## Supplementary Table 1. ROBINS-I risk of bias analyses of SCS studies

| Study                | Confounding | Selection | Classification | Deviations from intended interventions | Missing data | Measurement of outcomes | Selection of reported results |
|----------------------|-------------|-----------|----------------|----------------------------------------|--------------|-------------------------|-------------------------------|
| Barolat et al.19 (1986) | Serious     | Serious   | Serious        | Low                                    | Low          | Serious                 | Moderate                      |
| Katz et al.20 (1991)   | Serious     | Moderate  | Moderate       | Low                                    | Moderate     | Serious                 | Moderate                      |
| Herman et al.21 (2002) | Serious     | Serious   | Moderate       | Low                                    | Low          | Serious                 | Low                           |
| Carhart et al.25 (2004) | Moderate    | Serious   | Moderate       | Low                                    | Low          | Serious                 | Low                           |
| Jilge et al.23 (2004)  | Moderate    | No information | Serious   | Low                                    | Low          | Serious                 | Low                           |
| Minassian et al.24 (2004) | Moderate    | No information | Serious   | Low                                    | Low          | Serious                 | Low                           |
| Ganley et al.25 (2005) | Serious     | Serious   | Moderate       | Moderate                               | Low          | Serious                 | Low                           |
| DiMarco et al.25 (2006) | Serious     | Serious   | Moderate       | Low                                    | Low          | Serious                 | Low                           |
| Huang et al.27 (2006)  | Moderate    | Serious   | Moderate       | Low                                    | Low          | Serious                 | Low                           |
| DiMarco et al.25,26 (2009) | Moderate    | Moderate  | Moderate       | Low                                    | Low          | Serious                 | Low                           |
| Harkema et al.28 (2011) | Moderate    | Serious   | Moderate       | Low                                    | Low          | Serious                 | Moderate                      |
| Moshonkina et al.29 (2012) | Serious     | Moderate  | Serious        | Low                                    | Low          | Serious                 | Moderate                      |
| Hofstoetter et al.30 (2013) | Moderate    | Serious   | Moderate       | Low                                    | Low          | Moderate                 | Moderate                      |
| Angeli et al.31 (2014) | Moderate    | Serious   | Moderate       | Low                                    | Low          | Serious                 | Moderate                      |
| Hofstoetter et al.32 (2014) | Moderate    | Serious   | Moderate       | Low                                    | Low          | Moderate                 | Moderate                      |
| Sayenko et al.33 (2014) | Moderate    | Serious   | Moderate       | Low                                    | Low          | Serious                 | Low                           |
| Bedi et al.34 (2015)   | Serious     | Serious   | Serious        | Low                                    | Low          | Serious                 | Moderate                      |
| Gerasimenko et al.34 (2015) | Moderate    | Serious   | Moderate       | Low                                    | Low          | Serious                 | Moderate                      |
| Hofstoetter et al.35 (2015) | Moderate    | Serious   | Moderate       | Low                                    | Low          | Moderate                 | Moderate                      |
| Rejc et al.36 (2015)   | Serious     | Serious   | Moderate       | Low                                    | Low          | Serious                 | Low                           |
| Bedi et al.37 (2016)   | Serious     | Serious   | Serious        | Low                                    | Low          | Serious                 | Moderate                      |
| Lu et al.38 (2016)     | Serious     | Moderate  | Moderate       | Low                                    | Low          | Serious                 | Low                           |
| Minassian et al.39 (2016) | Serious     | Moderate  | Moderate       | Low                                    | Low          | Serious                 | Low                           |
| Gad et al.40 (2017)    | Serious     | Serious   | Moderate       | Low                                    | Low          | Serious                 | Low                           |
| Grahn et al.41 (2017)  | Moderate    | Serious   | Moderate       | Low                                    | Low          | Serious                 | Moderate                      |
| Rejc et al.42 (2017)   | Serious     | Serious   | Moderate       | Low                                    | Low          | Serious                 | Moderate                      |
| Rejc et al.43 (2017)   | Serious     | Moderate  | Moderate       | Low                                    | Low          | Serious                 | Low                           |
| Angeli et al.44 (2018) | Serious     | Moderate  | Low            | Serious                                | Low          | Serious                 | Moderate                      |
| Aslan et al.45 (2018)  | Serious     | Moderate  | Serious        | Low                                    | Low          | Serious                 | Low                           |
| DiMarco et al.46 (2018) | Serious     | Serious   | Moderate       | Low                                    | Low          | Serious                 | Low                           |
| Freyvert et al.47 (2018) | Serious     | Serious   | Moderate       | Low                                    | Moderate     | Serious                 | Low                           |
| Gad et al.48 (2018)    | Moderate    | Serious   | Moderate       | Low                                    | Low          | Serious                 | Low                           |
| Gill et al.49 (2018)   | Moderate    | Serious   | Moderate       | Low                                    | Low          | Serious                 | Low                           |
| Harkema et al.50 (2018) | Serious     | Serious   | Serious        | Low                                    | Low          | Serious                 | Low                           |
| Harkema et al.51 (2018) | Moderate    | Moderate  | Moderate       | Low                                    | Low          | Serious                 | Low                           |
| Herrity et al.52 (2018) | Serious     | Serious   | Moderate       | Low                                    | Low          | Serious                 | Low                           |
| Inanici et al.53 (2018) | Serious     | Serious   | Moderate       | Low                                    | Low          | Serious                 | Low                           |
| Niu et al.54 (2018)    | Moderate    | Moderate  | Moderate       | Low                                    | Low          | Serious                 | Low                           |

