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Spectra Family Bibliography

Identification of the fate and regenerative mechanism of zebrafish melanocyte progenitor cells and melanocytes after laser-induced pigment ablation

Park JH, Koun S, Kim KE, Kim I. Identification of the fate and regenerative mechanism of zebrafish melanocyte progenitor cells and melanocytes after laser-induced pigment ablation. Lasers in Surgery and Medicine. 2022;54(2):281-288. doi:10.1002/lsm.23458

Treatments were performed on adult zebrafish at either 0.3 or 0.7J/cm2.

Both groups were treated with 7mm spot size, 1064nm wavelength, 5-7ns pulse duration and a singular pulse.

Short-term repetitive treatments can reduce pigmentation.

New melanocytes appeared between days 5 and 10 with the higher fluence of 0.7J/cm2 which also had a lower recovery ratio of pigmented areas.

A low fluence Q-switched Nd:YAG laser modifies the 3D structure of melanocyte and ultrastructure of melanosome by subcellular-selective photothermolysis

Mun JY, Jeong SY, Kim JH, Han SS, Kim I-H. A low fluence Q-switched Nd:YAG laser modifies the 3D structure of melanocyte and ultrastructure of melanosome by subcellular-selective photothermolysis. Microscopy. 2011;60(1):11-18. doi:10.1093/jmicro/dfq068

8 treatments each with two passes were completed on a weekly basis.

Subject's were treated with a 5-7ns pulse duration, 1064nm wavelength, and a 7mm spot size.

Treatment resulted in fewer dendrites in the melanocytes.

Selective photothermolysis on Stage IV melanosome occurred due to the treatment.

A low-fluence 1064-nm Q-switched neodymium-doped yttrium aluminium garnet laser for the treatment of cafe-au-lait macules

Kim, Ha, Park, et al. A low-fluence 1064-nm Q-switched neodymium-doped yttrium aluminium garnet laser for the treatment of café-au-lait macules. Journal of the American Academy of Dermatology. 2015;73(3):477-483. doi:10.1016/j.jaad.2015.06.002

1064nm Wavelength: 6 treatments every two weeks, 7mm spot size, 2.6-3.0J/cm2, 10Hz, and 3 passes to achieve mild erythema.

532nm Wavelength: 3 treatments every 4 weeks, 2.6mm spot size, 1.0-1.2J/cm2, 2Hz, and 1 pass with no overlap

1064nm laser resulted in more favorable response, with all subjects having a favorable clinical response compared to 67% treated with the 532nm wavelength in a preliminary study.

In an additional evaluation, 75% of patients were satisfied with their results following 1064nm treatment

A Pilot Split-face Comparison of Q-switched (QS) Single Pulse versus QS Quick Pulse-to-pulse 1,064-nm Nd:YAG Laser Treatment in a Patient with Melasma

Cho SB, Kang J-S, Goo BL. A Pilot Split-face Comparison of Q-switched (QS) Single Pulse versus QS Quick Pulse-to-pulse 1,064-nm Nd:YAG Laser Treatment in a Patient with Melasma. Medical lasers. 2013;2(2):76-81. doi:10.25289/ML.2013.2.2.76

Subject had split face treatment with one half on single pulse mode and the other half on quick pulse-to-pulse.

Each side of the face was treated with a total of 1200 pulses with the 1064nm wavelength.

The single pulse settings were a fluence of 1.6J/cm2, spot size of 7mm.

The Q-PTP settings were 1.6J/cm2 split into two 0.8J/cm2 pulses 80usec apart with a spot size of 7mm.
The Q-PTP mode appeared to minime the overall treatment pain.
Clinical outcomes were similar between the two treatment modes

A Prospective Open-labeled Study of Tattoo Removal with Q-Switched Nd:YAG Laser Utilizing the R0 Technique and Correlation with Kirby-Desai Scale

