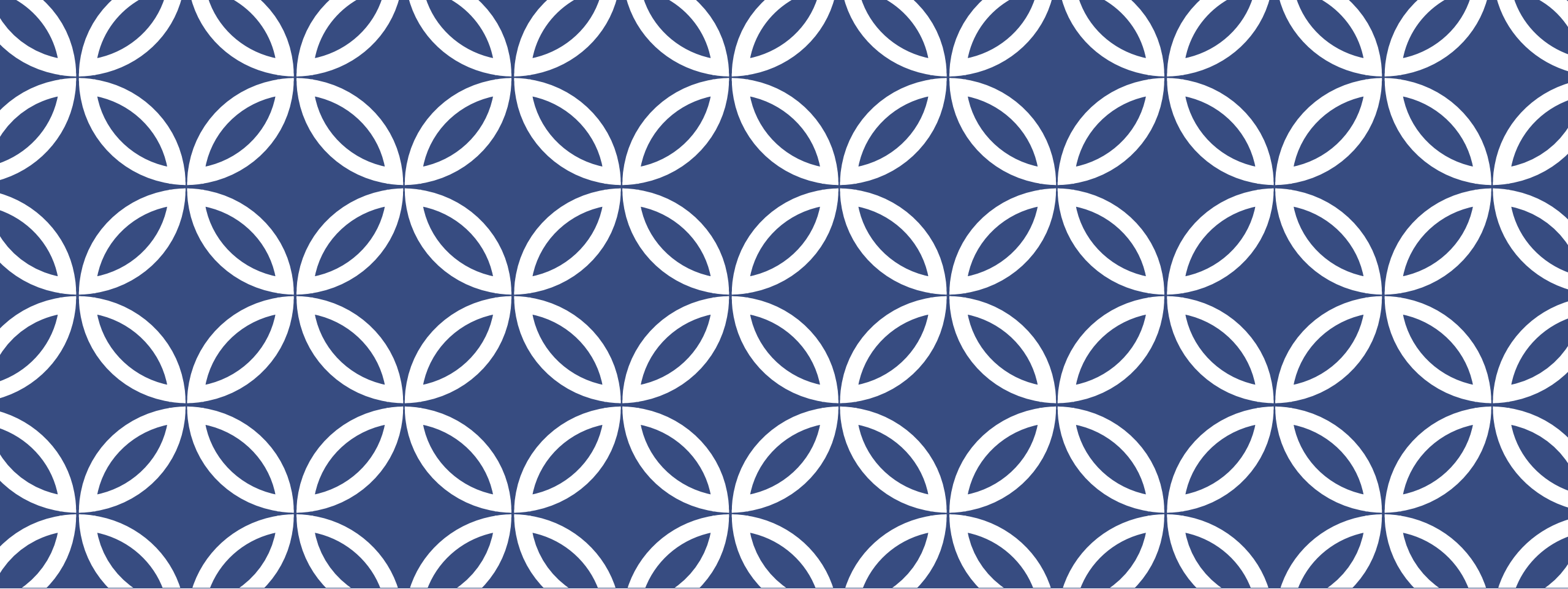




# WHEELCHAIR & SEATING ASSESSMENTS

OT9552 Caring for Self and Others  
Rebecca Timbeck

# THE PLAN FOR THE NEXT 2 CLASSES...

Why seating assessments?

Mat assessments and common postural tendencies

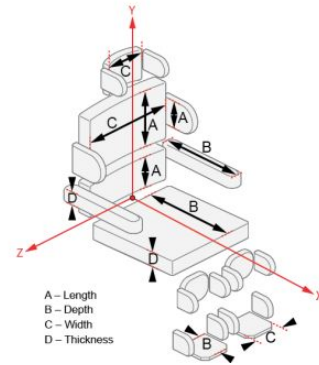
Wheelchair fit, measurement and prescription considerations

Wheelchair assessment and funding application

# REMEMBER IN OT9501, WE LEARNED ABOUT...

- Anatomy, including pelvic and spinal positioning
- Seating and wheelchair assessment interview
- Pressure Injuries
- Seating Terminology
- Basic seating assessment requirements (i.e. measurements)
- Funding criteria and options through Ontario Ministry of Health, Assistive Devices Program (ADP) (reviewed on the final 12 slides of this presentation)
- Wheelchair mobility skills

# SEATING RESOURCES



**A CLINICAL APPLICATION  
GUIDE TO STANDARDIZED  
WHEELCHAIR SEATING  
MEASURES OF THE BODY AND  
SEATING SUPPORT SURFACES**  
Revised Edition



Supported by Grant #668 from the PVA Education Foundation

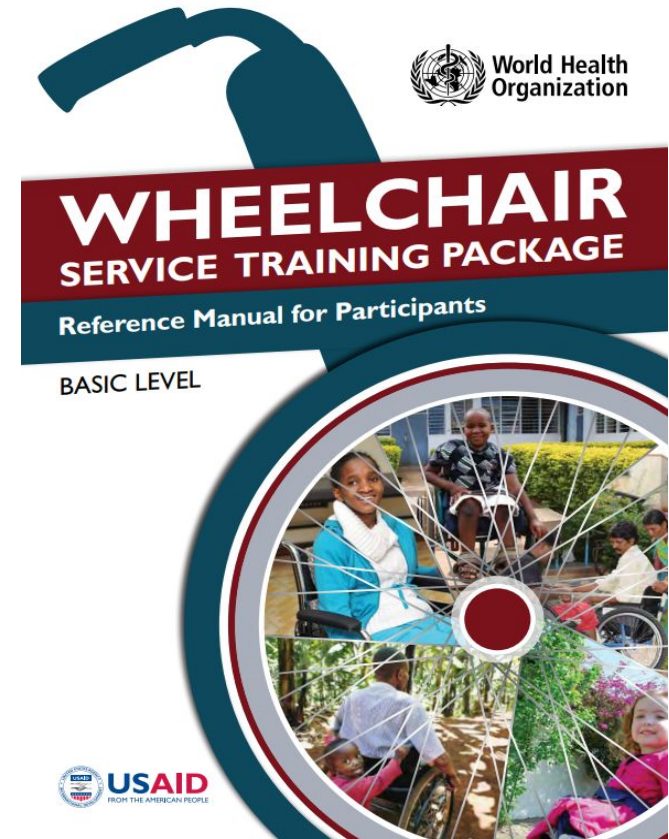


Assistive Technology Partners  
SCHOOL OF MEDICINE  
UNIVERSITY OF COLORADO ANSCHUTZ MEDICAL CAMPUS

Waugh, K., & Crane, B. (2013). *A Clinical Application Guide to Standardized Wheelchair Seating Measure of the Body and Seating Support Surfaces, 3<sup>rd</sup> Edition*.

Retrieved from:

<https://www.ncart.us/uploads/userfiles/files/GuidetoSeatingMeasuresRevisedEdition.November2013.pdf>



Frost, S. et al. (2012). *World Health Organization: Wheelchair Service Training Package - Basic level*. WHO Press. Geneva, Switzerland. Retrieved from:  
[https://apps.who.int/iris/bitstream/handle/10665/78236/9789241503471\\_reference\\_manual\\_eng.pdf?sequence=1](https://apps.who.int/iris/bitstream/handle/10665/78236/9789241503471_reference_manual_eng.pdf?sequence=1)

# WHERE DO SEATING ASSESSMENTS OCCUR?

- Not in Acute Care
- Sometimes in Rehabilitation
- Often in community or out-patient program



# GOALS FOR WHEELCHAIR AND SEATING

1. Improve mobility
2. Improve upper extremity function
3. Improve postural alignment; reduce/maintain progression of postural deformities
4. Improve respiratory function
5. Improve feeding and swallowing
6. Improve comfort
7. Improve social interaction and self-esteem
8. Maintain and/or improve skin integrity

# WHY IS WHEELCHAIR POSITIONING IMPORTANT?

- Allow for engagement in meaningful activities and occupations!
- Allow for maximum ADL function (whether being performed by the client or caregiver)
- Optimize trunk and pelvic stability and alignment to stop unwanted movement
- Prevent falls and wound development





Occupational Engagement  
Challenges?

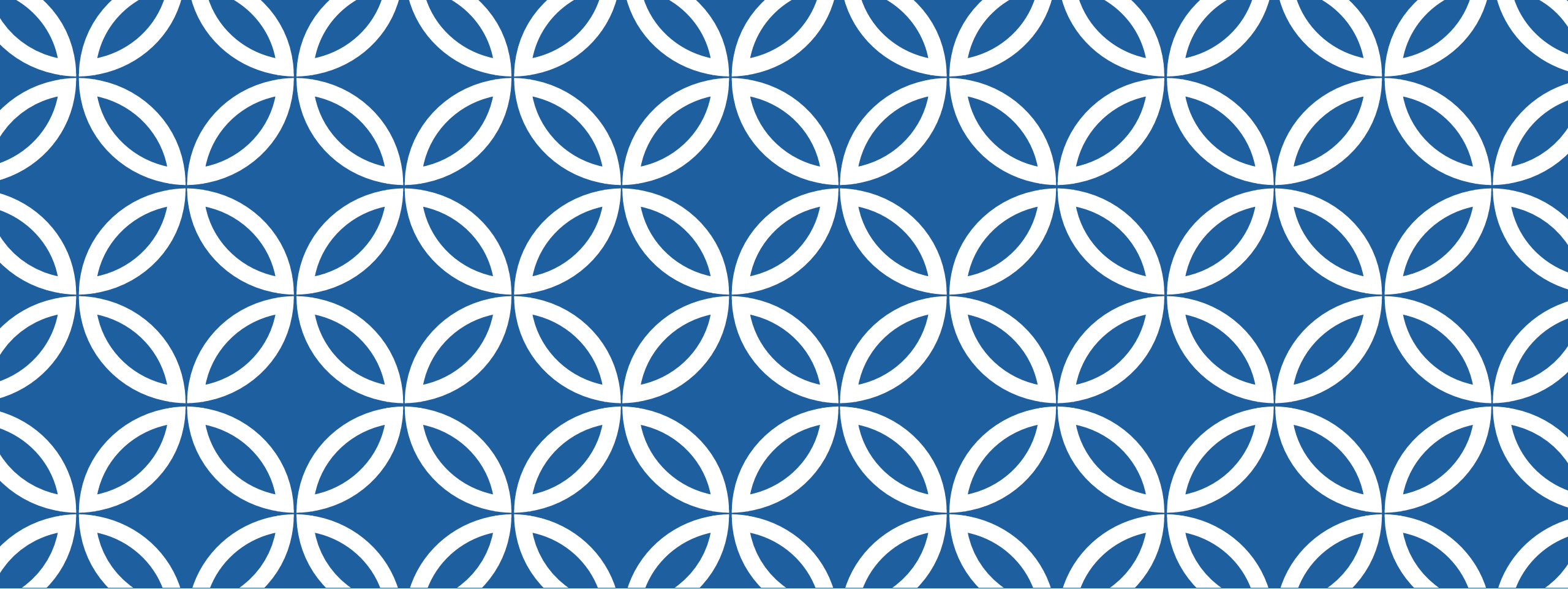


# HEALTH RISKS OF POOR POSITIONING:

- Decreased respiration
- Decreased digestion
- Increased risk for aspiration
- Decreased communication
- Decreased visual field
- Bladder issues
- Isolation and depression
- Wounds
- Increased risk for contracture development

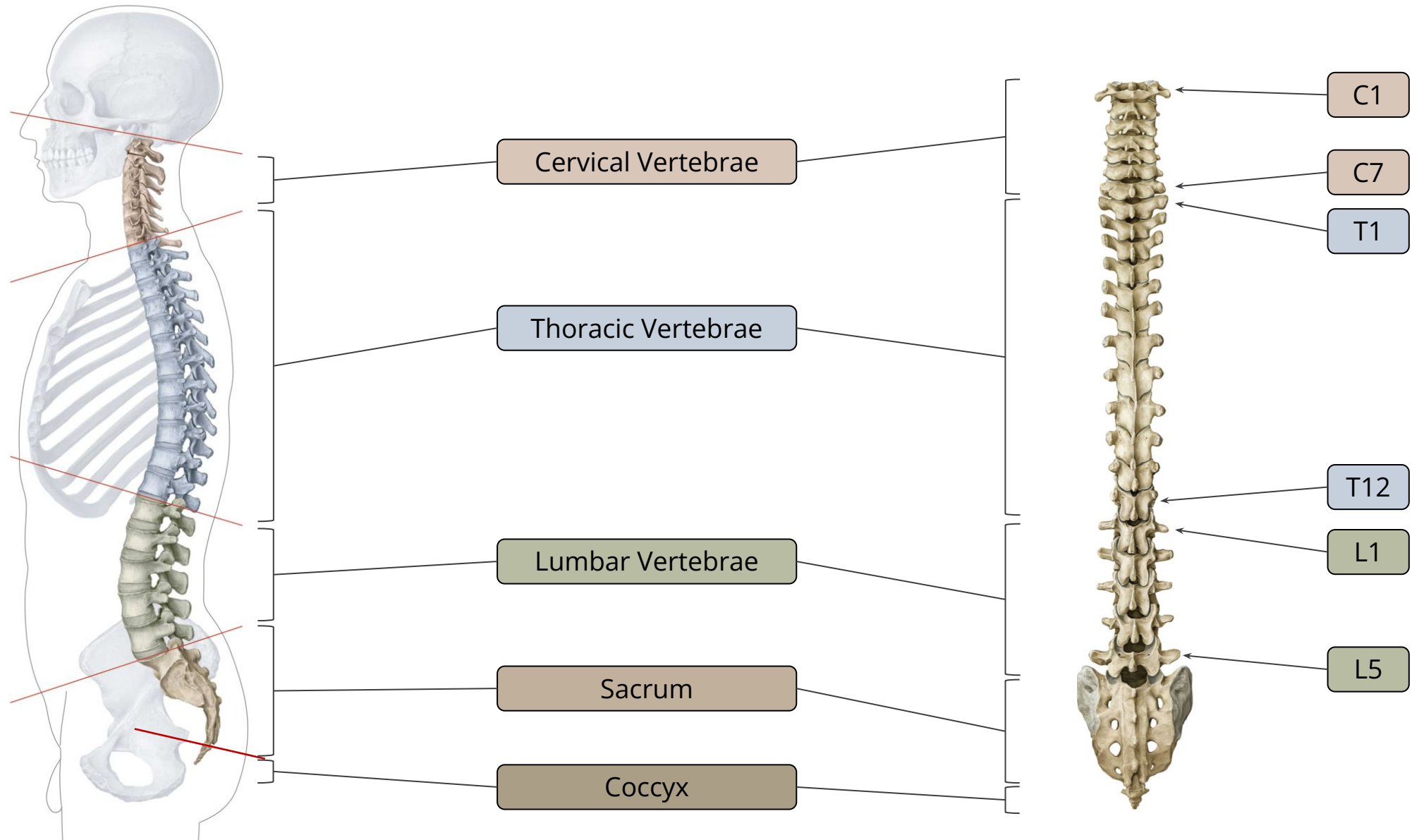
# IN ORDER TO ACHIEVE SEATING GOALS, ONE MUST...

- Address the influence of pathological reflexes and pathological tone
- Provide support as necessary to substitute for muscle groups that may not be functioning
- Respect orthopedic limitations
- Respect client's level of functioning, especially when considering method of propulsion
- Respect lifestyle of client/caregivers, and the environment in which they function
- Respect the client's age and level of ability

