

Table S2. Tabular representation of lasers/LEDs parameters utilised in the chosen eligible *in vivo* RCTs human studies related to temporomandibular dysfunction syndrome (TMD). The abbreviations in this table are listed in Supplementary File S2

Study, year, origin & citation	Utilised Laser/ LED wavelength	Emission mode CW/ Gated/ Pulsed	Energy (J)	Power output (W)	Pulse width (PW) & frequency (F)	Use of Power meter	Method of applications (EO or IO) & number of trigger points (TP)	Contact /non-contact	Tip-tissue distance	Spot size/spot area/beam & fibre tip diameters	Irradiated/ illuminated area	Energy density [Fluence] (J/cm ²)	Power Density (W/cm ²)	Exposure time (min/sec)	No.& frequency of sessions	Treatment duration
Venancio et al., 2005, Brazil [57]	780nm GaALAs diode laser	NI	NI	30mW	NI	NI	Bilateral EO: 3 TMJ points (a) post. aspect of joint (mouth open) (b) ant. to condyle in sigmoid notch (mouth closed), into condylar neck & disc (insertion of LPM); (c) joint interface with mouth open	NI	NI	NI	NI	6.3J/cm ² / point	NI	10sec	6 sessions (Twice a week)	3 weeks
Çetiner et al., 2006, Turkey [58]	830nm GaAlAs diode laser	NI	NI	NI	NI	NI	EO: 4 TP of the following: joint capsule (lateral, post., sup.), masseter (ant., inf., deep), temporal (ant., deep, middle, origin), MPM; LPM [Bilateral application]	Contact	NA	NI	NI	7J/cm ² / point	NI	162sec	10 sessions daily (excluding weekends)	2 weeks
Fikackova et al., 2007, Czech Republic [59]	830nm GaAlAs diode laser	NI	NI	400mW	NI	NI	EO: For myofascial pain: painful muscle spots; for TMD arthralgia: front of tragus (mouth open), through external acoustic meatus (mouth closed); 2cm in front of tragus, under zygoma (mouth closed) (No. of TP or allocation unspecified)	Contact	NA	Probe aperture size: 0.2cm ²	NI	GA: 10J/cm ² / point GB: 15J/cm ² /point GC: 0.1J/cm ² /point	NI	NI	10 sessions (Interval time unspecified)	4 weeks
Mazzetto et al., 2007, Brazil [60]	780nm GaALAs diode laser	CW	NI	70mW	NA	NI	EO: TMJ region, at 1 point: inside the external auditive duct towards retrodiscal region [Bilateral application]	Contact	NA	NI	NI	89.7J/cm ² / point	NI	10sec	8 sessions (Twice a week)	4 weeks
Frare et al., 2008, Brazil [61]	904nm GaAs diode laser	CW	NI	15mW	NA	Yes	EO: 5 TP: 4 in a shape of a cross in the pre-auricular region; & 1 in external auditory meatus [Bilateral application].	Contact	NA	Beam area: 0.039cm ²	NI	7J/cm ² / point	0.38mW/cm ² / point	16 sec/point	8 sessions (Twice a week)	4 weeks
Da Cunha et al., 2008, Brazil [62]	830nm GaAlAs diode laser	NI	4J/point	500mW	NI	NI	EO: painful areas (No. of TP or allocation unspecified)	Contact	NA	NI	NI	100J/cm ² / point	NI	20sec/site	4 sessions (Once a week)	4 weeks

