

Supplementary Material

eMethods

(Clinically Isolated CNS Demyelinating Syndrome [Title/Abstract] OR Demyelinating Diseases [Title/Abstract] OR Demyelinating Disease [Title/Abstract] OR Demyelinating Disorders [Title/Abstract] OR Demyelinating Disorder [Title/Abstract] OR Demyelination [Title/Abstract] OR Diffuse Cerebral Sclerosis of Schilder [Title/Abstract] OR Encephalomyelitis [Title/Abstract] OR Multiple Sclerosis [Title/Abstract] OR Myelitis [Title/Abstract] OR Neuromyelitis Optica [Title/Abstract] OR Adrenoleukodystrophy [Title/Abstract] OR Leukodystrophy [Title/Abstract] OR Leukoencephalopathy OR Amyotrophic Lateral Sclerosis [Title/Abstract]) AND (Physical Trauma [Title/Abstract] OR Trauma [Title/Abstract] OR Abuse [Title/Abstract] OR Injury [Title/Abstract] OR Injuries [Title/Abstract]).

eReferences

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eTable 1. Characteristics of the Included Studies

Study	Year	Country	Design	Sample Size	MS patients	Control	Femal:Male MS	Mean age of diagnosis	Disease	Diagnostic Criteria	Type of Trauma	Time of Trauma
Persson	2019	UK and US	case-control	95,629	15,627	15,5460	3	-	MS	Neurologist	Fracture	Premorbid
Abdollahpour	2018	Iran	case-control	1,604	547	1,057	4	-	MS	Neurologist	Head	Childhood
Eskaendarieh	2018	Iran	case-control	500	100	400	3.5	35.83	NMO	The International 2015 Consensus	Head	Premorbid
Shaygannejad	2016	Iran	case-control	935	536	399	-	28.55	MS	Edimus	Head	Premorbid
Al-Afasy	2013	Kuwait	case-control	303	101	202	1.1	-	MS	Neurologist	Head	Premorbid
Yao	2022	China	case-control	41,505	14,802	26,703	-	-	MS	Neurologist	Fracture	Premorbid
Mansouri	2014	Iran	case-control	2,004	1,217	787	-	26.3	MS	Poser or McDonald	Head	Premorbid
Lin	2015	Taiwan	prospective cohort	71,478	-	-	1.1	-	MS	Neurologist	Spinal	Premorbid
Gallagher	1987	USA	case-control	148	78	70	-	-	ALS	Neurologist	Multiple	Premorbid
Goncharova	2009	Russia	case-control	244	122	122	-	56	MS	Neurologist	Head	Both

Bamford	1981	USA	case-control	164	82	82	-	32	MS	Kurland	Head, Spinal, and Fractures	Pre morbid
Bobowick	1978	USA	case-control	30	16	15	-	-	MS	Neurologist	Multiple	Pre morbid
Abbasi	2017	Iran	case-control	1,081	660	421	5	-	MS	Neurologist	Head	Both
Eid	2022	Norway	prospective cohort	77,997	-	-	-	33	MS	McDonald	Multiple	Childhood
Gatto	2022	Iceland	prospective cohort	27,870	214	27,656	-	-	MS	Neurologist	Multiple	Childhood
Povolo	2020	Canada	retrospective cohort	391,860	359	391,501	0.5	-	MS	Neurologist	Head	Childhood
Montgomery	2017	Sweden	case-control	80,212	7,292	72,920	3	35	MS	Neurologist	Head and Fracture	Both
Spitzer	2012	Germany	case-control	1,109	234	885	1	29.2	MS	McDonald	Multiple	Childhood
Kang	2012	Taiwan	retrospective cohort	291,060	121	290,939	2	43	MS	Neurologist	Head	Pre morbid
Pflegger	2009	Denmark	prospective cohort	150,868	182	150,686	-	-	MS	Neurologist	Head	Pre morbid
Dokuchaeva	2006	Russia	retrospective cohort	356	178	178	2.8	48	MS	Neurologist	Multiple	Both