Aurangabadkar SJ, Shah SD, Kulkarni DS, Auragabadkar MS. A Prospective Open-labeled Study of Tattoo Removal with Q-Switched Nd:YAG Laser Utilizing the R0 Technique and Correlation with Kirby-Desai Scale. Journal of Cutaneous and Aesthetic Surgery. 2019;12(2):95-104. doi:10.4103/JCAS.JCAS_72_19

Treatments were performed monthly with a 1064nm wavelength, 5mm spot size, 5-6J/cm2, repetition rate of 5Hz, pulse duration of 2-5ns.
First pass to induce brisk whitening of tattoo, then PFD was applied until whtening disappeared, followed by two additional passes.
Clearance of the tattoos using the R0 technique was 1 to 4 sessions.
Side effects were minimal with one transient case of depigmentation that resolved over two weeks.

A randomized, split-face clinical trial of low-fluence Q-switched neodymium-doped yttrium aluminum garnet (1,064 nm) laser versus low-fluence Q-switched alexandrite laser (755 nm) for the treatment of facial melasma

Fabi SG, Friedmann DP, Niwa Massaki AB, Goldman MP. A randomized, split-face clinical trial of low-fluence Q-switched neodymium-doped yttrium aluminum garnet (1,064 nm) laser versus low-fluence Q-switched alexandrite laser (755 nm) for the treatment of facial melasma. Lasers in Surgery and Medicine. 2014;46(7):531-537. doi:10.1002/lsm.22263

Six treatments were performed weekly with the 1064nm wavelength.
Treatment parameters included an 8mm spot size, 1-2J/cm2 fluence, 5Hz frequency, and 1-8 passes until mild erythema developed.
Subject's exhibited a 27% improvement in their melasma scores up through their 24 week follow-up.
The endpoint of erythema typically resolved within 24 hours following treatment.

An open-label non-randomized prospective pilot study of the efficacy of Q-switched Nd-YAG laser in management of facial lichen planus pigmentosus

Shah DSD, Aurangabadkar DS, Nikam DB. An open-label non-randomized prospective pilot study of the efficacy of Q-switched Nd-YAG laser in management of facial lichen planus pigmentosus. Journal of Cosmetic and Laser Therapy. 2019;(2):108-115. doi:10.1080/14764172.2018.1469770

Subject's were treated up to 6 times every 4-8 weeks with the 1064nm wavelengthi7 until significant clearing was noted.
Treatments were completed with a 5mm spot size, a fluence of 3.0-4.6J/cm2 adjusted to minimize frosting, and a 5Hz repetition rate.
All patients had a satisfactory response to the treatment with no recurrence up to 6 months after treatment.
Treatment side effects were primarily mild with transient post treatment swelling lasting up to 12 hours.

Beneficial Effect of Low Fluence 1,064 nm Q-Switched Neodymium:Yttrium-Aluminum-Garnet Laser in the Treatment of Senile Lentigo

Nam JH, Kim HS, Lee GY, Kim WS. Beneficial Effect of Low Fluence 1,064 nm Q-Switched Neodymium:Yttrium-Aluminum-Garnet Laser in the Treatment of Senile Lentigo. Ann Dermatol. 2017 Aug;29(4):427-432. https://doi.org/10.5021/ad.2017.29.4.427

Retrospective chart review of previously treated patients.

Average fluence was 1.62J/cm2 and average number of treatments was 8.8 every 4 weeks.

There were no reported adverse events among the reviewed cases.

All subjects were able to satisfied improvement in their lentigos.

Beneficial Effects of Early Treatment of Nevus of Ota With Low-Fluence 1,064-nm Q-Switched Nd: YAG Laser

Seo H-M, Choi C-W, Kim W-S. Beneficial Effects of Early Treatment of Nevus of Ota With Low-Fluence 1,064-nm Q-Switched Nd: YAG Laser. Dermatologic Surgery. 2015;41(1):142-148. doi:10.1097/DSS.0000000000000212

A retrospective review was completed and found patients received between 6 and 32 treatments at 2 or 3 week intervals.

1064nm wavelength, 7 or 8mm spot size, 1.9 - 5.0J/cm2 fluence.

The average fluence used was lower in patients that were younger than 10.

The earlier treatments began, the less treatments required to hit improvement thresholds.

Carbon Assisted Q-Switched Nd:YAG Laser Treatment with Two Different Sets of Pulse Width Parameters Offers a Useful Treatment Modality for Severe Inflammatory Acne: A Case Report

Chun SI, Calderhead RG. Carbon Assisted Q-Switched Nd:YAG Laser Treatment with Two Different Sets of Pulse Width Parameters Offers a Useful Treatment Modality for Severe Inflammatory Acne: A Case Report. Photomedicine and Laser Surgery. 2011;29(2):131-135. doi:10.1089/pho.2010.2786

Six treatments were performed every two weeks at two different pulse durations alongside a carbon lotion.

First pass was with a 300microsecond pulse width at a fluence of 1.5J/cm with 7mm collimated hand piece.

Second pass was performed with 5ns pulse width, 1.5J/cm2 fluence, and similar 7mm collimated hand piece.

Sebum production was reduced by over 40% as reported by the patients.

After the full treatment regiment, inflammatory lesions decreased by 90% on average

Clinical and Histopathologic Assessment of Facial Melasma After Low-Fluence Q-Switched Neodymium-Doped Yttrium Aluminium Garnet Laser

Hofbauer Parra CA, Careta MF, Valente NYS, de Sanches Osório NEG, Torezan LAR. Clinical and Histopathologic Assessment of Facial Melasma After Low-Fluence Q-Switched Neodymium-Doped Yttrium Aluminium Garnet Laser. Dermatologic Surgery. 2016;42(4):507-512. doi:10.1097/DSS.0000000000000653

10 treatment sessions were performed on a weekly basis with the 1064nm wavelength.

The 8mm spot size was utilized at fluences ranging from 0.8 - 1.6J/cm2 and a 10Hz repetition rate, treating to erythema with 1 to 3 passes.

All subjects responded favorably to the treatment with clinically significant results assessed by melasma scoring.

There were no long lasting side effects from the treatment.

Clinical efficacy of 585 nm Q-switched laser treatment on inflammatory lesion and postinflammatory erythema of acne vulgaris

Wang XX, Li ZZ, Lai YY, et al. Clinical efficacy of 585 nm Q-switched laser treatment on inflammatory lesion and postinflammatory erythema of acne vulgaris. Beijing Daxue xuebao Yixue ban. 2022;54(2):283-288.

Three treatments were performed on half of the face every two weeks.
Fluence settings of 0.24 - 0.32 J/cm2 with a 5mm spot size.
Significant reduction in erythema as graded by the physician at the 8 week follow-up timepoint.

Clinical observation of Q-switch 1064nm Nd:YAG laser Q-PTP mode combined with tranexamic acid in the treatment of melasma

DOI:10.3969/j.issn.1673-7040.2018.11.004
Subjects were treated with the 1064nm wavelength on Q-PTP mode 5 times every 4 weeks combined with oral TA tablets for 5 months.
Laser parameters for each treatment were 7mm spot size, 1.4-3.0J/cm2 and 2-3 passes.
Laser was then set to a 4mm spot size with fluence of 4.0-6.0J/cm2 to spot treat melasma lesions.
The treatment was able to yield a 78% and 64% improvement rate at the one and 3 month follow-ups.
80% of subjects were satisfied at the one month follow-up which mostly persisted through 3-month follow-up to keep a 69% satisfaction rate.

Combination of 1064-nm Q-switched neodymium: yttrium–aluminum–garnet laser with low fluence and 578-/511-nm copper bromide laser for nipple–areolar hyperpigmentation

LEE EH, KANG J, KANG D, HAN CS, CHO SB. Combination of 1064-nm Q-switched neodymium: yttrium–aluminum–garnet laser with low fluence and 578-/511-nm copper bromide laser for nipple–areolar hyperpigmentation. The Journal of Dermatology. 2011;39(1):110-112. doi:10.1111/j.1346-8138.2011.01272.x
Three sessions of Spectra combined with a copper bromide laser.
Laser parameters for the Spectra treatment were 1.7 - 2.0J/cm2, a 7mm collimated hand piece and 4-5 passes with up to 15% overlap.
The combination of devices appear to be safe and effective for treating areolar hyperpigmentation.

Combination treatment of low-fluence 1,064-nm Q-switched Nd: YAG laser with novel intense pulse light in Korean melasma patients: a prospective, randomized, controlled trial

Yun WJ, Moon H-R, Lee M-W, Choi J-H, Chang S-E. Combination treatment of low-fluence 1,064-nm Q-switched Nd: YAG laser with novel intense pulse light in Korean melasma patients: a prospective, randomized, controlled trial. The Journal of Dermatologic Surgery and Oncology. 2014;40(8):842-850. doi:10.1097/DSS.0000000000000057
Six treatment session were performed every two weeks with the 1064nm wavelength.
Treatments were completed with another 4 to 6 passes immediately after the IPL was completed.
Parameters used for treatment included a fluence from 1.5 - 2.0J/cm2, a 6mm spot size, a pulse duration of 5-10ns, and a repetition rate of 10Hz.
Subjects exhibited a 50% improvement at the 2 month post treatment follow up per the partial MASI grading in the combination group.

Combination Treatments of 755 nm Alexandrite Laser with 1,064nm ND-YAG Laser Tonning for Café Au Lait Macule

Yoo KH, Bang D, Kim HS, Joe BH. Combination Treatments of 755 nm Alexandrite Laser with 1,064 nm Nd:YAG Laser Toning for Café Au Lait Macule. Medical lasers. 2015;4(2):78-80. doi:10.25289/ML.2015.4.2.78
Subject was treated with the 755nm Alexandrite and then received six treatments spaced 2 weeks apart with the Spectra XT.
Spectra parameters included a 4mm spot size, 2.5-3.0J/cm2 fluence

Noticeable improvement was seen 3 months post treatment with marked improvement noted at the 6 month follow up.
1 year post treatment the lesion had not recurred.

Comparison of the Scar Prevention Effect Between a Carbon Dioxide Fractional Laser and a Continuous Ablative Carbon Dioxide Laser with a 595-nm Nd:YAG Laser

Lee, S.J., Lee, J.W., Kim, S.H. et al. Comparison of the Scar Prevention Effect Between a Carbon Dioxide Fractional Laser and a Continuous Ablative Carbon Dioxide Laser with a 595-nm Nd:YAG Laser. Aesth Plast Surg 43, 213–220 (2019). https://doi.org/10.1007/s00266-018-1210-2

SpectraXT at 595nm wavelength was utilized to treat immediately following treatment with an ablative CO2 laser once a month.
Spectra parameters were set to a spot size of 5mm, fluence of 0.4J/cm2, and a repetition rate of 5Hz.
Combination of ablative CO2 and Spectra performed better than the control and CO2 device alone.
Significant improvements were seen in Stony Brook Scar Evaluation Scale and modified Vancouver Scar Scale.

Device-Induced Neocollagenesis: Profibrotic Response or True Neocollagenesis?

Natari S, Kim KE, Ryu SI, Park JH, Kim I. Device-Induced Neocollagenesis: Profibrotic Response or True Neocollagenesis? Lasers in Surgery and Medicine. 2020;52(10):1010-1019. doi:10.1002/lsm.23258

Spectra was used at four different sites to target the epidermis and then the upper and mid dermis.
Repetition rate, spot size, and Fluence were all adjusted on a per site basis.
Spectra treatment at 10Hz showed the most stable high collagen growth during the study.
Additionally the device was able to markedly increase the dermal collagen density.

