Author Year Country Research Design PEDro Sample Size	Methods	Outcomes
Aminmansour et al. (2016) Iran RCT PEDro= 9 $N_{initial}$= 32, N_{final}= 32	**Population:** Progesterone + Vitamin D group: Mean age= 41.88±13.6yr; Gender: male= 56.2%, female= 43.8%; Level of injury: cervical, thoracic, lumbar; Severity of injury: Incomplete. Placebo group: Mean age= 45.2±13.7yr; Gender: male= 50%, female= 50%; Level of injury: cervical, thoracic, lumbar; Severity of injury: Incomplete. **Treatment:** Patients were first administered methylprednisolone per standard protocol. Patients were then randomly assigned to receive progesterone (0.5 mg/kg) twice daily and vitamin D3 (5ug/kg) twice daily or placebo for up to 5 days. **Outcome Measures:** Assessed baseline, 6 days, 3 and 6 months post-injury. ASIA motor and sensory scores **Chronicity:** Individuals were studied within 8 hr of sustaining injury.	1. Progesterone + vitamin D group performed significantly better than placebos on ASIA motor scores for all extremities at 6 months ($p<0.05$). No significant differences between groups seen at other time points. 2. Progesterone + vitamin D group performed significantly better than placebos on ASIA sensory scores for right upper, left lower, and right lower at 6 months ($p<0.05$). No significant differences between groups seen at other time points.
Costa et al. 2015 Italy RCT PEDro= 7 $N_{initial}$= 19, N_{final}= 19	**Population:** Mean age= 27.67y Gender: male= 94.7%, female= 5.3%; Level of injury: cervical, thoracic; Severity of injury: AIS A or B **Treatment:** Participants were randomized to receive either methylprednisolone or erythropoietin treatment groups for 48 hours. **Outcome Measures:** ASIA motor and sensory, MAS, Penn Score, VAS, SCIM. Evaluated at baseline, day 3, 7, 14, 30, 60, and 90. **Chronicity:** Screened and enrolled within 8 hours of sustaining injury.	1. No between-groups difference on ASIA motor and sensory, MAS, Penn score, VAS or SCIM ($p>0.05$) at day 90.
Pointillart et al. (2000) (English translation of Petitjean et al. (1998)) France RCT PEDro=6 N=106	**Population:** Age range=20-47 yr; Gender: male=90%, female=10%; Level of injury: not specified; Severity of injury: complete=45%, incomplete=55%. **Treatment:** Patients were randomly assigned to one of four groups: methylprednisolone (MP), nimodipine, MP + nimodipine, or no treatment. The dosages of nimodipine were 0.15 mg/kg/h over 2 hr followed by 0.03 mg/kg/h for 7 days. The dosages of MP followed National Acute Spinal Cord Injury Study (NASCIS) II guidelines and were 30 mg/kg over 1 hr followed by 5.4 mg/kg/h for 23 hr. **Outcome Measures:** The following after 1 year: neurological function based on ASIA score (motor and sensory), adverse event outcomes. **Chronicity:** Individuals were hospitalized within 8 hr of sustaining injury.	1. After one year, there were no significant differences in neurological recovery based on ASIA scores among the four groups ($p>0.05$). 2. Patients who received MP had significantly higher rates of hyperglycemia compared to those who received nimodipine and those who received no medication ($p<0.05$). 3. The authors noted that patients with incomplete injuries experienced significantly more neurological recovery than patients with complete injuries ($p<0.0001$).
Pettersson & Toolanen (1998) Sweden RCT PEDro=8 N=40	**Population:** Mean age=35 yr; Gender: male=55%, female=45%; Level of injury: not specified; Severity of injury: complete=0%, incomplete=100%. **Treatment:** Patients treated for whiplash injuries received either methylprednisolone (MP) according to National Acute Spinal Cord Injury Study (NASCIS) II guidelines or placebo. **Outcome Measures:** The following after 6	1. Patients who received MP had significantly fewer disabling symptoms than patients who received placebo ($p=0.047$). 2. Patients who received MP had significantly fewer sick days ($p=0.01$) and a significantly lower sick-leave profile ($p=0.003$) than patients who received placebo.