Goldacre	2006	UK	prospective cohort	645,593	105	645,488	-	-	MS	McDonald	Head	Childhood
Chen	2007	USA	case-control	364	109	255	-	58.3	ALS	Neurologist	Head	Premorbid
Ghadirian	2001	Canada	case-control	402	200	202	2	-	MS	McDonald	Head	Premorbid
Gusev	1996	Russia	case-control	310	155	155	-	-	MS	McAlpine	Head	Both
Turner	2010	UK	prospective cohort	512,112	281	511,831	-	-	-	Neurologist	Head and Extrimites	Premorbid
Alter and Speer	1968	USA	case-control	108	36	72	-	45	MS	Neurologist	Head	Premorbid
Antonovsky	1965	Israel	case-control	1,205	241	964	1.1	31	MS	Neurologist	Multiple	Both
Berr	1989	France	case-control	126	63	63	2.7	30.8	MS	Poseur	Multiple	Premorbid
casetta	1994	Italy	case-control	254	104	150	2	32.2	MS	McDonald	Multiple	Premorbid
Currer	1974	Ireland	case-control	120	60	60	1.4	26	MS	McDonald	Multiple	Premorbid
Da Silva	2009	Brazil	case-control	162	81	81	2.1	22	MS	Neurologist	Head	Premorbid
De Genaro	2009	Serbia and Italy	case-control	254	104	150	2.06	28	MS	McDonald	Head, Fractures, and Spinal	Both
Dolan	2003	USA	case-control	48	24	24	2	35.4	MS	Poseur	Multiple	Premorbid

Fernandez	1990	Spain	case-control	84	43	41	1.69	28.3	MS	Poseur	Head, Spine, and Fractures	Pre morbid
Fraser & Lunny	2013	USA	case-control	986	493	493	1.45	39.7	MS	Neurologist	Head, Spine, and Fractures	Pre morbid
Helmick	1989	USA	case-control	44	22	22	3.4	29	MS	Poseur	Multiple	Pre morbid
Hopkins	1991	USA	case-control	70	14	56	4.3	35.2	MS	Poseur	Multiple	Pre morbid
Koch	1974	USA	case-control	14	7	7	2.5	29.3	MS	Neurologist	Multiple	Pre morbid
kurtzke	1997	Norway	case-control	150	23	127	1.55	30	MS	Schum	Head	Pre morbid
Koch-Henriksen	1989	Denmark	case-control	594	297	297	1.42	32	MS	McDonald	Head	Both
Laure	1994	Germany	case-control	300	150	150	2.04	30.3	MS	McDonald	Head	Childhood
Leibowitz	1973	Israel	case-control	140	70	70	-	-	MS	Neurologist	Multiple	Both
Martinez-Sobrerpa	2001	Cuba	case-control	100	50	50	4.5	21	MS	Poseur	Head and Burns	Pre morbid
Materljan	1994	Croatia	case-control	108	36	72	1.8	24.4	MS	Poseur	Multiple	Both
McAlpine	1952	England	case-control	500	250	250	1.86	29.6	MS	Neurologist	Multiple	Pre morbid
Operaski	1989	USA	case-control	290	145	145	2.45	30.1	MS	Neurologist	Fracture	Pre morbid

Rudez	1998	Croatia	case-control	264	132	132	1.8	28	MS	Poseur	Multiple	Pre morbid
Specic	1993	Croatia	case-control	138	46	92	2.06	26.4	MS	Poseur	Head	Pre morbid
von Wilhelm	1970	Switzerland	case-control	72	36	36	-	-	MS	Neurologist	Multiple	Childhood
Westlund and Kurland	1952	Canada	case-control	235	112	123	1.43	30.3	MS	Neurologist	Head	Pre morbid
YosefiPour	2002	Iran	case-control	249	149	100	1.19	-	MS	Neurologist	Multiple	Pre morbid
Zaadstra	2008	Netherlands	case-control	5,371	2,821	2,550	2.3	52	MS	Neurologist	Head	Pre morbid
Zilber	1996	Israel	case-control	134	70	64	1.73	25.2	MS	McDonald	Multiple	Both
Zorzon	2003	Italy	case-control	271	140	131	1.72	31.2	MS	McDonald	Head and Fracture	Both
Siva	1993	USA	case-control	819	-	-	2.47	-	MS	Neurologist	Head	Pre morbid

