

Author Year Country Research Design PEDro Score Total Sample Size	Methods	Outcome
<p>Scivoletto et al. (2006) Italy Case Series N=117</p>	<p>Population: Mean age=55.1yr; Gender: males=71, females=46; Level of injury: C=37, T=59, LS=21; Severity of injury: AIS A=36, C=53, D=28; Etiology of injury: non-traumatic=81, traumatic=36 Treatment: Charts of patients admitted to rehabilitation 90 days or more post injury (mean 136±55.6 days) were examined. All patients received individual PT 40 minutes twice a day, 5 days a week and one 60 min therapy on Saturday. Patients also received water therapy 45 mins twice weekly and OT 45 min 3day/week. Outcome Measures: BI, Walking Index for Spinal Cord Injury (WISCI), Rivermead Mobility index (RMI), bladder management, discharge destination, AIS. All collected at admission and discharge.</p>	<ol style="list-style-type: none"> 1. Delayed admission still resulted in significant improvement in: 2. BI, WISCI, RMI, Motor scores, gait (p<0.001). 3. Mean LOS was 99.7±62.5 days (median 100 days). 4. At discharge 49 of 117 patients were able to achieve normal bladder control, 28 used clean intermittent catheterization and 34 self intermittent catheterization. 5. 90% (104) patients returned home post rehabilitation, 8% were transferred to acute ward due to complications, and 2% were discharged to other rehabilitation facilities. 6. No significant neurological recovery was seen in the AIS A group; however, 51% of those in the AIS C group improved to AIS D (p=0.007).
<p>Amin et al.(2005) England Case Control N_{Initial}=432; N_{Final}=432</p>	<p>Population: SCI, tetraplegia, paraplegia, traumatic. Treatment: No intervention. Comparison of those admitted to a specialized integrated spinal unit (i.e., combined acute and rehabilitation) with or without a delay between injury and referral (>3 days) and between referral and admission (>7 days). Outcome Measures: LOS.</p>	<ol style="list-style-type: none"> 1. Those admitted with a delay (>7 days) following referral had significantly longer LOS (p<0.001). This was for people with both complete (N=59) and incomplete (N=29) injuries but not for those without spinal cord damage (N=24). 2. More severe injuries (as determined by Injury Severity Scores) were more likely to have longer LOS (Spearman's =0.593, p<0.0001). 3. Those who were admitted with a delay between injury and referral (>3 days) did not differ on LOS with those who did not experience a delay (p=0.44). 4. The primary reasons for delays between referral and admission for those with complete injuries were i) achieving medical stability and ii) absence of beds. For those with incomplete injuries the same primary reasons were identified but in reverse order.
<p>Scivoletto et al. (2005) Italy Case Control N_{Initial}=150; N_{Final}=150</p>	<p>Population: SCI, tetraplegia, paraplegia, complete, incomplete, traumatic. Treatment: No intervention. Comparison of those admitted to a specialized Spinal Rehabilitation unit at one of 3 time periods following injury (<30 days, 31-60 days, >60 days). Outcome Measures: LOS, AIS motor scores and impairment grade, BI, Rivermead Motor</p>	<ol style="list-style-type: none"> 1. Those admitted earliest (<30 days) had significantly better BI at discharge than those with longer delays (>60 days) (p=0.006). They also demonstrated significantly greater changes (p=0.003) and greater efficiency (p<0.001) on the BI. 2. Those admitted the earliest (<30 days) had significantly better mobility

