

Author Year Country PEDro Score Research Design Total Sample Size	Methods	Outcome
<p>Nardone et al. 2017 Italy RCT PEDro=9 N=12</p>	<p>Population: Mean age=43.1±13.2 yr; Gender: males=9, females=3; Time since injury=10.3±5.0 yr; Level of injury: C=8, T=4, L=0; Severity of injury: A=2, B=5, C=2, D=3; Type of pain=neuropathic. Intervention: Patients were randomized to either an active repetitive transcranial magnetic stimulation (rTMS) (1250 pulses at 10 Hz or a sham treatment for 10 sessions over 2 wks. Outcome Measures: Visual analog scale (VAS and McGill pain questionnaire (MPQ) for pain, relative treatment effect (RTE), Hamilton rating scale for depression (HAM-D) and Hamilton rating scale for anxiety (HAM-A).</p>	<ol style="list-style-type: none"> 1. Sum score of pain showed a significant main effect for group (p=0.02) and time (p<0.001). 2. Significant interaction between group and time (p<0.001). 3. RTE scores were observed to be lower in the treatment group versus the sham group. 4. Post hoc tests revealed a significant difference between groups for RTE after the 2 wks of treatment (p<0.001). 5. A significant main effect for time was shown for HAM-D scores (p<0.001). 6. Significant interaction between group and time for HAM-D scores in the treatment group (p<0.001). 7. Variance-type tests for HAM-A revealed no significant effects.
<p>Yilmaz et al. 2014 Turkey RCT PEDro=7 N_{Initial}=17; N_{Final}=16</p>	<p>Population: Mean age=38.6yr; Gender: males; Level of injury: paraplegia; Severity of injury: incomplete=6, complete=10; Mean time post injury=134yr; Type of pain=neuropathic. Treatment: Participants were randomized to receive active (treatment, n=9) or sham (control, n=7) repetitive transcranial magnetic stimulation (rTMS, 1x/d, 10d). Outcomes were assessed pre and post treatment, and at 6wk and 6mo follow-up. Outcome Measures: Visual Analogue Scale – Pain Intensity (VAS-PI).</p>	<ol style="list-style-type: none"> 1. There was a significant reduction in VAS-PI score in the treatment group at 10d and 6wk (p=0.004) and in the control group at 10d (p=0.02). 2. There was no significant difference in VAS-PI score between groups at baseline, 10d, 6wk, or 6mo (p>0.05).
<p>Jette et al. 2013 Canada RCT PEDro=7 N=16</p>	<p>Population: SCI: Mean age=50yr; Gender: males=11, females=5; Level of injury: quadriplegia=4, paraplegia=12. Type of pain=neuropathic. Treatment: SCI individuals with chronic neuropathic pain were randomly assigned to receive 3 sessions of active or sham rTMS over hand or leg area. Participants were then crossed over to receive the alternative treatment. Outcome Measure: Numeric Rating Scale (NRS)</p>	<ol style="list-style-type: none"> 1. Significant reduction in pain was seen in both hand (p=0.003) and leg (p=0.047) conditions 20 minutes post treatment; while no significant difference was seen in control group. 2. Pain improvement lasted up to 48 hours in both the hand (p=0.021) and leg (p=0.008). 3. Those with incomplete injury in the hand condition had greater reduction than those with complete (p=0.018).
<p>Kang et al. 2009 South Korea RCT PEDro=9 N=13</p>	<p>Population: SCI: Mean age=54.8yr; Gender: males=11, females=5; Level of injury: quadriplegia=5, paraplegia=6. Type of pain=neuropathic. Treatment: SCI individuals with chronic neuropathic pain were randomized to receive 5 sessions of rTMS or sham rTMS. Participants were then crossed over to receive the alternative treatment after a 12 week washout period. Outcome Measure: Numeric Rating Scale (NRS); Brief Pain Inventory (BPI)</p>	<ol style="list-style-type: none"> 1. No significant effect of time or group was seen for rTMS on NRS scores post treatment and at 3 week follow up. 2. Significantly lower NRS scores for worst pain were seen 1 week post rTMS period compared to those with sham rTMS, p=0.028. 3. No significant effect of time or group was seen on the BPI

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<p>Defrin et al. 2007 Israel RCT PEDro=10 N=12</p>	<p>Population: SCI: Mean age=54 yr; Gender: males=7, females=4. Type of pain=neuropathic. Treatment: Patients were randomly placed into two groups: real or sham 10 daily motor TMS treatments (500 trains at 5 Hz for 10 sec; total of 5000 pulses at intensity of 115% of motor threshold) over a 2 wk period, using figure-of-8 coil over the vertex. Outcome Measure: Chronic pain intensity (visual analog scale [VAS]) Chronic pain experience (McGill Pain Questionnaire [MPQ]), pain threshold, and level of depression (Beck Depression Inventory [BDI]).</p>	<ol style="list-style-type: none"> 1. The real and sham TMS stimulated similar, significant decreases in VAS scores ($p<0.001$) following all of the 10 treatment sessions, and in VAS and MPQ scores following the final treatment series. 2. The reduction in MPQ scores in the real TMS group continued during the follow-up period. 3. There was no significance between group differences in the magnitude of pain reduction. 4. At follow-up, patients in the TMS group reported a 30% reduction in chronic pain intensity, compared to a 10% pain reduction reported by patients in the sham TMS group. 5. A significant increase in heat-pain threshold was found only for patients in the real TMS group (4°C, $p<0.05$) at the end of the series. 6. There was a significant difference in the magnitude of change in pain threshold between the real and sham TMS groups ($p<0.05$). 7. Real and sham TMS groups showed a significant decrease in BDI values following the treatment period in comparison to pre-treatment BDI values ($p<0.01$). 8. This reduction was maintained by both groups at follow-up ($p<0.01$). 9. Only patients in the TMS treatment group exhibited a decreased level of depression during follow-up in comparison to the values at the end of treatment ($p<0.05$).