Lassemi et al., 2008, Iran [63]	980nm diode laser	Puled	2J/point (Total: 6J) 1.5J at the other sites of muscle pain	NI	F: 80 Hz PW: NI	NI	EO: (a) post. part of joint-mouth open (post. articular branches of auriculotemporal nerve) (2 J for 1 min), (b) an area ant. to condyle in sigmoid notch-mouth closed for LPM insertion in condylar neck & meniscus (2 J for 1 min); (c) joint interface-mouth open (2 J for 1 min); TP in adjacent muscles (No. of TP unspecified).	Contact	NA	NI	NI	NI	NI	1min	2 sessions (48-h interval)	4 days
Carrasco et al., 2008, Brazil [64]	780nm GaAlAs diode laser	CW	NI	70mW	NA	NI	EO: 5 points of the TMJ area: lateral, sup., ant., post. & posterior-inferior of condylar [Bilateral application].	Contact	NA	NI	NI	105J/cm ² / point	NI	60sec	8 sessions (Twice a week)	4 weeks
Emshoff et al., 2008, Austria [65]	HeNe 632.8nm diode laser	CW	NI	30mW	NA	Yes	EO: centre of the upper joint space, 1 cm in front of the tragus (No. of TP or allocation unspecified)	Contact	NA	NI	NI	1.5J/cm ² / point	NI	2 mins at both closed mouth & MMO position	1 series of 20 sessions (2 to 3 times a week)	8 weeks
Carrasco et al., 2009, Brazil [66]	780nm GaAlAs diode laser	CW	NI	GI: 50mW GII: 60mW GIII: 70mW GIV: 50mW Placebo GV: 60mW Placebo GVI: 70mW Placebo	NA	NI	EO: (No. of TP or allocation unspecified)	Contact	NA	NI	NI	GI-LLLT: 25J/cm ² / point GII- LLLT: 60J/cm ² / point GIII- LLLT: 100J /cm ² / point. GIV- LLLT Placebo: 25J/ cm ² / point GV-LLLT Placebo: 60J /cm ² / point GVI- LLLT, Placebo: 100J /cm ² / point	NI	NI	8 sessions (Twice a week)	4 weeks
Shirani et al., 2009, Iran [67]	Two diode laser probes (660nm & 890nm)	660 nm: CW 890 nm: Pulsed	6-10 J/ point	660nm: 17.3mW 890nm: 9.8W	F:1500 Hz PW: NI (890nm)	Yes	EO: tender TP of masseter. IO: MPT, LPM (No. of TP or allocation unspecified)	Contact	NA	Spot size: 0.6cm ² Irradiated area: 1 cm ²	NI	660nm: 6.2J /cm ² / point 890nm: 1J/cm ² / point	NI	660 nm: 6 min 890 nm:10 min	6 sessions (Twice a week)	3 weeks
Venezian et al., 2010, Brazil [68]	GaAlAs diode laser (780nm)	CW	NI	GI- 50mW	NA	NI	EO: 4 points (upper, middle & lower thirds of masseter (3 points) & ant.	Contact	NA	NI	NI	GI:25J/cm ² /point	NI	GI: 20 secs	8 sessions (Twice a week)	4 weeks

				GII- 50mW Placebo GIII- 60mW GIV- 60mW Placebo			region of temporalis (1 point)					GII: 25J/cm²/ point, Placebo GIII: 60J/ cm²/point GIV:60J/cm²/ point, Placebo		GII: 20 secs GIII: 40 secs GIV: 40 secs		
Oz et al., 2010, Turkey [69]	Low- intensity semiconduc- tor diode laser:820nm	CW	NI	300mW/ point	NA	NI	EO: 3 points of masseter (sup., middle, inf.), 1point of temporalis (ant.) on both sides	Non- contact	2mm	Beam diameter: 6mm	NI	3 J/cm²/ point	NI	10 secs/ point	10 sessions (Twice a week)	5 weeks