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	months: degree of disabling symptoms, total number of sick days from work, sick-leave profile 6 months after injury. **Chronicity:** Individuals were administered treatment within 8 hr of sustaining injury.	
Bracken et al. (1997) USA RCT PEDro=7 N=499	**Population:** Mean age: not specified; Gender: male=85%, female=15%; Level of injury: not specified; Severity of injury: complete=50%, incomplete=50%; **Treatment:** Patients were randomly assigned to receive either methylprednisolone (MP) for 24 hr (5.4 mg/kg), MP for 48 hr (5.4 mg/kg), or tirilazad mesylate for 48 hr (2.5 mg/kg). All treatment groups initially received a bolus of MP (30 mg/kg). All patients received the study drug within 8 hr of injury. The 24 hr MP group served as the reference; there was no placebo group. **Outcome Measures:** The following after 6 weeks and 6 months: motor function, sensory function (pinprick, light touch, deep pain), adverse event outcomes. The following after 6 months: Functional Independence Measure (FIM). **Chronicity:** Individuals received the study treatment within 8 hr of sustaining injury.	**Overall Analyses:** 1. Compared to patients that received 24 hr MP, there was no significant difference in motor function recovery in patients that received 48 hr MP at 6 weeks (p=0.09) and 6 months (p=0.07) post injury. After 6 months, more patients who received 48 hr MP improved at least one motor function 'category' compared to those who received 24 hr MP, but this difference was not significant (p=0.6). 2. There were no significant differences in sensory function (pinprick, light touch, deep pain) among patients who received any of the treatments at 6 weeks or 6 months post injury (p>0.05 in all cases). 3. Overall FIM scores at 6 months did not differ significantly between patients who received 24 hr MP and patients who received 48 hr MP (p=0.08); however, patients who received 48 hr MP gained significantly more sphincter control (p=0.01) and self-care (p=0.03) compared to those receiving 24 hr MP. 4. Patients who received 48 hr MP experienced significantly more severe pneumonia than patients who received 24 hr MP or tirilazad mesylate after 6 weeks (p=0.02). **Analyses of Time to Loading Dose (within 3-8 hr vs >8 hr):** 5. Patients who received treatments within 3 hr showed no significant differences in neurological recovery in all three treatment groups (p>0.05). 6. Patients who initiated any MP treatment within 3-8 hr gained significantly more motor function after 6 months than those who initiated any MP treatment after 8 hr (p=0.03). 7. Among patients who started treatment between 3-8 hr, patients who received 48 hr MP within 3-8 hr improved significantly more motor function than those receiving 24 hr MP at 6 weeks (p=0.04) and 6 months (p=0.01) post injury. **Analyses of Severity of the Injury (complete vs. incomplete):** 8. Patients with incomplete injuries (receiving either 24 hr or 48 hr MP) recovered more motor function than patients with complete injuries after 6 weeks and 6 months compared to baseline measurements, but

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		these differences were not significant (p≥0.05 in all cases).
Bracken et al. (1998) (One year follow up to Bracken et al. (1997)) N=431	**Outcome Measures:** The following after 1 year: motor function, sensory function (pinprick and light touch), Functional Independence Measure (FIM).	**Initial Analysis:** 1. Patients receiving 48 hr MP did not differ from patients receiving 24 hr MP with regards to motor function improvement after 1 year (p=0.232). 2. Patients who received 48 hr MP and 48 hr tirilazad mesylate experienced more deaths from pneumonia, respiratory distress syndrome, and respiratory failure compared to patients who received 24 hr MP, however this difference was not significant (p=0.056). 3. There were no significant differences in FIM scores across any of the treatment groups one year later (p>0.05). **Analyses of patients treated within 3 hr compared to patients treated between 3-8 hr:** 4. Patients who received any treatment within 3 hr did not differ in motor function after one year (p>0.05). 5. Patients who received 24 hr MP within 3-8 hr experienced diminished motor function after one year. Patients who received 48 hr MP within 3-8 hr did not experience significant improvement in their motor function (p=0.053). **Analyses of Severity of the Injury (complete vs. incomplete):** 6. The authors note that patients with incomplete injuries experienced more motor function recovery than patients with complete injuries (data not shown).