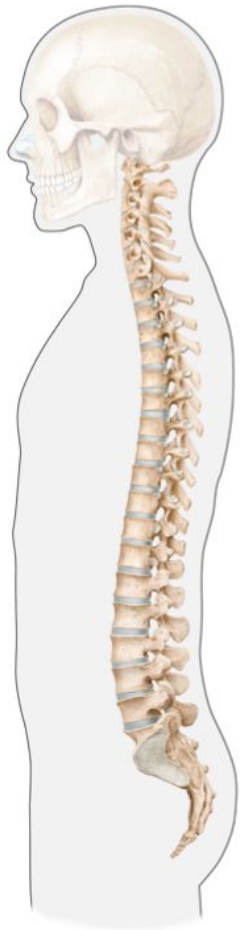


**SETTING THE STAGE....**

# VERTEBRAL COLUMN



# ABNORMAL VERTEBRAL CURVES



Normal



Excessive Kyphosis



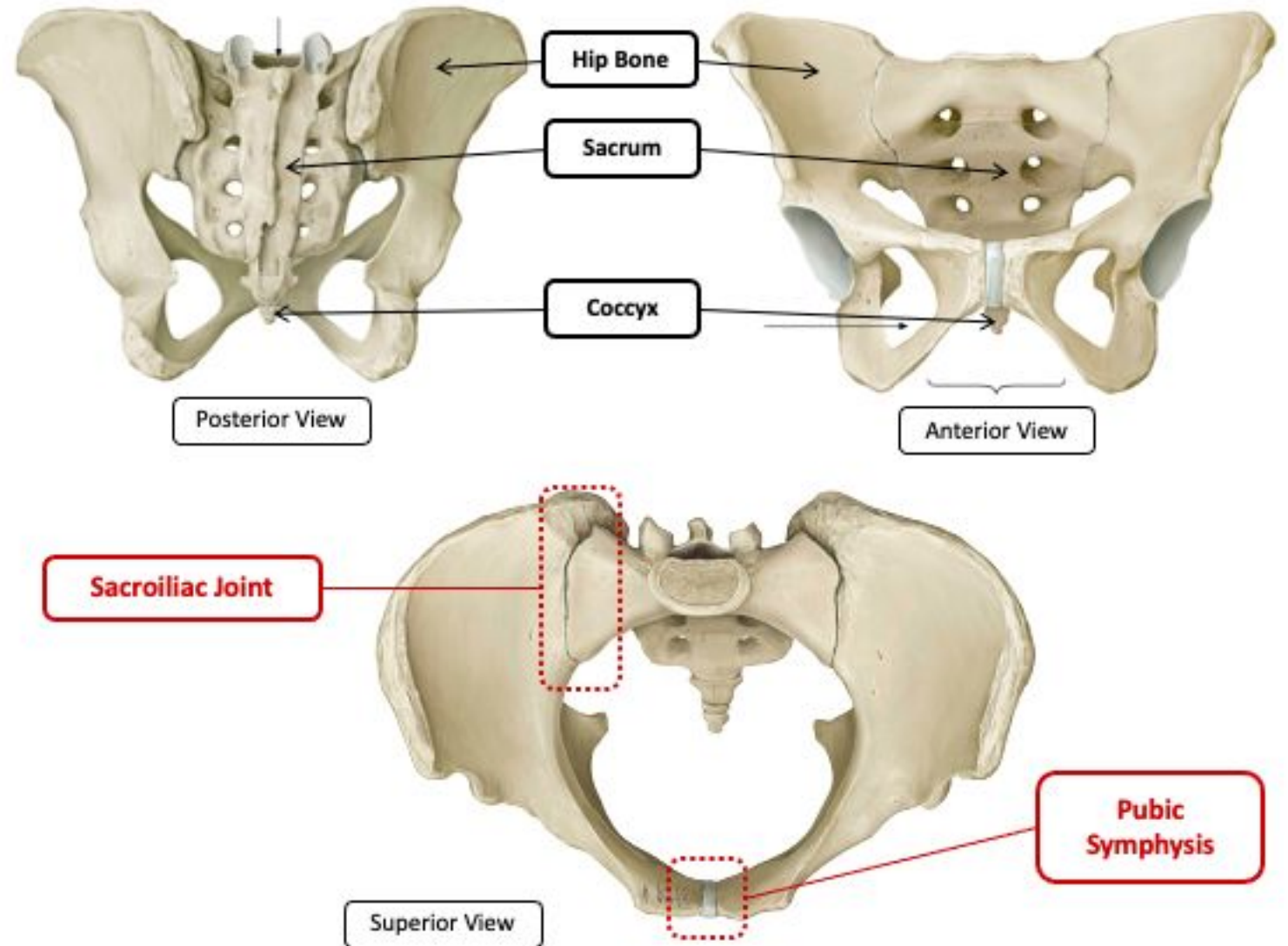
Excessive Lordosis



Scoliosis



# REVIEW OF THE PELVIS

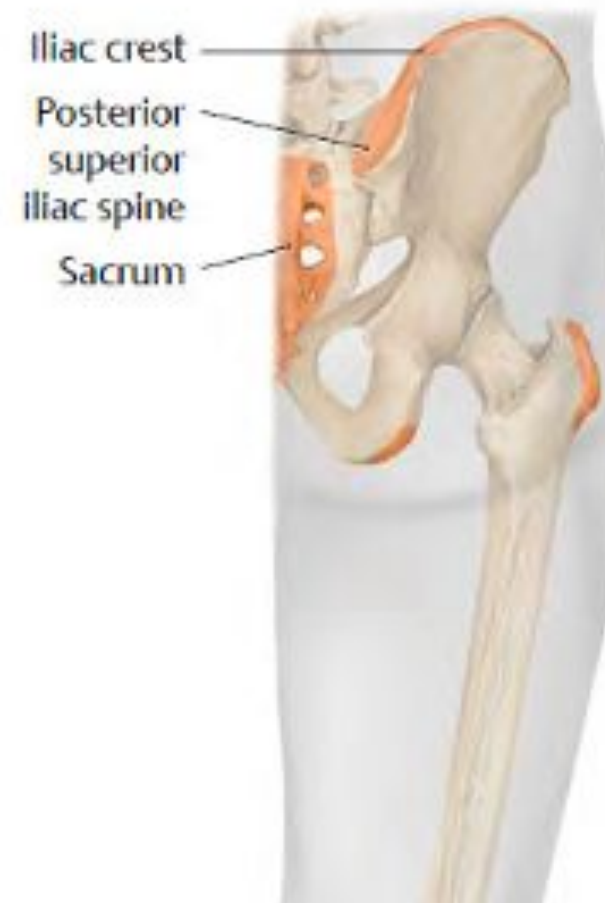


# REVIEW OF THE PELVIS: SURFACE ANATOMY

Anterior view



Posterior view





# WHO NEEDS A WHEELCHAIR ASSESSMENT AND WHY?

A person usually needs a wheelchair if:

- they cannot walk
- they can walk, but:
  - with difficulty
  - only for a short distance
  - only for portions of the day

# WHO NEEDS A WHEELCHAIR ASSESSMENT AND WHY?

Why complete a wheelchair and seating assessment?

- gather information – person, environment and occupations
- choose the most appropriate wheelchair for the wheelchair user
- choose the most appropriate wheelchair components from those available;
- ensure the chosen equipment fits within their environment
- find out what training the wheelchair user and/or the family need to make the best use of the wheelchair

# WHO NEEDS A WHEELCHAIR ASSESSMENT AND WHY?



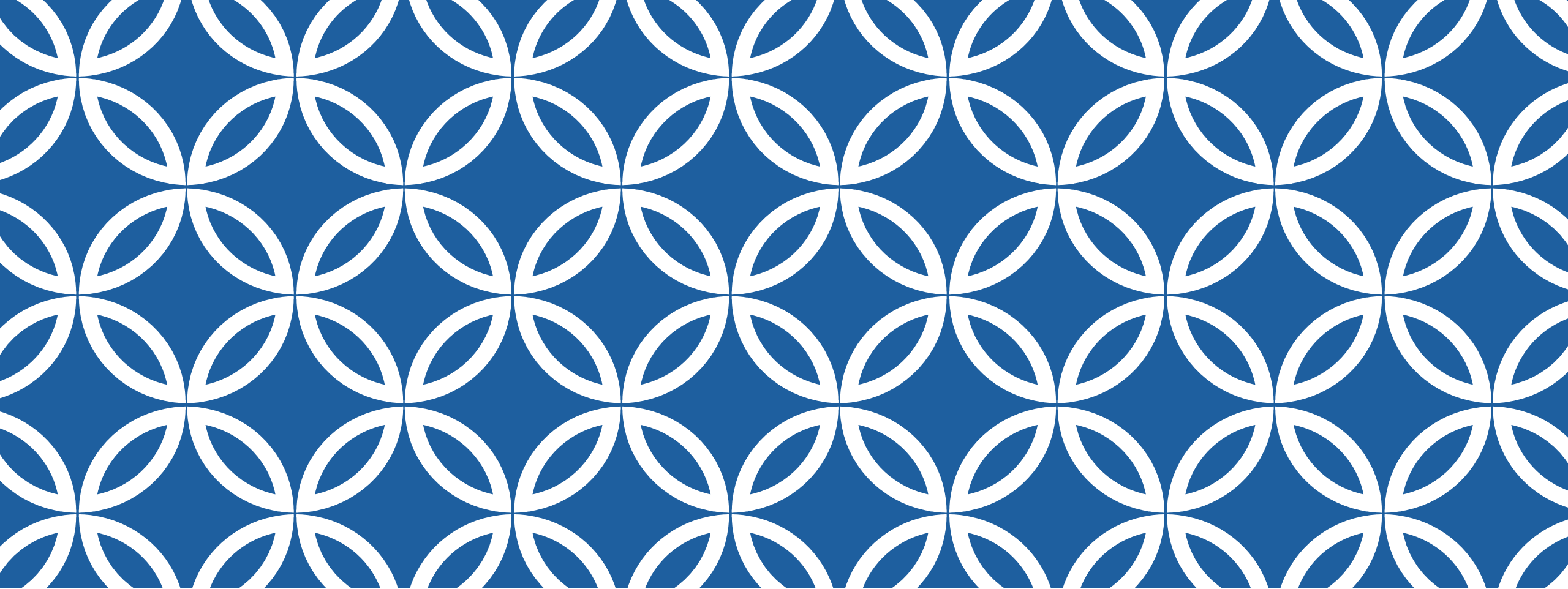
Still stumped on whether or not your patient needs wheeled mobility? Here are scenarios where wheeled mobility could significantly increase a person's quality of life:

- They can ambulate but are at high risk of falls
- They have frequent urge incontinence because they are unable to get to the restroom on time
- Their O<sub>2</sub> saturations drop below or heart rate increases above a safe range with ambulation
- Their day consists of sitting in a recliner and transferring to a bedside commode as needed

# WHO: 8 STAGES OF THE SEATING AND WHEELCHAIR ASSESSMENT PROCESS

1. Referral and appointment
2. Assessment
3. Prescription (selection)
4. Funding and ordering
5. Product preparation
6. Fitting
7. User training
8. Follow-up, maintenance and repairs

(World Health Organization, 2008)



INTERVIEW

# SEATING AND WHEELCHAIR ASSESSMENT INTERVIEW

If a person already has a wheelchair:

- Does the wheelchair meet the user's needs?
- Does the wheelchair meet the user's environmental conditions?
- Does the wheelchair provide proper fit and postural support?
- Is the wheelchair safe and durable?
- Does the cushion provide proper pressure relief (if user has pressure sore risk)?

If “yes” to all questions, the user may not need a new wheelchair. If “no” to any of these questions, the user needs a different wheelchair or cushion; or the existing wheelchair or cushion needs repair or modifications

# SEATING AND WHEELCHAIR ASSESSMENT INTERVIEW (CON'T)

- Consent
- Client/caregiver concerns and goals
- Mobility and function
- Comfort/pain?
- Posture/positioning/repositioning?
- Skin concerns and/or pressure sores
- Current equipment not meeting basic and essential needs (i.e. change of status or repair needs)



# SEATING AND WHEELCHAIR ASSESSMENT INTERVIEW (CON'T)

- Medical history
- Personal Care Needs
- Hearing/Vision
- Augmentative Communication Needs
- Feeding and Swallowing Concerns
- Vocation and Leisure Needs (not ADP funded)

# SEATING AND WHEELCHAIR ASSESSMENT INTERVIEW (CON'T)

What is the client's current:

- |                                                |                                                 |
|------------------------------------------------|-------------------------------------------------|
| <input type="checkbox"/> Sitting tolerance     | <input type="checkbox"/> Method/Ability to Self |
| <input type="checkbox"/> Comfort/Pain          | <input type="checkbox"/> Propel                 |
| <input type="checkbox"/> Ability to reposition | <input type="checkbox"/> Transfer method        |
| <input type="checkbox"/> Safety                | <input type="checkbox"/> Residence              |
| <input type="checkbox"/> Skin condition        | <input type="checkbox"/> Transportation methods |

# SEATING AND WHEELCHAIR ASSESSMENT INTERVIEW (CON'T)

## Residence and Community Access:

- ☐ Type of residence (house, apartment, rent vs. own)
- ☐ Entrance to and accessibility within the home
  - ☐ Level entrance
  - ☐ Stairs, Ramp, Lift
  - ☐ Doorways
  - ☐ Flooring
  - ☐ Turning radius
- ☐ Outdoor surfaces - paved versus gravel; even versus uneven, curb cut outs
- ☐ Work and/or school environments
- ☐ Vehicle access

# SEATING AND WHEELCHAIR ASSESSMENT INTERVIEW (CON'T)

## Funding Options:

- ☐ ADP
- ☐ March of Dimes
- ☐ Veterans Affairs Canada (VAC)
- ☐ Workplace Safety and Insurance Board (WSIB)
- ☐ Insurance
- ☐ Easter Seals
- ☐ Disability Groups

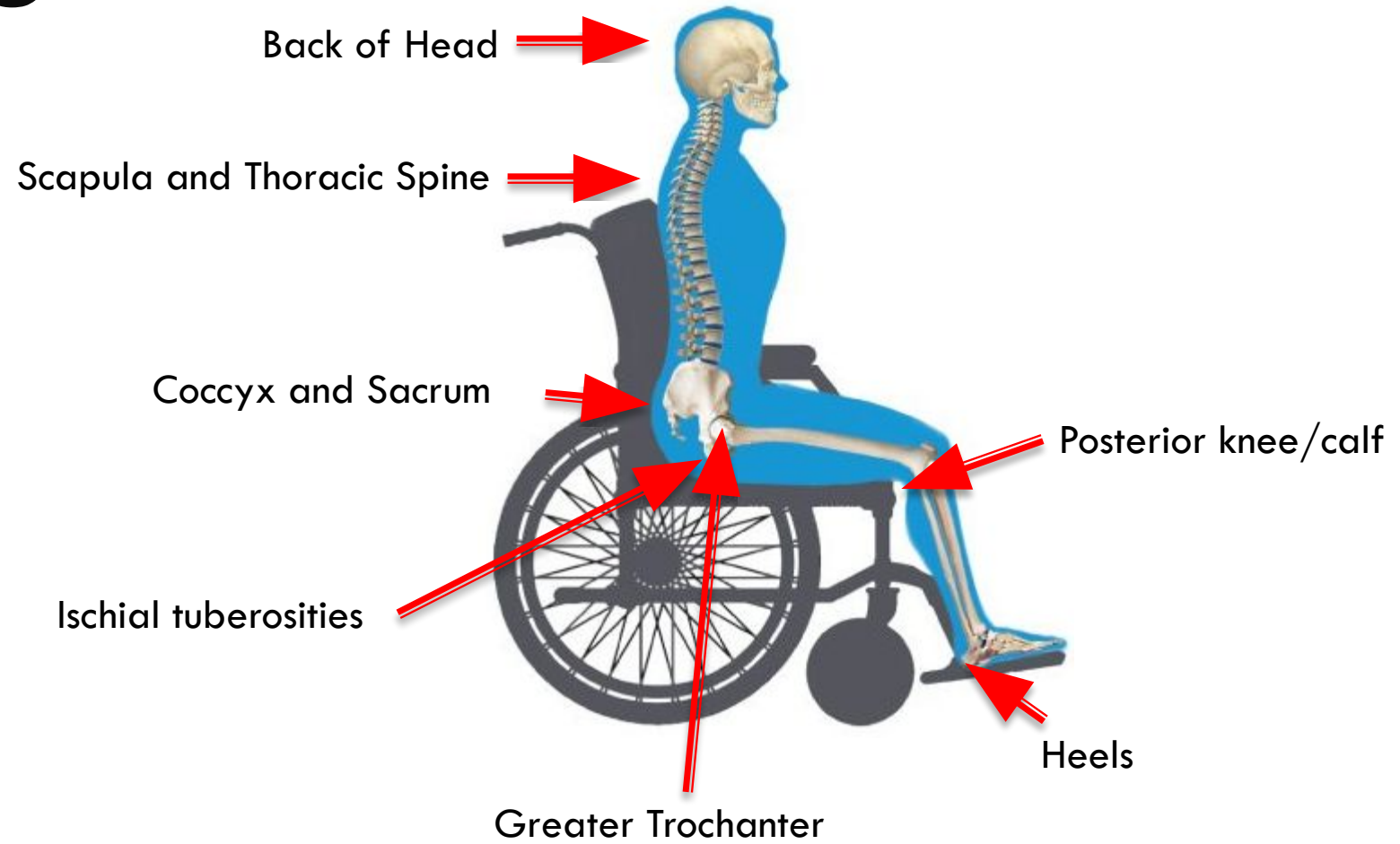
# REMEMBER....

## PRESSURE INJURIES

“A pressure injury is localized damage to the skin and underlying soft tissue usually over a bony prominence or related to a medical or other device. The injury can present as intact skin or an open ulcer and may be painful. The injury occurs as a result of intense and/or prolonged pressure or pressure in combination with shear. The tolerance of soft tissue for pressure and shear may also be affected by microclimate, nutrition, perfusion, co-morbidities and condition of the soft tissue.”

<http://www.npuap.org/resources/educational-and-clinical-resources/npuap-pressure-injury-stages/>

# SKIN HEALTH: AREAS AT RISK FOR PRESSURE INJURIES IN SITTING



# REMEMBER.... PRESSURE

Pressure is the applied force over an area

$$P = F/A$$

To decrease the effects of pressure:

Decreased the magnitude of the force

Increase the area of application

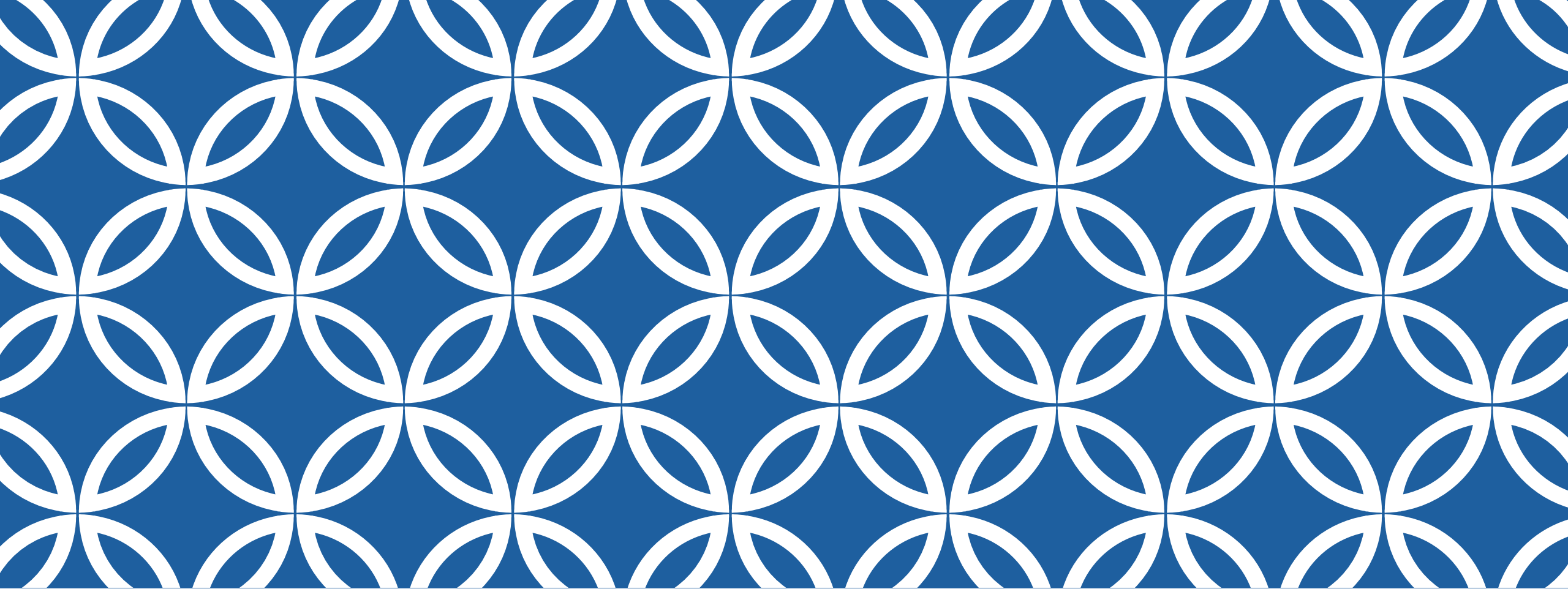
Decrease the time of application



# RISK FACTORS

- Impaired mobility
- Seated posture
- Impaired sensation/neuropathy
- Diseases that affect blood flow
- Age
- Fragile skin
- Urinary or fecal incontinence
- Poor nutrition or dehydration
- Decreased mental awareness
- Obesity





# PHYSICAL ASSESSMENT

# WHERE DO I COMPLETE A WHEELCHAIR ASSESSMENT?

Mat assessment:

- **sitting** on a firm surface allows you to see the client's natural postures when not supported in a wheelchair

- **supine** assessment primarily for lower extremity evaluation

- Refer to videos on OWL

# ABNORMAL POSTURES - WHAT IS THE BODY DOING THAT IT SHOULDN'T BE DOING?

With prolonged sitting, patients begin to shift their bodies into what is known as abnormal postures to seek stability and/or alleviate pain or pressure.