Marini et al., 2010, Italy [70]	910nm GaAs diode	Super- pulsed	NI	Average power: 400mW Peak power: 45W	F:1-50 kHz PW: <200 ns	Yes	EO: in right and left TMJ (No. of trigger points or allocation not mentioned) [Bilateral application].	Contact	NA	NI	NI	NI	NI	3 steps therapy/ TMJ 120 kHz for 10 mins 2.18k Hz for 5 mins 3.16 kHz for 5 mins	10 sessions (10 consecutive days ; 5 days/week)	2 weeks
Rohlig et al., 2011, Turkey [71]	Low- intensity semiconduc- tor (820nm) diode laser	CW	NI	300mW/ point	NA	NI	EO: 5 points 3 on masseter (sup., middle, inf.), 1 on temporalis (ant.) & 1 on sup. SCM.	Contact	NA	Beam diameter: 6mm	NI	8J/cm²/point	NI	10 sec/point	10 sessions (Every alternate day)	3 weeks
Sattayut et al., 2012, United Kingdom [72]	820nm GaAlAs diode laser	NI	G1: 4J/ point G2: 20J/ point	G1: 60mW G2: 300mW	NI	NI	EO: 6 points Post. TMJ, sigmoid notch, joint interface, 3 tender TP in masticatory muscles elicited by palpation [Unilateral application]	Contact	NA	NI	NI	G1: LLLT- 21.4J/cm²/ point G2: LLLT- 107J/cm²/ point	NI	NI	3 sessions (Every alternate day)	1 week
De Carli et al., 2012, Brazil [73]	808nm GaAlAs diode laser	NI	2.8 J/point Total: 56 J	100mW/ point	NI	Yes	EO: 10 TP of TMJ & muscle: joint capsule (lateral, post., sup., ant., inf.), masseter (origin, insertion) & temporal (ant., middle, post.). [Bilateral application]	NI	NI	Spot size: 0.028cm²	NI	100J/cm²/ point	NI	28 secs	4 sessions (Twice a week)	10 days
da Silva et al., 2012, Brazil [74]	780nm GaAlAs diode laser	CW	NI	70mW	F: NA PW: NA	NI	EO: 5 TP Condylar points (ant., sup., post., post- inf.) & external auditory meatus), 3-masseter & 1- ant. temporalis [Bilateral application]	Contact	NA	Beam diameter: 5mm	NI	GI: 52.5J/ cm²/point GII: 105J/cm²/ point GIII: Placebo	NI	GI:30 sec GII:60 sec GIII:30 sec	10 sessions (Twice a week)	5 weeks

Panhoca et al., 2013, Brazil [75]	GI: red-LED (630±10nm), GII: IR-LED (850± 10nm) GIII: Control positive, IR-laser (780nm)	NI	GI & GII: 9J/ point GIII:4.2J /point	GI and GII: 150mW GIII: 70mW	NI	Yes	EO: 5 TP: 3 points around TMJ, 1 point for temporalis & 1 point near the masseter [Bilateral application].	Contact	NA	GIII: Spot size: 0.04cm²	GI &GII: Illuminati-on area: 0.5cm²	GI and GII: 18J/cm²/ point GIII: 105J/cm²/ point	GI & GII: 300mW/cm²/ point GIII: 1.7W/cm²/ point	60 sec/ point	8 sessions (Twice a week)	4 weeks
Uemoto et al., 2013, Brazil [76]	795nm IR-diode laser	NI	NI	80mW	NI	NI	EO: MTPs in masseter (No. of TP or allocation unspecified) [Bilateral application].	Contact	NA	NI	NI	Right masseter: 4J/cm²/point Left masseter 8J/cm²/point	NI	NI	4 sessions 72 hr interval between 1&2 sessions; 48 hr interval between 2&3 session; 72 hr interval between 3&4 sessions	8 days