Bracken et al. (1990) USA RCT PEDro=10 N=487	**Population:** Mean age: not specified; Gender: not specified; Level of injury: not specified; Severity of injury: complete=60%, incomplete=40%. **Treatment:** Patients were randomly allocated to receive either methylprednisolone (MP; 62.5 mg/mL), naloxone (25 mg/mL) or placebo. Both drugs were administered as a 15 minute loading dose followed by a 23 hr maintenance dose. **Outcome Measures:** Motor function, sensory function (pinprick and light touch), adverse events. Outcomes were assessed at 6 weeks and 6 months. **Chronicity:** Individuals were randomized to study groups within 12 hr of sustaining injury.	**Overall Analysis:** 1. There were no significant improvements in motor function or sensory function in patients who received either MP or naloxone compared to patients who received placebo 6 weeks and 6 months after injury (p>0.05). 2. There were no significant differences in adverse event outcomes during hospitalization between those who received MP, those who received naloxone, and those who received placebo (p>0.05). **Analyses of Time to Loading Dose (≤8 h vs >8 h):** 3. Patients treated with MP within 8 hr had a significant improvement in motor function (p=0.048) and sensory touch function (p=0.034) 6 weeks later compared to those treated with placebo. No significant differences were seen with regards to pinprick sensory function (p>0.05). 4. Patients treated with MP within 8 hr had a significant improvement in motor function (p=0.033), pinprick scores (p=0.016) and touch (p=0.030) 6 months later compared to

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		those treated with placebo. 5. Patients treated with MP after 8 hr had no improvements in motor function or sensory function 6 weeks or 6 months after injury (p>0.05) compared to those treated with placebo. **Analyses by Injury Severity:** 6. Patients with complete injuries treated with MP had significant improvement in motor function 6 weeks after injury (p=0.021) compared to those treated with placebo. There were no significant improvements in sensory function. 7. Patients with incomplete injuries treated with MP had no significant improvements in motor or sensory function 6 months after injury compared to those treated with placebo (p>0.05). 8. Patients with complete injuries treated with MP had significant improvement in motor function (p=0.019), pinprick sensation (p=0.028), and touch sensation (p=0.050) 6 months after injury compared to those treated with placebo. 9. Patients with incomplete injuries treated with MP had significant improvement in motor function 6 months after injury (p=0.018) compared to those treated with placebo. There were no significant improvements in sensory function.
Bracken et al. (1992) (One year follow up to Bracken et al. (1990)) N=427	**Outcome Measures:** The following after 1 year: motor function, and sensory function (response to pinprick and touch sensation)	1. Treatment with (30 mg/kg bolus and 5.4 mg/kg/hr for 23 hours) of MP is indicated for acute spinal cord trauma, but only if it can be started within 8 hours of injury. 2. At I year, pneumonia occurred in 1.4% of naloxone-treated patients compared with 3.3% for placebo (p=0.04). 3. Among all randomized patients more than 8 hours postinjury, those receiving either MP (p=0.080) or naloxone (p=0.100) recovered less motor function than those given placebo.
Wu et al. (2011) Taiwan Case Control N=32	**Population:** Mean age=41.7 yr; Gender: male=84%, female=16%; Level of injury: cervical-lumbar; Severity of injury: complete=9%, incomplete=91%. **Treatment:** Patients either received methylprednisolone (MP) within 8 hr post injury or delayed MP treatment (≥8 hr of sustaining injury). **Outcome Measures:** The following after questionnaire follow up (time span 3-69 months post injury): severity of pain and presence of neuropathic pain. **Chronicity:** The time period since injury ranged from 3-69 months.	1. Patients who received MP after 8 hr experienced slightly greater pain and an increased prevalence of neuropathic pain, but these differences were not significant (p=0.155 and p=0.141, respectively).
