SUPPLEMENTARY MATERIAL:

Cosmetic Laser Procedures and Nonsurgical Body Contouring in Patients With Skin of Color

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Supplementary Table S1. Studies of Cosmetic Lasers in Skin of Color: Dermatosis Papulosa Nigra And Acne Scars

Reference (year)	Treatment modality	Treatment settings (No. of treatments)	No. of patients, FST	Outcome measures	Treatment efficacy	Adverse events
Dermatosis papulosa nigra						

Kundu[1] (2009)	Split face KTP 532-nm vs ED	Fluence: 15 J/cm^2 Pulse width: 10 ms (2 sessions) No anesthesia	14, IV–VI	Dermatologist-blinded photography assessment Treatment quality questionnaire	No treatment difference between KTP and ED KTP preferred by patients for comfort	None reported
Schweiger et al[2] (2008)	Nonablative 1064-nm Nd: YAG	LP fluence: 145–155 J/cm2 Pulse width: 20 ms (1 session) No anesthesia	2, V	Photography assessment Patient satisfaction	70%–90% clearance	None reported
Bruscino et al[3] (2014)	CO_2 10,600 nm	Spot size: 0.7 mm Current: 10 Hz Power: 0.5–0.7 W	5, Brazilian (1) Cuban (3) Peruvian (1) FST not provided	Photography assessment Patient satisfaction	Clinical improvement was achieved in all patients and remained stable over time (8-month follow-up)	Mild, local transient pain
Ali et al[4] (2016)	CO_2 (Sharplan) 40 C laser (Laser Industries) and KLS Martin MCO 50plus laser (KLS Martin Group)	Super-pulse mode Spot size: smaller papules Power: 1 W Pulse width: 100 ms Resurfacing mode Spot size: 2 mm Power: 10 W Topical anesthesia	45, African-Caribbean (12) South Asian (3) Mediterranean (2) mixed (1) (FST not provided)	Patient satisfaction Telephone survey	Median patient satisfaction response: 9.5/10	None reported

Furukawa et al[5] (2020)	CO_2	CO_2 pulse width: 0.05 s Rest duration: 0.36 Case report 1 Spot size: 1, 2 Power: 8–10 (3 sessions, 10 mo) Case report 2 Spot size: 0.9–1.2 Power 8–12 (13 sessions, 8 mo) Case report 3 Spot size: 1.2 Power: 8–9 (6 sessions, 5 mo) Local anesthesia	3, Japanese (FST not provided)	Patient satisfaction Photography assessment	Clinical improvement was achieved in all patients	None reported
Acne scars						
Hasegawa et al[6] (2006)	1550-nm erbium-doped fiber laser	Fluence: 6 mJ/MTZ MTZ density: 1000–15,000/cm^2 (2–3 sessions, 2–3 weekly intervals) Topical anesthesia	10, FST not reported	Physician and patient 4-point scale evaluation	Clinical improvement was achieved in all patients	Mild, transient erythema

Lipper and Perez[7] (2006)	Nonablative 1064-nm Nd: YAG	Short pulsed Spot size: 5 mm Fluence: 14 J/cm^2 Pulse width: 0.3 ms Repetition rate: 7 Hz 2000 pulses per side of face (8 sessions, 2 wk apart) No anesthesia	9, FST I (3) FST II (3) FST III (2) FST IV (1) FST V (1)	Blinded physician evaluation of standardized digital photography before and after treatment Patient self-assessment	100% acne scar improvement in all patients Scar severity score improved by 29.36% (CI, 16.93%–41.79%; *P*=.006) 89% of patients reported 10%–50% scar improvement at 1–2 mo	Treatment-induced erythema resolved within 2 h posttreatment
Lee et al[8] (2008)	1550-nm erbium-doped fractional photothermolysis	Fluence: 12-20 mJ/MTZ Total density: 1500 MTZ/cm^2 (5 sessions, 3–5 wk apart) Topical anesthesia	27, IV–V	Standardized digital photography Patient evaluation 5-point scale	Marked improvement noted in photography Patient self-assessment: 8 reported excellent improvement, 16 reported significant improvement, 3 reported moderate improvement	Transient pain, erythema, and edema with full resolution
Mahmoud et al[9] (2010)	1550-nm erbium fractional laser	Fluence: 10 mJ vs 40 mJ Treatment level 6 (17% of treated area covered) (5 sessions, every 4 wk) 8 passes	15, IV (4) V (10) VI (1)	Blinded dermatologist evaluation of standardized photographs after treatment on a 5-point scale using a quartile grading scale	Significant improvement in acne scarring and overall appearance (*P*<.001) No significant difference was found between 10 mJ and 40 mJ Patients reported high satisfaction	Postinflammatory hyperpigmentation