Ahrari et al., 2014, Iran [77]	810nm diode laser	Pulsed mode	6J/ point	50mW/ point	F: 1500 Hz PW: 1µs	Yes	EO: masseter (origin, body, insertion); temporalis (ant., middle, post.) & MPM insertion (No. of TP unspecified) [Bilateral application].	Contact	NA	Spot size: 1.76cm²	NI	3.4J/cm²/ point	NI	120 sec/ point	12 sessions (3 times a week)	4 weeks
Demirkol et al., 2014, Turkey [78]	Nd:YAG, 1064nm	Pulsed	NI	250mW/p oint	F: NA PW: NA	NI	EO: TP of masticatory muscles (No. TP or allocation unspecified)	Non-contact	1cm²	NI	NI	8J/cm²/point	NI	20 sec/ point	10 sessions (Once a day)	10 days
Pereira et al., 2014, Brazil [79]	660nm (red laser) & 795nm (IR- laser).	NI	NI	NI	NI	NI	EO: TMJ (post. ligament & lateral pole); EO muscles (temporalis, masseter, post. mandibular & submand. regions; IO muscles (LPM & temporal tendon). Cervical muscles (suboccipital, SCM & trapezius). (No. of TP unspecified)	NI	NI	NI	NI	Muscle: 8J/cm²/point TMJ: 4J/cm²/point	NI	NI	3 sessions (48 hr interval time)	1 week

Maia et al., 2014, Brazil [80]	808nm GaAlAs diode laser	CW	Total: 1.9J	100mW	NA	NI	EO: 5 TP: ant. temporalis & masseter, 4 forming a cross & 1 central point; distance between each point: 1cm [Bilateral application]	NI	NI	Spot area: 0.028cm ²	NI	70J/cm ² /point	NI	19 sec/point	8 sessions (Twice a week)	4 weeks
Sancakli et al., 2015, Turkey [81]	820nm diode laser	CW	NI	300mW/point	NA	NI	EO (Bilateral) LGI: LLLT Greatest painful points on masseter and/or temporalis (No. of TP or allocation unspecified). LGII: 6 TP: 3 on masseter (sup., middle, and inf.) & 3 on temporalis (ant., middle, post.)	Non-contact	2mm	Beam diameter: 6mm	NI	3J/cm ² /point	NI	10 secs/point	12 sessions (3 times a week)	4 weeks
De Oliveira et al., 2017, Brazil [82]	GaAlAs diode laser Red-laser: 660nm IR-laser: 790nm	NI	NI	Muscle points: 120 mW/point Joints pain: 120mW/point	F: NI PW: NI	NI	EO: TMJ (post. ligament & lateral pole); EO muscles (Temporalis, masseter, post. mandibular & submand. regions); IO muscle (LPM & temporal tendon) (No. of TP or allocation unspecified)	NI	NI	Spot size: 0.031cm ²	NI	Muscle points: 8J/cm ² /point Joints with sensitivity: 4J/cm ² /point	NI	Muscle TP: 1.06 sec/point Sensitive joints: 0.33 sec/point	3 sessions (At an interval of 48 hrs)	1 week
Costa et al., 2017, Brazil [83]	IR-laser (830nm)	NI	2.8 J/point Total: 14J	100mW/point	F: NI PW: NI	Yes	EO: 5 TP temporalis (ant., medium, post.) superficial masseter (sup., inf.) [Bilateral applications]	NI	NI	Spot size: 0.028cm ²	NI	100J/cm ² /point	NI	28 secs/point	1 session	1 day
Seifi et al., 2017, Iran [84]	Diode Laser (810nm)	CW	NI	0.5W	NA	NI	(No. of TP or allocation unspecified)	NI	NI	Spot size- 5mm	NI	NI	NI	60 sec/point	4.5 sessions/week	1 week
Shobha et al., 2017, India [85]	GaAlAs 810nm diode laser	CW	NI	100mW	NA	NI	EO: at the centre of upper joint space, 1cm in front of tragus & at TP (No. of TP or allocation unspecified)	Non-contact	NI	Tip diameter: 300μ	NI	6J/cm ² /point	NI	60 sec/session	8 sessions (2–3 times a week)	Approx. 4 weeks