Ito et al. (2009)	**Population:** Mean age: not specified; Gender:	**Overall Analyses**

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Japan Case control N=79	male=80%, female=20%; Level of injury: cervical; Severity of injury: complete=27%, incomplete=73%, AIS A-D. **Treatment:** Patients were either given methylprednisolone sodium succinate (MPSS) according to National Acute Spinal Cord Injury Study (NASCIS) II guidelines (2003-July 2005) or no MPSS (August 2005-2007). **Outcome Measures:** The following after 3 months: neurological recovery using the ASIA motor score and ASIA impairment score at 3 months post injury, and complications. **Chronicity:** Individuals received treatment within 8 hr of sustaining injury.	1. There were no significant differences in neurologic improvement between patients who received MPSS and patients who did not receive MPSS according to the AIS (p>0.05). 2. There were no significant differences in motor function between patients who received MPSS and patients who did not receive MPSS according to the ASIA motor score (p>0.05). 3. Patients who received MPSS experienced significantly more total infections (p=0.028) and pneumonia (p=0.019) than patients who did not receive MPSS. **Analyses of Severity of Injury and Type of Injury:** 4. Among patients with complete injuries, there were no significant differences in motor function between those who received MPSS and those who did not receive MPSS according to the ASIA motor score (p>0.05). 5. Among patients with incomplete injuries, there were no significant differences in motor function between those who received MPSS and those who did not receive MPSS according to the ASIA motor score (p>0.05). 6. Among patients without fractures, there were no significant differences in neurologic improvement (p>0.05) or motor function (p>0.05) between those who received MPSS and those who did not receive MPSS according to the AIS and motor score.
Zhuang et al. (2008) China Pre-Post Test N=43	**Population:** Mean age=43.4 yr; Gender: male=77%, female=23%; Level of injury: cervical-lumbar; Severity of injury: complete=28%, incomplete=72%. **Treatment:** All patients received methylprednisolone (MP) 30 mg/kg for 15 minutes and 5.4 mg/kg/h for 23 hr after a 45 minute interval, according to National Acute Spinal Cord Injury Study (NASCIS) II guidelines. **Outcome Measures:** The following after MP treatment compared to before MP treatment (time period not specified): sensory function (acupuncture sense and light touch) and motor function. **Chronicity:** Individuals received treatment within 8 hr of sustaining injury.	1. Among patients with complete injuries, there were no significant differences in sensory function or motor function after MP treatment compared to before MP treatment (p>0.05). 2. Among patients with incomplete injuries, there was a significant decline in motor score after MP treatment compared to before MP treatment (p<0.01). There were no significant differences in sensory function after MP treatment compared to before MP treatment (p>0.05).
Suberviola et al. (2008) Spain Case Control N=82	**Population:** Mean age: not specified; Gender: male=84%, female=16%; Level of injury: cervical and non-cervical; Severity of injury: complete=54%, incomplete=46%. **Treatment:** Patients either received methylprednisolone (MP) 30 mg/kg for 15 minutes and 5.4 mg/kg/h for 23 hr after a 45 minute interval, according to National Acute Spinal Cord Injury Study (NASCIS) II guidelines	1. There were no significant differences in mortality between patients who received MP and patients who did not (OR=0.48, 95% CI: 0.08-3.64). 2. There were no significant differences in neurological function using the Frankel scale between patients who received MP and patients who did not (OR=1.09; 95% CI: 0.35-3.66).

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	or no MP. **Outcome Measures:** The following after intensive care unit discharge: mortality, neurological function using the Frankel scale, adverse event outcomes. **Chronicity:** Individuals were hospitalized within 8 hr of sustaining injury.	3. Patients who received MP experienced significantly more overall infections (p=0.004), more respiratory infections (p=0.02), and more early-onset hyperglycemia (p<0.01) than patients receiving no MP.