MS: Multiple Sclerosis, NMO: Neuromyelitis Optica, ALS: Amyotrophic Lateral Sclerosis, USA: United States of America, UK: United Kingdom.

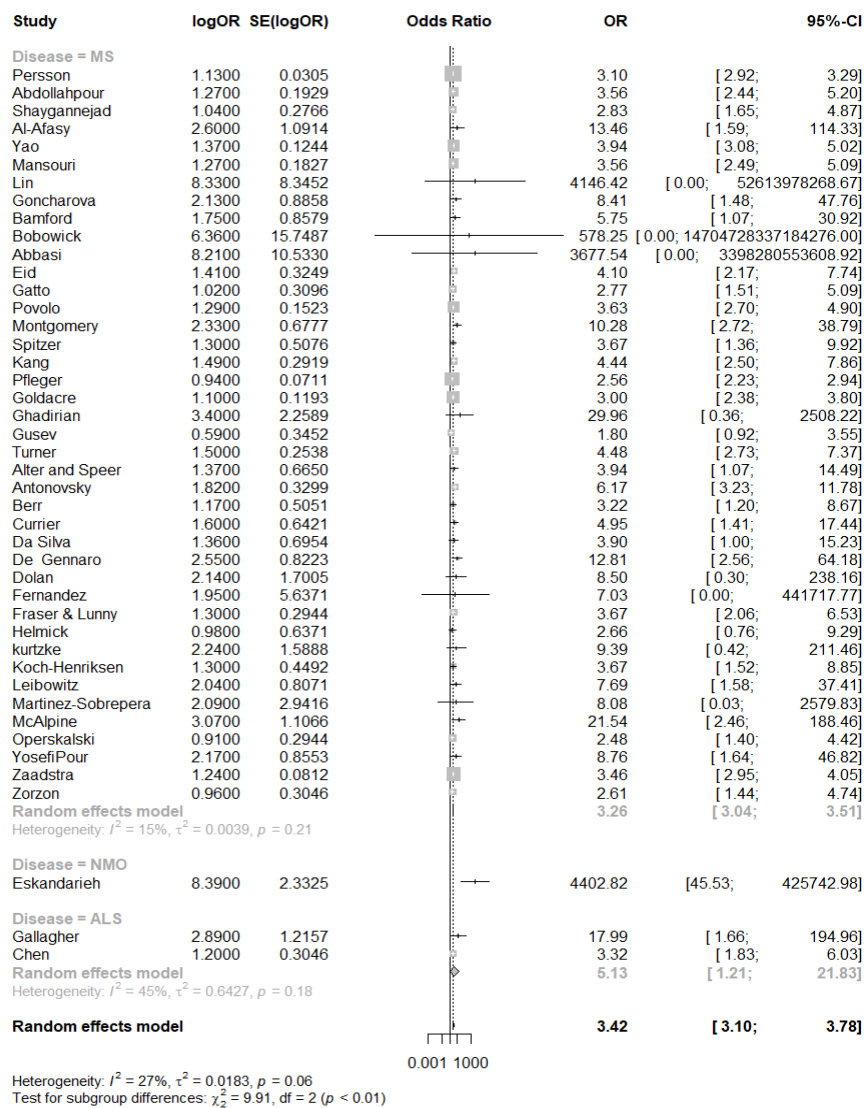
eTable 2. Summary of NOS Results of the Included Studies.