Rezazadeh et al., 2017, Iran [86]	GaAlAs 980nm diode laser	NI	NI	200mW	F: NI PW: NI	NI	EO: 3 regions of both sides including post. & ant. aspects of TMJ, as well TP (No. of TP or allocation unspecified)	NI	NI	NI	NI	5J/cm ² /point	NI	2.5 mins	8 sessions (Time interval was not mentioned)	2 weeks
Varma et al., 2018, UAE [87]	940nm diode laser	CW	NI	6W	NA	NI	EO: Painful muscular areas over TMJ, masseter, temporalis, trapezius. (No. of TP or allocation unspecified)	Non-contact	1cm up to 3cm	NI	NI	NI	NI	300 sec	8 sessions (Twice a week)	4 weeks

Borges et al., 2018, Brazil [88]	AlGaAs diode laser (830nm)	CW	G1: 7.68 J G2:57.6 J G3: 101.12J	30mW	NA	Yes	EO: 8 TP (4/side) in TMJ: preauricular region & external acoustic meatus	Contact	NA	Spot size: 0.11600cm ²	NI	G1: 8 J/cm ² /point (Total: 64J/cm ²), G2: 60J/cm ² /point (Total: 480J/cm ²), G3: 105J/cm ² /point (Total 840J/cm ²)	2.59 W/cm ² /point	G1: 32sec/point; 266 sec/session; 2586sec/10 sessions G2: 240 sec/point; 1920sec/session; 19200 sec/10 sessions G3: 420 sec /point; 3360 sec /session; 33600 sec/10 sessions	10 sessions (3 times a week)	3 weeks
Brochado et al., 2018, Brazil [89]	GaAlAs 808nm diode laser	CW	4 J/ point; 48 J/ point or 576 J /side	100mW/ point	NA	Yes	EO: 12 points/side: 5 in TMJ (sup., ant., lateral, post., postero-inferior to condyle) & 7-temporalis (ant., middle, & post.), masseter (upper, middle, lower), & insertion of MPM	Contact	NA	Spot size: 0.03cm ²	NI	13.3J/cm ² /point Radiant exposure: 133J/cm ²	3.33 W/cm ² /point	40sec/point	12 sessions (3 times a week)	4 weeks
Rodrigues et al., 2018, Brazil [90]	GaAlAs 780nm diode laser	CW	NI	Site 1: (60mW) Site 2: (60mW)	NA	NI	EO: Site 1: superficial masseter (upper, middle, lower), Temporalis (ant., middle, post. Site 2: lateral pole of TMJ (5 TP related to lateral pole of mandible head: lateral, sup., ant., post., inf.) [Bilateral application].	Contact	NA	NI	NI	Site 1: 30J/cm ² /point Site 2: 75J/cm ² /point	NI	Site 1: 20 sec Site 2: 50 sec	8 sessions (Twice a week)	4 weeks
Peimani et al., 2018, Iran [91]	808nm diode laser	NI	4J/ point	50mW	F: NI PW: NI	NI	EO: 3 TP over TMJ/ session (allocation of TP unspecified)	Contact	NA	Spot size: 0.028cm ²	NI	144J/cm ² /point	1.78 W/cm ² /point	10 sec/point	8 sessions (Twice a week)	4 weeks
Nadershah et al., 2019, Saudi Arabia [92]	940nm diode laser	CW	300J/ Rx Total dose: 1500J	7W	NA	NI	EO: 5 TP at the temporal (centre of temporalis), zygomatic (origin of masseter), angle of mandible (masseter	Non-contact	2cm	Spot size: 2.8cm ²	NI	300J/cm ² /point	NI	2 min/ application (24 sec/ point)	5 sessions (Every 48 h)	10 days

							insertion), pre-auricular & mastoid areas [Unilateral application].									