Leypold et al. (2007) USA Case Control N=82	**Population:** Mean age: not specified; Gender: male=80%, female=20%; Level of injury: cervical; Severity of injury: complete=100%, incomplete=0%, AIS A. **Treatment:** Patients were treated with methylprednisolone (MP) bolus 30 mg/kg plus 5.4 mg/kg/h for 24 hr, according to National Acute Spinal Cord Injury Study (NASCIS) II guidelines (1987-1993), or were given no MP (1998-2002; historical controls). **Outcome Measures:** The following within 3 days of injury using MRI: presence/absence of intramedullary hemorrhage, length of intramedullary hemorrhage, length of spinal cord edema. **Chronicity:** Individuals received treatment within 8 hr of sustaining injury.	1. There were no significant differences in terms of the presence of spinal cord hemorrhages between patients who received MP and patients who did not (p>0.05). 2. Patients who received MP had significantly shorter mean length of intramedullary hemorrhage compared to the control group (p=0.04). 3. There were no significant differences in the length of spinal cord edema in either group (p>0.05). 4. The authors note that younger patients were more likely than older patients to manifest edema and hemorrhage.
Lee et al. (2007) China Case Control N=138	**Population:** Mean age=48.5 yr; Gender: male=68%, female=32%; Level of injury: C2-C7; Severity of injury: complete=69%, incomplete=31%. **Treatment:** Patients either received methylprednisolone (MP; according to National Acute Spinal Cord Injury Study (NASCIS) II and III guidelines) or received no MP. Some patients also received surgery. **Outcome Measures:** The following at follow-up examination (unspecified date): neurological function using the Frankel scale, adverse event outcomes. **Chronicity:** The mean interval between injury and transfer and injury and transport was 6.9 hr and 23 minutes, respectively.	1. 11 (69%) of 16 complete SCI patients treated with surgery and MP improved by one Frankel score (no statistical analyses reported)*. 2. 21 (68%) of 31 incomplete SCI patients treated with surgery and MP improved by one Frankel score (no statistical analyses reported)*. 3. Steroid complications were noted in 14 (87.5%) of 16 patients with complete injuries and 8 (28.6%) of 28 patients with incomplete injuries and 2 (14.3%) of 14 patients with mild spinal cord contusion (no statistical analyses reported). *Patients not stratified by those receiving MP only vs. MP plus surgery, or those receiving MP according to NASCIS II vs. NASCIS III (for those who did not receive MP).
Tsutsumi et al. (2006) Japan Case Control N=70	**Population:** Age range=13-86 yr; Gender: male=86%, female=14%; Level of injury: cervical; Severity of injury: complete=61%, incomplete=39%, AIS A-D. **Treatment:** Patients received methylprednisolone (MP) according to National Acute Spinal Cord Injury Study (NASCIS) II guidelines or no MP. **Outcome Measures:** The following after 6 weeks and 6 months: neurological recovery using the ASIA motor scale, improvement in myotomal level. The following within 6 weeks: adverse event outcomes. **Chronicity:** Individuals were admitted to	**Overall Analyses:** 1. Patients who received MP experienced significantly more motor improvement than patients who did not receive MP after 6 weeks (p=0.0033) and 6 months (p=0.0007). 2. There were no significant differences with regard to myotomal level between patients who received MP and patients who did not at 6 weeks (p=0.6456) and 6 months (p=0.1966). 3. There were no significant differences between patients who received MP and those who did not with regards to medical complications (p>0.05). **Analyses of Severity of the Injury (complete**

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	hospital within 7 days after sustaining injury.	**vs. incomplete):** 4. Among patients with incomplete injuries, those treated with MP experienced significantly more motor improvement after 6 weeks (p=0.0195) and 6 months (p=0.0049). 5. Among patients with complete injuries, there were no significant differences in motor improvement between groups after 6 weeks (p>0.05) and six months (p>0.05).
Rasool et al. 2004 India Prospective Controlled Trial N=48	**Population:** Mean age: not specified; Gender: male=80%, female=20%; Level of injury: cervical; Severity of injury: complete=20%, incomplete=80%. **Treatment:** Patients received methylprednisolone (MP) according to National Acute Spinal Cord Injury Study (NASCIS) II guidelines or no MP (control group). **Outcome Measures:** The following after 6 weeks and 6 months: neurological function using the ASIA scale (both motor and sensory function). **Chronicity:** Individuals who presented to hospital within 8 hr of sustaining injury received treatment. Those who presented later than 8 hr post injury were placed in the control group.	1. Patients who received MP gained significantly more motor recovery than patients who did not receive MP after 6 weeks (p<0.001). 2. Patients who received MP gained significantly more sensory recovery with regard to pinprick (p<0.001) and light touch (p<0.001) scores than patients who did not receive MP after 6 weeks. 3. Patients who received MP gained significantly more motor recovery than patients who did not receive MP after 6 months (p<0.001). 4. Patients who received MP gained significantly more sensory recovery with regard to pinprick (p<0.001) and light touch (p<0.001) scores than patients who did not receive MP after 6 months.