Brauer et al[10] (2015)	755-nm picosecond laser with DLA	Spot size: 6 mm Fluence: 0.71 J/cm^2 Pulse width: 750 picoseconds Repetition rate: 5 Hz (6 sessions, 4–8 wk apart determined by FST) Topical anesthesia	20, I–V	Pain and satisfaction scores Blinded physician evaluation of standardized photography and analysis of 3D volumetric appearance Independent histologic evaluation of biopsy taken at baseline and 3 mo	Patients were satisfied to extremely satisfied in appearance and texture at final treatment and follow-up 25%–50% improvement at 1 and 3 mo, 3D analysis reported 24.3% improvement of scars Increased elongation density of elastic fibers, increased dermal collagen and mucin in histological analysis	None reported

Alexis et al[11] (2016)	Split-face 1550-nm erbium-doped fractional laser lower vs higher density	Lower-density zone size: 200 MTZ/cm^2 Treatment level 4; 11% Surface area: 20% (4 treatments, 4-wk intervals) Topical anesthesia	18, IV–VI	Live-blinded dermatologist-evaluated standardized photographs, before and after treatment (QGSGS) patient and blinded dermatologists evaluated improvement in acne on a 10-point scale (VAS)	Live-blinded: acne scar severity was significantly improved (*P*=.0277). Significant improvement in acne scarring (*P*=.0389) by QGSGS and by VAS (*P*<.0001). Non–live blinded: significant improvement in acne scar severity (*P*<.001) No significant difference in acne scar improvement between 2 treatments Patients: significant improvement in acne scar severity by VAS (*P*<.001) with both treatments, no difference in acne scar severity between 2 treatment settings	Hyperpigmentation, erythema, edema, bleeding

Haimovic et al[12] (2016)	755-nm picosecond laser with DLA	Spot size: 6 mm Fluence: 0.71 J/cm^2 Pulse width: 750–850 picoseconds (6 sessions, interval times not reported) Topical anesthesia	56, IV–VI 4 patients with acne scars	Standardized clinical photography	DLA device is safe for unwanted scars	Transient erythema and hyperpigmentation with full resolution
Kwon et al[13] (2020)	Split-face 1064-nm Nd:YAG P-DOE vs 1550-nm NAFL	P-DOE Spot size: 10 mm Fluence: 130–430 mJ/cm^2 Pulse duration: 450 picosecond NAFL Spot size: 10 mm Fluence: 25–35 J/cm^2 (4 sessions, 3-wk intervals) Topical anesthesia	25, III (12) IV (13)	Blinded physicians evaluated standardized photographs, ECCA, IGA Patient evaluation, histologic analysis	P-DOE–treated side achieved a significant improvement in acne appearance (55% vs 42%) with less severe pain (4.3 vs 5.6) (P<.05) P-DOE group showed lower side effects (P<.05) IGA score was significantly higher on the P-DOE side compared to the NAFL side (P<.05) Increase in density of neocollagen fiber, elastic fibers, and mucin in histological analysis from both P-DOE and NAFL	No reported events

Sirithanabadeekul et al[14] (2021)	Split-face 1064-nm FxPico vs $FxCO_2$ topical analgesic cream	FxPico Spot size: 8 mm fluence: 0.8 J/cm^2 Repetitive rate: 5 Hz Pulse: 10% $FxCO_2$ Pulse width: 3 ms Power: 10 W Depth: 350 μm–400 μm (single session)	25, III (7) IV (17) V (1)	Blinded dermatologist evaluated photographs, 5-point quartile scale, skin-imaging analysis instrument, patient satisfaction	Physician improvement for skin texture on the FxPico (*P*=.029) compared to $FxCO_2$ at 1 mo No difference in atrophy Skin imaging: significant improvement in scar volume on both FxPico– (19.5%, *P*=.006) and $FxCO_2$– (11.7%, *P*=.001) treated sides Significant improvement in skin texture at 1 (18.8%, *P*=.001) and 3 (11.5%, *P*=.007) mo on the FxPico side A significant reduction in scar volume and skin texture was noted at 1 mo with no further improvement at 3 mo for skin texture on the $FxCO_2$ side Collagen and elastin increased at 3 mo after both treatments Patients were satisfied to moderate to	Pain, burning/stinging, erythema, edema, pinpoint hemorrhage

