

Author, Year; Country Score Research Design Total Sample Size	Methods	Outcome
<p>Bertschy et al. 2016 Switzerland Retrospective Interview study Level 5 N=17</p>	<p><b>Population:</b> 17 women who are mothers with SCIs who gave birth over to 23 children over the last 15 years (age range= 18-54 years), mean age of SCI= 21yo, mean age of giving birth= 33yo, 13 paraplegic and 4 tetraplegics</p> <p><b>Treatment:</b> None. Descriptive study of the most frequent secondary medical problems during the pregnancies of women with SCI.</p> <p><b>Outcome Measures:</b> The questionnaire specifically asked about skin problems, bowel function, UTI frequency, mode of delivery, decubital ulcers, hospital admissions, medication changes, respiratory tract problems, and changes in neurogenic lower urinary tract dysfunction symptoms. In addition, patients were asked whether they took prophylactic measures against UTIs, decubitis, and deep vein thrombosis.</p>	<ol style="list-style-type: none"> <li>1. All participants practiced independent bladder management. 3 women changed their bladder management techniques during pregnancy. 5 women reported an increased bladder evacuation frequency during pregnancy, and 6 women reported a new onset or increase in incontinence.</li> <li>2. 10/17 women performed prophylactic measures against deep vein thrombosis where 9/10 of them used compressive stockings. No incidences of deep vein thrombosis were diagnosed during pregnancy.</li> <li>3. 10 women were hospitalized during the course of their pregnancies. Aside from urinary tract infections/ pyelonephritis, women were hospitalized for falls, hypertension, pneumonia, preeclampsia, pre-term labour or tachycardia.</li> <li>4. Although medical complications are not infrequent during pregnancy in women with SCIs, pregnancy and delivery in this group of women are possible without posing intolerable risks to the mothers or the children.</li> <li>5. 5 women had vaginal births (1 required general anesthesia) while 11 women underwent caesarean sections (8 general and 3 epidural anesthesia).</li> </ol>
<p>Iezzoni et al. 2015 USA Observational Study Level 5 N=22 (8 SCI)</p>	<p><b>Population:</b> 22 women (34.8±5.3years); most were white, well-educated, and higher income; 8 had SCI, 4 had cerebral palsy, 10 had other conditions; 18 used wheeled mobility aids.</p> <p><b>Treatment:</b> None</p> <p><b>Outcome Measures:</b> Interviews.</p>	<ol style="list-style-type: none"> <li>1. Some women's obstetricians had height adjustable examination tables, which facilitated transfers for physical examinations. Other women had difficulty transferring onto fixed height examination tables and were examined while sitting in their wheelchairs.</li> <li>2. Family members and/or clinical staff sometimes assisted with transfers; some women reported concerns about transfer safety.</li> <li>3. No women reported being routinely weighed on an accessible weight scale by their prenatal care clinicians. A few were never weighed during their pregnancies.</li> </ol>
<p>Iezzoni et al. 2015 USA Observational Study</p>	<p><b>Population:</b> 22 women (34.8±5.3years); most were white, well-educated, and higher income; 8 had SCI, 4 had cerebral palsy, 10 had other conditions; 18 used wheeled mobility aids.</p> <p><b>Treatment:</b> None</p>	<ol style="list-style-type: none"> <li>1. 14 had cesarean deliveries (8 elective).</li> <li>2. Impairment-related complications during pregnancy included: falls; urinary tract and bladder problems; wheelchair fit and stability problems that reduced mobility and compromised safety; significant shortness of breath, sometimes requiring respiratory support; increased spasticity; bowel management difficulties; and skin</li> </ol>

<p>Level 5 N=22 (8 SCI)</p>	<p><b>Outcome Measures:</b> Functional impairment-related complications during pregnancy.</p>	<p>integrity problems (this was rare, but many women greatly increased skin monitoring during pregnancy to prevent pressure ulcers).</p> <ol style="list-style-type: none"> <li>Women with mobility disabilities appear to experience problems relating to their functional impairments.</li> <li>Pre-conception planning and in-depth discussions during early pregnancy could potentially assist women with mobility disabilities to anticipate and address these difficulties.</li> </ol>