It is crucial that you understand what you are looking at and decide whether your goal is to correct or accommodate for the abnormal posture.

# CLIENTS SLIDE INTO ABNORMAL POSTURES FOR A MULTITUDE OF REASONS:

- Fatigue due to trunk and pelvis weakness
- A lifetime of sitting in a certain posture
- Seeking out postural stability
- Loss of ROM due to tightened musculature pulling at the joints
- Sitting in an ill-fitting wheelchair where the seat size does not match the client's dimensions, promoting an abnormal posture

**“HOW DO I KNOW WHEN TO  
CORRECT A POSTURAL  
ABNORMALITY  
AND WHEN DO I  
ACCOMMODATE FOR IT?”**

When assessing and evaluating postural variations,  
determine if they are:

**Flexible?**

(able to correct to neutral)

or

**Fixed?**

Informs decisions as to whether you decide to:

**CORRECT**

**PARTIALLY CORRECT**

**ACCOMMODATE**



# ACCOMMODATE OR CORRECT

When a posture is **FIXED**, the skeleton does not move out of that posture; it is “stuck.”

- Therefore, the need is for equipment that will **ACCOMMODATE** for that poor posture in order to provide optimal support and pressure redistribution.
- The GOAL is the prevention of further progression.

When a posture is **FLEXIBLE**, the skeleton still moves, the deformity can be reversed

- Equipment should be chosen to help **CORRECT** the abnormal posture.
- The GOAL is to restore movement of the skeleton to prevent the posture from becoming fixed and allow greater freedom of movement.

**We must remember** accommodating for postural changes is okay.

Postural changes can't always be fixed.

# WHERE DO YOU START?

Need a stable base of support...

START AT THE PELVIS!

Then, move on to the trunk, head and lower extremities.

Posterior Pelvic Tilt



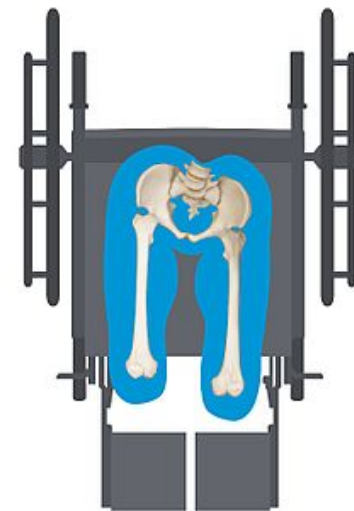
Anterior Pelvic Tilt



Pelvic Obliquity

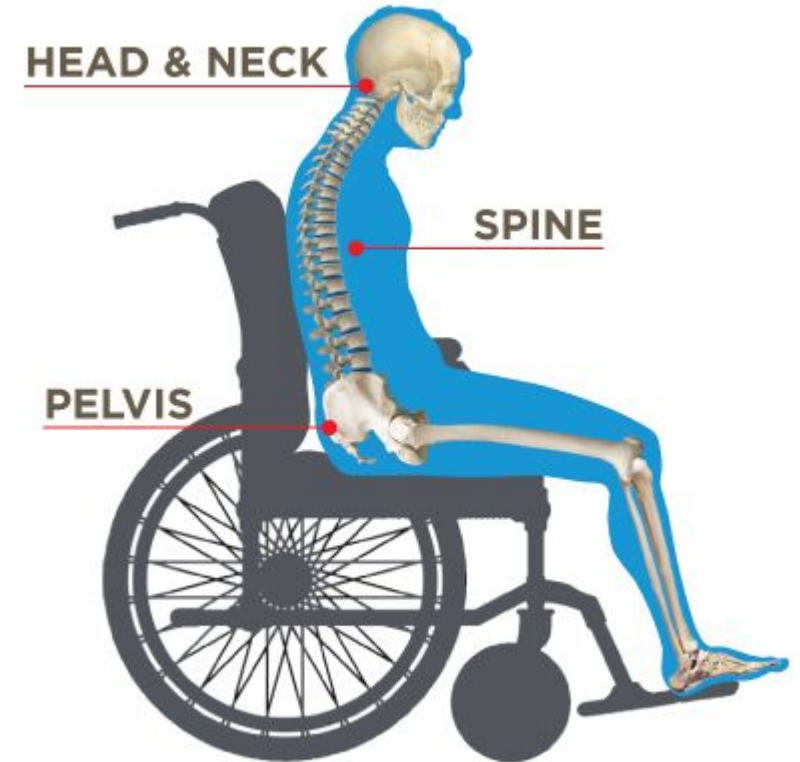


Pelvic Rotation



# POSTERIOR PELVIC TILT

- Posterior pelvic tilt is probably the most seen postural abnormality
- Often referred to as “sacral sitting” because the pelvis is tilted in such a way that all the pressure is placed directly on the sacrum, leaving clients highly susceptible to a [pressure injury](#).



Neck hyperextension  
to compensate for  
downcast visual  
angle

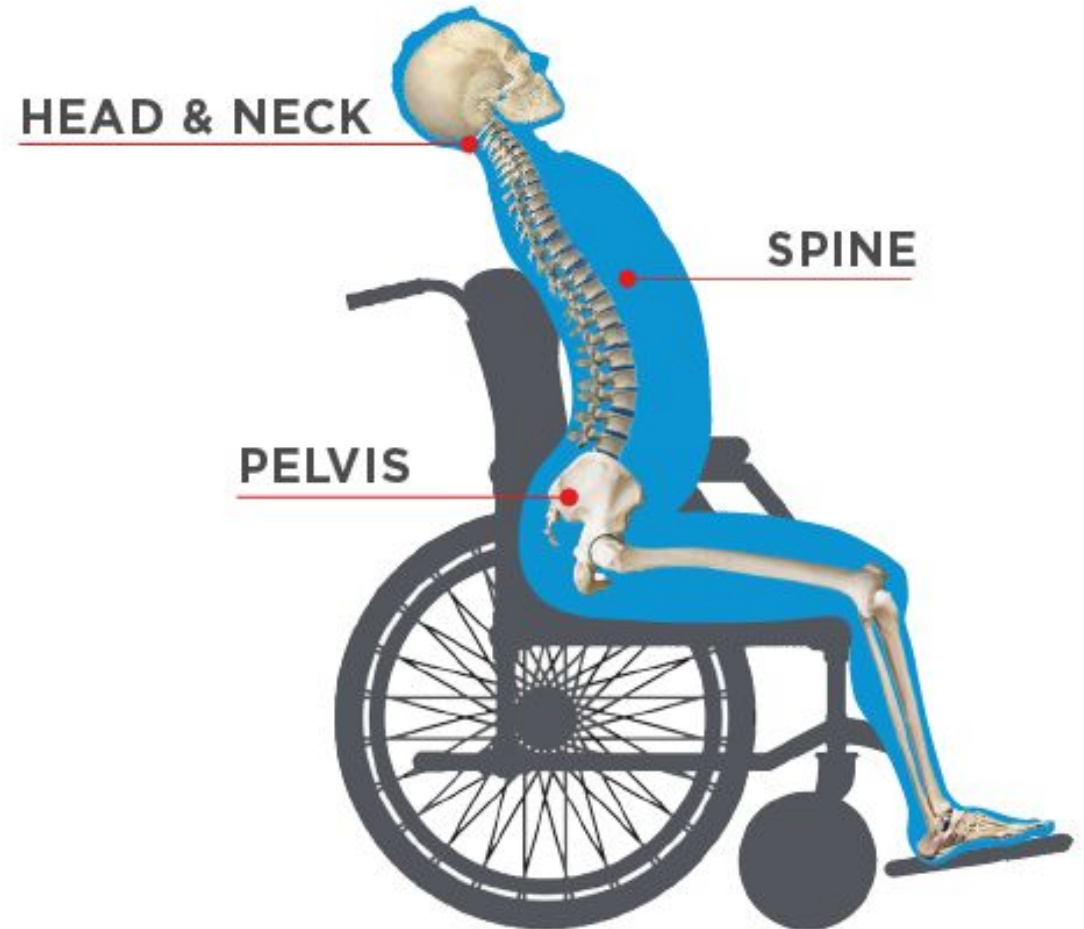


Posterior pelvic tilt



# ANTERIOR PELVIC TILT

- Not as commonly seen posterior pelvic tilt
- Within an aging population, anterior pelvic tilt is usually caused by one of the following:
  - Obesity, especially in conjunction with poor abdominal strength. The excess tissue in the pelvic region pushes the pelvis forward, creating more lumbar lordosis and an anterior pelvic tilt.
  - Tight hip flexors, which pull the pelvis into an anterior pelvic tilt.



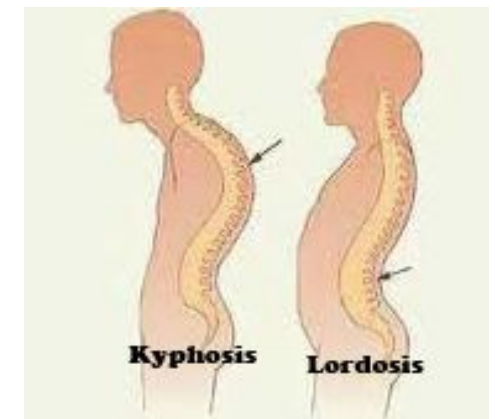
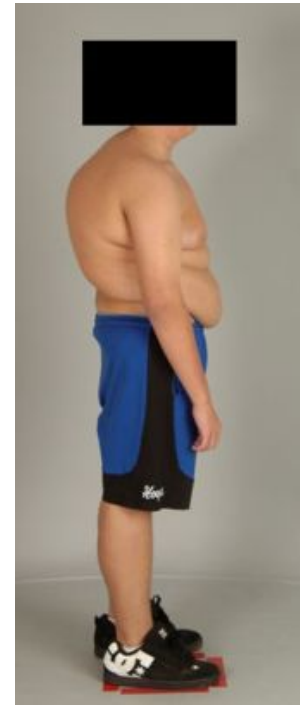
# KYPHOSIS VS. LORDOSIS

## Kyphosis

- Abnormal rearward curvature spine
- Full trunk kyphosis often accompanied by a posterior pelvic tilt and shoulder protraction

## Lordosis

- Usually at the lumbar level with exaggerated lumbar curve
- Often accompanied by anterior pelvic tilt

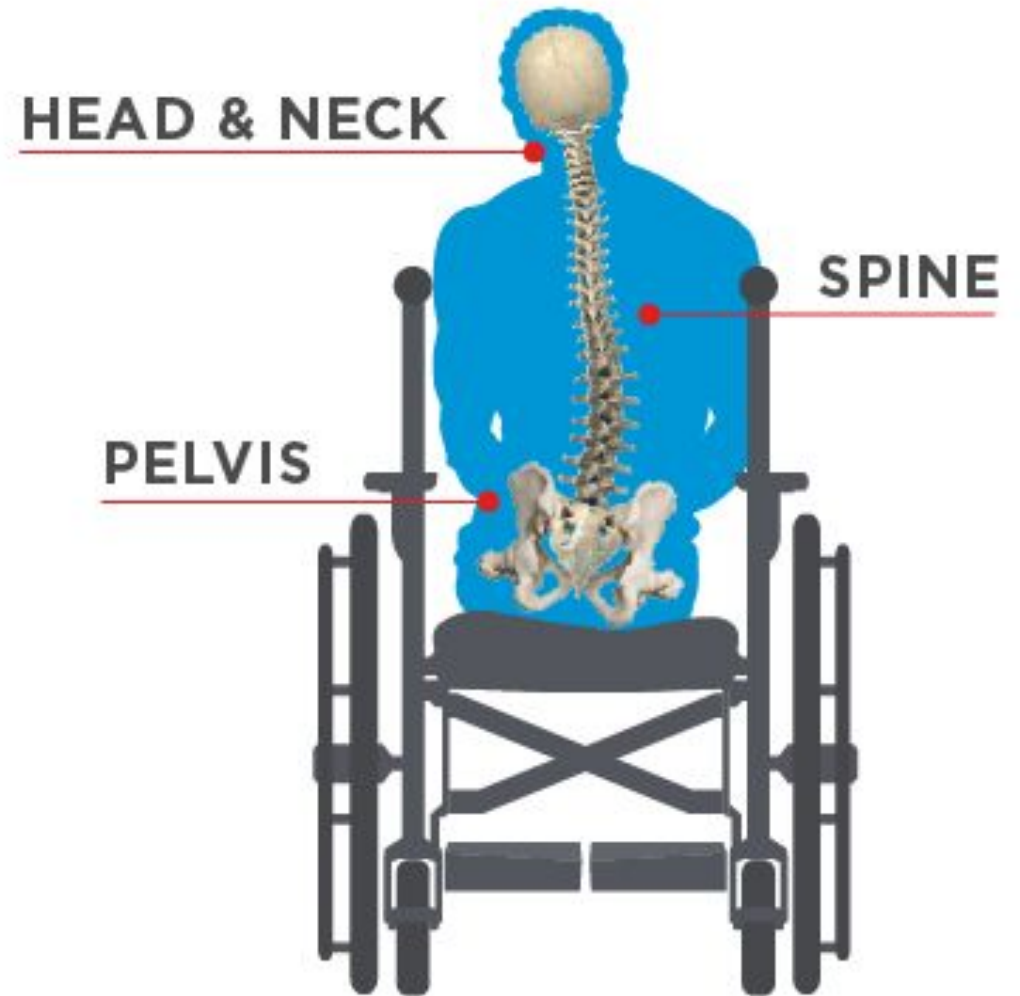


# PELVIC OBLIQUITY

An ill-fitting wheelchair may be to blame for pelvic obliquity when:

- The seat sling is hammocking
- Seat width is too wide
- Back support height is too low
- Only one leg rest is being used
- Foot plates are set at unequal heights
- Armrest height is too high or too low

Whether the reason is the ill-fitting wheelchair or an anatomical issue or a combination of the two, how do you identify an obliquity?

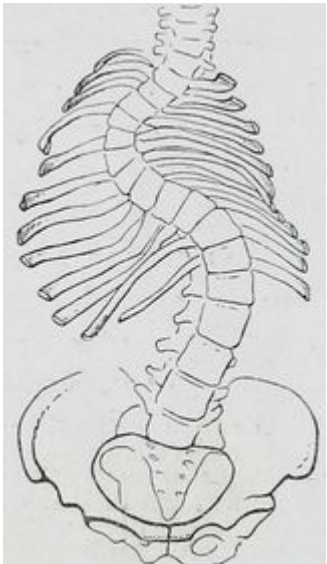




# SCOLIOSIS

## Lateral Curvature of the spine

- Can be either:
  - Single Curve
  - S Curve
- Name for side of convexity



S curve



Right convexity



Left convexity

# LOWER EXTREMITY POSITIONING

## Wind sweeping

Abduction and external rotation of one hip with the adduction and internal rotation of the other

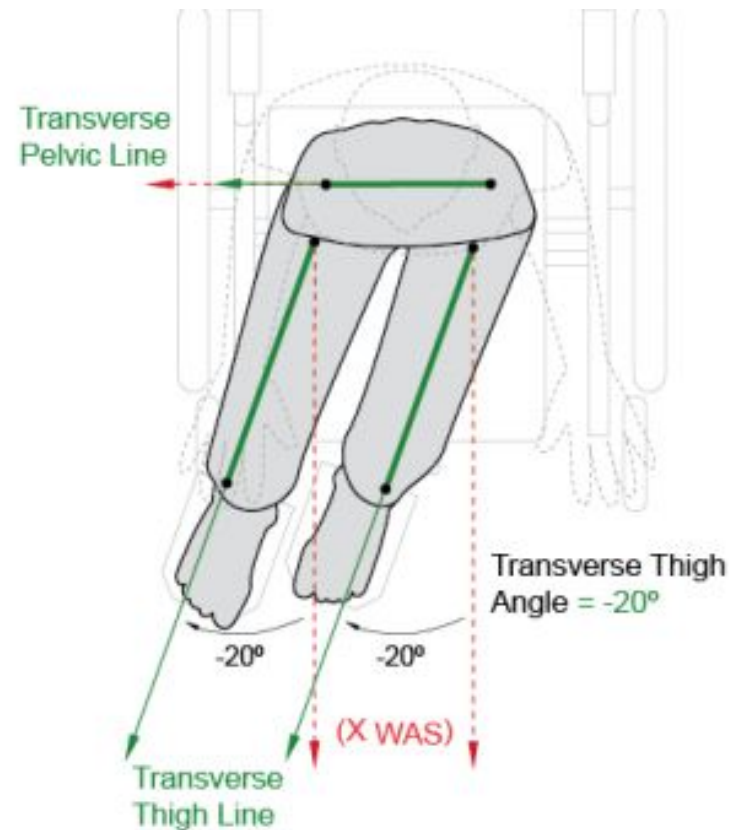


Fig. 2.40: Right windswept posture

# WINDSWEeping

**Windswept posture is often seen in individuals that are non-ambulatory with:**

Cerebral Palsy

Hip dislocation/subluxation

Multiple revisions of hip joint replacements

Scoliosis

Osteochondritis dissecans

Joint weakness

Decreased ROM

**An ill-fitting wheelchair system that doesn't provide sufficient support and alignment to the pelvis and femurs can cause the windswept posture. The wheelchair may be the culprit when:**