					extremely satisfied	

Abbreviations: FST, Fitzpatrick skin type; KTP, potassium titanyl phosphate; ED, electrodessication; LP, long-pulsed; MTZ, microscopic treatment zone; DLA, diffractive lens array; QGSGS, Quantitative Global Scarring Grading System; VAS, visual analog scale; P-DOE, picosecond laser with diffractive optical element; NAFL, nonablative fractional laser; IGA, Investigator Global Assessment; FxPico, fractional pico laser; $FxCO_2$, fractional carbon dioxide.

Supplementary Table S2. Studies of Cosmetic Lasers in Skin of Color: Skin Rejuvenation

Reference (year)	**Treatment modality**	**Treatment settings (No. of treatments)**	**No. of patients, FST**	**Outcome measures**	**Treatment efficacy**	**Adverse events**
Skin rejuvenation						

Kono et al[15] (2007)	Split-face 1550-nm Er:YAG laser	Group 1 Half face 8 passes at 125 MTZ/cm^2 at 8 mJ Half face 8 passes at 250 MTZ/cm^2 at 8 mJ Group 2 Half face 8 passes at 125 MTZ/cm^2 at 8 mJ Half face 8 passes at 125 MTZ/cm^2 at 16 mJ Group 3 Half face 8 passes at 125 MTZ/cm^2 at 16 mJ Half face 8 passes at 250 MTZ/cm^2 at 8 mJ Topical anesthesia	30, III–IV	Independent evaluation of standardized photography Patient satisfaction evaluation scale	Patient satisfaction was higher in patients treated with higher fluences (groups 1 and 3 [P<.05]), but not in patients with higher densities	Pain, erythema, and swelling at higher densities Hyperpigmentation was observed in 1 patient treated with higher density
Jih et al[16] (2008)	1550-nm diode pumped erbium fiber laser	Fluence: 8–9 mJ/MTZ Density: 250 MTZ/cm^2 in 3 passes (5 sessions, 2- to 3-wk intervals) Topical anesthesia	10, II–IV	Standardized photography Subjective assessments by patient and investigators using a 5-point scale. Evaluated skin roughness, wrinkling, and pigmentation. Histological evaluation	Improvement in skin pigmentation (P<.001) and texture (P<.001) Thickening of epidermis and increased collagen density with compact collagen fibers in the dermis at 3-mo biopsy posttreatment	Erythema and edema posttreatment for 2–4 d after treatment

Saedi et al[17] (2013)	Fractionated nonablative 1440-nm laser	Spot size 150 μm Density: 500 MTZ/cm^2/pass 3 settings: low, 4 mJ/pulse; medium, 7 mJ/pulse; high: 9 mJ/pulse 8 passes on facial treatment areas (6 sessions, 2-wk intervals) Topical anesthesia	20, I–VI: I (1) II (4) III (12) IV (2) VI (1)	Photographic assessment, pore score, and subjective patient and investigator measurements regarding pore appearance, skin texture, and overall skin appearance	Reduction in pore score (P<.002) Patients noted clinical improvement in pores, skin texture, and overall appearance	Mild erythema, dryness, and flaking after 2 wk after final treatment

