Wheelchair options: Manual to Power

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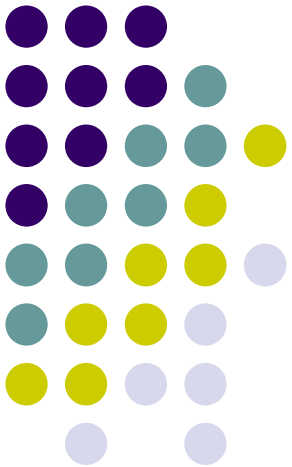

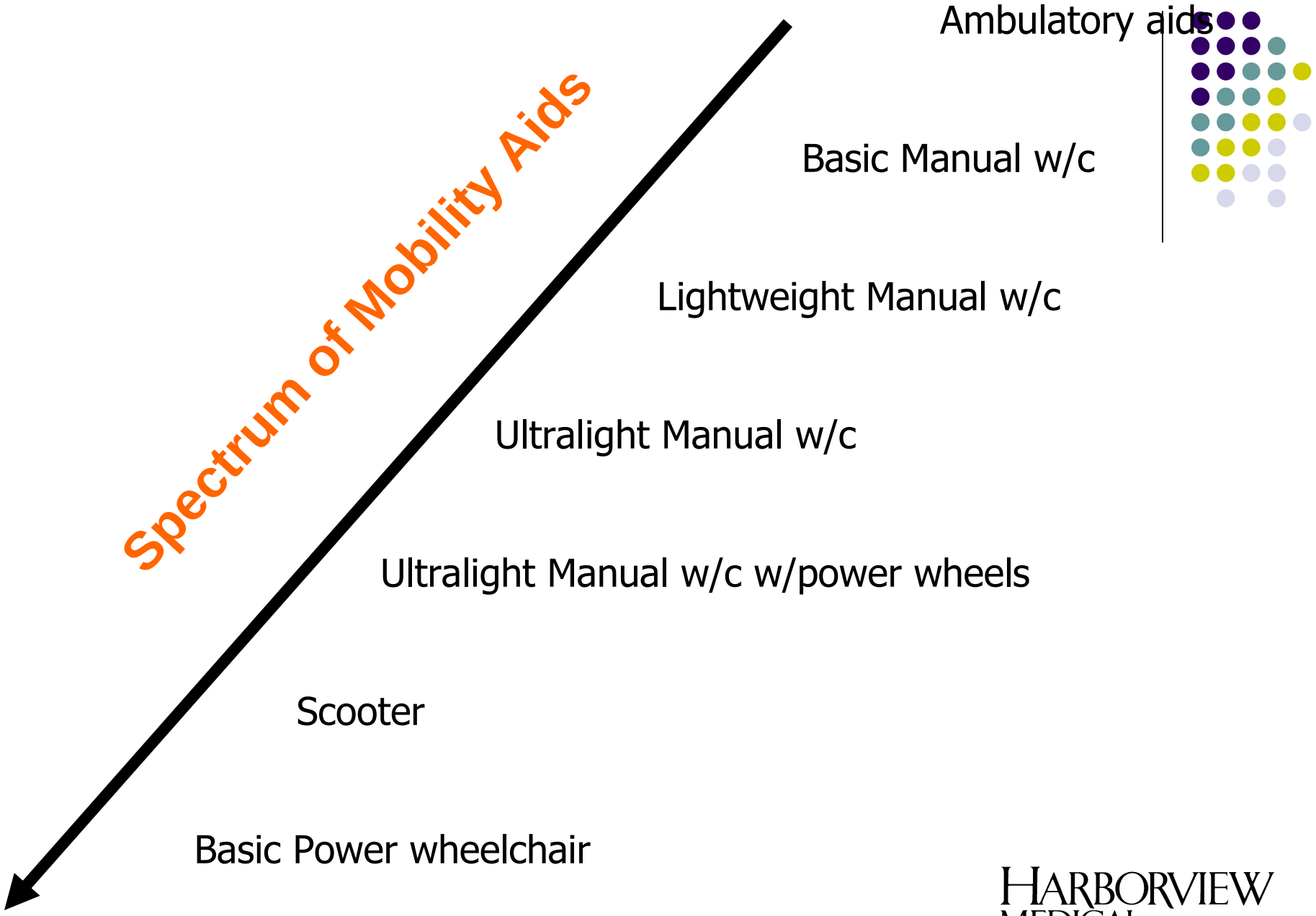

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Manual Wheelchair

- Standard (>40lbs)
- Lightweight (30-40lbs)
- Ultralight (16-30lbs)