- The seat depth is too shallow, not providing enough femoral support and lower extremity alignment
- The seat width is too narrow, causing rotation in the chair and poor lower extremity alignment
- The seat width is too wide, increasing the likelihood of an obliquity and poor lower extremity alignment
- Seat-to-floor height is too low, causing the knees to be higher than the hips with poor femoral contact and lower extremity alignment
- A hammocking seat sling causes the pelvis to collapse and poor alignment of lower extremities
- Only one leg rest increases the likelihood of an obliquity and the legs being swept to one side
- The footplate is too high, decreasing femoral contact

# WINDSWEeping

With windswept posture, the spine will usually follow the pattern of the underlying pelvic posture

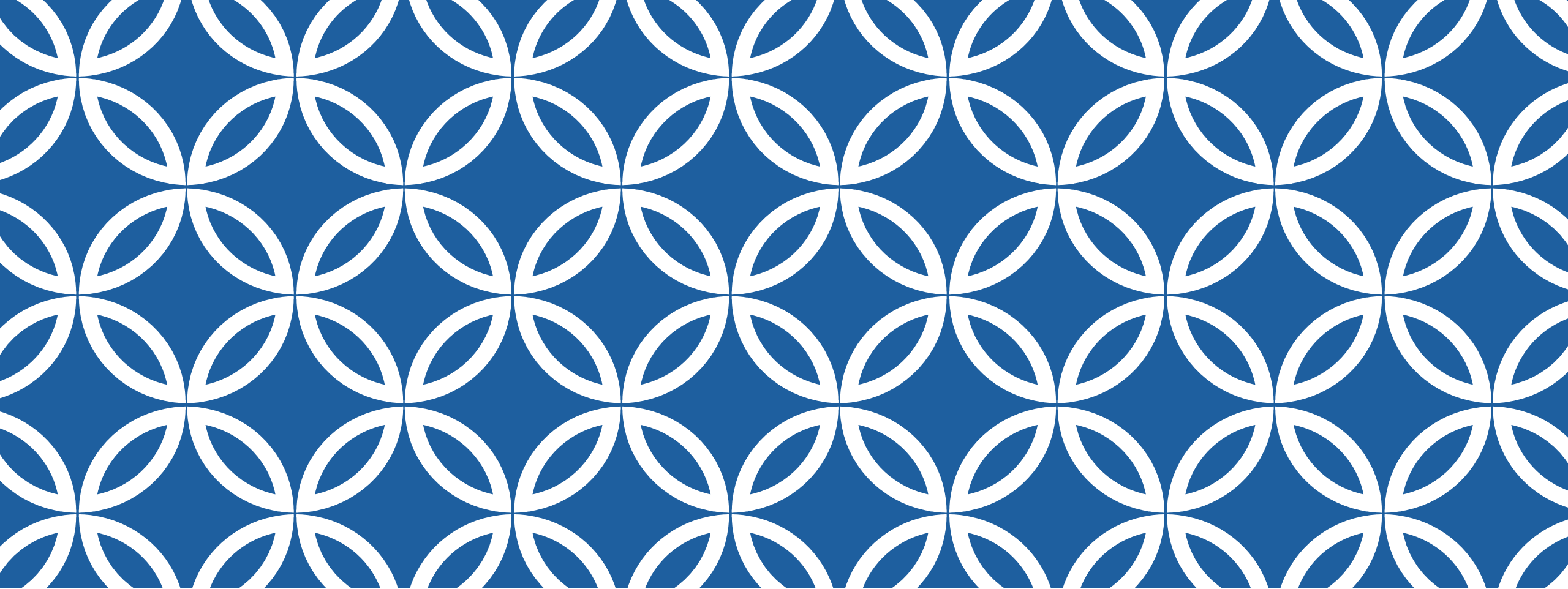
- Pelvic obliquity with a scoliosis of the spine
- Pelvic rotation with a spinal rotation

Scoliosis:



Spinal Rotation:





# EXISTING WHEELCHAIRS AND FIT

# EVALUATE EXISTING WHEELCHAIR

- Make and model
- Sizing/dimensions and set-up
- Seating
- Features (i.e. scissor brakes, angle adjustable foot plates, belts, etc.)
- Wear patterns and personal modifications





# INCORRECT SEAT DIMENSIONS

| WIDTH: TOO NARROW                                                                         |                              |                                                                                                                       |
|-------------------------------------------------------------------------------------------|------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| <i>What is going on?</i>                                                                  | <i>Negative Result</i>       | <i>What can you do?</i>                                                                                               |
| Excess pressure at trochanter from contact with the chair                                 | Wound risk at the trochanter | Measure hip width<br><br>Look for a skin protection cushion that immerses the trochanters                             |
| Resident rotates hips to "fit" into the chair                                             | Pelvic rotation              | Measure hip width                                                                                                     |
| Resident "sweeps" LEs to one side, trying to avoid buildup of pressure on the trochanters | Windswept posture of the LEs | Measure hip width<br><br>Find a cushion with medial abduction and lateral adduction contours to maintain LE alignment |

# INCORRECT SEAT DIMENSIONS

| WIDTH: TOO WIDE                                                                     |                                                                                                    |                                                                                                                       |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| <i>What is going on?</i>                                                            | <i>Negative Result</i>                                                                             | <i>What can you do?</i>                                                                                               |
| Resident leans to one side to increase stability. Pelvis will be lower on that side | Pelvic obliquity                                                                                   | Measure hip width                                                                                                     |
| Pelvis collapses                                                                    | Posterior pelvic tilt aka sacral seating                                                           | Measure hip width                                                                                                     |
| Pelvic collapse causes hips to internally rotate and LEs to excessively adduct      | Strain & contracture risk at hip joints<br><br>Wound risk at medial knees where knees rub together | Find a cushion with medial abduction and lateral adduction contours to maintain LE alignment                          |
| LEs "sweep" to one side when LE weakness is present                                 | Windswept posture of LEs                                                                           | Measure hip width<br><br>Find a cushion with medial abduction and lateral adduction contours to maintain LE alignment |



# INCORRECT SEAT DIMENSIONS

| DEPTH: TOO DEEP                                                                                                                        |                                          |                                   |
|----------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|-----------------------------------|
| <i>What is going on?</i>                                                                                                               | <i>Negative Result</i>                   | <i>What can you do?</i>           |
| Seat sling digs into the back of legs causing pain<br><br>Resident will slide forward to alleviate the pain                            | Posterior pelvic tilt aka sacral sitting | Measure upper leg length minus 2" |
| Seat sling digs into the back of legs decreasing circulation, increasing LE edema<br><br>Resident slides forward to alleviate numbness | Posterior pelvic tilt aka sacral sitting | Measure upper leg length minus 2" |
| Foot propulsion more difficult, resident slides forward for better heel strike                                                         | Posterior pelvic tilt aka sacral sitting | Measure upper leg length minus 2" |
| Resident will slide forward immediately after repositioning                                                                            | Posterior pelvic tilt aka sacral sitting | Measure upper leg length minus 2" |

# INCORRECT SEAT DIMENSIONS

| DEPTH: TOO SHALLOW                                                                                    |                                                                                                    |                                                                                                                                       |
|-------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| <i>What is going on?</i>                                                                              | <i>Negative Result</i>                                                                             | <i>What can you do?</i>                                                                                                               |
| Decreased femoral contact and LE support                                                              | Windswept posture, abduction, or adduction of LEs                                                  | Measure upper leg length minus 2"<br><br>Find a cushion with medial abduction and lateral adduction contours to maintain LE alignment |
| Reduced area for pressure redistribution results in increased pressure at the ITs, sacrum, and coccyx | Wound risk at ITs, sacrum, and coccyx                                                              | Measure upper leg length minus 2"<br><br>Look for a skin protection cushion that immerses and/or offloads the bony prominences        |
| Pelvis collapses inward due to lack of LE support to ensure pelvic alignment                          | Strain & contracture risk at hip joints<br><br>Wound risk at medial knees where knees rub together | Measure upper leg length minus 2"<br><br>Find a cushion with medial abduction and lateral adduction contours to maintain LE alignment |

\*When LE alignment is an issue: think CONTOURS when choosing a cushion!

<https://hub.permobil.com/blog/abnormal-posture-caused-by-current-wheelchair-system-seat-dimension>

# INCORRECT SEAT DIMENSIONS

| HAMMOCKING SEAT SLING                                   |                                          |                         |
|---------------------------------------------------------|------------------------------------------|-------------------------|
| <i>What is going on?</i>                                | <i>Negative Result</i>                   | <i>What can you do?</i> |
| Pelvis collapses                                        | Posterior pelvic tilt aka sacral sitting | Add Rigid Insert        |
| Resident seeks out one side of wheelchair for stability | Pelvic obliquity                         | Add Rigid Insert        |
| Resident compensates by rotating pelvis for stability   | Pelvic rotation                          | Add Rigid Insert        |
| LEs "sweep" to one side                                 | Windswept posture of LEs                 | Add Rigid Insert        |

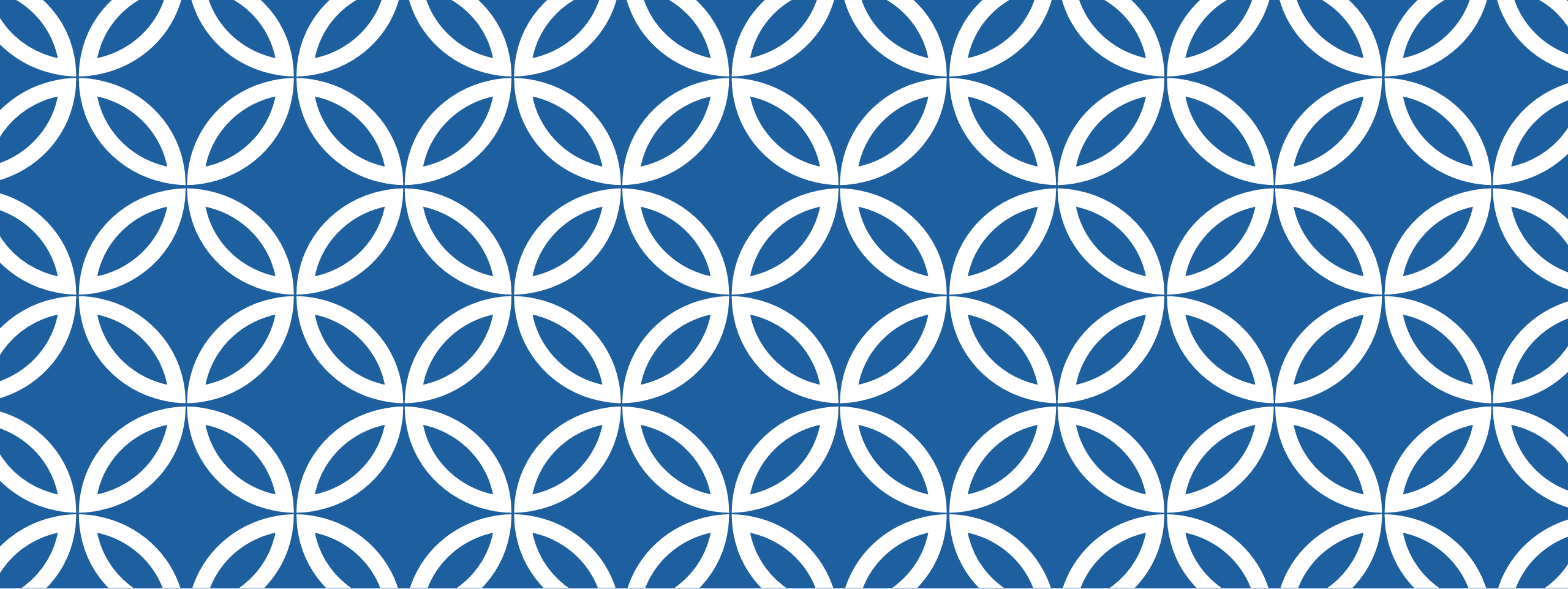
# INCORRECT S DIMENSIONS

| SEAT-TO-FLOOR HEIGHT: TOO LOW                                                                                                                                                                               |                                                                |                                                                                                                                                                         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>What is going on?</i>                                                                                                                                                                                    | <i>Negative Result</i>                                         | <i>What can you do?</i>                                                                                                                                                 |
| <p>Leg rests are shortened to compensate for lack of threshold clearance</p> <p>Knees are then higher than the hips causing decreased femoral contact with the seat surface and LEs "sweep" to one side</p> | Windswept positioning of LEs                                   | <p>Measure lower leg length</p> <p>Use a higher profile cushion</p> <p>Find a cushion with medial abduction and lateral adduction contours to maintain LE alignment</p> |
| <p>Keens higher than hips increase peak pressure at ITs, sacrum, and coccyx</p>                                                                                                                             | Wound risk at ITs, sacrum, and coccyx                          | <p>Measure lower leg length</p> <p>Use a higher profile cushion</p> <p>Look for skin protection cushion that immerses and/or offloads the bony prominences</p>          |
| <p>On a chair without leg rests, feet can drag and get caught under chair during propulsion or transport</p>                                                                                                | Resident can be thrown out of chair or injury to LEs can occur | <p>Measure lower leg length</p> <p>Use a higher profile cushion</p>                                                                                                     |



# INCORRECT SEAT DIMENSIONS

| SEAT-TO-FLOOR HEIGHT: TOO HIGH                                                                                       |                                                  |                                                                                                                                                         |
|----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>What is going on?</i>                                                                                             | <i>Negative Result</i>                           | <i>What can you do?</i>                                                                                                                                 |
| Foot propulsion is more difficult so resident slides forward for better strike                                       | Posterior pelvic tilt aka sacral sitting         | Measure lower leg length<br>Use a lower profile cushion                                                                                                 |
| Increased pressure at distal thigh, increasing risk of LE edema, resident slides forward to reduce numbness and pain | Posterior pelvic tilt aka sacral sitting         | Measure lower leg length<br>Use a lower profile cushion                                                                                                 |
| Resident rotates forward on one side for better heel strike of one foot                                              | Pelvic rotation                                  | Measure lower leg length<br>Use a lower profile cushion                                                                                                 |
| Feet "dangle"                                                                                                        | Increased internal rotation and adduction of hip | Measure lower leg length<br>Use a lower profile cushion<br>Find a cushion with medial abduction and lateral adduction contours to maintain LE alignment |
| Resident slides forward to alleviate strain on pelvis and knees                                                      | Posterior pelvic tilt aka sacral sitting         | Measure lower leg length<br>Use a lower profile cushion                                                                                                 |



**MEASUREMENT** |

### **HOME ENVIRONMENT:**

Measurements of doorways, table height, bed height, stairs, etc

### **TRANSPORTATION:**

Document what kind of car they drive and/or ride in

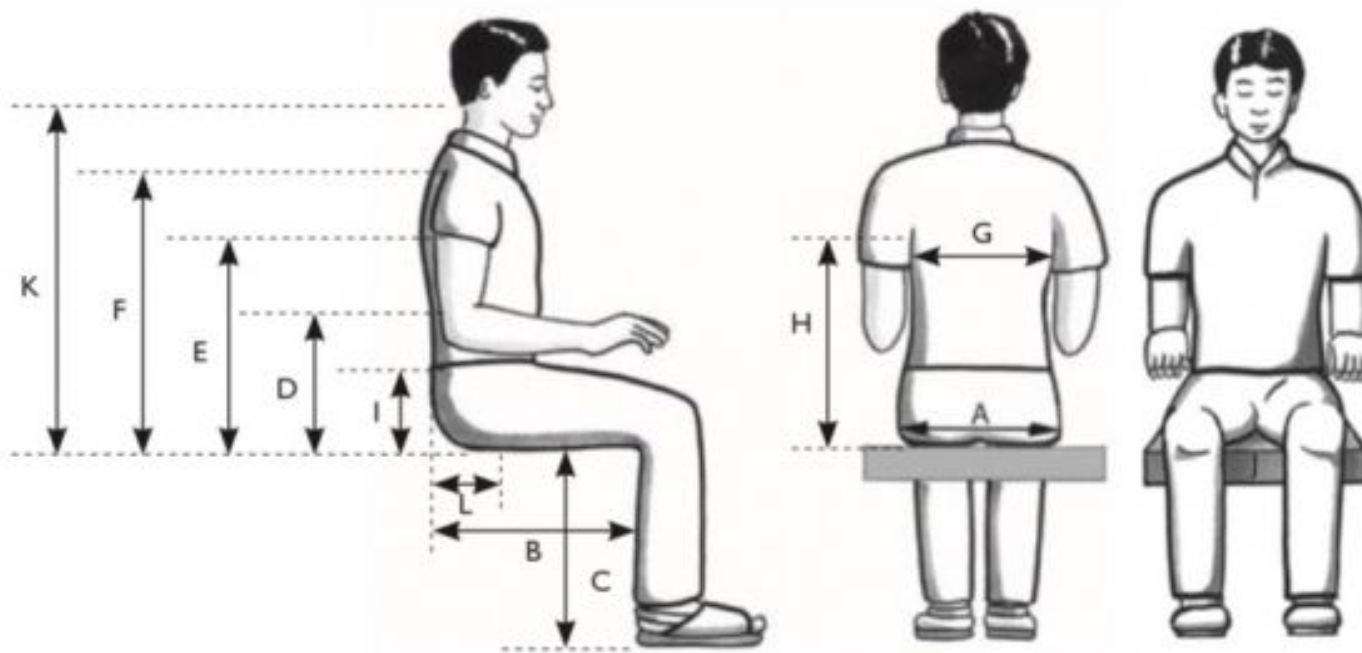
### **CURRENT SEATING/MOBILITY:**

Describe ALL current equipment and the condition of each

### **MOBILITY SKILLS:**

How do they currently get around to perform their daily tasks? Be descriptive (efficiency, ability)