Wattanakrai et al[18] (2012)	Split-face on periorbital areas: 1550-nm Yb/Er laser vs 2940-nm Er:YAG laser	Half face with 1550-nm Yb/Er using 2.5cm^2, 12 mJ, and 100 MTZ/cm^2 in 3 passes for a total of 200 MTZs Half face with 2940-nm Er:YAG laser in 3 incremental passes: first pass: 7-mm spot size, 600 μs at 0.77 J/cm^2; second pass: 3-mm spot size, 4.24 J/cm^2; third pass: 7-mm spot size, 300 μs at 1.29 J/cm^2 (3 sessions, 4-wk intervals) Topical anesthesia	22, III–IV	Standardized video camera for objective assessments of wrinkles, patient satisfaction, and pain score	Significant difference was noted after 2 sessions in the Yb/Er side and after 3 sessions on the Er:YAG side (P<.05). No significant difference between median changes between the 2 lasers 8.2% improvement in objective wrinkles measurement on Yb/Er side and 8.5% on Er:YAG side	Hyperpigmentation in 2 patients on the Er:YAG treatment side resolving after 1 mo Desquamation with Er:YAG lasting 4 to 5 d Erythema, edema, burning sensation with both
Leheta et al[19] (2013)	Randomized study: NAFL 1540-nm	Group A: dermal filler and lipolysis Group B: 6 sessions of NAFL 1540 Er:YAG (monthly interval, treatment settings not mentioned) + fillers + lipolysis	24, I–IV	Clinical photography with evaluation GAIS and patient satisfaction	Laser group showed higher degree of improvement in long-term evaluation (13–18 mo)(P<.05)	None reported

Marmon et al[20] (2014)	1440-nm diode based fractional laser	Fluence: 4–9 mJ Specific depth: 280–390 μm Density: 40–50 MTZ/cm^2 8 passes (4 sessions, 2-wk intervals) Topical anesthesia	10, III-V	Photographs Independent patient evaluation by dermatologists	Improvement of roughness (*P*=.006), wrinkles (*P*=.046), and pigment (*P*=.010)	Moderate facial edema after procedure. 1 case of isolated hyperpigmentation 2 wk after third treatment with full resolution

Friedmann et al[21] (2016)	1565-nm erbium-doped fractional laser	Multiple settings Mean pulse energy: 40 mJ/μbeam (range, 18–50) and 41 μbeam/cm^2 (200–500) Increase in mean pulse energy and density with each session: first, 36 mJ/μbeam (range,18–50) and 397 uμeam/cm^2 (200–500) second, 41 mJ/μbeam (range, 28–50) and 417 μbeam/cm^2 (350–500) third, 43 mJ/μbeam (range, 38–50) and 421 μbeam/cm^2 (350–500) Mean pulses per treatment: 382 (range, 323–451) 1 pass (3 sessions, 4- to 5-wk intervals) Topical anesthesia	16, II-IV	Clinical photography Wrinkle and elastosis assessments by physician Patient-self assessment Histological evaluation	FGWES decrease after 6 mo (*P*=.008)	Pain worsening throughout the treatment series, erythema and edema immediately after treatment Blistering (n=2), cutaneous imprint of laser grid (n=2), HSV (n=2), all fully resolved

Yim et al[22] (2019)	Split face 1064-nm Nd:YAG microlens array (pico arm) vs 1064-nm Nd:YAG quasi–long pulse (quasi-arm)	Pico arm Spot Size: 8 mm Fluence: 0.6–0.8 J/cm^2 Pulse width: 450 ps Frequency: 10 Hz Quasi-arm Spot size: 8 mm Fluence: 4 J/cm^2 Pulse width: 0.3 ms Frequency: 10 Hz Topical anesthetic, (5 sessions, 2-wk intervals)	25: III (21), IV (3)	Dermatologist 5-point scale evaluation of standardized photographs and 3D skin analysis after treatment	54.2% of patients in pico arm compared to 41.7% in quasi arm reported moderate improvement in visible pores Moderate improvement in wrinkles of 12.5% noted in pico arm vs 4.2% in quasi arm 16.4% reduction in wrinkles index reported in pico arm vs 0.5% in quasi arm	None reported

Moradi and Weiner[23] (2019)	1927-nm thulium laser with high intensity precision RF	1927-nm laser Fluence: 15 mJ, 8 passes RF Group 1 Pass 1, 1.5-mm depth, level 3, 150 ms Pass 2, 1.0-mm depth, level 3, 100 ms Group 2 Pass 1, 1.25-mm depth, level 3, 60 ms Pass 2, 1.0-mm depth, level 3, 60 ms Group 3 Pass1, 1.0-mm depth, level 3, 60 ms Pass 2, 1.0-mm depth, level 3, 60 ms (3 sessions, 30-d intervals) Topical anesthesia	19, I-VI	Clinical evaluation of live and pre- and posttreatment images using a 5-point scale Patient satisfaction questionnaire	Clinical improvement in skin quality was observed in 68% of patients 90% of patients noted improved skin quality, while 74% expressed at least some satisfaction with their treatment results	Erythema, edema