Pollard & Apple (2003) USA Case Control N=412	**Population:** Mean age: not specified; Gender: not specified; Level of injury: cervical; Severity of injury: complete=0%, incomplete=100%. **Treatment:** Patients received methylprednisolone (MP) according to National Acute Spinal Cord Injury Study (NASCIS) II guidelines or did not receive MP. **Outcome Measures:** The following after discharge from rehabilitation: neurological function using the ASIA scale. **Chronicity:** Individuals were admitted to hospital within 90 days of injury.	1. Patients who received MP did not significantly differ in neurological function compared to patients who did not receive MP (p>0.05). 2. Patients aged younger than 18 experienced significantly more neurological recovery than patients in any other age group (p=0.002).
Poynton et al. (1997) Ireland Case Control $N_{initial}$=71, N_{final}=63	**Population:** Age range=17-76 yr; Gender: not specified; Level of injury: not specified; Severity of injury: complete=58%, incomplete=42%. **Treatment:** Patients admitted before 8 hr of injury received methylprednisolone (MP) 30 mg/kg for 15 minutes and 5.4 mg/kg/h for 23 hr after a 45 minute interval according to National Acute Spinal Cord Injury Study (NASCIS) II guidelines; patients admitted after 8 hr of injury received no MP. **Outcome Measures:** The following at a follow-up examination (mean=29.6 months): neurological function using ASIA motor and sensory scores. **Chronicity:** Individuals who presented to hospital within 8 hr of sustaining injury received treatment. Those who presented later than 8 hr post injury did not receive treatment.	1. There were no significant improvements in neurological function between patients who received MP and patients who did not (p>0.05). 2. The authors note that there were no complications attributed to the administration of MP. 3. The authors note that neurological recovery was most likely in patients with incomplete injuries instead of complete injuries, and in patients who were tetraplegic versus paraplegic.

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Heary et al. (1997) USA Case Control N=254	**Population:** Mean age=26 yr; Gender: male=91%, female=9%; Level of injury: cervical-lumbar; Severity of injury: complete=75%, incomplete=25%. **Treatment:** Patients with gunshot wounds to the spine either received methylprednisolone (MP; according to National Acute Spinal Cord Injury Study (NASCIS) II guidelines), dexamethasone (initial dose of 10-100 mg), or no steroids. **Outcome Measures:** The following at follow-up examination (unspecified date): Frankel score, AIS score, adverse event outcomes. **Chronicity:** Thirty-one patients received MP within 8 hr of injury. Of patients initially treated at an outside hospital (n=119), 95% were transferred to the study hospital within 48 hr of injury.	1. There were no significant differences in Frankel score improvement between patients who received steroids and patients who did not receive steroids (p>0.05). 2. Patients who received MP did not experience a significant improvement in neurological recovery based on the ASIA score compared to patients who did not receive steroids (p=0.41). 3. Patients who received dexamethasone did not experience a significant improvement in neurological recovery based on the ASIA score compared to patients who did not receive steroids (p=0.077). 4. Patients who received dexamethasone experienced significantly more gastrointestinal complications compared to patients who did not receive steroids (p=0.021). 5. Patients who received MP experienced significantly more episodes of pancreatitis compared to patients who did not receive steroids (p=0.04).