# WHAT MEASUREMENTS DO I NEED?



- Not all measurements are needed for all clients
- Basic measurements include A, B, C, D, E, G
- Additional measurements are required for more complicated seating (example: for a tilt wheelchair, need F and K)



# LINEAR BODY MEASUREMENT

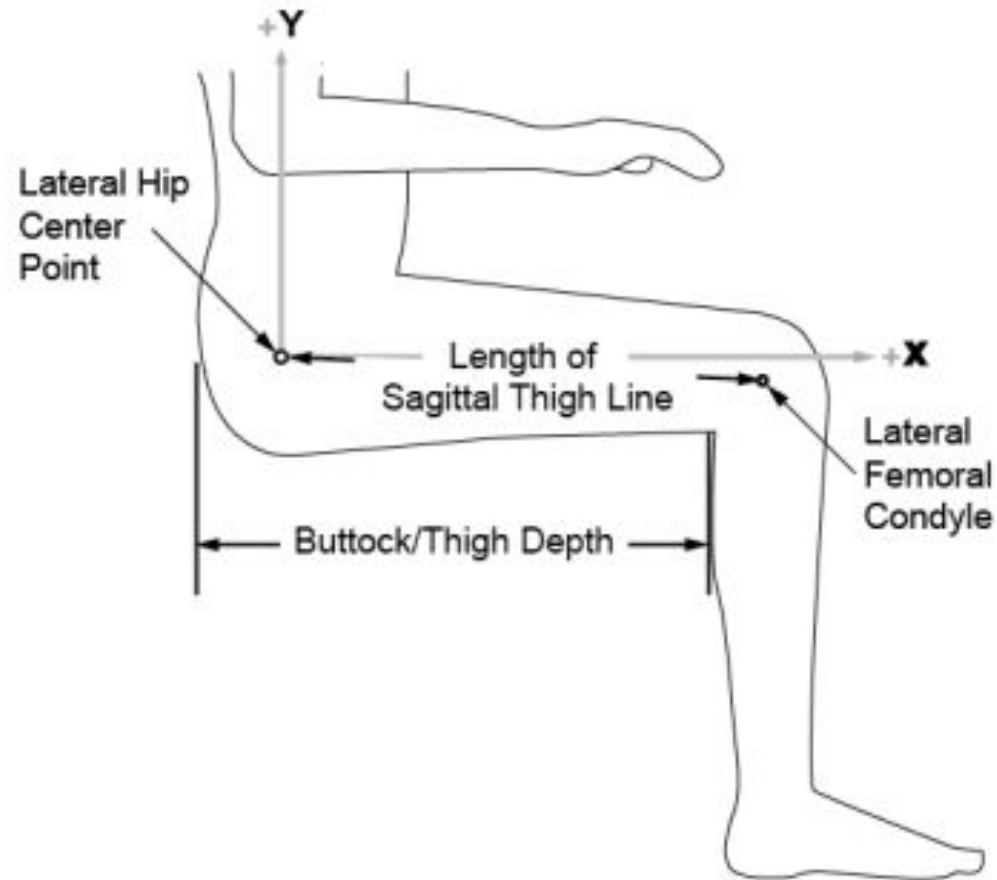
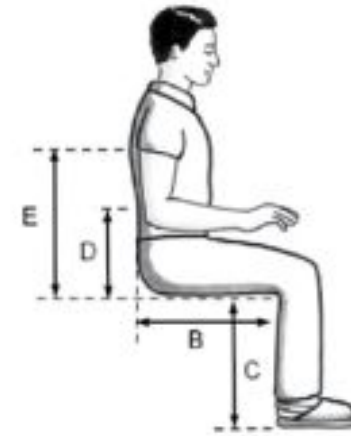
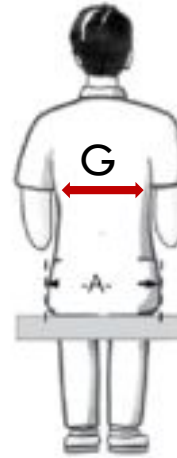


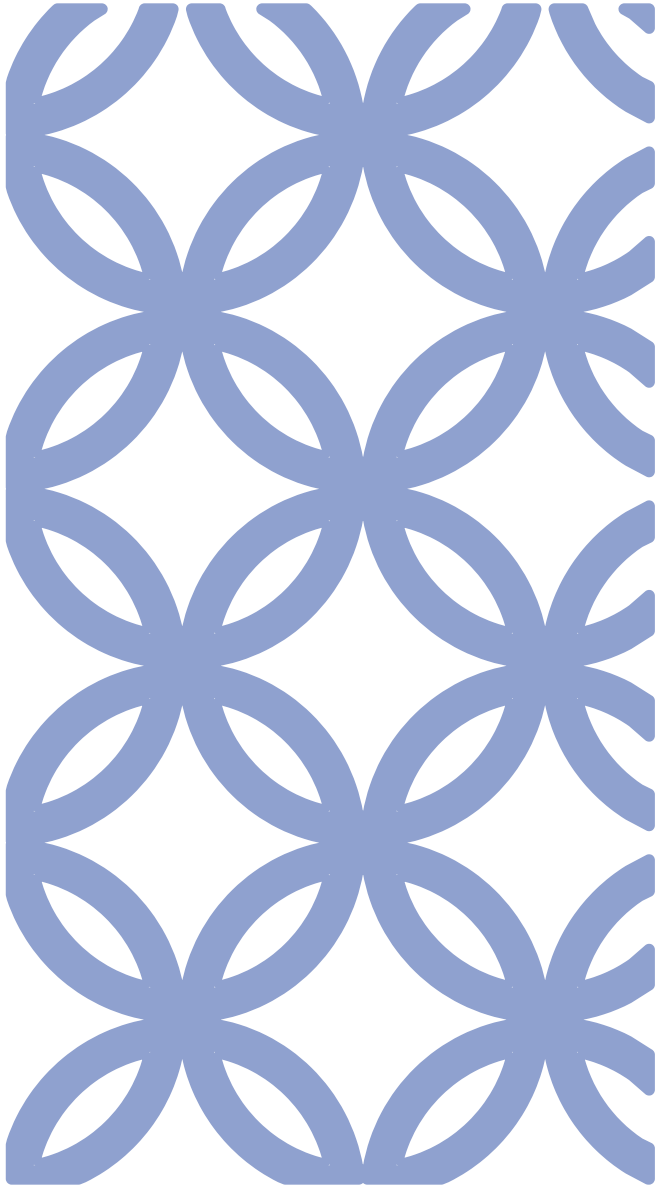
Fig. 1.9: Sagittal thigh line vs. buttock/thigh depth

# WHAT MEASUREMENTS DO I NEED?



|   | Body Measurement         | Measurement (mm) | Change body measurement to ideal wheelchair size                                                  | Wheelchair measurement (mm) |
|---|--------------------------|------------------|---------------------------------------------------------------------------------------------------|-----------------------------|
| A | Hip width                |                  | Hip width = seat width                                                                            |                             |
| B | Seat depth               | L                | B less 30–60 mm = seat depth (if length is different, use shorter one)                            |                             |
|   |                          | R                |                                                                                                   |                             |
| C | Calf length              | L                | = top of seat cushion* to footrests height or = top of seat cushion* to floor for foot propelling |                             |
|   |                          | R                |                                                                                                   |                             |
| D | Bottom of rib cage       |                  | = top of seat cushion* to top of backrest (measure D or E – depending on the user's need)         |                             |
| E | Bottom of shoulder blade |                  |                                                                                                   |                             |

\*check the height of the cushion that the wheelchair user will use.



# ROM & Measurement

---

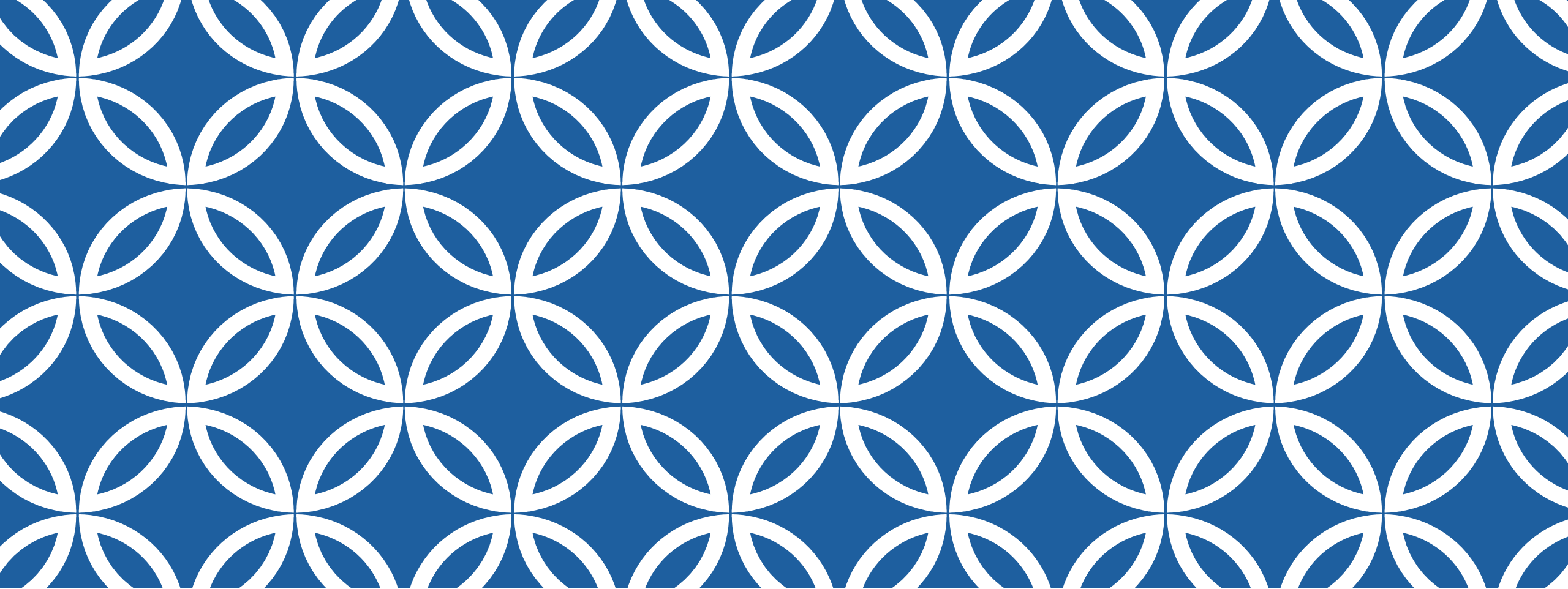
# RANGE OF MOTION

- Begin with assessing functional ROM
- Observe limitations and measure as necessary
- For lower extremities, want to assess:
  - Hips (hip flexors, hamstrings)
  - Knees (hamstrings)
  - Ankles

**\*\*Pay attention to what happens to the client's pelvic position as you test their lower body ROM**



Begin  
with....  
90°-90°-90°



# PRESCRIPTION AND EQUIPMENT CONSIDERATIONS FOR POSTURAL ABNORMALITIES

# PRESCRIPTION

Consider all the information learned to create your equipment prescription in conjunction with the client and vendor:

- Client and caregiver goals
- Mobility and function
- Skin health
- Postural tendencies – fixed vs. flexible, correct vs. accommodate
- PROM
- Measurements

# EQUIPMENT RECOMMENDATIONS CONSIDERATIONS BASED ON POSTURAL ABNORMALITIES: POSTERIOR AND ANTERIOR PELVIC TILT

## Anterior Pelvic Tilt

- Avoid the use of large lumbar rolls or supports
- Ensure the knees are not lower than the hips (promotes an anterior pelvic tilt)
- Provide a back support tall enough for the client (measure from seat surface to the top of shoulder)
- Avoid using back supports that are too upright and would promote an anterior pelvic tilt
- Use of anti-tippers is strongly recommended

## Posterior Pelvic Tilt

- Avoid the use of elevating leg rests (ELR) for people with shortened hamstring length creating a pull on the pelvis into a posterior pelvic tilt
- Ensure appropriate cushion depth to prevent contact pressure behind the knees and thus forward sliding to reduce contact
- Use w/c or a back support that can open seat-to-back angle to straighten out the chest and place the pelvis at an angle the resident can tolerate.
- Add a solid seat insert to any seat sling that is hammocking to prevent the pelvis from collapsing into a posterior pelvic tilt
- If it is a fixed posterior pelvic tilt, use an immersion style cushion that contours to the shape of the resident for maximum pressure redistribution, minimizing peak pressures

# EQUIPMENT RECOMMENDATIONS CONSIDERATIONS BASED ON POSTURAL ABNORMALITIES: PELVIC OBLIQUITY

## Is it **FIXED** OR IS IT **FLEXIBLE**?

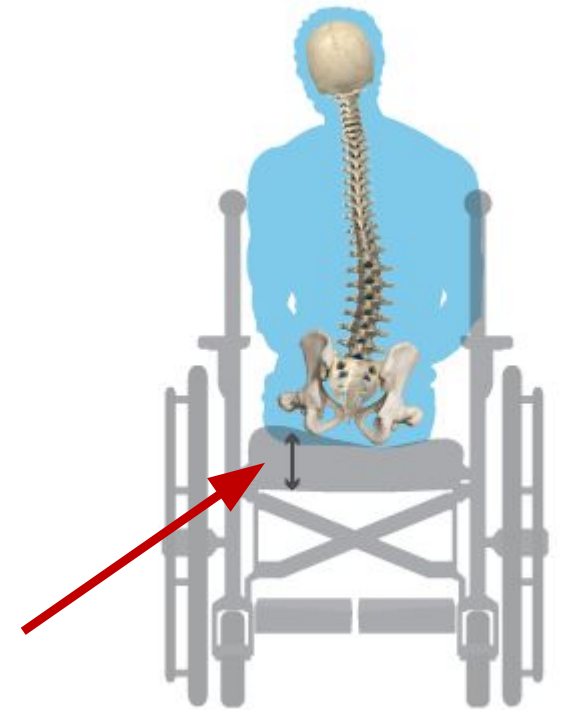
Primary need is for even pressure distribution to take excess pressure off the lower IT, protecting it from wound development

**If FLEXIBLE— attempt correction by:**

- Level the pelvis by building up the lower IT with an adjustable cushion.
- You will likely want to incrementally build up the lower side to allow the client to adjust to the changes and tolerate the change without pain or discomfort.

**If FIXED – accommodate and** prevent the abnormality from progressing

- HOW? Fill in the higher side to provide more contact with the seat surface for added stability and even pressure distribution between the lower “at risk” IT and the higher “free floating” IT

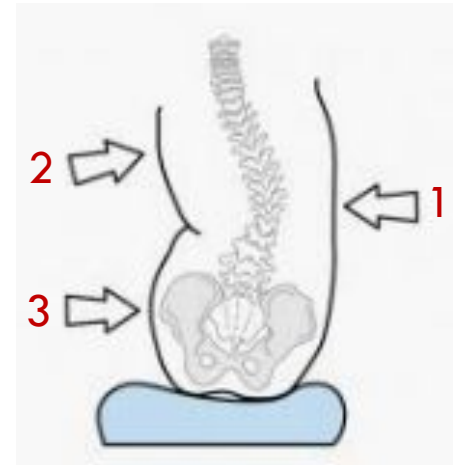




# EQUIPMENT RECOMMENDATIONS CONSIDERATIONS BASED ON POSTURAL ABNORMALITIES: SCOLIOSIS

## **To support the scoliosis seen at the trunk:**

- Add stability by using a deeper back support that can immerse and capture the abnormal curvatures of the spine. This will also protect the spine from peak pressures that could cause a wound.
- Use mounted laterals to add counter pressure for more midline posture.
- A 3-point system attached to the specialized wheelchair back support cushion may be indicated to correct or prevent further progression of the scoliosis:
  1. One lateral placed at the thoracic spine at the apex of the curvature
  2. One lateral placed under the axilla, avoiding direct pressure at the axilla to prevent nerve damage
  3. One lateral placed lower, close to the pelvis



# EQUIPMENT RECOMMENDATIONS CONSIDERATIONS BASED ON POSTURAL ABNORMALITIES: PELVIC ROTATION

If the rotated pelvis is **flexible**, the goal can be to correct it, while remembering to take it slowly and to avoid making drastic, sudden changes.

- Small, incremental changes are best to build up tolerance to the new pelvic alignment. Strive to stabilize the pelvis in the resident's most neutral alignment with an aggressively contoured cushion (medial abductors and tapered lateral adductors will create leg troughs and prevent unwanted movement at the pelvis)
- Consider an anti-thrust shelf to reduce forward migration of the pelvis (pro's and con's?)

If the rotation is fixed, less contour is best because the client's unique shape will not fit into a pre-contoured cushion. If you try to force them into a shape unlike their own, pain and pressure on unwanted areas can be created, increasing the risk of wound development.

