



Confidence in posture solutions

## 13 STEPS TO A BASIC SEATING POSTURE Passive Wheelchairs

### **Introduction**

This checklist has been devised as a tool to aid the basic assessment of a client in a passive or comfort wheelchair. There are multitude of accessories available for this process and we have chosen to focus on a small selection. For more information about accessories, please refer to the Invacare Rea sales literature or go to [www.invacare-rea.com](http://www.invacare-rea.com) or [www.invacare.co.uk](http://www.invacare.co.uk)

Thanks for contributing to safer seating posture!

### **Goal**

- To evaluate the posture of the client
- To have a logical sequence in adjusting a seating system for your client
- To check how the client is seated after you have made a change in the existing seating system
- To be able to measure differences before and after a fitting/ assessment

The first column of the checklist explains the 13 steps. It contains the main questions and hints on how to check the critical areas.

The next column tells you what to adjust (refer to the user manual for product specific information) and what to aim for.

The final column identifies possible problem areas and considerations: if something does not work during one of the steps, the problem area will give solution suggestions.


The checklist takes assumes that you are aware of the way the pelvis and spine interface with each other and with the rest of the body.

### **Points to remember**

- The client must sit in a wheelchair.
- Examination - explain what you want to check and that you will need to touch them - with their permission.
- The wheelchair sizes should correspond to the size of the client.
- As the different body parts are interconnected a change in one position may have consequences on previous adjustments.
- Make one adjustment at a time. Analyze the results before each adjustment.

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Checklist	What to adjust and the aim	Possible problem areas / Considerations
<p><b>1.1 Mapping the user</b></p> <p>A. Activities in daily living            B. Physiological condition            C. Psychological factors            D. Social situation            E. Economical factors</p>		Remember that the client relatives, therapist, etc. may have different opinions about goals
<p><b>1.2 Preparations</b></p> <p>1. Tilt and recline the chair slightly            2. Remove the legrests            3. Put a cushion or support under the feet</p>	<b>Relaxed feet position</b>	The hamstrings should be relaxed. This is achieved naturally if the user can move their feet to a preferred position
<p><b>2. Position of buttocks in the chair</b></p> <p>Is the client sitting as far into the seat as possible?            Should the backrest be slightly reclined?</p> <p>Lean the client forward and check the position from above by palpating the buttocks.</p> <p>To be done before and after the adjustment</p>	<p>Seat depth</p> <p><b>The client should sit as far back as possible</b></p>	<p>Check pressure distribution of the buttocks with your hand comparing backrest with seating</p>  <p>The upper inside of the calf should not touch the seat cushion. Strive for a 2-3 cm space</p>
<p><b>3. Pelvic symmetry</b></p> <p>Palpate SIAS/ ASIS</p> <p>Check whether the two upper pelvic edges are level.</p> <p>After adjustment, check pressure with two fingers, between side guard and Trochanter</p>	<p>Seat width</p> <p><b>Should be as narrow as possible without allowing direct pressure</b></p>	<p>Kneel in front of the client so you are at eye level with your hands when palpating SIAS/ ASIS</p> <p>The armrest sides should “just” touch the buttock sides at Trochanter area</p>