Magri et al., 2019, Brazil [93]	GaAlAs diode laser 780nm	CW	NI	Masster & ant. temporal (20mW); TMJ (30mW)	NA	NI	EO: masseter & anterior temporal; TMJ Distance between points: 1 cm (No. of TP or allocation unspecified)	Contact	NA	NI	NI	Masseter & ant. temporal: 5J/cm ² / point TMJ: 7.5J/cm ² /point	NI	10 sec/ point	8 sessions (Twice a week)	4 weeks
Al-Quisi et al., 2019, Iraq [94]	Red LED 660nm	NI	Total: 1.6J	1.6W	F:NI PW:NI	NI	EO: TMJ, LPM & tender TP on masseter & temporalis (No. of TP or unspecified)	NI	NI	NI	NI	NI	NI	3 mins/ point	4 sessions (Once a week)	4 weeks
Herpich et al., 2019, Brazil [95]	Cluster of 9 diodes: one super-pulsed laser diode (905nm), 4 red LED diodes (640nm) & 4 IR-LED diodes (875nm LED).	Laser 905nm: super-pulsed LED (640nm & 875nm): pulsed	Laser total energy 0.27J 640nm LED: 4.5J/ emitter, total: 18 J 875nm LED: 5.25J/ emitter, total: 21 J Total energy: 39.27 J	905nm diode laser: 0.9 mW [mean output (MOO)] LED: 15mW (MOO) 875nm LED: 17.5mW (MOO)	F: 1000Hz (905nm diode laser) F:2 Hz (640 nm LED) F: 16 Hz (875 nm LED) PW: NI	Yes	IO: Region of pterygoid muscles (No. of TP or allocation unspecified) [Bilateral application].	Contact	NA	Laser tip size: 0.4cm ² 640 nm-LED: 0.9cm ² 875 nm-LED: 0.9cm ² Aperture size: 4cm ² but an adapter with an aperture of 0.394cm ² for IO	NI	99.67J/cm ² / point	NI	Laser: 300 sec 640 nm LED: 300 sec 875 nm LED: 300 sec	6 sessions (unspecified time interval)	NI
Khairnar et al., 2019, India [96]	660nm diode laser	NI	2.2 J/min	60mW	NI	NI	EO: TMJ region- at centre of upper joint space, 1 cm in front of tragus (No. of TP or allocation unspecified)	Contact	NA	NI	NI	NI	NI	3 mins	15 sessions (an alternate day)	Approx. 4 weeks
Sobral et al., 2020, Brazil [97]	808nm±10 nm InGaAlP diode laser	CW	6 J/ point	100mW	NA	NI	EO: Total: 8 TP: 3 on masseter (upper, middle, lower) & 1 point on ant. temporalis [Bilateral application]	Contact	NA	Beam diameter with spacer: 0.354cm Beam area: 0.0984cm ²	Irradiated area: 0.7872cm ² /point	61J/cm ² /point	1016mW/cm ² /point	60 secs/ point	12 sessions (Twice a week)	6 weeks
Maracci et al., 2020, Brazil [98]	GaAlAs 808nm diode laser	CW	NI	100mW	NA	NI	EO: 24 TP; 1 cm distance between two sites on TMJ & associated musculature	Contact	NA	NI	NI	80J/cm ² /point	NI	22 sec/ application	2 sessions (48 hr interval)	3 days

Chellappa et al., 2020, India [99]	672nm diode laser	NI	3J/per site	50mW	NI	NI	EO: 4 sites (masseter, temporalis, condylar regions & intra-auricular portion)	Contact	NA	NI	NI	NI	NI	120 sec/ point	6 sessions (Twice a week)	3 weeks
Monteiro et al., 2020, Brazil [100]	635±10nm diode laser	CW	16J/ point & Total: 128J	200mW	NA	NI	EO: depending on painful points (diagnostic questionnaire) at palpation (average of 4 TP/ side) (No. of TP or allocation unspecified) [Bilateral application].	Contact	NA	Beam diameter: 8mm Beam spot size 0.5cm²	Irradiated area- 0.5cm²/ point (4cm² total irradiated area)	8J/cm²/point	400mW/cm²/ point	20 sec/ point	4 sessions (Once a week)	4 weeks