Merry et al. (1996) USA Case Control $N_{initial}$=19, N_{final}=15	**Population:** Mean age=50 yr; Gender: male=53%, female=47%; Level of injury: cervical-lumbar; Severity of injury: complete=0%, incomplete=100%. **Treatment:** Patients with incomplete SCI received steroids (either methylprednisolone (MP), dexamethasone or both) or no steroids. Treatments differed with regards to duration, combination, and protocol among patients. **Outcome Measures:** The following at hospital discharge: neurological function using Frankel scale, adverse event outcomes. The following at last clinic visit (mean=14.4 months): neurological function using Frankel scale. **Chronicity:** Four of 6 patients treated before May 1990 were administered steroid treatment on average 7 hr post injury. Eight of 13 patients treated after May 1990 received steroid treatment on average 4 hr post injury. One patient received treatment 41 hr post injury.	1. Comparing discharge from hospital to admission to hospital, most patients (11/15) improved by at least one Frankel grade*. The authors did not differentiate steroid patients from non-steroid patients. 2. Comparing most recent clinic visit to discharge from hospital, few patients (5/15) improved by at least one Frankel grade*. The authors did not differentiate steroid patients from non-steroid patients. 3. The authors noted hospital complications occurred in 11 of the 14 patients who received steroids and all 3 of the patients who died had received steroids*. *No statistical analyses were performed.
Levy et al. (1996) USA Case Control N=236	**Population:** Mean age=25.6 yr; Gender: male=94%, female=6%; Level of injury: cervical-lumbar; Severity of injury: complete=55%, incomplete=45%. **Treatment:** Patients with penetrating gunshot wounds either received methylprednisolone (MP) according to National Acute Spinal Cord Injury Study (NASCIS) II within 8 hr of admission or did not receive MP. **Outcome Measures:** The following at discharge from rehabilitation compared to admission to rehabilitation: neurological function based on the Frankel scale, autonomy after	1. Patients who received MP did not significantly improve in neurological recovery based on the Frankel scale compared to patients who did not receive MP (p>0.05). 2. Patients who received MP did not significantly improve in autonomy after injury or the ability to ambulate compared to patients who did not receive MP (p>0.05). 3. There were no significant differences in adverse event outcomes during hospitalization between patients who received MP and patients who did not (p>0.05).

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	injury, ability to ambulate. The following during hospital stay: adverse event outcomes. **Chronicity:** Individuals received steroid treatment within 8 hr of sustaining injury.	
Gerhart et al. (1995) USA Case Control $N_{1990-1991}$=151, N_{1993}=127	**Population:** Mean age: not specified; Gender: not specified; Level of injury: cervical-sacral; Severity of injury: Frankel A-D. **Treatment:** Patients either received methylprednisolone (MP) according to National Acute Spinal Cord Injury Study (NASCIS) II guidelines or did not receive MP. Two observation periods were analyzed: 1990-1991 and 1993. **Outcome Measures:** The following at hospital discharge: neurological function based on the Frankel Scale. **Chronicity:** Not specified.	**Analyses During 1990-1991:** 1. Patients who received MP improved by at least one Frankel grade more than patients who did not receive MP, but this trend was not significant (p=0.118). 2. There were no significant differences in neurological recovery by two or more Frankel grades between patients receiving MP and not receiving M (p=0.486). **Analyses During 1993:** 3. Patients who received MP improved by at least one Frankel grade significantly more than patients who did not receive MP (p=0.044). 4. There were no significant differences in neurological recovery by two or more Frankel grades between patients receiving MP and not receiving MP (p=0.942).
George et al. (1995) USA Case Control $N_{initial}$=145, N_{final}=130	**Population:** Mean age=34 yr; Gender: male=77%, female=23%; Level of injury: cervical, dorsal spine region, lumbar; Severity of injury: complete=64%, incomplete=36%. **Treatment:** Patients were analyzed from a 1989-1992 registry. Those from the first half of this time span were given no methylprednisolone (MP) and patients from the second half of this time span were given MP according to National Acute Spinal Cord Injury Study (NASCIS) II guidelines. **Outcome Measures:** The following at hospital discharge: mortality, patient mobility, adverse event outcomes. The following at rehabilitation discharge (when available): Functional Independence Measure (FIM). **Chronicity:** Mean time from injury to treatment administration was 152 minutes.	1. There were no significant differences in mortality between the two groups (p>0.05). 2. There was significantly poorer mobility at the time of discharge in patients treated with MP compared patients receiving no treatment (p<0.05). 3. There were no significant differences in FIM scores upon discharge between MP and no MP group (p>0.05). 4. There was a higher occurrence of complications in patients who received MP, but this trend was not significant (p>0.05).