Study	Year	Selection	Comparability	Outcome	Score
Persson	2019	***		****	7
Abdollahpour	2018	***	**	***	8
Eskandarieh	2018	***	**	****	9
Shaygannejad	2016	***		***	6
Al-Afasy	2013	***	**	****	9
Yao	2022	***	**	****	9
Mansouri	2014	***		****	7
Lin	2015	***	**	****	9
Gallagher	1987	***		***	6
Bobowick	1978	**		***	5
Abbasi	2017	***	**	****	9

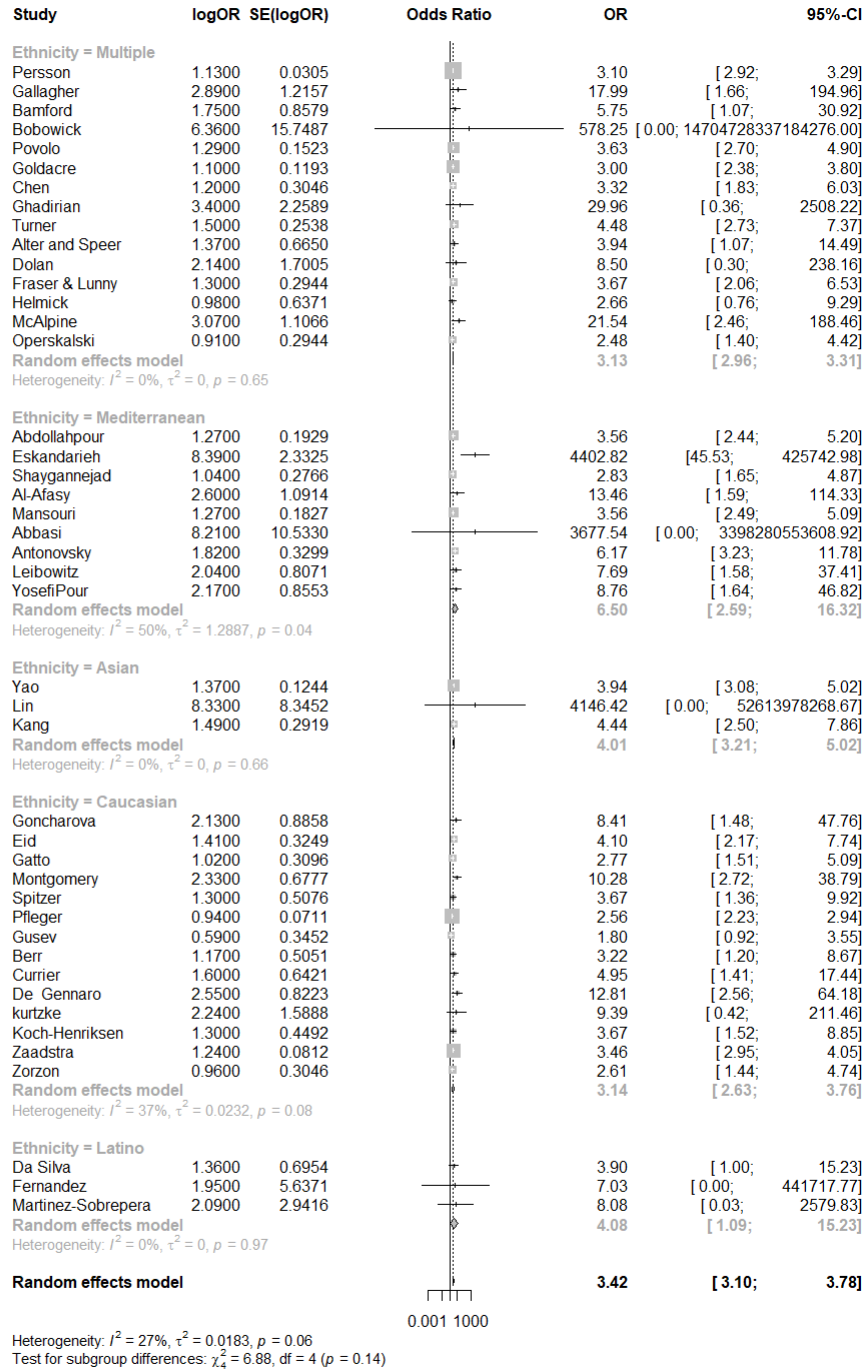
Gatto	2022	**	**	**	6
Eid	2022	***	**	***	8
Montgomery	2017	***	**	****	9
Spitzer	2012	***	**	***	8
Pfleger	2009	***	**	****	9
Kang	2012	***	**	****	9
Goldacre	2006	***	**	***	8
Chen	2007	***	**	****	9
Ghadirian	2001	***	**	****	9
Gusev	1996	***	**	****	9
Turner	2010	***	**	****	9
Alter and Speer	1968	**		**	4
Antonovsky	1965	**		***	5
Berr	1989	**		***	5
Casetta	1994	**		***	5
Currier	1974	**		*	3
Da Silva	2009	**		**	4
De Gennaro	2009	**		*	3
Dolan	2003	**		*	3
Fernandez	1990	**		*	3
Fraser & Lunny	2013	**		***	5
Bamford	1981	**		*	3
Goncharova	2009	**		***	5
Helmick	1989	***		***	6
Hopkins	1991	***		****	7
Koch	1974	**		**	4
kurtzke	1997	**		***	5
Lauer	1994	**		**	4
Leibowitz	1973	**		**	4
Koch-Henriksen	1989	***	**	***	8
Martinez-Sobrepera	2001	**		***	5
Materljan	1994	***		***	6
McAlpine	1952	**		*	3
Operskalski	1989	***	**	****	9
Rudez	1998	**		**	4
Specic	1993	***		***	6
Von Wilhelm	1970	**		**	4
Zaadstra	2008	***		****	7
Zilber	1996	***		***	6
Zorzon	2003	**		***	5
Siva	1993	***		***	6