Yu et al[24] (2021)	Split-face 755-nm picosecond laser with DLA	Spot size: 8 mm Fluence: 0.4 J/cm^2 Pulses width: 550–750 ps Pulse rate: 10 Hz (10 sessions, 2-wk intervals)	10: III (2) IV (8)	Blinded physicians evaluated photographs regarding dyschromia, skin texture, facial laxity, and rhytids using a quartile scale Patient satisfaction	Dyschromia and skin texture showed continous improvement at 1, 3, and 6 months (P<.05) with no significance (P>.05). Rejuvenation efficacy was maintained at 36-months (P<.05) with the degree of photoaging is intensified on the control side. 70% of patients indicated satisfied to very satisfied with treatment intervention	Erythema, edema, postinflammatory hyperpigmentation Rejuvenation efficacy was maintained with 1.4, 0.75, and 0.8 better for dyschromia, skin texture, and rhytids relative to control side measures. In all patients the degree of photoaging is intensified on the control side. 70% of patients indicated satisfied to very satisfied with treatment intervention

Split face 755-nm Picosecond laser with diffractive Lens Array
10:
III (2)
IV (8)
Blinded Physicians evaluated phographs regarding dyschromia, skin texture, facial laxity, and rhytids using a quartile scale
Patient satisfaction
Dyschromia and skin texture showed continous improvement at 1, 3, and 6 months (P<.05) with no significance (P>.05). Rejuvenation efficacy was maintained at 36-months (P<.05) with 1.4, 0.75, and 0.8 better for dyschromia, skin texture, and rhytids relative to control side measures. In all patients the degree of photoaging is intensified on the control side. 70% of patients indicated satisfied to very satisfied with treatment intervention
Erythema, edema, postinflammatory hyperpigmentation

Milante et al[25] (2020)	Split-face: 1064-nm LP Nd:YAG laser Other half face: grid fractional monopolar RF Periorbital rhytids	Grid Spot size: 7×7 mm Fluence: 87-112 J/cm^2 Pulses width: 550–750 Pulse rate: 500–800 Hz YG Spot size: 5 mm Fluence: 14 J/cm^2 Pulses width: 1064 nm ps Pulse rate: 800–1000 Hz	14, II–V	Blinded clinician evaluation of standard digital photographs, Lemperle wrinkle assessment, Patient satisfaction, adverse events, clinical evaluation of wrinkle severity	Grid RF and YAG lasers had significant decreases in mean wrinkles, clinical assessment, and photographs using Lemperle wrinkle assessment *P*<.05) Significant decrease in mean wrinkle assessment score from 3.5 to 3.17 in clinical assessment and a decrease from 3.165–2.33 for photographic assessment	68.75% experienced erythema, 25% had burning sensation, and 25% experienced urticaria immediately postprocedure

Knight and Kautz[26] (2018)	Full -face NAFL+IPL Elastosis scores 3–6 and mild to moderate pigmentation	IPL Spot size: 8 mm Fluence: 12–17 J/cm^2 Filter: 560 nm 2–3 subpulses Pulse duration: 3–4 ms NAFL Spot size: 12 mm Fluence: 20–30 mJ/200–350/cm^2 (3 sessions, full-face IPL followed immediately by NAFL, conducted at 4- to 6-wk intervals)	33, II–IV	Physician evaluated using Fitzpatrick, wrinkle and ,FES (0%, no improvement; 75%–100%, excellent response—most or all of lesion much lighter or gone) 5-point GAIS, VAS, patient satisfaction	59% of patients had ≥1 point improvement in FES scores, 63% had good to excellent pigmentation responses, and 80% of patients improved in texture, brightness, and tightness throughout the 6-mo follow-up period	Severe pruritus (1) Pinpoint bleeding (3) Redness and bruising (1) HSV (1)

Munavalli [27] (2016)	Split-face, Q-switched Nd:YAG laser+NAFL (SST) Other side of face 1565-nm NAFL	NAFL (alone) Spot size: 100–500 Fluence: 10–70 mJ Filter: 1565 nm Pulse duration: 6–8 ns NAFL+Nd:YAG (SST) Spot size: 2.5–6 nm Fluence: 9–1.6 J/cm^2 Pulse duration: 6–8 nm (3 treatment sessions, conducted at 4- to 6-wk intervals) Additional information not provided	17, II–IV	Pain scores Wrinkle/elastosis scores Physician-evaluated skin tone Patient ratings of skin texture	Significantly lower pain scores with SST SST-treated side had higher physician-evaluated skin tone, patient ratings of skin texture, overall significant improvement in wrinkle/elastosis scores in both treatments maintained through 6 mo	Mild erythema (1_SST) Blistering, ulceration, hypopigmentation (1_SST)