(Continued)
### Supplementary Table 1. ROBINS-I risk of bias analyses of SCS studies (continued)

| Study                        | Confounding | Selection | Classification | Deviations from intended interventions | Missing data | Measurement of outcomes | Selection of reported results |
|------------------------------|-------------|-----------|----------------|------------------------------------------|--------------|-------------------------|--------------------------------|
| Phillips et al. \(^{50}\) (2018) | Moderate    | Moderate  | Moderate        | Low                                      | Low          | Moderate                | Low                            |
| Powell et al. \(^{51}\) (2018)  | Serious     | Serious   | Serious         | Serious                                  | Serious      | Moderate                | Moderate                       |
| Rath et al. \(^{52}\) (2018)   | Moderate    | Moderate  | Moderate        | Low                                      | Low          | Moderate                | Low                            |
| Wagner et al. \(^{53}\) (2018) | Moderate    | Moderate  | Moderate        | Low                                      | Serious      | Low                     | Low                            |
| Walter et al. \(^{54}\) (2018) | Moderate    | Serious   | Moderate        | Low                                      | Low          | Serious                 | Low                            |
| West et al. \(^{55}\) (2018)   | Serious     | Serious   | Serious         | Low                                      | Low          | Serious                 | Moderate                       |
| Calvert et al. \(^{56}\) (2019) | Moderate    | Moderate  | Moderate        | Moderate                                 | Low          | Serious                 | Low                            |
| Cheng et al. \(^{57}\) (2019)  | Serious     | Moderate  | Moderate        | Serious                                  | Low          | Serious                 | Moderate                       |
| Darrow et al. \(^{58}\) (2019) | Serious     | Moderate  | Moderate        | Low                                      | Low          | Serious                 | Low                            |
| Knikou et al. \(^{59}\) (2019) | Moderate    | Moderate  | Moderate        | Low                                      | Low          | Moderate                | Low                            |
| Nightingale et al. \(^{60}\) (2019) | Serious | Serious | Serious         | Low                                      | Low          | Moderate                | Low                            |
| Sayenko et al. \(^{61}\) (2019) | Moderate    | Moderate  | Serious         | Low                                      | Serious      | Moderate                | Low                            |
| Terson de Paleville et al. \(^{62}\) (2019) | Moderate | Serious | Serious         | Moderate                                 | Low          | Serious                 | Low                            |
| Alam et al. \(^{63}\) (2020)   | Serious     | Serious   | Moderate        | Low                                      | Low          | Serious                 | Low                            |
| DiMarco et al. \(^{64}\) (2020) | Moderate    | Moderate  | Moderate        | Low                                      | Low          | Serious                 | Low                            |
| Gad et al. \(^{65}\) (2020)    | Serious     | Serious   | Serious         | Low                                      | Low          | Serious                 | Low                            |
| Gill et al. \(^{66}\) (2020)   | Serious     | Moderate  | Moderate        | Low                                      | Low          | Serious                 | Low                            |
| Gorgey et al. \(^{67}\) (2020) | Serious     | Serious   | Serious         | Moderate                                 | Moderate     | Serious                 | Moderate                       |
| Peña Pino et al. \(^{68}\) (2020) | Serious | Moderate | Moderate        | Low                                      | Serious      | Low                     | Low                            |
| Wiesener et al. \(^{69}\) (2020) | Serious    | Serious   | Moderate        | Low                                      | Low          | Serious                 | Low                            |
| Wu et al. \(^{70}\) (2020)     | Moderate    | Serious   | Serious         | Low                                      | Low          | Serious                 | Low                            |
| Beck et al. \(^{71}\) (2021)   | Serious     | Moderate  | Moderate        | Low                                      | Low          | Serious                 | Low                            |
| Calvert et al. \(^{72}\) (2021) | Serious    | Moderate  | Serious         | Low                                      | Low          | Serious                 | Moderate                       |
| DiMarco et al. \(^{73}\) (2021) | Moderate    | Moderate  | Moderate        | Low                                      | Low          | Serious                 | Low                            |
| Estes et al. \(^{74}\) (2021)  | Moderate    | Moderate  | Moderate        | Low                                      | Low          | Moderate                | Low                            |
| Herrity et al. \(^{75}\) (2021) | Moderate    | Serious   | Moderate        | Low                                      | Serious      | Moderate                | Low                            |
| Ibáñez et al. \(^{76}\) (2021) | Serious     | Serious   | Moderate        | Low                                      | Low          | Serious                 | Low                            |
| Inanici et al. \(^{77}\) (2021) | Serious    | Serious   | Serious         | Moderate                                 | Low          | Serious                 | Low                            |
| Linde et al. \(^{78}\) (2021)  | Serious     | Moderate  | Moderate        | Low                                      | Low          | Serious                 | Low                            |
| Mesbah et al. \(^{79}\) (2021) | Moderate    | Moderate  | Moderate        | Low                                      | Low          | Serious                 | Low                            |
| Squair et al. \(^{80}\) (2021) | Moderate    | Moderate  | Moderate        | Low                                      | Low          | Serious                 | Low                            |
| Smith et al. \(^{81}\) (2022)  | Serious     | Moderate  | Moderate        | Low                                      | Low          | Serious                 | Low                            |

ROBINS-I, Risk of Bias in Non-Randomized Studies of Interventions; SCS, spinal cord stimulation.