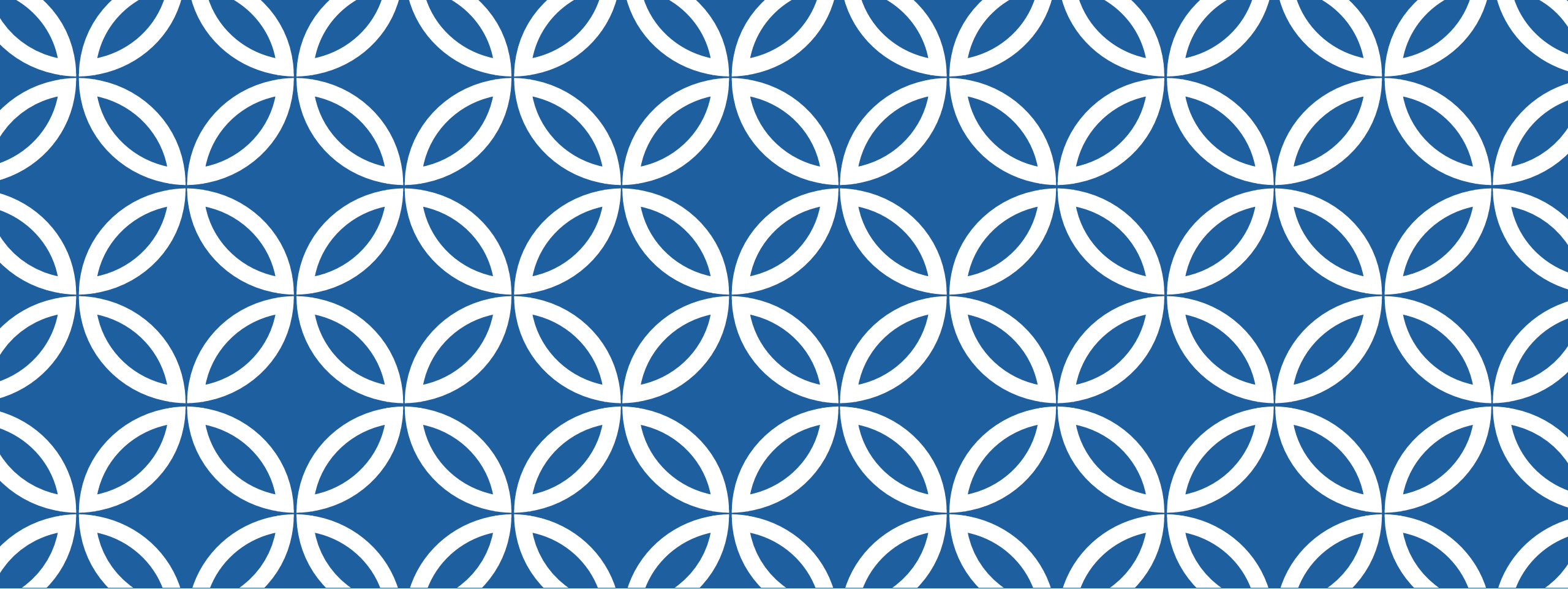
- An immersion-style cushion with less aggressive contouring to protect the bony prominences.
- A cushion that can be adjusted to compensate for the leg length discrepancy that accompanies a rotation. Measure the longer leg when deciding seat depth for the wheelchair cushion, and ask the cushion manufacturer to customize the length on the shorter side.

At the trunk and head:

- Add stability by using a deeper back support that can immerse the spine and capture the shape of the spinal abnormality. This will also protect the spine from peak pressures that could cause a wound.
- Support the head, if affected. A head support that gives posterior support in the suboccipital area and has angle adjustability to prevent rotation and lateral flexion of the neck is recommended.

# EQUIPMENT RECOMMENDATIONS CONSIDERATIONS BASED ON POSTURAL ABNORMALITIES: WINDSWEEPING

- Avoid the use of ELRs that decrease femoral contact with seat surface and promote windswept posture.
- Windswept posture often accompanies either a rotation or an obliquity, so follow the goals for those underlying causes of these postures.
- **Look for:**
  - A pre-contoured cushion with medial abductors and tapered lateral adductors that will provide leg troughs. These troughs will act as boundaries and borders for maximum pelvic and lower extremity alignment to prevent excessive internal/external rotation, adduction/abduction at the hip joints.
  - Cushions that can be built up or minimized to compensate for ROM limitations, and maximize femoral contact of the lower extremities for maximum stability and alignment.
- **Sometimes added accessories are needed such as:**
  - Lateral knee blocks
  - Lateral pelvic/thigh supports
  - Medial Knee blocks



**EQUIPMENT DEMO AND  
TRIALS** |

# TYPES OF MANUAL WHEELCHAIRS

**Manual Wheelchair Type 1** - **basic** wheelchair that provides standard mobility capabilities

- Versatile and ideal for short term rentals; not usually too personalized

**Manual Wheelchair Type 2** – **lightweight folding** wheelchairs come with a variety of features that allow adjustability both vertical and horizontally

- Functionality varies based on wheelchair brand

**Manual Wheelchair Type 3** – **lighter weight wheelchairs** with a more personalized fit and superior performance

- Most models in this category can conveniently fold to fit into small spaces and vehicle

**Manual Wheelchair Type 4** - **ideal for people who lead very active lifestyles**

- Lightweight, built with high quality materials and are adjustable to meet personal preferences
- Often rigid and don't fold for improved performance

**Manual Wheelchair Type 5** - **tilt-in-space wheelchairs** provide a broad range of positioning options

- Models come with tilt assist adjustment capabilities and provide maximum comfort and pressure redistribution

# KNOWING THE UNIVERSAL TERMINOLOGY



# CUSHIONS...MEDIUMS

Foam



Honeycomb



Air



Combinations of above



Gel





# CUSHIONS...STYLES

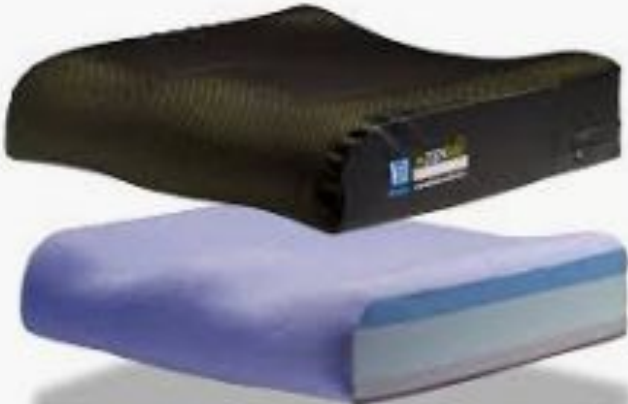
Flat/Linear



Wedge



Contoured



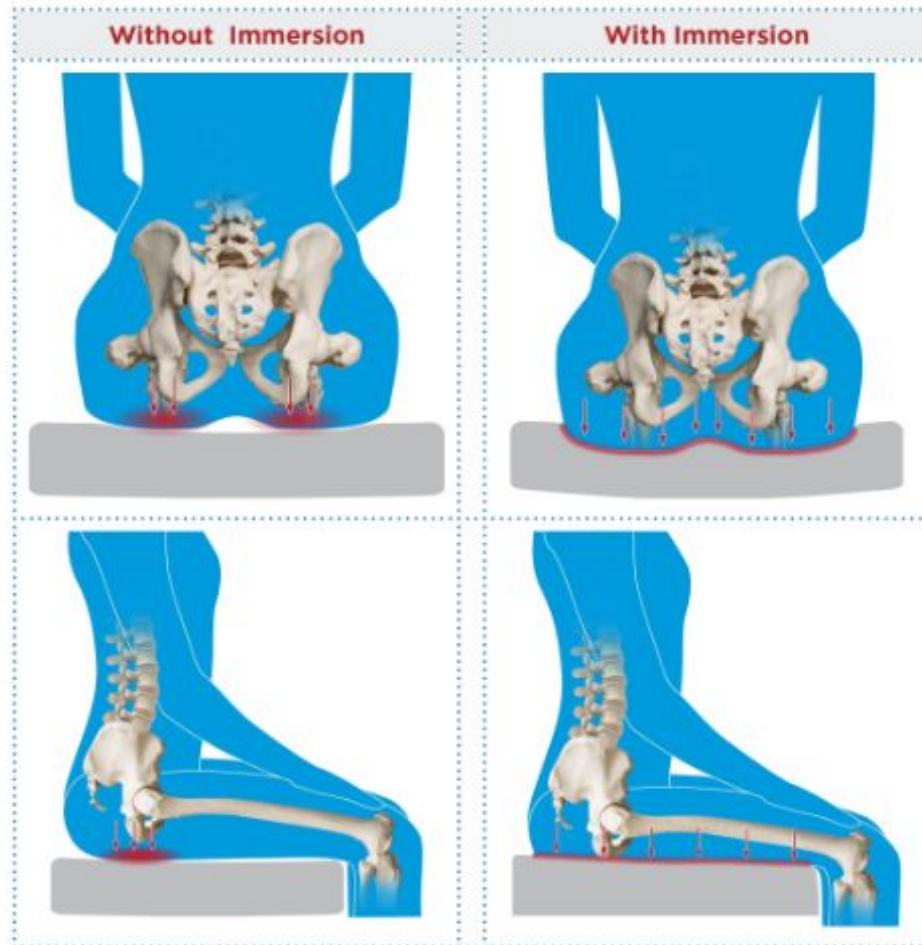
Anti-thrust





# CUSHIONS – IMMERSION

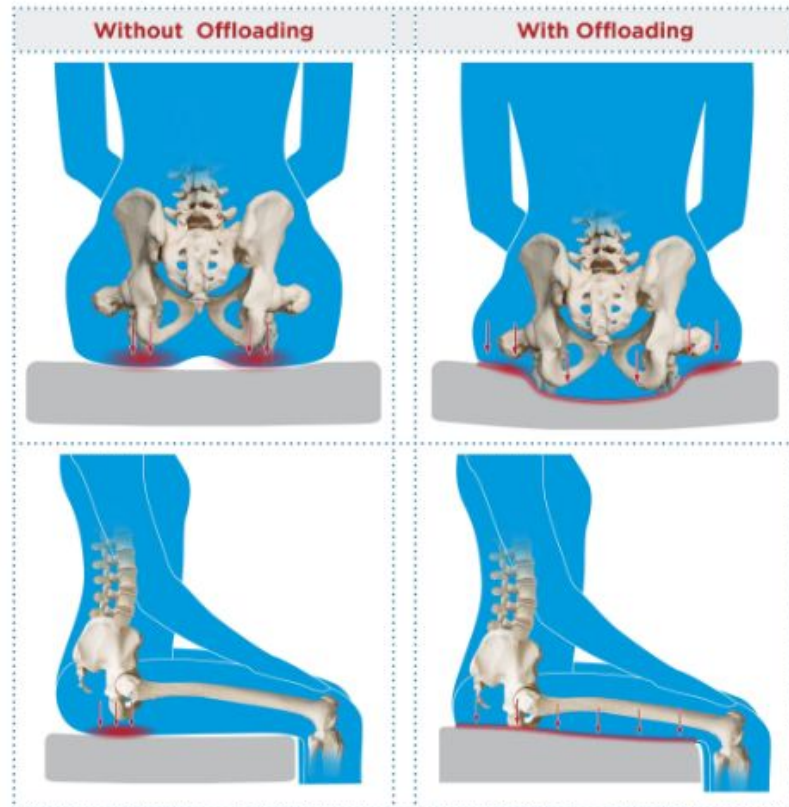
THE PRINCIPLE OF CONFORMING TO THE PERSON'S CURVATURE BY "SINKING THE BODY IN." WE ALLOW THE CUSHION AND/OR BACK SUPPORT TO TAKE THE BODY'S SHAPE, ALLEVIATING THE BONY PROMINENCES FROM UNWANTED PEAK PRESSURE TO MAXIMIZE PRESSURE REDISTRIBUTION



| Benefits                                                                                                                  | Considerations                                                                                                                           |
|---------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Less firm surface, creating a "softer" end feel for the patient, may be an ideal solution for pain management             | Less stable surface that may not be suitable for someone with trunk and pelvic weakness, causing fatigue with prolonged, upright posture |
| Envelops or captures the exact curvature of the pelvis to increase pressure redistribution over the largest area possible | May not be suitable for someone who desires proprioceptive input from a firmer surface to maintain an upright, midline posture           |
| Good for any type of pressure injury at any stage, depending on the medium                                                |                                                                                                                                          |
| May be easier for independent transfers                                                                                   | Some immersion style cushions require more maintenance, and if not properly maintained, can increase risk of a pressure injury           |
| Reduces peak pressures at the bony prominences (ITs, sacrum, and coccyx)                                                  |                                                                                                                                          |

# CUSHIONS – OFFLOADING

THE PRINCIPLE OF *TAKING PRESSURE OFF OF A SMALL SURFACE AREA AND LOADING IT ONTO A GREATER SURFACE AREA THAT CAN WITHSTAND MORE PRESSURE AND PREVENT UNWANTED SKIN BREAKDOWN*



| Benefits                                                                                                               | Considerations                                                                                                 |
|------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| Firmer surface, creating a “safer” end feel for the patient                                                            | May not be suitable for someone with hypersensitivity due to the firm end feel; depends on personal preference |
| Partially or completely suspends the ITs, sacrum, and coccyx for pressure relief                                       | Since the nature of the contours adds more stability, it may be more difficult for independent transfers       |
| Redistributes pressure to the trochanters and femurs, areas with greater surface area that can withstand more pressure | Someone with significant contractures may not “fit” the pre-contoured shape                                    |
| Provides more stability to someone lacking trunk or pelvic strength to prevent unwanted movement                       | Not good for patients with trochanter wounds since pressure is redistributed to that area                      |

# BACK RESTS: SLING BACK OR OFF-THE-SHELF BACK SUPPORT?

Ask yourself....

- Is your patient immobile?
- Does your patient have a postural abnormality that affects pelvic and trunk stability and alignment?
- Does your patient require assistance to sit unsupported?
- Does your patient complain of pain while sitting in the wheelchair?

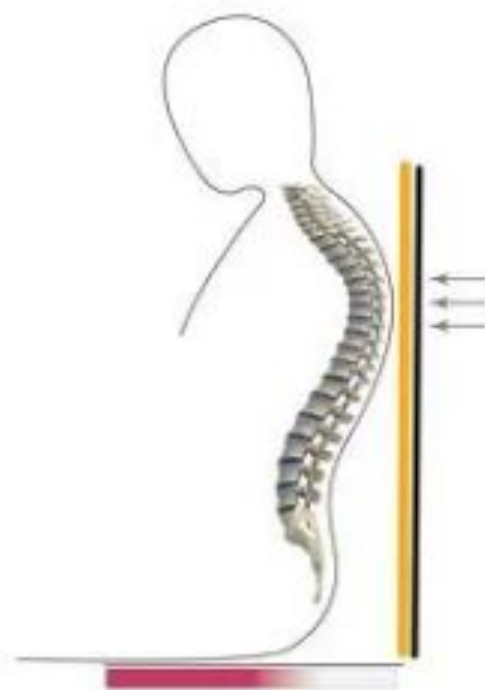
If you answered **yes** to any of these questions, then, without a doubt, replace the sling back with a separate off-the-shelf back support.

# OFF-THE-SHELF BACK SUPPORT ADVANTAGES:

- Provides depth and angle adjustability through hardware
- Provides trunk stability to promote functional sitting
- Works with the cushion to provide pelvic stability
- Provides increased pressure redistribution at the trunk and pelvis
- Can minimize the progression of abnormal postures
- Decreases pain by increasing stability and pressure redistribution

*\*Even when dealing with a more "typical" spinal posture, a solid back support can provide stability to conserve energy for self-propulsion*





**Fixed 90°**  
Peak Pressure  
at the Apex



**Open STBA**  
More Surface Contact  
Match Patient ROM

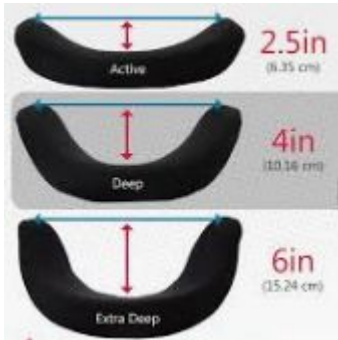


**Open STBA + Contour**  
Optimal Pressure  
Redistribution

*\*When more surface area makes contact with the patient, stability, and comfort increase.*

# BACK SUPPORT CONSIDERATIONS:

## Shape of the Shell



## Medium



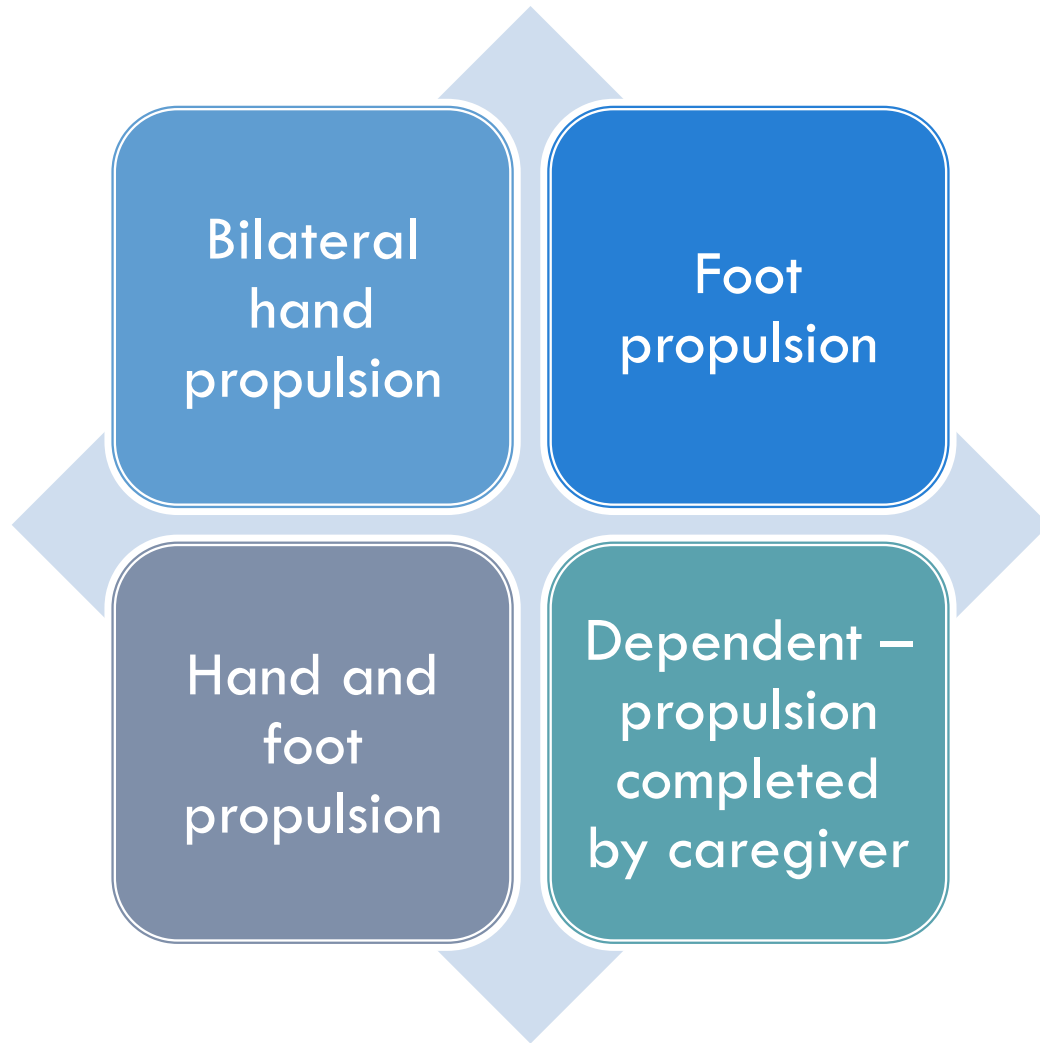
## Adjustability



# BACK RESTS: HEIGHT AND LENGTH

Ask yourself....