Prendergast et al. (1994) USA Case Control N=54	**Population:** Mean age=35.8 yr; Gender: male=80%, female=20%; Level of injury: not specified; Severity of injury: complete=46%, incomplete=54%. **Treatment:** Patients were given no methylprednisolone (MP; before 1990) or were given MP according to National Acute Spinal Cord Injury Study (NASCIS) II guidelines (after 1990). **Outcome Measures:** The following after 4 days, 1 week, 2 weeks, 1 month, and two months: motor function, sensory function (pinprick and light touch). **Chronicity:** Not specified.	1. There were no significant differences in motor function between the MP treated group and the control group after 1 week, 2 weeks, 1 month, and 2 months (p>0.05). 2. There were no significant differences in sensory function between the MP treated group and the control group after 1 week, 2 weeks, 1 month, and 2 months (p>0.05). 3. Of patients with penetrating SCI, those treated with MP had significantly lower motor functioning at 4 days and at one week post SCI than those treated with no MP (p<0.05).
Kiwerski (1993)	**Population:** Mean age: not specified; Gender:	1. Patients with a complete injury receiving

Author Year Country Research Design PEDro Sample Size	Methods	Outcomes
Poland Case Control N=620	not specified; Level of injury: cervical; Severity of injury: complete=60%, incomplete=40%. **Treatment:** Patients received one of three treatments during 1976-1991: low doses dexamethasone (<24 mg), high doses dexamethasone (>24 mg), or no dexamethasone. The dosages and duration of delivery varied from patient to patient. **Outcome Measures:** The following during hospital stay: neurological recovery (outcome measure not specified). Recovery is considered 'marked' if patient advanced 2 degrees on the scale or if paresis disappeared. **Chronicity:** Individuals were admitted to hospital within 24 hr post injury.	dexamethasone achieved a 'marked' recovery significantly more than those receiving no dexamethasone. 2. Among patients with incomplete injuries, there was no overall difference in neurological recovery between patients who received dexamethasone and those who did not. However, significantly more patients who received dexamethasone achieved a 'marked' recovery compared to those who did not receive dexamethasone. 3. Among patients with complete injuries, neurological recovery did not differ significantly between those who received a high dose of dexamethasone and those who received a low dose; however, patients with incomplete injuries who received higher doses of dexamethasone experienced more neurological recovery than those who received low doses of dexamethasone. 4. The authors note that the effect of dexamethasone was most effective if given within the first 8 hr after injury. No statistical analyses were reported.
Galandiuk et al. (1993) USA Case Control N=32	**Population:** Mean age: not specified; Gender: not specified; Level of injury: cervical-thoracic; Severity of injury: complete=69%, incomplete=31. **Treatment:** Patients received either methylprednisolone (MP; from 1990-1993) 30 mg/kg followed by 5.4 mg/kg/h for 23 hr, according to National Acute Spinal Cord Injury Study (NASCIS) II guidelines, or no MP (from 1987-1993). **Outcome Measures:** The following during hospital stay: length of hospital stay, adverse event outcomes and length of hospital stay, the immunosuppressive effects of steroids. The following after 6 months: motor function, sensory function. **Chronicity:** Not specified.	1. The length of hospital stay was longer in patients receiving MP compared to patients not receiving MP, however this trend was not significant (p=0.65). 2. There were no significant differences in the episodes of pneumonia or infections between the MP group and the no MP group (p=0.20). 3. Inhibition of chemotaxis of macrophages and neutrophils, inhibition of interleukin-2 and interleukin gamma, inhibition of antigens, and decrease of immunoglobulin G levels were observed in the MP group compared to the no MP group. No statistical tests were performed on these measures. 4. Patients treated with MP experienced significant improvements in motor score after 6 months compared to patients who did not receive MP (p=0.015). 5. Patients treated with MP experienced greater sensory function gains after 6 months compared to patients who did not receive MP, but this trend was not significant (p=0.20).