Westlund and Kurland	1952	**		**	4
YosefiPour	2002	**		***	5
Povolo	2020	***		***	6
Dokuchaeva	2006	***		***	6

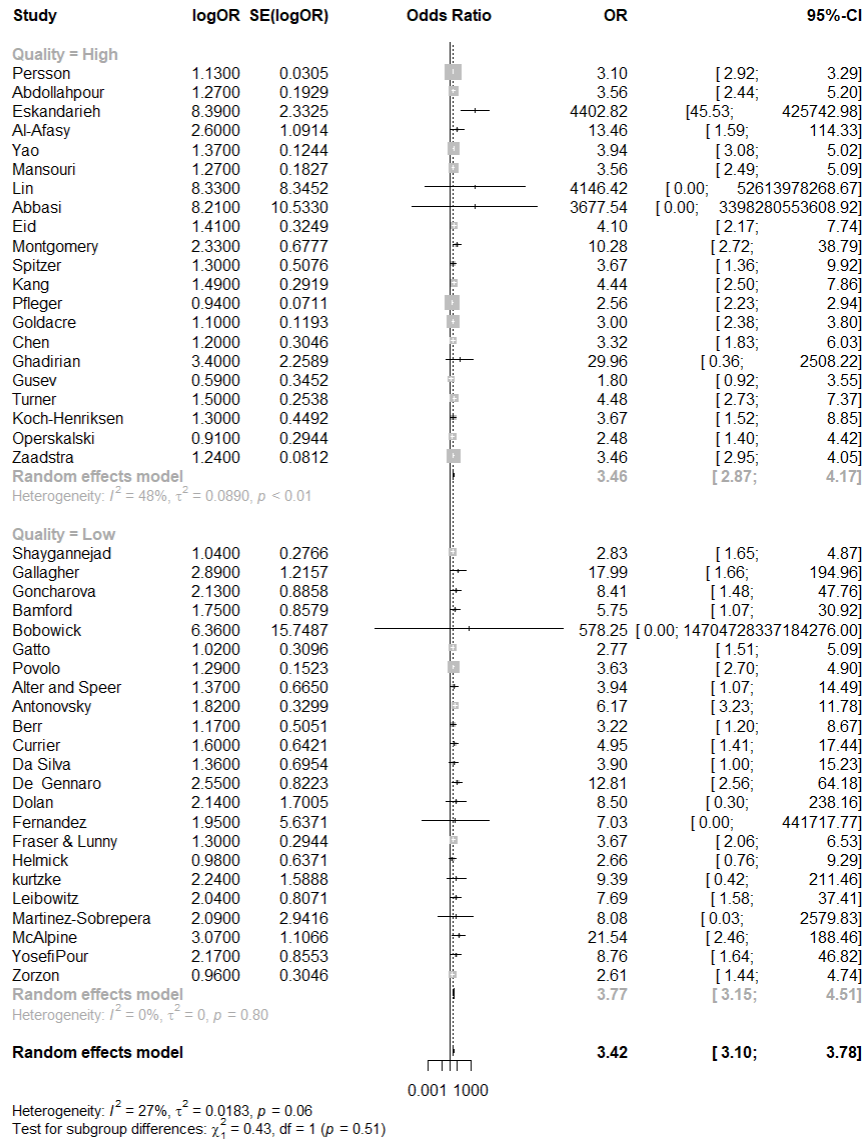
eFigure 1. The Association between Physical Trauma and Demyelinating Diseases Sub-group Analysis According to the Disease Type.



