

Author Year Country Research Design Sample Size	Methods	Outcome
<p>Hobson 1992 USA Prospective Controlled Trial N=22</p>	<p>Population: <i>SCI group</i> (n=12): Mean Age=40.9 yr; Gender: males=10, females=2; Level of injury: paraplegia=7, tetraplegia=5; Severity of injury: complete; Mean time since injury=19.5 yr. <i>Able-Bodied group</i> (n=10): Mean age=39.3 yr; Gender: males=6, females=4. Intervention: Comparison of Pressure mapping and shear measurements from midline neutral posture to eight typical wheelchair-sitting postures (trunk bending left and right, forward trunk flexion 30 and 50 degrees, back recline 110 and 120 degrees and tilt 10 and 20 degrees). Outcome Measures: Tangentially induced shear (TIS) measuring shear forces; Pressure distribution – Oxford Pressure Monitor Device measuring average and maximum pressure and peak pressures gradient.</p>	<ol style="list-style-type: none"> 1. Mean maximum pressure was on average 26% higher in the SCI group versus the able-bodied group. 2. Forward trunk flexion reduced the average pressure for both groups; however, SCI group encountered a 10% increase in pressure at the initial 30° of forward flex before a reduction occurred. 3. SCI subjects had a mean peak pressure gradient that was 1.5-2.5 greater than able-bodied subjects. Maximum decrease of pressure gradient from a neutral position happened after the backrest reclined to 120°. 4. When a sitting position change occurred, a similar shift to the anterior/posterior midline location of maximum pressure was experienced in both groups. From neutral, a forward trunk flexion at 30° and 50° produced a 2.4 and 2.7 cm posterior shift. When the backrest reclined to 120°, the greatest posterior shift occurred at 6 cm.
<p>Gutierrez et al. 2004 Sweden Case Control N=33</p>	<p>Population: <i>SCI group</i>: Gender: males=25; Level of injury: paraplegia=25; Severity of injury: AIS A=25. <i>Able-bodied group</i>: Gender: males=8. Intervention: Posture changes as related to pressure, contact area and symmetry of loading, on a standardized hard surface and for SCI, in their wheelchair as well. Outcome Measures: Pressure distribution via Tekscan Pressure Mat.</p>	<ol style="list-style-type: none"> 1. Significant differences were found between the groups. SCI group had increased pressure ($p<0.01$), decreased contact area ($p<0.01$) and increased asymmetry ($p<0.05$). 2. Sitting in their own wheelchair improved pressure distribution, as compared to the hard surface. Although total seating area force increased ($p<0.01$), the pressure reduced and the contact area increased ($p<0.01$). 3. No improvements occurred when comparing relaxed and upright position in their own wheelchair.