- How does your client mobilize?
  - ☐ Hand propulsion?
    - ☐ Consider amount of trunk support needed and activity level of client
    - ☐ Ensure clearance of scapula while propelling
  - ☐ Dependent for propulsion?
    - ☐ Consider greater length of back rest
    - ☐ Consider positioning needs/support if using tilt



# METHOD OF MANUAL WHEELCHAIR PROPULSION



# METHOD OF PROPULSION

Chosen method of propulsion has significant impact on recommended equipment

For example, on seat to floor height, wheel and caster size

# Rear wheels position – for hand propelling

Correct fit: When hands are placed on the push rims, the user's elbows should be at a right angle.

## How to check

- Ask the wheelchair user to grip the push rims at the top of the wheels. The elbow should be bent at 90 degrees.
- Also check with the user if the rear wheels are positioned correctly for balance (forward for active, back for safe).

If the wheelchair user needs the rear wheels to be positioned in the “safe” (further back) position, this may mean that the arms are further back and than is ideal for propelling. Explain this compromise to the wheelchair user.

If any adjustments are made to the rear wheels position, the brakes will also need to be adjusted and rechecked.



# Seat height—for foot propelling

## Correct fit:

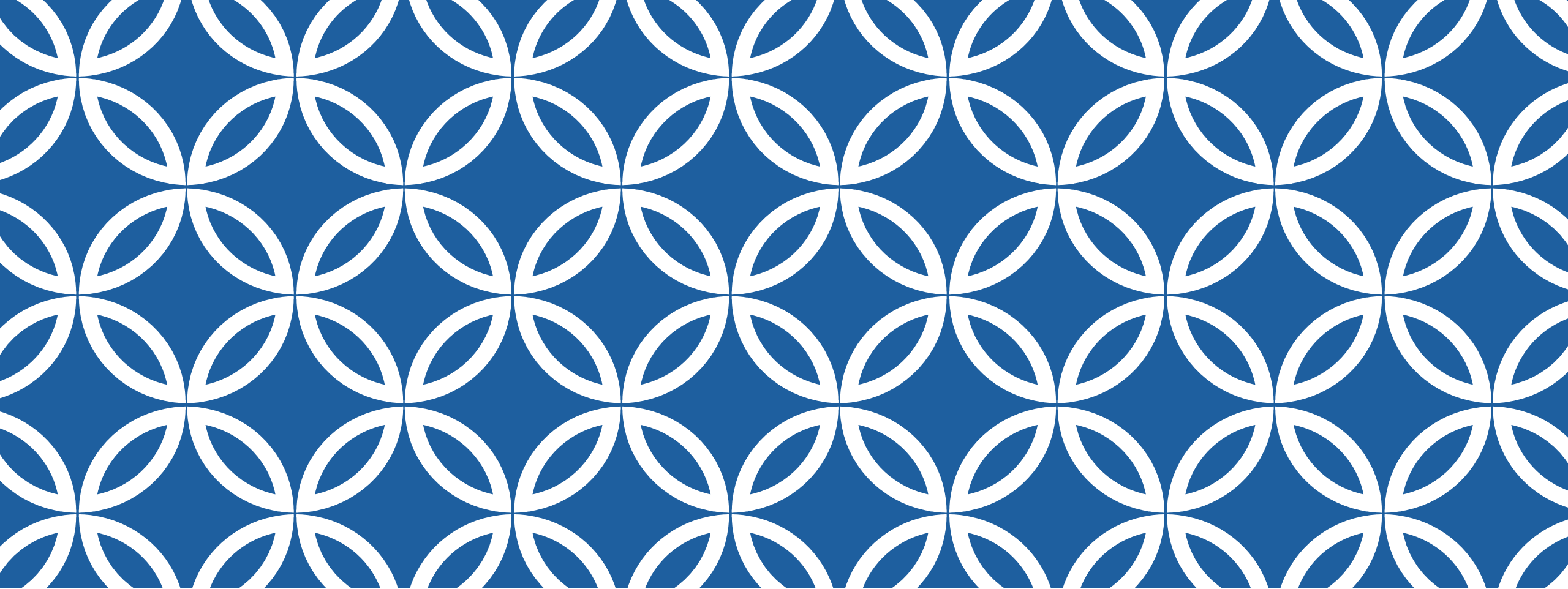
- With the wheelchair user sitting upright, and the back of the pelvis comfortably supported by the backrest, he/she should be able to rest the feet flat on the floor.
- Ask the wheelchair user to sit with the back of their pelvis against the backrest with the pushing foot flat on the floor.



# Seat height—for foot propelling

- Check whether the feet can sit flat on the floor. If the seat height is too high, wheelchair service personnel can try:
  - reducing the height of the cushion;
  - attaching a solid seat lower than the original seat (get technical advice or support to do this).
- Ensure adequate clearance of seat depth and back of knee
- For a user who is propelling with only one foot, with the other foot resting on the footrest – check the pressure under the seat bone of the side that is resting on the footrest





# WALKER ASSESSMENT AND MEASUREMENT |

# TYPE 1, 2, 3 (ROLLATOR) WALKER MEASUREMENT

What do you need?

- Client weight – informs width of walker and weight capacity
- Client overall height – informs seat height
- Client wrist crease height – informs handle height

# TYPE 1, 2, 3 (ROLLATOR) WALKER MEASUREMENT

- ❑ Walkers are less individualized/customized than wheelchairs
- ❑ Each manufacturer typically has 3-4 fixed seat height walker sizes
  - ❑ I.e., Super Low, Low and Tall
  - ❑ Need to choose seat height based on client height and functional abilities



# TYPE 1, 2, 3 (ROLLATOR) WALKER MEASUREMENT

- Need to consider overall weight of walker
  - Does your client need to lift the walker? In/out of the house? Car?
- What funding does your client qualify for?
  - If applying for wheelchair and walker in same funding period, ADP will only fund type 1 or 2 walker
- Where will your client use the walker?
  - Size of wheels – 4", 6" 8"
  - Bigger wheels are better for outdoors

# TYPE 1, 2, 3 (ROLLATOR) WALKER MEASUREMENT

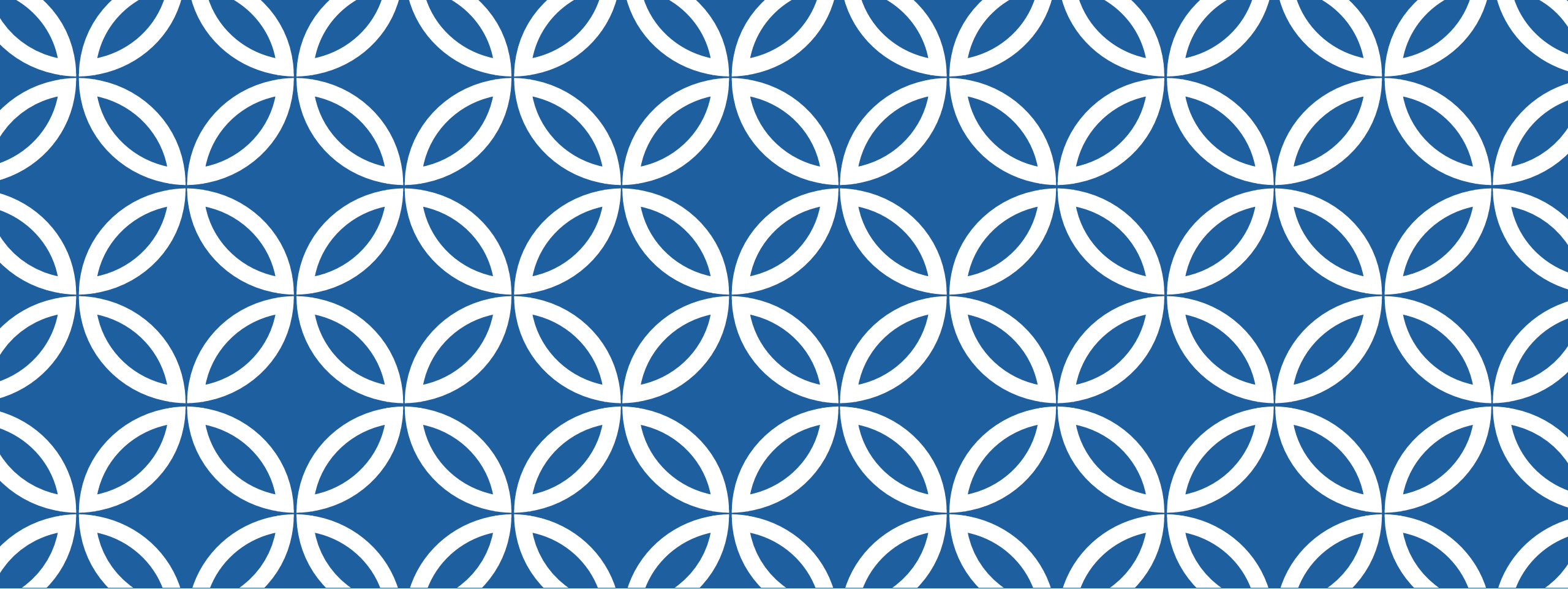
- What type of handles work best for your client?
- Brake style?
- Back rest – usually a fixed strap

## Sample Manufacturer Specifications:

### Technical specifications

| Part Name         | Part no. | Handle Height<br>(Min - Max) | Seat Height | Overall Width | Width between<br>Handles | Distance<br>between Rear<br>Wheels | Wheel Size   | Product Weight |
|-------------------|----------|------------------------------|-------------|---------------|--------------------------|------------------------------------|--------------|----------------|
| neXus 3 Super Low |          | 78 cm - 86 cm                | 48 cm       | 58 cm         | 45 cm                    | 47 cm                              | 15 cm x 3 cm | 7.6 kg         |
| Black             | 470018   | 30.5" - 34.1"                | 19"         | 23"           | 17.5"                    | 18.5"                              | 6" x 1.2"    | 16.9lb         |
| Blue              | 470018B  |                              |             |               |                          |                                    |              |                |
| Red (Burgundy)    | 470018R  |                              |             |               |                          |                                    |              |                |
| neXus 3 Low       |          | 78 cm - 93 cm                | 56 cm       | 58 cm         | 45 cm                    | 47 cm                              | 15 cm x 3 cm | 7.7 kg         |
| Black             | 470022   | 30.5" - 36.5"                | 22"         | 23"           | 17.5"                    | 18.5"                              | 6" x 1.2"    | 17.1lb         |
| Blue              | 470022B  |                              |             |               |                          |                                    |              |                |
| Red (Burgundy)    | 470022R  |                              |             |               |                          |                                    |              |                |
| neXus 3 Standard  |          | 83 cm - 101 cm               | 61 cm       | 58 cm         | 45 cm                    | 47 cm                              | 15 cm x 3 cm | 7.8 kg         |
| Black             | 470024   | 32.5" - 39.8"                | 24"         | 23"           | 17.5"                    | 18.5"                              | 6" x 1.2"    | 17.3lb         |
| Blue              | 470024B  |                              |             |               |                          |                                    |              |                |
| Red (Burgundy)    | 470024R  |                              |             |               |                          |                                    |              |                |

Maximum User Weight: 200 kg / 441 lb



# MOBILITY ASSESSMENT FORMS |

# COMPLETING THE MOBILITY ASSESSMENT FORM

- Allows for systematic approach to mobility assessments
- Includes comprehensive set of questions to help form your recommendations
- Summary Section is critical to help you “pull it all together”
  - SO WHAT?
  - The place where all assessment data is synthesized into a succinct recommendation with justification

## Sample Summary & Recommendations for Wheelchair Assessment:

| RECOMMENDATIONS:                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mobility Base & Components                                                                                                                                                                                                                                          | Justification                                                                                                                                                                                                                                                                             |
| Type 5 Manual Wheelchair (dependent for propulsion)<br>- 18" wide x 18" deep<br>- 16.5" finished seat to foot plate height<br>- full length arm rests<br>- 80 degree hangers<br>- angle adjustable foot plates<br>- 24" rear wheels<br>- 8" casters<br><br><br><br> | - change of functional status<br>- client dependent for propulsion<br>- unable to reposition self independently<br>- frequent repositioning needed (approximately hourly)<br>- coccyx ulcer likely due to friction/shear/pressure (posterior pelvic tilt)<br><br><br><br><br>             |
| Seating System & Components                                                                                                                                                                                                                                         | Justification                                                                                                                                                                                                                                                                             |
| Back rest:<br>- 18" wide x 18" tall<br>- 4" lateral supports<br>- foam with adjustability to accommodate kyphosis<br><br>Cushion: Air cushion<br>- 18" wide x 18" deep<br><br>Headrest:<br>- multi-axial, contoured head rest<br>- height adjustable                | - Kyphosis<br>- reduced trunk control with tendency to lean to right<br>- tall back rest required for support in tilt wheelchair<br><br>- current skin breakdown<br>- dependent for mobility and unable to reposition independently<br><br>- required for support when in tilted position |

## Sample Summary & Recommendations for Walker Assessment:

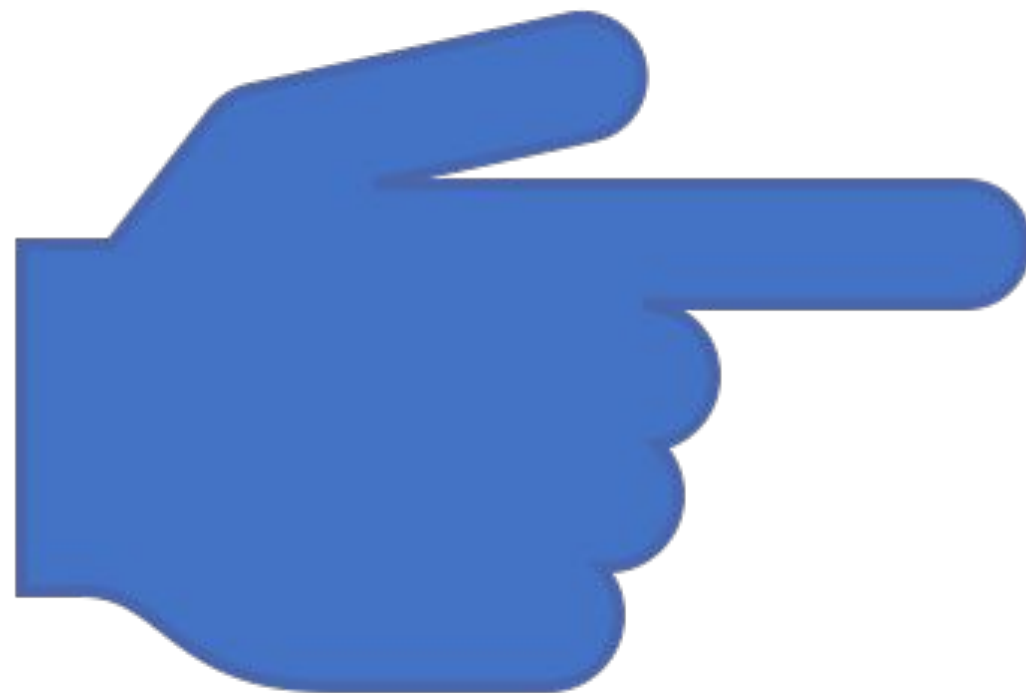
### **RECOMMENDED WALKER(S)**

Type 3 Rollator walker: seat height = 21", handle height = 32", width = 18", rubber handles, basket in front with curb climber. Colour – red



YOUR  
TURN

---



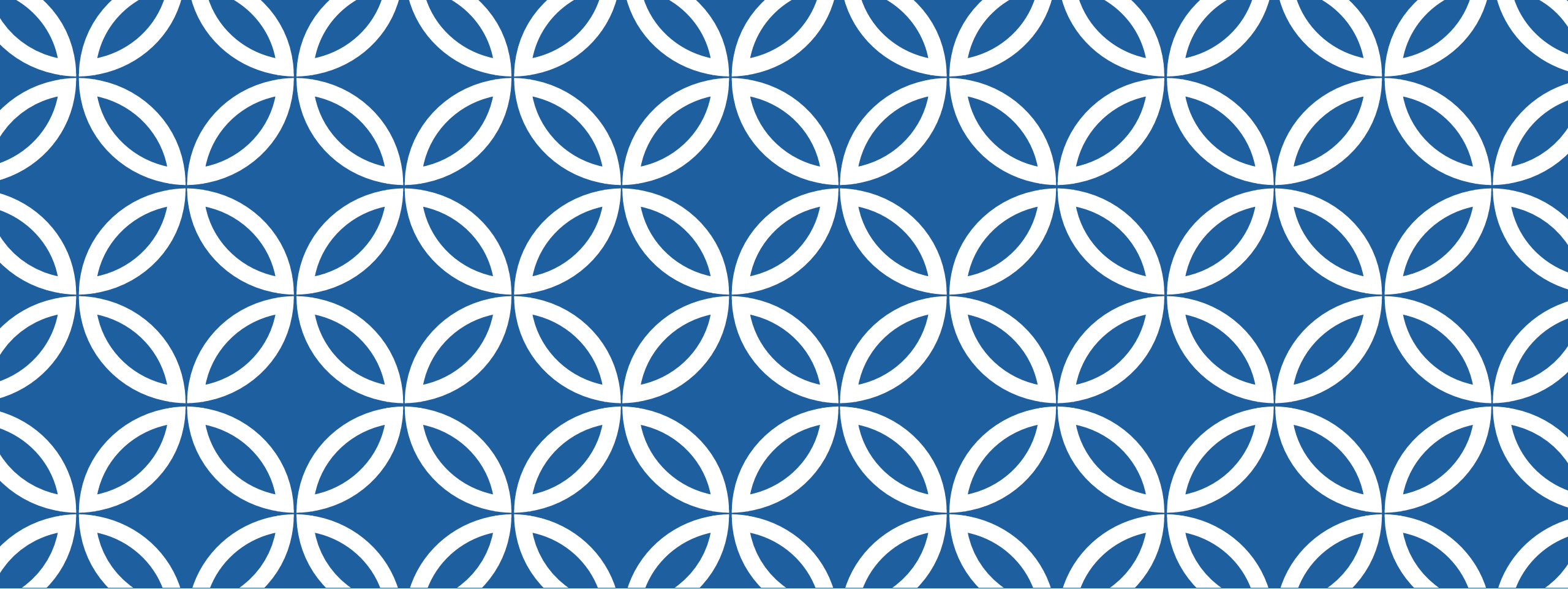
# SAMPLE SEATING ASSESSMENT:

- Based on the provided case, "Phillip Garcia", identify wheelchair and seating goals
- Using the provided seating assessment form, the [Seating and Mobility Evaluation Form \(Sunrise Medical\)](#), conduct a seating assessment on a peer who is playing the role of Phillip
  - Fill in the assessment form with demographic and background information about Phillip but complete the physical assessment portion based on your peer's measurements

# SAMPLE SEATING ASSESSMENT:

Continue with the [Seating and Mobility Evaluation Form \(Sunrise Medical\)](#):

- Based on your assessment findings, complete your wheelchair prescription for Phillip
- This includes specific details as to the recommended equipment in order to achieve Phillip's goals (for example: not the name brand of cushion but the type of cushion (i.e. air, gel, foam, etc.)