Abbreviations: FST, Fitzpatrick skin type; MTZ, microscopic treatment zone; NAFL, nonablative fractional laser; GAIS, Global Aesthetic Improvement Scale; FGWES, Fitzpatrick-Goldman Wrinkle and Elastosis Score; HSV, herpes simplex virus; RF, radiofrequency; DLA, diffractive lens array; LP, long-pulsed; IPL, intense pulsed light; VAS, visual analog scale; SST, synergistic sequential treatment.

Supplementary Table S3. Studies of Cosmetic Lasers in Skin of Color: Disorders Of Hyperpigmentation

Reference (year)	**Treatment modality**	**Treatment settings (No. of treatments)**	**No. of patients, FST**	**Outcome measures**	**Treatment efficacy**	**Adverse events**
Disorders of hyperpigmentation						

Rokshar and Fitzpatrick[28] (2005)	1535 nm and 1550 nm Melasma	Fluence: 6–12 mJ/MTZ Density: 2000–3500 MTZ/cm^2 (4–6 treatments, 1- to 2-wk intervals) Topical anesthesia	10, III–V	Physician-evaluated photographs Patient evaluation	60% of patients achieved 75%–100% resolution of melasma 30% of patients had less than 25% resolution of melasma	PIH (n=1)
Wattanakrai et al[18] (2010)	Split face: 1064-nm Q-switched Nd: YAG+topical 2% hydroquinone cream vs topical control Melasma	Spot size: 6 mm Fluence: 3–3.8 J/cm^2 Repetition rate: 10 Hz (5 sessions, 1-wk intervals)	22, III–V	Blinded clinician evaluation of standard digital photographs Colorimeter mMASI score Patient questionnaire	After 5 laser treatments, improvement in colorimeter (P<.001) and mMASI score (P<.001) on laser side Authors noted temporary improvement of melasma with noted side effects	3 FST V patients reported mottled hypopigmentation after completing 5 laser treatments Rebound hyperpigmentation in 4 patients Melasma recurred in all patients at 12-wk follow-up
Negishi et al[29] (2016)	Split face: LP 532-nm KTP laser on full face and an additional randomized LP 1064-nm to half of face Photodamage and solar lentigines	Spot size: 2–4 mm Fluence: 6.6–13.5 J/cm^2 Pulse width: 5 ms (4 treatments, 3-wk intervals)	22, III–IV	Blinded clinician evaluation of standardized photography, mPSI, MASI score, MI, roughness measurement, subjective self-evaluation score	mPSI and MI results favored skin treated with LP 532-nm KTP laser alone and in combination with LP 1064-nm (P<.001) No difference noted in both sides	PIH (n=1) 4-wk duration

Wang et al[30] (2019)	755-nm picosecond alexandrite laser with a DLA Melasma	A1 Spot size: 8 mm Fluence: 0.4 J/cm2 Pulse width: 750 picoseconds DLA fluence: 2.8 J/cm^2 (3 laser sessions, 4-wk intervals) A2 Spot size: 8 mm Fluence: 0.4 J/cm^2 Pulse width: 750 picoseconds DLA fluence: 2.8 J/cm^2 (5 laser sessions, 4-wk intervals) B Triple-combination cream daily, 8 wk minimum, then taper until final evaluation	29, IV	Blinded physicians calculated MASI and VASI scores before and after treatment	MASI scores were significantly improved in all 3 groups at wk 20, A1 (53%), A2 (38%), B (50%). A2 showed a greater improvement than A1 in terms of spots, wrinkles, and pores, with a significant (*P*<.001) difference in red areas, VASI	Dryness, erythema, pruritus, focal desquamation
Bae et al[31] (2020)	1927-nm laser PIH	Spot size: 140 mm Fluence: 5 mJ Depth: 170 mm (2–5 sessions at monthly intervals) No anesthesia	61, IV–VI	Physician evaluated standardized photographs	Mean percent improvement evaluated by 2 dermatologists 43.24% (*P*<.0001)	None reported