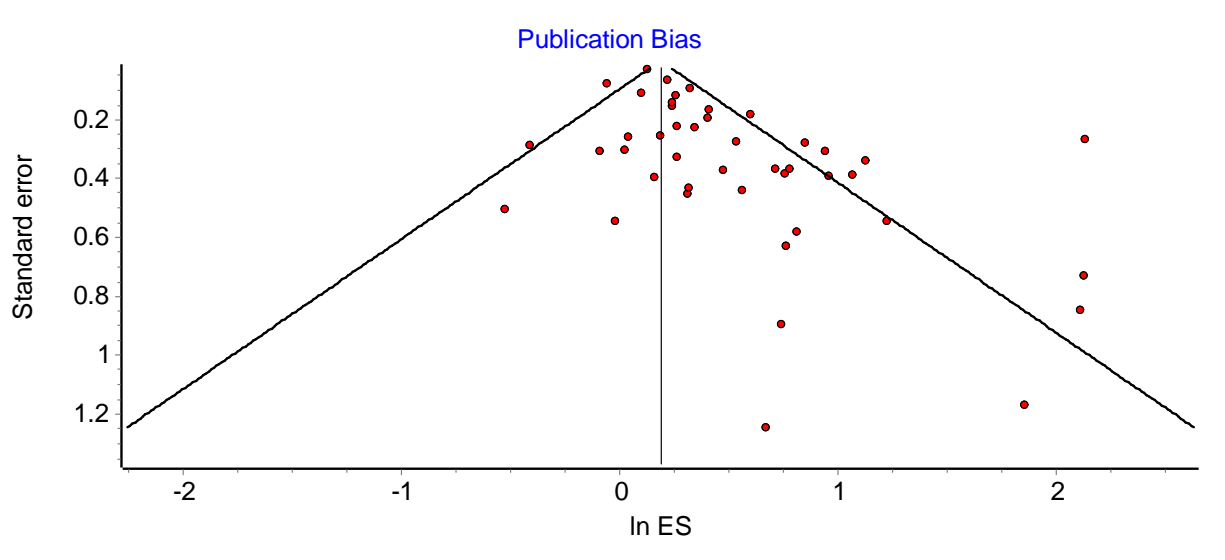
eFigure 2. The Association between Physical Trauma and Demyelinating Diseases Sub-group Analysis According Ethnicity.



eFigure 3. The Association between Physical Trauma and Demyelinating Diseases Sub-group Analysis According to High Quality Studies.



eFigure 4. Publication Bias Funnel Plot



eFigure 5. Publication Bias Doi Plot