**WHAT'S NEXT?**



# EQUIPMENT TRIAL

Once you have completed your assessment and decided upon your equipment prescription, contact client's vendor of choice to request trial equipment

With trial equipment, evaluate:

- ☐ Client's goal
- ☐ Fit and comfort
- ☐ Correct/accommodate/position client as desired
- ☐ Mobility?
- ☐ Function?

## Once equipment trial is completed:

- complete funding application(s)
- follow-up with client once the new equipment has been delivered to ensure proper set-up (i.e. back angle, footplate height, seat depth, etc.)

# RELEVANT RESOURCE TO EVALUATE FIT

For Phillip who will be a hemiplegic foot propeller, here is a training video to help determine if you have the right set-up for optimal propulsion:

Dalhousie University

Wheelchair Skills Training

One-foot wheelchair propulsion forward

<https://www.youtube.com/watch?v=rKy7-npLXAg&feature=youtu.be>



YOUR CASE ASSIGNMENT |



# SEATING ASSESSMENT & ADP APPLICATION (INDIVIDUAL – 15%)

**DUE DATE: March 22, 2021**

- There is updated functional mobility information posted on OWL that relate to your CASE
- Complete a mobility assessment on a peer acting as your CASE client.
- On OWL, you will find a Walker Assessment Form, a Seating and Mobility Evaluation Form and some assessment results (i.e. Berg Balance Scale) that should be included in your clinical reasoning process.
- Please complete and submit the assessment forms and your recommendations for mobility equipment.
- In addition, please complete and submit the necessary pages of an Ontario Ministry of Health Mobility Devices ADP Application Form (see OWL).

# REFERENCES

Dalhousie University, Faculty of Medicine, Wheelchair Skills Program. Retrieved Jan 2019 from: <https://wheelchairskillsprogram.ca/en/>

Endsjo, A., Mullis, S. & Sharpe, L. Wheelchair Seating & Positioning Guide: Demystifying the provision of wheelchair seating and positioning for healthcare professionals. Retrieved Jan. 2020 from: <https://hub.permobil.com/wheelchair-seating-positioning-guide>

Frost, S. et al. (2012). *World Health Organization: Wheelchair Service Training Package - Basic level*. WHO Press. Geneva, Switzerland. Retrieved from: [https://apps.who.int/iris/bitstream/handle/10665/78236/9789241503471\\_reference\\_manual\\_eng.pdf?sequence=1](https://apps.who.int/iris/bitstream/handle/10665/78236/9789241503471_reference_manual_eng.pdf?sequence=1)

Ontario Ministry of Health and Long Term Care, Assistive Devices Program (Jan. 11, 2019). Retrieved from <http://www.health.gov.on.ca/en/pro/programs/adp/>

Waugh, K., & Crane, B. (2013). *A Clinical Application Guide to Standardized Wheelchair Seating Measure of the Body and Seating Support Surfaces*, 3<sup>rd</sup> Edition. Retrieved from: <https://www.ncart.us/uploads/userfiles/files/GuidetoSeatingMeasuresRevisedEdition.November2013.pdf>



**Ontario**

MINISTRY OF HEALTH AND LONG-TERM CARE

**MINISTRY OF HEALTH & LONG-TERM CARE**  
**ASSISTIVE DEVICES PROGRAM (ADP)**

**MOBILITY DEVICES POLICY AND ADMINISTRATION MANUAL**  
**FEBRUARY 2016**

**[HTTP://WWW.HEALTH.GOV.ON.CA/ADP](http://www.health.gov.on.ca/adp)**

# ASSISTIVE DEVICES PROGRAM (ADP)

Ontario funding program

Function based funding program (not income based)

Must have a valid Ontario Health Card

Must not be eligible for VAC Group A funding or WSIB funding

# ASSISTIVE DEVICES PROGRAM (ADP)

Assessment process involves three parties:

- The client/caregivers
- The ADP authorizer (OT/PT)
- The vendor

# ASSISTIVE DEVICES PROGRAM (ADP)

ADP will pay **75%** of the approved price, and the client will pay the remaining 25%

However, ADP will pay **100%** for clients receiving Social Assistance Benefits:

- Ontario Works (OW)
- Ontario Disability Support Program (ODSP)
- Assistance to Children with Severe Disabilities (ACSD)

# ASSISTIVE DEVICES PROGRAM (ADP)

There are three types of devices funded by ADP:

1. Ambulation Aids
2. Wheelchairs
3. Positioning Devices (Seating)

# ASSISTIVE DEVICES PROGRAM (ADP)

## Designated Funding Period

The funding period is the minimum period of time that a device is expected to remain useful.

1. Ambulation Aids - 5 years
2. Wheelchairs - 5 years
3. Power Dynamic Positioning Devices - 5 years
4. Positioning Devices (Seating) - 2 years.



# ASSISTIVE DEVICES PROGRAM (ADP)

## Eligibility Criteria

1. **Ambulation Aids:** The applicant must be able to operate the device independently.
2. **Manual Wheelchairs:** The applicant may or may not be able to propel the device independently.
3. **Power Wheelchairs:** The applicant must be able to operate the device independently.
4. **Positioning Systems (Seating):** The applicant must require the device to support posture in order to facilitate mobility.

# ASSISTIVE DEVICES PROGRAM (ADP)

## Basic Mobility Requirements

Funding is restricted to those devices that meet the applicant's **basic mobility requirements**

The device must be used on an **ongoing daily basis**.

The required and intended use of the device must be to provide mobility **within the applicant's place of residence** and to **gain entry/exit** from the applicant's place of residence.

Equipment required for a minimum of 6 months

# ASSISTIVE DEVICES PROGRAM (ADP)

Funding is **not** provided for mobility devices, including components, used solely for:

Travelling to and from destinations in the community

Post-operative needs

Pain management

Training, exercise or therapeutic purposes

Sports

Recreation and social activities

Work

School

Feeding, sleeping and other non-mobility related activities.

# ASSISTIVE DEVICES PROGRAM (ADP)

In order to determine what device is clinically required and basic for ADP funding purposes, the authorizer must:

- Complete a comprehensive functional assessment.
- Complete device trials from **most basic to the more complex**, taking the individual's medical condition and all environmental and safety issues into consideration.
- Provide medical diagnosis, avoid including a list of symptoms.
- Provide details related to the need for the device must be provided within the functional mobility section of the form using precise language to confirm eligibility

# ASSISTIVE DEVICES PROGRAM (ADP)

## **Manual Wheelchair Mobility**

- Where independent ambulation is not possible
- The individual's basic mobility requirements cannot be met by the use of a generic/transport chair
- Factors that will influence the prescription details include the applicant's medical condition and prognosis, and seating needs now and in the foreseeable future.

# ASSISTIVE DEVICES PROGRAM (ADP)

## **Manual Wheelchair Mobility Aids funded by ADP:**

Manual wheelchairs

Paediatric dependent wheeled bases

Power wheelchairs, power bases, power add-on devices, power scooters

Approved options for manual and power wheelchairs

# ASSISTIVE DEVICES PROGRAM (ADP)

## **Positioning Devices (Seating) funded by ADP:**

- must be required to support posture and/or provide pressure relief in a wheelchair specifically to facilitate mobility.

Types of positioning products funded by ADP include:

- Modular/commercially available and custom fabricated devices to support the head, neck, trunk, pelvis and extremities in a wheelchair
- Power dynamic seating systems (tilt/recline/elevating leg rests)

# ASSISTIVE DEVICES PROGRAM (ADP)

## **Manual Wheelchair with Manual Dynamic Tilt System**

Manual dynamic tilt system must achieve one or more of the following goals:

- Increase sitting tolerance where there is risk of tissue trauma due to unrelieved pressure and inability to weight shift independently and/or there is an inability to maintain a functional postural position
- Maintain skin integrity where there is past/present history of tissue trauma, inability to weight shift independently and fixed seating alone is not an adequate solution.



# ASSISTIVE DEVICES PROGRAM (ADP)

## **Power Mobility Devices**

Where manual mobility is precluded

### **Types of Power Mobility Devices:**

- ☐ Power wheelchairs
- ☐ Power bases
- ☐ Power add-on devices
- ☐ Power scooters

# ASSISTIVE DEVICES PROGRAM (ADP)



# ASSISTIVE DEVICES PROGRAM (ADP)

## **Power Scooter:**

ADP funding should only be requested for a power scooter when:

- ❑ Power mobility is basic mobility device
- ❑ The Applicant does not have seating requirements now or in the foreseeable future
- ❑ The scooter is not intended to be a replacement for a car or another transportation modality
- ❑ The Applicant can transfer independently on to and off the scooter

# ASSISTIVE DEVICES PROGRAM (ADP)

## **Central Equipment Pool (CEP)**

High technology power wheelchairs, defined as a power wheelchair and/or power base that includes a power dynamic positioning device - tilt and/or recline – as a component.

### Eligibility Criteria:

1. Maintain skin integrity where there is a high risk of tissue trauma and a loss of ability to effectively weight shift independently;
2. Maximize respiratory function
3. Maintain independent mobility through increased sitting tolerance

# ASSISTIVE DEVICES PROGRAM (ADP)

## Central Equipment Pool (CEP)





DALHOUSIE  
UNIVERSITY

*Faculty of Medicine*  
Wheelchair Skills Program

**WHEELCHAIR  
SKILLS** PROGRAM



## **Wheelchair Skills Program Manual 5.0**

<https://wheelchairskillsprogram.ca/en/>

**Wheelchair Skills Test (WST) Version 5.0 Form****Manual Wheelchairs**

Name of wheelchair user: \_\_\_\_\_

Caregiver assisting (if any): \_\_\_\_\_

Tester: \_\_\_\_\_

Date: \_\_\_\_\_

| #                            | Individual Skill                               | Capacity (0-3)* | Comments                      |
|------------------------------|------------------------------------------------|-----------------|-------------------------------|
| 1                            | Rolls forward short distance                   |                 |                               |
| 2                            | Rolls backward short distance                  |                 |                               |
| 3                            | Stops on command                               |                 |                               |
| 4                            | Turns in place                                 |                 |                               |
| 5                            | Turns while moving forward                     |                 |                               |
| 6                            | Turns while moving backward                    |                 |                               |
| 7                            | Maneuvers sideways                             |                 |                               |
| 8                            | Picks objects from floor                       |                 |                               |
| 9                            | Relieves weight from buttocks                  |                 |                               |
| 10                           | Performs level transfers                       |                 |                               |
| 11                           | Folds and unfolds wheelchair                   |                 |                               |
| 12                           | Gets through hinged door                       |                 |                               |
| 13                           | Rolls longer distance                          |                 |                               |
| 14                           | Ascends slight incline                         |                 |                               |
| 15                           | Descends slight incline                        |                 |                               |
| 16                           | Ascends steep incline                          |                 |                               |
| 17                           | Descends steep incline                         |                 |                               |
| 18                           | Rolls across side-slope                        |                 |                               |
| 19                           | Rolls on soft surface                          |                 |                               |
| 20                           | Gets over obstacle                             |                 |                               |
| 21                           | Gets over gap                                  |                 |                               |
| 22                           | Ascends low curb                               |                 |                               |
| 23                           | Descends low curb                              |                 |                               |
| 24                           | Ascends high curb                              |                 |                               |
| 25                           | Descends high curb                             |                 |                               |
| 26                           | Performs wheelchair-ground transfers           |                 |                               |
| 27                           | Performs stationary wheelie                    |                 |                               |
| 28                           | Turns in place in wheelie position             |                 |                               |
| 29                           | Rolls forward and backward in wheelie position |                 |                               |
| 30                           | Descends high curb in wheelie position         |                 |                               |
| 31                           | Descends steep incline in wheelie position     |                 |                               |
| 32                           | Ascends stairs                                 |                 |                               |
| 33                           | Descends stairs                                |                 |                               |
| Total score:**               |                                                | %               | Total testing time (minutes): |
| * See criteria on next page. |                                                |                 |                               |
| ** See formula on next page. |                                                |                 |                               |

WST 5.0 Form for Manual Wheelchairs  
Originally approved for distribution and use: August 17, 2018  
Current version: August 17, 2018

| General Scale for Scoring Skill Capacity* |    |                                                                                              |
|-------------------------------------------|----|----------------------------------------------------------------------------------------------|
| Advanced pass                             | 3  | The subject carries out the skill in a highly proficient or advanced manner.                 |
| Pass                                      | 2  | The subject carries out the skill independently and safely, but imperfectly.                 |
| Partial pass                              | 1  | The subject completes a majority of the evaluation criteria.                                 |
| Fail                                      | 0  | The subject does not complete a majority of the evaluation criteria, is unsafe or unwilling. |
| Not Possible                              | NP | The wheelchair does not have the parts to allow this skill.                                  |
| Testing Error                             | TE | The tester cannot assess the skill for some reason.                                          |

\* More details, including criteria specific to individual skills can be found in the WSP Manual.

**Formula for calculating total percentage score:**

Total WST Capacity Score = sum of individual skill scores / ([number of possible skills – number of NP scores – number of TE scores] x 3) X 100%

General comments including any suggestions for remediation:

Details about the WST can be found in the WSP Manual at <http://www.wheelchairskillsprogram.ca/eng/manual.php/>.

WST 5.0 Form for Manual Wheelchairs  
Originally approved for distribution and use: August 17, 2018  
Current version: August 17, 2018





**Wheelchair Skills Test (WST) Version 5.0 Form****Powered Wheelchairs**

Name of wheelchair user: \_\_\_\_\_

Caregiver assisting (if any): \_\_\_\_\_

Tester: \_\_\_\_\_ Date: \_\_\_\_\_

| #                            | Individual Skill                     | Capacity (0-3)* | Comments                      |
|------------------------------|--------------------------------------|-----------------|-------------------------------|
| 1                            | Positions and operates controller    |                 |                               |
| 2                            | Operates body positioning options    |                 |                               |
| 3                            | Rolls forward short distance         |                 |                               |
| 4                            | Rolls backward short distance        |                 |                               |
| 5                            | Stops on command                     |                 |                               |
| 6                            | Turns in place                       |                 |                               |
| 7                            | Turns while moving forward           |                 |                               |
| 8                            | Turns while moving backward          |                 |                               |
| 9                            | Maneuvers sideways                   |                 |                               |
| 10                           | Picks objects from floor             |                 |                               |
| 11                           | Relieves weight from buttocks        |                 |                               |
| 12                           | Performs level transfers             |                 |                               |
| 13                           | Gets through hinged door             |                 |                               |
| 14                           | Rolls longer distance                |                 |                               |
| 15                           | Ascends slight incline               |                 |                               |
| 16                           | Descends slight incline              |                 |                               |
| 17                           | Ascends steep incline                |                 |                               |
| 18                           | Descends steep incline               |                 |                               |
| 19                           | Rolls across side-slope              |                 |                               |
| 20                           | Rolls on soft surface                |                 |                               |
| 21                           | Gets over obstacle                   |                 |                               |
| 22                           | Gets over gap                        |                 |                               |
| 23                           | Ascends low curb                     |                 |                               |
| 24                           | Descends low curb                    |                 |                               |
| 25                           | Performs wheelchair-ground transfers |                 |                               |
| Total score:**               |                                      | %               | Total testing time (minutes): |
| * See criteria on next page. |                                      |                 |                               |
| ** See formula on next page. |                                      |                 |                               |

**General Scale for Scoring Skill Capacity\***

|               |    |                                                                                              |
|---------------|----|----------------------------------------------------------------------------------------------|
| Advanced pass | 3  | The subject carries out the skill in a highly proficient or advanced manner.                 |
| Pass          | 2  | The subject carries out the skill independently and safely, but imperfectly.                 |
| Partial pass  | 1  | The subject completes a majority of the evaluation criteria.                                 |
| Fail          | 0  | The subject does not complete a majority of the evaluation criteria, is unsafe or unwilling. |
| Not Possible  | NP | The wheelchair does not have the parts to allow this skill.                                  |
| Testing Error | TE | The tester cannot assess the skill for some reason.                                          |

\* More details, including criteria specific to individual skills can be found in the WSP Manual.

**Formula for calculating total percentage score:**

$$\text{Total WST Capacity Score} = \frac{\text{sum of individual skill scores} - (\text{number of possible skills} - \text{number of NP scores} - \text{number of TE scores}) \times 3}{3} \times 100\%$$

General comments including any suggestions for remediation:

Details about the WST can be found in the WSP Manual at <http://www.wheelchairskillsprogram.ca/eng/manual.php/>.

WST 5.0 Form for Powered Wheelchairs  
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