

Supplementary file 2: A comprehensive summary of HILT parameters

Study	Laser model	Wavelength (nm)	Mode (continuous/pulsed)	Peak power (W)	Mean power (W)	Frequency (Hz)	Phase duration (μs)	Treatment technique	Energy density (mJ/cm ²)	Total energy (J)	Treatment area (cm ²)	Treatment time (min/session)
Dundar et al., 2015	Nd:YAG, HIRO 3.0; ASA laser, Arcugnano, Italy	1064	pulsed duty cycle of about 0.1 %	3K	NS	10-40	120-150	phase1: FMS (100 cm ² per 30 s) phase2: total of 6 points phase3: SMS (100 cm ² per 60 s)	Phase1: 0.36, 0.41, 0.51 phase2: 0.61 phase3: 0.36, 0.41, 0.51	1060	NS	15
Alayat et al., 2016	Nd:YAG, HIRO 3, ASA, Arcugnano, Vicenza, Italy	1064	pulsed duty cycle of about 0.1 %,	3K		10-40	120-150	phase1: FMS phase2: total of 8 points phase3: SMS	phase1: 0.36, 0.51 phase2: 0.51 phase3: 0.36, 0.51	2250	75	15
ahmed et al., 2020	ZIMMER OPTON PRO, Germany	810 and 980	50% duty cycle	7	3	5	NS	20 J/p for 13 s	6.4		NS	
Alayat et al. 2020	Nd:YAG, HIRO 3, ASA, Arcugnano, Vicenza, Italy	1064	pulsed duty cycle of about 0.1 %,	30K	10.5	15	100	50 J/p for 26 s, total of 8 points	Phase1: 0.51 phase2: 0.61 phase3: 0.71 phase4: 0.81	400	NS	3:46
Parandnia et al. 2020	Omega, NewAge Inc, Italy	1064	adjustable duty cycle from 20% to 100% but NS which one used	14	NS	20-100 k	NS	phase1: FMS phase2: 25 J/p, total of 3 points phase3: SMS	27.28	2803	100	8
Barassi et al. 2021	Nd: YAG, Medisport Srl, Latina, Italy	in a ratio of 25% for 810 nm and 75% for 1064 nm	phase 1 & 2: pulsed phase 3: Continuous	15	phase1 & 2: 10 phase3: 8	NS	NS	MSM phase 1: on the left UTM phase 2: on the right UTM phase 3: cervical tract	Phase 1 & 2: NS Phase 3: 60	NS	NS	7 - 10
Ahmed et al. 2022	Zimmer high power laser, Germany	810, 980	NS	7	NS	NS	NS	phase1: FMS phase2: total of 8 points phase3: SMS	NS	1060	NS	NS

Ahi et al., 2022	Neodyum YAG, BTL brand 6000 series, UK	1064	pulsed	3K	8	25	NS	NS	5	125	367	15
Iqbal et al., 2022	Gas laser	650 nm, 20m	continuous	NS	NS	NS	NS	A single diode probe	1joule per point	NS	NS	3
Sargolzehi et al.,2022	Model KLASER, Class IV, made in Italy	660, 800, 905, 970	phase 1&11: continue phase2-10: pulsed	phase 1&11: 9.6 phase2-10: 20	9.6	phase 2: 2 3: 10 4: 50 5: 100 6: 500 7: 2500 8: 7500 9: 15k 10: 20k	NS	probe held at 90° angle, noncontact	NS	2957	NS	5:08
Taleb et al., 2022	ZIMMER OPTON PRO	810, 980	pulsed	7	3	5	NS	NS	20 J/p	NS	3.1	13 seconds
Gawaan et al.,2023	Omega, NewAge Inc., Italy	NS	adjustable duty cycle (20–100%)	14	NS	20–100	NS	phase1 & 3: FMS phase2: total of 3 points	phase1 & 3: 27.28 phase2: 25 J/p	2803	100	8
Yassin et al.,2024	Omega, NewAge Inc, Italy	NS	NS		phase1 & 3: 6.49 phase2: 2.43	NS	NS	phase1: FMS phase2: total of 3 points phase3: SMS	phase1 & 3: 27.28 phase2: 25 J/p	2803	100	8
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Abbreviations: cm, cm2, ; FMS, fast manual scanning; Hz, ; J/p, joule/ point; J, ; mJ/cm2, ;MSM, manual scanning movement; nm, NS, not specified; SMS, slow manual scanning;; W