<p>Iezzoni et al. 2015; USA Cross-sectional study Level 5 N=1907</p>	<p><b>Population:</b> 1907 women with traumatic SCI (age range=18-49 years).</p> <p><b>Treatment:</b> None</p> <p><b>Outcome Measures:</b> Data included SCI clinical details, functional impairments, participation measures, depressive symptoms, life satisfaction, and hospitalizations in the last year relating to pregnancy or its complications.</p>	<ol style="list-style-type: none"> <li>2% of participants were hospitalized during the past 12 months for a reason related to pregnancy), which differed significantly by the years elapsed since injury.</li> <li>The highest rate occurred 15 years post injury (3.7%).</li> <li>Younger age at injury was associated with current pregnancy (<math>P &lt; 0.0001</math>).</li> <li>Those reporting pregnancy were more likely to be married or partnered, have sport-related SCI, have higher motor scores, and have more positive psychosocial status scores.</li> </ol>
<p>Morton et al. 2013 USA Case-control Level 3 N = 34</p>	<p><b>Population:</b> 48 pregnancies in 34 women with various physical disabilities (22 of the pregnancies were by women with SCI). Median maternal age of 27 years (range 21-40 years). 17 women had injuries at or above T6 and 5 had a SCI below T6.</p> <p><b>Treatment:</b> None</p> <p><b>Outcome Measures:</b> Pregnancy complications and evaluation of breastfeeding 6 weeks postpartum</p>	<ol style="list-style-type: none"> <li>Women with physical disabilities were less likely to breastfeed (53%) their children than able-bodied women (77%; <math>P = 0.02</math>).</li> <li>Medications used by patients with chronic SCI may affect breastfeeding rates.</li> <li>Autonomic Dysreflexia (AD) occurred in 10 out of 17 women with SCI T6 and above.</li> </ol>
<p>Skowronski &amp; Hartman 2008 Australia Case Series Level 4 N = 5</p>	<p><b>Population:</b> All tetraplegic women presenting to the obstetric service of a university teaching hospital, which also provides a regional spinal injury service, between 1981 and 2006. This case series describes seven pregnancies in five tetraplegic women. Mean age at the time of injury was 22 years, and, at the time of pregnancy, 33 years. All participants had spinal cord injuries in the region of C6.</p> <p><b>Treatment:</b> None</p> <p><b>Outcome Measures:</b> Course, complications, management and outcomes of pregnancy in tetraplegic women.</p>	<ol style="list-style-type: none"> <li>Of the seven pregnancies, 2 were babies who were exclusively breastfed, 2 were fed with breast milk and supplements, 1 was bottle fed, 1 was express fed + supplements, and 1 was fed for two days nasogastric feeding, then by bottle.</li> <li>All 5 women experienced some difficulties with breastfeeding, including autonomic dysreflexia, inhibition of the milk ejection reflex, and problems of infant handling.</li> <li>Paradoxically, one participant with complete cord lesion at C6 had minimal difficulties with breastfeeding.</li> </ol>

<p>Mitra et al. 2015 USA Cross-sectional Level 5 N = 13,361</p>	<p><b>Population:</b> Women with disability (n = 1,015) and women without disability (n = 12,346). Ages categorized as &lt;20, 20-29, 30-39 and 40 years. <b>Treatment:</b> None <b>Outcome Measures:</b> maternal attitudes and experiences</p>	<ol style="list-style-type: none"> <li>1. 70% of women with disabilities reported ever breastfeeding or pumping compared to 75% of women without disabilities (<math>P &lt; 0.01</math>).</li> <li>2. 45% of women with disabilities were currently breastfeeding versus 53% of women without disabilities (<math>P &lt; 0.01</math>).</li> <li>3. Type of disability is not specified: participants self-identified by answering "Are you limited in any way in any activities because of physical, mental, or emotional problems?"</li> </ol>
<p>Jackson &amp; Wadley 1999 USA Cross-sectional Level 5 N = 472</p>	<p><b>Population:</b> Women who gave birth pre-injury (n=242) and postinjury (n=66). Mean age at interview was 40 years. Cervical, thoracic and lumbar with AIS A, B, C, D. Lesion levels and breakdown not provided for women who answered pregnancy questions. <b>Treatment:</b> None <b>Outcome measures:</b> self-reported reproductive health issues</p>	<ol style="list-style-type: none"> <li>1. Of women who gave birth pre-SCI, 28% breastfed their children pre-injury; only 11% breastfed post-injury (<math>P &lt; 0.05</math>).</li> <li>2. Breastfeeding duration was longer post-SCI than pre-SCI at 6.1 months vs 4.2 months.</li> </ol>