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<p><b>4. Position of the feet</b></p> <ol style="list-style-type: none"> <li>1. Check hamstring tightness</li> <li>2. Choose and add legrests that correspond to the preferred position that the client has selected</li> <li>3. Check if the feet are bearing weight</li> <li>4. Check height of foot plate</li> <li>5. Check pelvic position by SIAS</li> </ol>	<p>Footrest height, angle and depth Legrests angle</p> <p>Calf pad support – adjust height and depth</p> <p><b>The feet should be positioned so the pelvis is in a natural position</b></p>	<p><b>Hamstrings should never be tight – it will pull the pelvis into a backward rotation! Check hamstring tendons for relaxed position</b></p> <p>Pressure applied under the soles of the feet stimulate upright posture and help to keep them on the footplates Use two fingers for pressure checks at cushion level – both top and front</p>
<p><b>5. Position of thighs</b></p> <p>Check if the thighs are parallel and straight and facing forward</p> <p>Check that the hamstrings are relaxed</p>	<p>Adjust the width of the legrests to avoid pressure on knees</p> <p><b>The legs should be as straight as possible</b></p>	<p>The upper legs should not be abducted, adducted or wind-swept</p>
<p><b>6. Seat angle and cushion</b></p> <ol style="list-style-type: none"> <li>1. Assess how the body pressure should be divided between seat and backrest</li> <li>2. Create a stable sitting position</li> <li>3. Insert your hand between client and seat, little finger first, and feel the pressure both before and after the adjustment</li> <li>4. Check patient for comfort</li> <li>5. Check risks of decubitus (pressure ulcer) – use the Norton scale or similar and proceed accordingly</li> </ol>	<p>Adjust the seat angle (tilt) with the lever at the rear of the backrest</p> <p><b>There should a large contact area between seat and backrest</b></p>	<p>Make sure that you have a seat cushion that allows enough space for the ischial tuberosities</p> <p>The seat should be tilted just enough to maintain balance and feel secure. Check that eyes and ears are level: this ensures that the client remains alert</p>



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<p><b>7. Back angle</b></p> <p>1. Check position of head and how it is balanced in the spine</p> <p>2. Lean the client forward and check the position from above by palpating the both buttocks</p> <p>Check for comfort</p>	<p>Adjust the backrest angle with the lever at the rear to a relaxed position</p> <p><b>Ears and eyes should be parallel with the floor and the complete backrest should support the backrest of the client</b></p>	<p>To avoid sliding out of the chair, have the backrest as upright as possible</p> 
<p><b>8. Back height</b></p> <p>Check for comfort and mobility</p> <p>Check with your hand for pressure distribution</p>	<p>Adjust the backrest height</p> <p><b>The support should be at least up to the client's arm pits</b></p>	<p>Make sure that the shoulder blades are not pushed forward</p>
<p><b>9. Back shape</b></p> <p>Check support of preferred posture.</p> <p>Use your hand for pressure evaluation</p>	<p>If not sufficient adjust with wedges and/ or the tension-adjustable backrest</p> <p><b>Strive for mobility movement without locking the posture</b></p>	<p>Strive for a natural pelvic position. Ensure that firm support is given just at the upper pelvis (sacrum-iliac joint) to avoid backward rotation of pelvis</p>
<p><b>10. Arm rest</b></p> <p>Evaluate the support both for upper and lower trunk by giving stabilisation with your hands</p>	<p>Adjust height and depth</p> <p><b>Shoulder area should be relaxed</b></p>	<p>Does it give support during transferal/ body shifting</p>

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<p><b>11. Lateral / trunk support</b> Create upper body stability</p>	<p>Adjust the depth and height</p> <p><b>The body posture should be stable thanks to rear rather than side support</b></p>	<p>Could another backrest cushion/ backrest base give better support?</p>
<p><b>12. Head support</b> Check the reason: 1. Support during transportation 2. Tilt in space</p>	<p>Adjust height and angle and loosen all screws then adjust from the bottom to the top</p> <p><b>Neck and headrests should be used when seat angle is &gt; 105°</b></p>	 <p>Support area for car- transportation</p>  <p>Support area for normal use</p>
<p><b>13. Tilt in space</b> Check interval of relevant use</p> <p>Make a final check with your hand around the user for distribution of pressure - this will indicate if optimum support is being given</p>	<p>Adjust the backrest angle with the lever at the rear</p> <p><b>Tilt should be used in short periods for weight and pressure distribution purposes</b></p>	<p>As tilt increases, the pressure distribution transfers from the seat to the backrest area</p> <p>Please note that a greater tilt angle increases drowsiness and decreases activity levels</p>