Ungaksornpairote et al[32] (2020)	Split face: lentigines 532 nm picosecond, half face and 532-nm Q -switched Nd:YAG laser to other half face ABNOM 1,064-nm Q -switched Nd:YAG laser to half of face 1064-nm picosecond laser to other half of face lentigines ABNOM	solar lentigo Spot size 3-mm 532-nm picosecond laser Fluence: 0.3–0.5 J/cm^2 (single session) 532-nm Q-switched Nd:YAG laser to other ½ of face Fluence: 0.5-1.2 J/cm2 ABNOM: Spot size: 4mm 1,064-nm Picosecond to 1/2 face Fluence: 3.3 to 3.8 J/cm2 1,064-nm Q-switch Nd: YAG laser to other 1/2 - Fluence: 7.2 to 8.2 J/cm2 (5 sessions, 12-week intervals). Topical anesthesia	14: III (1) IV (8) V (5)	Blinded clinician and patient quartile grading scale, healing time	Clinician evaluation significant lightening of lesions, picosecond (*P*=.003) and Q-switch Nd:YAG (*P*=.001) The picosecond laser provided significantly better clearance of lesions compared with Q-switched at wk 4 (*P*=.034), wk 12 (*P*=.039), and wk 24 (*P*=.27) At 6 mo, mean scores of quartile improvement scale were 3.5 (SD 0.8) and 1.7 (SD 1.2) (*P*=.27) Patient evaluation No significant difference in degree of pigment clearance between 2 lasers	Patients reported greater pain during treatment on ABNOMs with 1064 nm Q-switched laser compared to 1064nm picosecond laser (4.2±1.0 vs 2.9±1.1)(*P*=.010) PIH was mild, developed at 3 to 4 wk after laser treatment, and spontaneously disappeared within 3 mo

Chung et al[33] (2020)	Picosecond 785-nm laser Ephelides	Patient A: 785-nm laser Spot size: 3 mm Fluence: 1.2 J/cm^2 Pulse duration: 300 picoseconds 1–2 passes (single session) Patient B: 785-nm laser Spot size: 2 mm Fluence: 1.3 J/cm^2 Pulse duration: 300 picoseconds 1–2 passes (single session)	2, III	Clinical photography	Improvement after a single session	None reported
Polnikorn and Tanghetti[3] [4] (2020)	755-nm picosecond with DLA vs picosecond with flat optic Melasma	Group 1 Flat optic Spot size: 3- to 4-mm Fluence: 1.0– to 2–1.5 J/cm^2 Group 2 DLA Spot size: 8 mm Fluence: 0.41 J/cm^2 (6 sessions, 2-wk intervals, 1 pass)	60 (IV–VI)	Dermatological evaluation of standardized photographs using MSI scoring system	No significant difference in improvement between DLA and flat optic MSI significantly (P<.001) improved by 75.5% in patients with the DLA compared to 57.2% (±36.1%) improvement in the patients with the flat optic	Macular hyperpigmentation and melasma recurrence

Kim et al[35] (2020)	Picosecond 1064-nm Nd:YAG laser PIH, melasma, mottled pigmentation	Spot size: 7 mm Fluence: 0.4–0.7 J/cm^2 Repetition rate: 100 Hz (6 biweekly treatments, 3 passes) Topical anesthesia	47 III (33) IV (14)	Clinicians evaluated standardized digital photographs PSI Patients reported satisfaction on a 4-point scale (PGA)	Average decrease in PSI at 13 wk was 6.85±6.35 (*P*<.001) Average decrease in the values of erythema and melanin indices were 19.41±64.64 (*P*=.234) and 28.88±32.89 (*P*=.002) 68.1% of patients reported good or excellent improvement	None reported
Hong et al[36] (2022)	Split-face 1064-nm picosecond Nd:YAG laser toning Laser to other face 1064-nm Q-switched Nd:YAG laser toning Melasma	Picosecond Nd:YAG Spot size: 10 mm Fluence: 1.5–2.5 J/cm^2 Repetition rate: 10 Hz Q-switched Nd:YAG Spot size: 8 mm Fluence: 2.0–3.0 J/cm^2 Repetition rate: 10 Hz (2-wk interval, 5 sessions)	20, III–V	Modified mMASI Patient satisfaction scores VAS	No significant difference in mMASI score, patient satisfaction score, and VAS scores between picosecond Nd:YAG and Q-switched Nd:YAG No statistically significant improvement in MI in either group	None reported