<p>Lee et al. 2018 Sweden and Canada Cross-sectional Level 5 N = 102</p>	<p><b>Population:</b> Women with SCI (C1-L4). Mean age <math>41.31 \pm 9.77</math> years. AD was reported by 46.7% of women with cervical SCI (n = 14). 25% of women with upper thoracic (T1-T6) SCI (n = 3) and 13.1% of women with low-level SCI below or at T7 (n = 8). 76.7% (n = 23) of women with cervical SCI indicated insufficient milk production as a major breastfeeding complication compared to 58.3% (n = 7) of upper thoracic and 36.1% (n = 22) of low-level SCI. <b>Treatment:</b> None <b>Outcome measures:</b> Participants' injury, pregnancy, childbirth, lactation/breastfeeding difficulties, breastfeeding education and psychological wellbeing (using validated scales for quality of life after SCI, postpartum depression, anxiety, maternal self-efficacy).</p>	<ol style="list-style-type: none"> <li>1. Breastfeeding cessation in women with cervical and upper thoracic SCI was mainly due to lack of time for both breastfeeding and personal care (bladder care, showering, activities of daily living).</li> <li>2. The low-level SCI group reported sleep deprivation.</li> <li>3. 63% (n = 56) of women who sought information self-researched or received no education on breastfeeding with SCI.</li> </ol>

<p>Gragg 2015 USA Case Study Level 5 N = 1</p>	<p><b>Population:</b> One mother with SCI C6/C7 (n=1). <b>Treatment:</b> None <b>Outcome measures:</b> breastfeeding challenges and supports</p>	<ol style="list-style-type: none"> <li>1. Although some difficulties with ineffective latch were experienced, infant latched successfully overall with assistance (while in hospital and early postpartum). A lactation consultant made informal home visits early in postpartum which may have helped.</li> <li>2. Mother did experience let-down reflex.</li> <li>3. Infant was breastfed exclusively until milk supply decreased at 7-8 weeks. Night supplementation began until 10 weeks. Donated human milk was then used until 12 weeks.</li> </ol>
<p>Cross et al. 1991 USA Interview study Qualitative N = 16</p>	<p><b>Population:</b> 16 women with SCI, with a total of 22 live births. Average maternal age (at delivery) was 25.6 years. 9 injured at or above T6 (12 live births), 7 injured below T6 (10 live births). <b>Treatment:</b> None <b>Outcome measures:</b> pregnancy outcomes and complications.</p>	<ol style="list-style-type: none"> <li>1. All women who chose to breastfeed were able to do so (number of women or SCI level is not stated for those women).</li> <li>2. One woman reported an increase in spasticity while breastfeeding her child.</li> </ol>
<p>Hocaloski et al. 2017 Canada Workshop Report N = 29</p>	<p><b>Population:</b> Of 29 women in attendance, there were 7 physicians, 7 registered nurses (RNs), 5 people with SCI, 2 physical therapists (PTs), 2 occupational therapists (OTs), 1 mental health professional, 1 social worker, 1 researcher, 1 knowledge translation (KT) specialist, 1 PhD student. <b>Treatment:</b> None <b>Outcome measures:</b> n/a (workshop for consensus on care in Canada)</p>	<ol style="list-style-type: none"> <li>1. A pre-meeting online survey of stakeholders elucidated 3 themes: lack of knowledge for both consumers and care providers, gaps in access to services and information, and a need for collaboration throughout the perinatal journey.</li> <li>2. The workshop addressed issues of care providers' lack of knowledge of non-medical issues during the perinatal period, physical and attitudinal barriers to access to care for women with SCI, and the need for better collaboration and communication between care providers, the latter potentially initiated by providing information to care providers through the women with SCI themselves.</li> <li>3. Content experts attending the workshop collectively made recommendations for knowledge generation and research priorities, clinical application priorities, and the need for policy and guideline development in this field. Two information sources for women have since been developed and are available online</li> </ol>