the cover, position of patient in wheelchair (pelvic obliquity), crumbling, or mold
  - Increase in temperature & moisture retention\(^4\)
  - Can develop an odor & can’t be washed
  - Less apt to distribute pressure compared to air & gel cushions\(^5,6\)

**Air**\(^1\): 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.\(^7\) 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.\(^5,7\) Cells can be shorter or higher.
- **Disadvantages:**
  - More expensive, but will unload more pressure than foam cushions.\(^5\)
  - Cells can deflate which will require refilling.
  - Manual pump for inflation of cells; cushion must be inflated correctly to have pressure relieving effects.\(^2,7\) Higher maintenance; requires knowledgeable user.
  - Increase in temperature & moisture retention.\(^4\)
  - Requires user to have postural stability because it does not provide postural correction/stability.\(^2\) Great for pressure relief, not for positioning.
  - Frequently, harder to transfer on/off\(^7\)
Honeycomb\(^1\): This type of cushion is formed in matrix pattern similar to honeycomb. Made from thermoplastic, the honeycomb cushion remains lightweight and flexible.\(^1\)

Advantages:
- Lightweight, flexible, & easy to clean
- Increases airflow and temperature regulation compared to a foam cushion.
- Decreased moisture retention\(^2\)

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\(^1\): Gel cushions have a gel pocket surrounded by a foam base.

Advantages:
- Increased comfort with cooling effects
- Gel is located to alleviates weight from bony prominences
- May have a contoured base to provide better posture and stability
- Better for active individuals and will decrease shear forces\(^2\)
- More expensive, provide better pressure distribution than foam\(^2\)

Disadvantages:
- Heavy and 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\(^8\):

Advantages:\(^8\)
- 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:\(^8\)
- Not for those with significant pelvic asymmetry (>1 inch)
- Similar to cushions which are only foam or air

Patient Resources

https://mskte.org/sci/factsheets/wheelchairs/Getting-The-Right-Wheelchair

References: