Supplementary Table 2: Compilation of laser and light treatments in nail psoriasis.

Study	Dosage	Efficacy	Safety	Level of evidence
Nd:YAG laser: vascular laser, reaches deeper dermal vasculature				
Kartal SP et al.[43]	6 mm, 10 J/cm^2, and 15 ms at a repetition rate of 1.5 Hz Once monthly for 3 months	Significant reduction in NAPSI scores after three treatment sessions. Both nail bed and matrix lesions responded well.	No adverse effects	Prospective case series
Khashaba SA et al.[44]	5 mm, 40 J/cm^2, 35 ms, and 3–5 s pre-cooling using integrated contact cooling with ice packs Four sessions monthly for 4 months	Significant improvement in NAPSI scores and dermoscopic features. The nail bed showed better improvement than the nail matrix	Mild tolerable pain	Prospective intra-patient left-to-right, randomised, placebo-controlled study
Hesham Ali Elwan Y et al.[42]	Beam diameter: 2.5 mm, laser energy: started with 110 J/cm^2 and increased to 130 J/cm^2, single pulse frequency - shallow depth Once monthly for up to six sessions	No statistically significant difference in total NAPSI and nail bed scores, but significant improvement in nail matrix score. Dermoscopic improvement observed.	Except for mild pain in a few, no side effects were reported	Intra-patient RCT
El-Basiony MAS et al.[104]	Long-pulsed, two passes of 5 mm, 20 J/cm2, and 10 ms Three sessions with 1-month intervals targeting the nail matrix and bed	Significant reduction in tNAPSI scores and ultrasound parameters	-	Intra-patient RCT
Roter G et al.[109]	Nd:YAG (6 mm; 10 J/cm^2; and 15 ms) versus combined PDL (7 mm; 6 J/cm^2; and 0.45 ms) and Nd:YAG lasers. Three treatment sessions were applied at 4-week intervals, and patients were followed up for 6 months after the last session.	Statistical difference in 8- and 32-point NAPSI scores before and after treatment for both hands. No statistical difference between the scores of the right and left hands. Combined therapy shows no advantage over the use of a single laser.	Transient purpura and tenderness Nd:YAG was more uncomfortable than PDL	Prospective, intra-patient, left-to-right comparative study
Arango-Duque LC et al.[40]	Nd:YAG (5 mm; 40 J/cm^2; and 35 ms) versus PDL (7 mm; 6 J/cm^2; and 0.4 ms)	No statistically significant difference was found between the two treatments.	No adverse effects Nd:YAG was more painful	Open-label, prospective, intra-patient, left-to-right controlled trial

		Improvement in the global, matrix, and nail bed NAPSI scores.		
PDL: selective destruction of pathologic dilated microvasculature in the nail bed and matrix				
Al-Mutairi N et al.[52]	Power: 10 W, laser energy: 8.0–10.0 J/cm^2, stack: 3, dwell time: 500 ms, spacing: 600 mm, spot size: 7 mm, beam diameter: 7 mm, cryogen spurt: 30 ms with 30 ms delay. Once every 4 weeks, for a total of 12 weeks.	Subungual hyperkeratosis and onycholysis showed significant improvement. Nail pitting was the least responsive. NAPSI improvement was significantly greater in PDL than in excimer .	Mild hyperpigmentation in a few patients	Prospective, single-blinded, intra-patient, left-to-right controlled trial
Oram Y et al.[106]	Beam diameter: 7 mm, pulse duration: 1.5 ms, laser energy: 8.0–10.0 J/cm^2, cryogen spurt: 30 ms with 30 ms delay Once monthly for 3 months.	Significant improvement in NAPSI scores post-treatment. The nail bed lesions, particularly onycholysis and subungual hyperkeratosis, responded best to the treatment.	Mild tolerable pain	Prospective clinical trial
Peruzzo J et al.[107]	Spot size: 7 mm, pulse duration: 0.45 ms, fluence: 6 J/cm^2 Three sessions at 4-week intervals	Median improvement in NAPSI scores: 44.2% overall, 50% for nail bed, and 65.1% for nail matrix.	Light pain during the laser application	Prospective, uncontrolled clinical trial
Huang Y et al.[108]	Vbeam®; pulse duration: 1.5 ms, beam diameter: 7 mm, laser energy density: 9 J/cm^2, cryogen spurt: 30 ms with a 30 ms delay. Once a month for 6 months.	The mean decrease in the modified NAPSI score from baseline to 6 months was significant. The effect of topical retinoid plus PDL was not synergistic in this study.	Vesicle formation in one patient	Intra-patient, left-to-right, controlled trial of PDL
Treewittayapoom C et al.[36]	Spot size: 7 mm, pulse duration: 0.45 ms and 6 J/cm^2 Whereas the opposite side was treated with spot size: 7 mm, pulse duration: 6 ms, and 9 J/cm^2 Once a month for 6 months. A cryogen spurt of 20 ms with a 10 ms delay was used.	Significant reduction in overall NAPSI, nail matrix NAPSI, and nail bed NAPSI scores from baseline in both groups; however, no significant difference was found between the two pulse duration groups.	Petechiae and hyperpigmentation, which were mild and transient	Randomised, double-blind, intra-patient, left-to-right study

Goldust and Raghifar[109]	Eighty nails were treated with a 6 ms pulse duration and 9 J/cm^2, whereas 80 nails were treated with a 0.45 ms pulse duration and 6 J/cm^2. Spot size: 7 mm, cryogen spurt: 20 ms with a 10 ms delay. Once a month for 6 months.	Significant reduction in overall NAPSI, nail matrix NAPSI, and nail bed NAPSI scores/ no significant difference was found between the two pulse duration groups.	Transient petechiae and hyperpigmentation	Randomised and double-blind
Fernández-Guarino M et al.[37]	The nail matrices treated with PDT were occluded with MAL and a bioadhesive patch (Askina®) for 3 hours. Afterwards, PDL was applied (595 nm, Vbeam®,) on both hands using subpurpuric doses (7 mm; 6 ms; 9 J/cm^2; delay: 1.5 ms; cryogen: 40), with three overlapping pulses on each nail (in the matrix). This treatment was performed monthly for 6 months.	A decrease in NAPSI score was observed with both treatments and in both nail matrix and nail bed involvement. No statistical differences were found between PDT and PDL.	-	Comparative pilot study
Youssef NY et al.[110]	Wavelength: 595 nm, pulse duration: 1.5 ms, spot size: 7 mm, fluence: 8 J/cm^2, and sessions once monthly for 6 months	Significant NAPSI reduction; equal improvement in bed and matrix lesions.	Mild transient pain and purpura	Prospective RCT
Gregoriou S et al.[41]	Cal/BD- once daily application on the nail fold and hyponychium PDL- 595 nm, 7 mm, 6 J/cm^2, and 0.4 ms. Every 4 weeks for 12 weeks (three sessions total).	PDL: no significant change in total NAPSI or nail bed score. Cal/BD is more effective.	PDL: mild transient erythema/petechiae	Unblinded, intra-patient, left-to-right prospective study
Soliman M et al.[38]	PDL- 585 nm, 7 mm, 8–10 J/cm^2, 1.5 ms, four sessions at 4-week intervals	NAPSI improvement with both, but there was no significant difference between them. ILIS showed earlier improvement.	PDL transient petechiae and mild purpura. ILIS more uncomfortable.	Randomised, intra-patient, comparative, controlled study

	ILIs-TA 5 mg/mL via needle-free injection, four sessions at 4-week intervals.			
Shehadeh W et al.[111]	Three monthly sessions of PDL on the proximal and lateral nail folds, followed by fractional CO_2 laser to the nail plate; daily application of betamethasone-calcipotriol gel between treatments and for 1 month post-treatment.	Significant improvement in NAPSI scores.	Three participants withdrew due to treatment-associated pain	Prospective, intra-patient, comparative study
Morsy EE et al.[39]	PDL- six monthly sessions; fluence: 6 J/cm^2, pulse duration: 6 ms, and spot size: 10 mm. IPL- pulse duration: 5 ms, spot size: 4×1 cm, pulse delay: 5–10 ms, and fluence: 25 J/cm^2.	Significant reduction in NAPSI scores, comparable to IPL; no significant difference between IPL and PDL.	The mean pain score in the IPL-treated group (5.80±1.24) was significantly higher when compared to the PDL-treated group	Prospective, intra-patient, controlled study
Fractional CO_2 laser				
Afify AA et al.[45]	Group A: fractional CO_2 laser followed by topical methotrexate Group B: fractional CO_2 laser followed by topical calcipotriol (0.05 mg/g) + betamethasone (0.5 mg/g) combination. Pulse width: 4,006 ms, stack: 3, dwell time: 500 ms, spot size: 3×3 mm, and energy: 180.2 mJ/cm^2. Four treatment sessions, once every 2 weeks.	Significant decrease in total NAPSI score in both groups. No statistically significant difference regarding total NAPSI score between groups A and B at 0, 1, and 2 months. Combined laser with topical treatment was effective.	Pain, bleeding, and transient nail discolouration	Comparative pilot clinical trial (with a within-subject split-body design)
Alakad R et al.[112]	Group A was treated with intralesional injection of methotrexate, while group B received fractional CO2 laser followed by topical application of methotrexate.	Both groups were associated with statistically significant improvement in psoriatic signs. Fractional CO_2 laser-assisted delivery of methotrexate is an effective and better-tolerated alternative to intralesional injections in nail psoriasis.	Mild pain and subungual haematoma in the injection group No adverse effects in the laser group	Prospective, randomised controlled clinical trial with blinded outcome assessment

	Power: 10 W, stack: 3, dwell time: 500 ms, spacing: 600 mm. Six sessions at 2-week intervals, followed by topical application of 0.1 mL methotrexate (25 mg/mL) per digit.			
Hassan Moftah N et al.[46]	Fr. CO_2 laser (10,600 nm) monthly × 4 months + daily methotrexate 1% gel versus methotrexate 1% gel alone daily × 4 months. Power: 15 W, dwell time: 500 µs, spacing: 700 µm, and SmartStack: Level 3.	At 4 months: both groups improved significantly (no difference). At 3 months post-treatment: the Fr. CO_2 group showed significantly better outcomes (p=0.001). Dermoscopic and histological improvements were greater in the laser group. Higher patient satisfaction in the laser group	Mild pain (20%) and erythema (37.1%), transient (<24 hours)	Randomised, intra-patient, comparative study
Essa Abd Elazim N et al.[113]	Fractional 10,600-nm CO_2 laser sessions (pulse energy: 140 mJ; density: 150 spots/cm^2; and depth: Level 1) combined with topical tazarotene application. Three laser sessions were done at 4-week intervals	The total, nail matrix, and nail bed mNAPSI scores were significantly improved at 3 and 6 months by both regimens, but they decreased more after the FCL/tazarotene combination. Combination therapy showed faster improvement of nail matrix signs, greater efficacy for nail bed signs and better patient satisfaction	Bleeding and periungual erythema were reported in only two patients following the laser treatment All patients experienced transient mild to moderate pain	Randomised, single-blind, intra-patient (split-body), controlled clinical trial
Nassar A et al.[114]	Group A: fractional laser-assisted delivery of TA at power: 10 W, stack: 4, dwell time: 500 µs, and spacing: 550 µm Every 2 weeks for six sessions. Group B: intralesional injection of TA	Both methods showed significant improvement in nail psoriasis; fractional laser-assisted delivery was as effective as intralesional injections. The pain score was statistically higher in the injection group compared to the laser group.	Subungual haematoma, worsening of nail signs (Koebner phenomenon), post-treatment paronychia of the proximal nail folds	Randomised, single-blind, parallel-group, controlled clinical trial
Soutou B et al.[47]	Ultra-pulsed	Complete clearance.	Moderate sensation of heat during the laser procedure	Case report

	41 fractional 10,600-nm CO_2 laser (UltraPulse®; Lumenis, Santa Clara, California, USA) Settings: deep Fx, micropulse energy: 10 mJ, pulses: 3, spot size: 5 mm, and pattern density percentage: 10% + MTX.			
Ortner VK et al.[115]	Cal/BD foam applied daily and fractional Er:YAG laser (2940 nm) for microporation once weekly before foam application for 6 weeks. A 10% density and small rectangular spot size were used Nail plates were treated once at baseline, with laser energy adjusted based on OCT-measured thickness (10 mJ/mb per 100 µm). Lateral and proximal nail folds were treated at baseline, Week 6, and Week 12 using a fixed 40 mJ/mb energy	Laser microporation enhanced topical drug penetration but did not significantly outperform Cal/BD alone in clinical outcomes (nail bed thickness and PROs).	Well tolerated, with mostly mild local reactions and no OCT-detected nail bed damage	Open-label, randomised, intra-patient, controlled, proof-of-concept, hybrid trial
Excimer laser: induces T-cell apoptosis, using high-intensity UV light to break DNA strands and express cell death-associated mitochondrial proteins				
Al-Mutairi N et al.[52]	excimer laser treatment was commenced at twice the MED. The fluence was increased by 200 mJ at each session, until nail clearance had been achieved or for a maximum of 12 weeks (24 treatments). The highest fluence used was 5,000 mJ/cm^2.	NAPSI improvement was significantly greater in PDL than in excimer. An excimer laser might be less effective than PDL for nail psoriasis treatment.	Slight transient pigmentation of the treated nail folds in five patients and a deep brown-black discolouration of the treated nails in one patient Petechiae	Single-blinded, intra-patient, left-to-right, comparative clinical trial
Non-ablative bipolar radiofrequency: non-ionising radiation that provides energy originating from an electric current to generate heat inside the dermis with anti-inflammatory effects				
El-Basiony MAS et al.[51]	A SmartXide2 C60), where a modified handpiece was used	Significant reduction in median tNAPSI score, decrease in thickness of subungual	Well tolerated overall, with only one patient reporting	Single-arm, evaluator-blinded, prospective clinical trial