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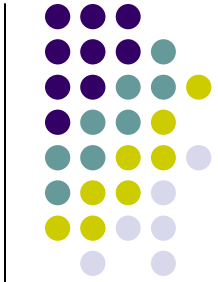
Manual wheelchairs



- Frame style
  - Folding
  - Rigid
- Frame materials
  - Steel
  - Aluminum
  - Titanium

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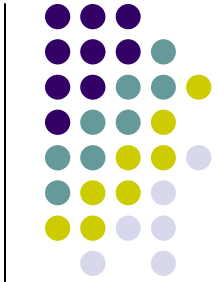
Adjustment features

- Seat to floor heights
- Back height
- Back angle
- Footplate angle
- Camber of wheels

Accessories / Options



- Backrests
- Cushions
- Camber
- Front end angles
- Push handles
- Anti-tippers
- Caster size
- Footplate
- Bags/Lights/etc.

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Backrest Options

- Sling
- Tension
- Solid
  - Height / width
  - Lateral support
  - Material
  - Mounting position

Postural considerations

- Scoliosis
- Kyphosis
- Lateral asymmetries
- Motor Trunk control
- Stabilization for function
- Stabilization for transfers

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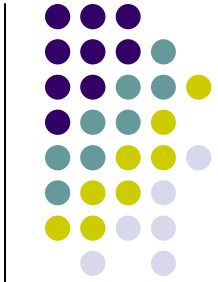
Cushions



- Platform for which movements are performed
- Address tissue integrity and load distribution
- Hundreds available to choose from – classified by pressure relieving and positioning qualities

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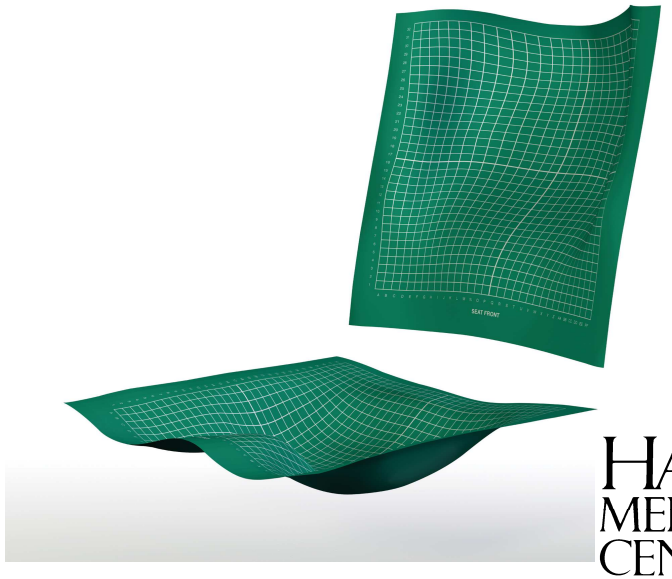
Cushion materials / options

- Foam
- Visco-elastic foam
- Visco-elastic fluid
- Air cushion
- Solid elastomer and solid gel

Pressure Mapping

- Goals:
  - Identifying peak pressures
  - Assisting with cushion / backrest determination
  - Evaluating asymmetries
  - Patient Education



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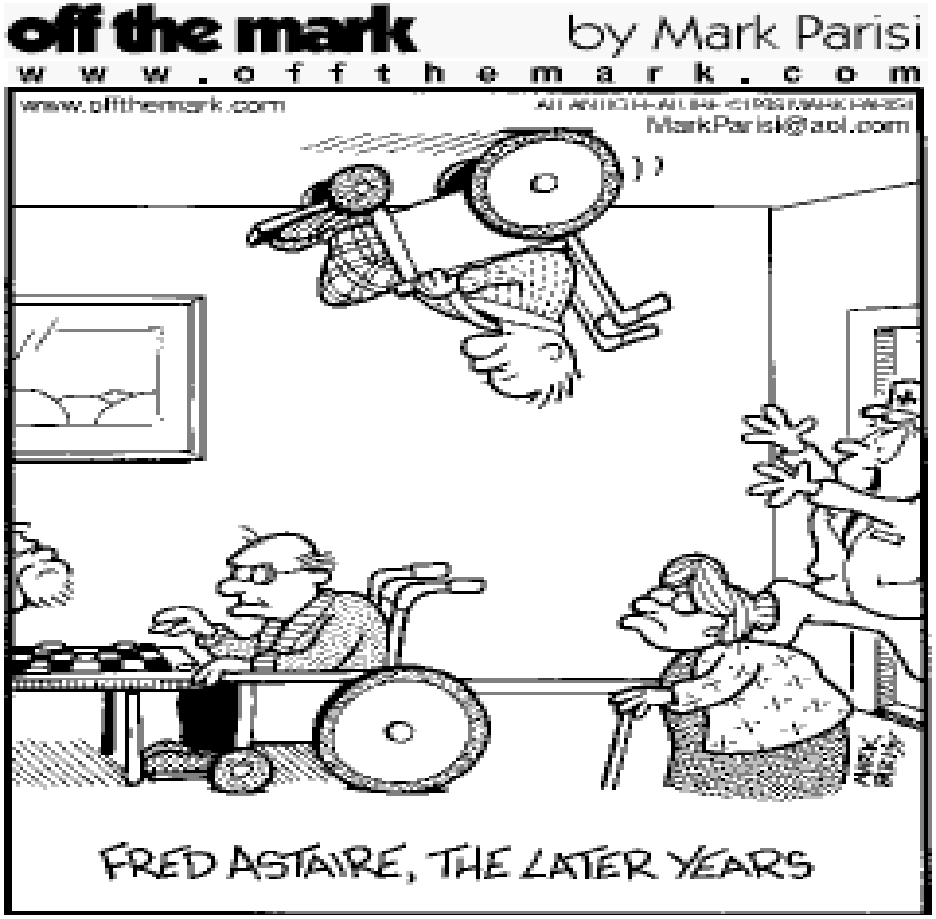
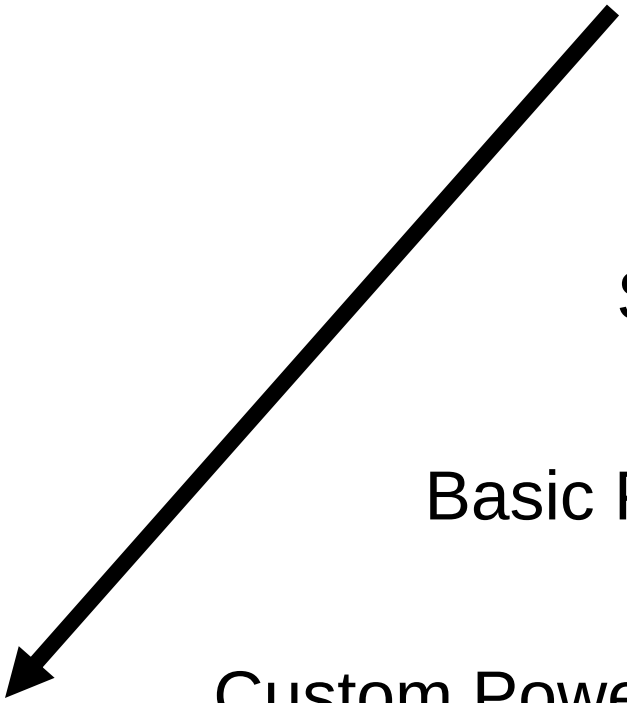
Meeting the needs of the client

- Maximize function
- Optimize seating and positioning
- Integrate AT needs / Long term needs
- Funding issues: current and future



Powered Mobility



Manual w/c w/ power wheels

Scooter

Basic Power wheelchair

Custom Power wheelchair

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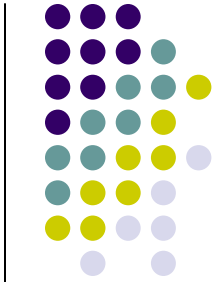
Why Power?



- Client unable to functionally propel manual wheelchair in all necessary situations.
- Cardiopulmonary function not adequate for manual wheelchair propulsion.
- Client requires power pressure relief.
- Work / school activities.

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Power Mobility Considerations

- Environment
- Daily activity needs
- Transportation
- Energy conservation
- Joint protection and pain management
- Pressure relief options
- Cognitive functioning

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Types of Power Mobility

- **Power-assist push rims on manual wheelchairs**
  - These help to extend the length of distance traveled per stroke, thereby increasing manual wheelchair user efficiency.

Scooters

- Excellent for clients who need assistance with community mobility only, have use of bilateral upper extremities, have good trunk control, and no seating/positioning needs. Limited maneuverability.