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	Index (RMI), Walking Index for SCI (WISCI), Efficiency measures for all were calculated by dividing by LOS.	(i.e., RMI) at discharge than those with longer delays (>60 days) ($p=0.03$). They also demonstrated significantly greater changes ($p=0.001$) and greater efficiency ($p=0.04$) for the RMI. 3. There were no significant differences between the early versus later admissions with respect to walking (WISCI) or ASIA motor scores ($p=0.63$ or $p=0.81$). 4. Those admitted earliest had the shortest LOS; these differences were not significant ($p=0.15$).
Sumida et al. (2001) Japan Case Control $N_{\text{Initial}}=139$; $N_{\text{Final}}=123$	Population: 123 people with SCI admitted to a Japanese Hospital System with specialized SCI rehabilitation services following acute care. Subjects included those with tetraplegia and paraplegia (frequencies not provided) with AIS A (51), B (8), C (35) and D (29). Treatment: No intervention. Comparison of those admitted earlier (<2 weeks post injury) versus later (>2 weeks) to a specialized spinal rehabilitation unit. Subjects were sub-grouped into i) tetraplegia, ii) paraplegia, iii) central cord. Outcome Measures: LOS, FIM, FIM motor score, FIM gain, FIM efficiency all collected at Discharge.	1. Subjects who were admitted earlier (<2 weeks) had significantly shorter LOS than those admitted later ($p<0.0005$). 2. FIM gain ($p<0.0001$) and FIM efficiency ($p<0.0001$) were significantly greater for subjects admitted earlier versus later. Note: the early admission subjects had lower initial motor and total FIM scores than did the delayed admission group ($p<0.05$). 3. Correlations between ASIA motor and FIM scores in various subgroups and at admission and discharge yielded a variety of associations ranging from very weak to strong correlations ($r=0.03-0.92$) with the majority of these correlations significant ($p<0.05$).
Aung & El Masry (1997) UK (Wales) Case Control $N_{\text{Initial}}=219$; $N_{\text{Final}}=219$	Population: 173 men (mean age 35.5) and 46 women (mean age 44.2) with traumatic SCI admitted to a Spinal Injuries Centre with specialized SCI acute care and rehabilitation services. Subjects included those with tetraplegia (116) and paraplegia (103). Treatment: No intervention. Comparison of those admitted 1. (<1 week post injury) versus 2. (<2 month) versus 3. (>2 months) to a specialized spinal acute care and rehabilitation unit. Outcome Measures: LOS, incidence of secondary complications all collected at discharge (i.e., during initial post-traumatic hospitalization).	1. Subjects with paraplegia who were admitted earlier (<1 week and <2 months) had significantly shorter LOS than those admitted later ($p<0.05$). 2. Subjects with tetraplegia who were admitted earlier (<1 week) had significantly shorter LOS than those admitted later (>2 months) ($p<0.05$). 3. The incidence of most secondary conditions did not differ between early versus later admissions for those with paraplegia or tetraplegia. However, those with paraplegia or tetraplegia did have lower incidence of pressure sores with earlier admission (<1 week) ($p<0.001$).
Oakes et al. (1990) USA Case Control	Population: 197 people with traumatic SCI admitted within 1 year of injury to a Level 1 trauma Centre with specialized SCI	1. Those admitted earlier had significantly shorter total hospitalization LOS ($p<0.01$).

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<p>N_{Initial}=197; N_{Final}=197</p>	<p>rehabilitation services. Male / female (158 / 39); Tetraplegia / paraplegia (102 / 95); Average ages for groups were 27.2 –32 years old.</p> <p>Treatment: No intervention. Comparison of those admitted earlier (<median) versus later (>median) to a specialized integrated spinal unit (i.e., combined acute care and rehabilitation). Subjects were grouped by tetra versus para and by early versus late admission by median admission values of 11 (tetraplegia) versus 21 (paraplegia) days.</p> <p>Outcome Measures: LOS, incidence of medical complications, incidence of surgical intervention.</p>	<ol style="list-style-type: none"> 2. Those admitted earlier with tetraplegia had fewer medical complications and less frequent spinal surgery versus those admitted later (no group analysis performed). Those admitted earlier with paraplegia had no difference in medical complications and more frequent spinal surgery. 3. Similar reductions in total hospitalization LOS with earlier admissions for both those with tetraplegia (p<0.01) and paraplegia (p<0.05) in a re-analysis of the sample with groupings based on admissions <24 hours versus >24 hours post-injury.