	to fit onto the nail's lateral folds. Subjects received five sessions with 2-week intervals; during each session, three passes in two perpendicular directions were applied with energy: 70 J/cm^3, power: 35 W, and dwell time: 3 s.	hyperkeratosis, and improvement in onycholysis.	burning pain during the first session	
Microneedling				
Yew YW et al.[50]	The microneedle device delivered topical steroids to one hand and the control treatment (topical Daivobet gel) to the other hand, twice weekly for 2 months.	The average NAPSI score improved for both the treatment and control groups at 4 months compared to baseline However, only the NAPSI value improvement in the controls at 2 months compared to baseline was statistically significant. As effective as topical steroids.	Pain, one reported discomfort with the clip, one reported peeling skin, and one reported numbness	Prospective RCT
PDT and IPL				
Tehranchinia Z et al.[48]	The right hand, as an experimental group, was treated with 20% ALA gel for 3 hours, followed by red light-PDT (630 nm with a total dose of 120 J/cm^2 and an intensity of 200 mW/cm^2 for approximately 20 minutes) every 3 weeks for five sessions. The left hand, as a control group, was only treated with clobetasol propionate 0.05% ointment.	No significant differences in the NAPSI scores between the treatment groups at baseline and at Weeks 3, 6, and 9 (all p>0.05), although significant differences were found at Weeks 12, 15, and 24 (follow-up) . A significant time-effect improvement was found in all the nail matrix, nail-bed, and total NAPSI scores in both treatment groups. Clobetasol 0.05% ointment seems to be effective in treating nail psoriasis after a treatment period of 15 weeks. However, the efficacy of ALA-PDT at a 24-week follow-up was greater than that of clobetasol	None of the patients reported intense pain and discomfort during irradiation	Open-trial study

Shaheen MA et al.[49]	Nails on the left hand received conventional IPL (430–1200 nm) without photosensitiser. Nails on the right hand received MB-PDT (topical MB aqueous solution 2% was applied on the affected nails 2 hours before illumination with IPL). Sessions were performed once every 2 weeks on all the affected nails for a maximum of 3 months. 585 nm, fluence: 15 J/cm^2, pulse duration: 10 ms, delay: 20 ms	Both treatments were effective on nail psoriasis, but MB-PDT was more effective in nail-bed lesions.	Nail discolouration that fades, pain, and pinpoint bleeding	Pilot study (left versus right hand)
Tawfik AA[126]	IPL Cutoff filter: 550 nm, spot area: 2.5–4.5 cm, total area: 11.25 cm^2, pulse duration: 20 ms, and fluence: 25 J/cm^2. Sessions were performed twice per month for a maximum of 6 months.	Significant improvement in the nail bed, matrix, and in the NAPSI.	Safe, pain-free, and easy to use	Single-arm and prospective cohort study involving 20 patients

ALA: 5-aminolevulinic acid; Askina®: B. Braun, Melsungen, Germany; BD: betamethasone dipropionate; Cal: calcipotriol; Er:YAG: erbium-doped yttrium-aluminium-garnet; FCL: 10,600-nm fractional CO_2 laser; fr. CO_2: fractional CO_2; ILIs-TA: intralesional injections of triamcinolone acetonide; IPL: intense pulsed light therapy; MB: methylene blue; MED: minimal erythemal dose; MTX: methotrexate; NAPSI: nail psoriasis severity index; Nd:YAG: neodymium:yttrium-aluminium-garnet; OCT: optical coherence tomography; PDT: photodynamic therapy; PDL: pulsed dye laser; PRO: patient-reported outcomes; SmartXide2 C60: DEKA, Florence, Italy; tNAPSI: target nail psoriasis severity index; Vbeam®: Candela Medical, Marlborough, Massachusetts, USA.