Li et al[37] (2022)	Split-face 755 **(AU: NM?)**picosecond alexandrite laser with TTA Laser to other face laser monotherapy Melasma	Picosecond laser monotherapy Spot size: 8 mm Fluence: 0.4 J/cm^2 Repetition rate: 5 Hz Pulse duration: 750×10^{-12} Picosecond laser+TAA (3 treatments, delivered at 4- to 5-wk intervals) Topical anesthesia	37 (FTS not disclosed)	Blinded investigator evaluation for Hemi-MASI, facial dyschromia, skin texture, laxity, and rhytids Patient satisfaction grading	Hemi-MASI, dyschromia, and skin texture on both halves improved significantly through 6-mo post–final treatment (P=.000) Laser monotherapy halves displayed significantly less redness and sensitivity during 7-d posttreatment recovery period (P<.05) Patient satisfaction ratings for combinatory therapy halves were higher than the monotherapy halves at 1-mo follow-up (P<.05)	None reported

Abbreviations: FST, Fitzpatrick skin type; MTZ, microscopic treatment zone; PIH, postinflammatory hyperpigmentation; mMASI, modified Melasma Area and Severity Index; LP, long-pulsed; KTP, potassium titanyl phosphate; mPSI, modified pigment severity index; MI, melanin index; ABNOM, acquired, bilateral nevus of Ota–like macules; DLA, diffractive lens array; MSI, Melasma Severity Index; PSI, Psoriasis Symptom Inventory; VAS, visual analog scale; TTA, topical tranexamic acid; Hemi-MASI, Hemi-Melasma Area and Severity Index.

Supplementary Table S4. Summary of Skin-Tightening And Body-Contouring Devices in Skin of Color

Nonsurgical fat-reduction method	Mechanism of action	Pros and cons

Radiofrequency skin tightening	Emits heat penetrating deep into the dermis. Generates collaged remodeling and synthesis within 4–6 mo posttreatment	Pros: Bypasses the epidermis through deep penetration of radiofrequency energy into the dermis and hypo dermis. Minimal possibility for dyschromia in POC[38]
High-frequency focused ultrasound	Ultrasound energy produces heat at target sites, induces necrosis of adipocytes, as and stimulates collagen remodeling within the tissue matrix.[39] Tissue temperatures over 56 °C stimulate adipocyte necrosis while sparing nearby nerves and vessels[40]	Pro: Short duration of procedure decreases risk for epidermal damage
Cryolipolysis	Controlled cooling induces subcutaneous panniculitis Through cold-induced apoptosis of adipocytes, this procedure selectively reduces adipose tissue in localized areas at a temperature of approximately –10 °C[41]	Con: lethal temperature for melanocytes is –4 °C, below which melanocyte apoptosis may be induced, resulting in depigmentation.[41] Risk for resultant depigmentation in darker skin types
Laser lipolysis	Hyperthermic exposure for 15 minutes selectively elevates adipocyte temperature between 42-47°C, which triggers apoptosis and the eventual clearance of destroyed cells from the interstitial space[42]	Pro: minimal epidermal damage through the selectivity of the 1060-nm wavelength coupled with the device's contact cooling system preserves the overlying skin
Injection lipolysis	Deoxycholic acid is an injectable adipocytolytic for the reduction of SMF	Pro: no significant adverse effects reported in POC Cons: swelling, lumpiness, and tenderness
Radiofrequency lipolysis	Heat-induced apoptosis through sustained temperature of 42–45 °C for at least 15 min[43]	Pro: distance of 1 cm between applicator and skin minimizes risk of postprocedural pigmentation in POC
Magnetic resonance contouring	Electromagnetic energy to stimulate approximately 20,000 muscle contractions within a time frame of 30 min. Contractions stimulate major lipolysis of adipocytes,	Pro: MOA does not appear to pose an increased risk to POC Con: multiple treatments required over time to maintain effect

	resulting in the release of large amounts of free fatty acids, which cause damage to nearby adipose tissue[44]	No published safety data specific to POC

Abbreviations: POC, people of color; SMF, submental fat.

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