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Power Bases

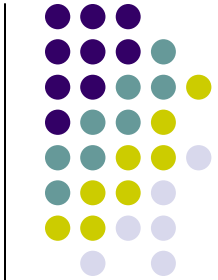
- **Base performance based on client's abilities**

MID WHEEL

REAR WHEEL

FRONT WHEEL

Performance Comparisons



REAR WHEEL DRIVE

-Largest turning radius, least maneuverable

-Highest outdoor speed and power

-Rough but powerful obstacle handling

-Anti tips needed with steep inclines

MID WHEEL DRIVE

-tightest turning radius, excellent maneuverability

-Requires auxiliary wheels to limit tippiness

-Smooth obstacle management with front caster suspension

-Hill management good, but traction decreases with steeper inclines

FRONT WHEEL DRIVE

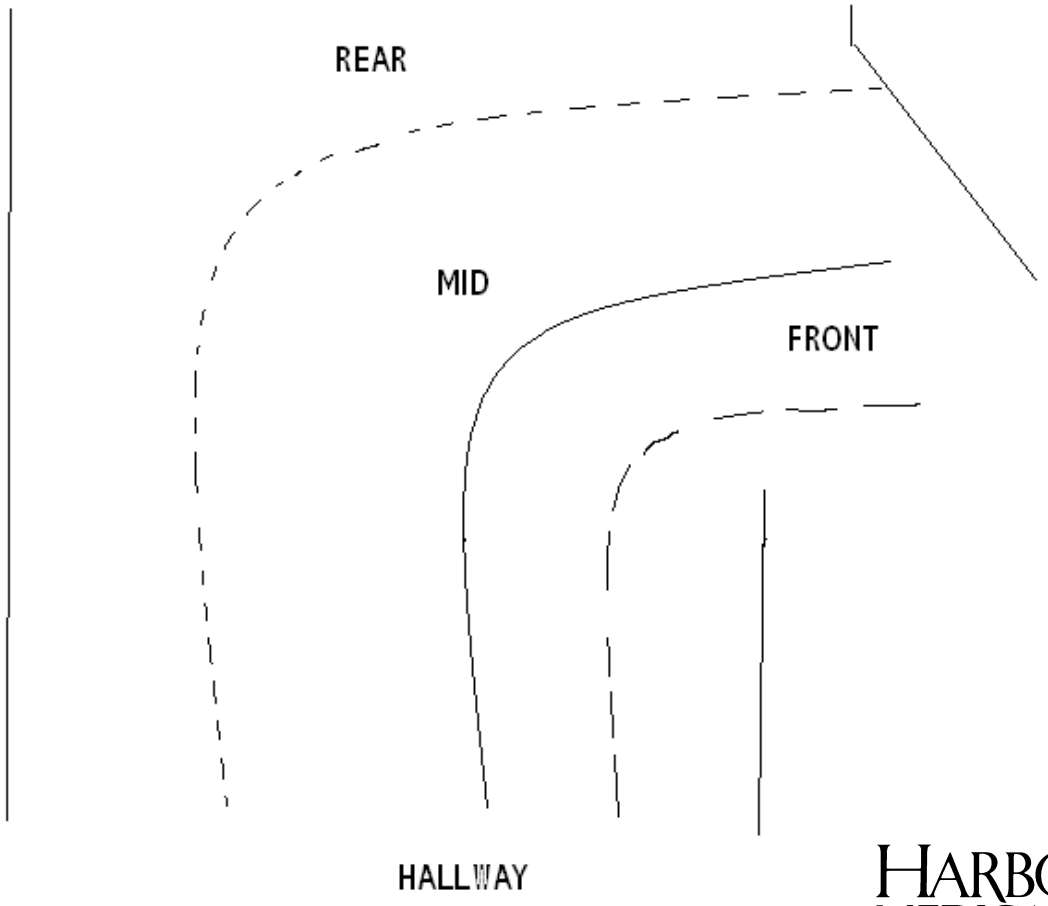
-Good maneuverability, smallest front turning radius

-Back end fish tails at high speeds, difficult to learn backing up

-Stable uphill / downhill without anti-tippers also loses traction w/steep incline

-Smooth obstacle handling (smaller height) , but has chance to high center

Front-turning radius



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Power Mobility plus…

- **Independence iBOT**.
  - Standard function – for daily mobility
  - 4-wheel drive function – for rough terrain
  - Balance function – rises vertically onto two wheels
  - Stair climb function – ascends/descends

- 4 x4 Innovation in Motion