Early Management of Scars Using a 532-nm Nd:YAG Laser

Jang J-Y, Han JH, Yoon KC, Shin HW, Kim YS, Kim J-K. Early Management of Scars Using a 532-nm Nd:YAG Laser. Archives of aesthetic plastic surgery. 2017;23(2):62. doi:10.14730/aaps.2017.23.2.62

Subject's were treated with the 532nm wavelength a single time within two weeks after stitches were removed.
Laser fluence was set between 0.6 and 0.8J/cm2, the spot size was 2.6mm, and pulse duration was set to 80ns.
The average scar improved 4.5 points on the vancouver scar scale, which evaluates pigmentation, vascularity, pliability, and height.
Discoloration of the skin on and around the scars was assessed individually and was found to have improved significantly indicating scar tissue blended in with the surrounding skin more easily.

Effect of an Epidermal Growth Factor-Containing Cream on Postinflammatory Hyperpigmentation After Q-Switched 532-nm Neodymium-Doped Yttrium Aluminum Garnet Laser Treatment

Park G-H, Rhee DY, Moon H-R, et al. Effect of an Epidermal Growth Factor-Containing Cream on Postinflammatory Hyperpigmentation After Q-Switched 532-nm Neodymium-Doped Yttrium Aluminum Garnet Laser Treatment. Dermatologic Surgery. 2015;41(1):131-135. doi:10.1097/DSS.0000000000000197

Subjects were treated with the 532nm wavelength with a fluence of 1.5 J/cm2 and a spot size of 5mm
The EGF cream was effective in decreasing the incidence of postinflammatory hyperpigmentation.
PIH rate was reduced from 50% to 7.7% when utilizing the cream.

Effect of low fluence Q-switched 1064nm Nd:YAG laser therapy on melasma

Kim I-H. Effect of low fluence Q-switched Nd:YAG laser therapy on Melasma. Aesthetic Dermatology. 2010;20:342-347.

Laser parameters were set to minimize the thermal effect by utilizing a 1.6-2.5J/cm2 fluence and 5-10Hz repetition rate while increasing the photomechanical effect by utilzing a 7mm spot size with a 7ns or less pulse duration.

Treatment resulted in a decrease of dendrites of melanocytes and alteration of melanosome ultrastructure.

Additional testing on zebra fish showed the device is capable of selectively removing pigment without destorying the full cell.

Effects of various parameters of the 1064 nm Nd:YAG laser for the treatment of enlarged facial pores

Roh MR, Chung HJ, Chung KY. Effects of various parameters of the 1064 nm Nd:YAG laser for the treatment of enlarged facial pores. Journal of Dermatological Treatment. 2009;20(4):223-228. doi:10.1080/09546630802647244

Treatments were performed wit the 1064nm wavelength, 7mm spot size, and a 10Hz repetition rate

Group 1 used thee device at 3.0 J/cm2 fluence and 300microsecond pulse duration, Group 2 had a fluence of 2.5J/cm2 and a pulse duration of 5ns.

Groups 3 and 4 combined the parameters from 1 and 2 for multiple passes.

Pore size and sebum levels significantly decreased in all treatment groups.

Side effects were mild and did not interfere with daily activites.

All groups performed similarly in regards to safety and efficacy.

Efficacy and safety of 1064-nm Q-switched Nd:YAG laser with low fluence for keloids and hypertrophic scars

Cho S, Lee J, Lee S, Lee S, Bang D, Oh S. Efficacy and safety of 1064-nm Q-switched Nd:YAG laser with low fluence for keloids and hypertrophic scars. Journal of the European Academy of Dermatology and Venereology. 2010;24(9):1070-1074. doi:10.1111/j.1468-3083.2010.03593.x

Treatments with the 1064nm wavelength were completed ever one to two weeks.

Fluence was set between 1.8-2.2 J/cm2, 7mm spot size, and 5-6 passes with appropriate overlapping.

Pigmentation, vascularity, pliability and height of scars were all decreased following the treatment.

Reported side effects of prickling sensation and erythema were mild and resolved a few hours after treatment.

Erythema Ab Igne Successfully Treated Using 1,064-nm Q-switched Neodymium-Doped Yttrium Aluminum Garnet Laser with Low Fluence

Cho S, Jung JY, Lee JH. Erythema Ab Igne Successfully Treated Using 1,064-nm Q-switched Neodymium-Doped Yttrium Aluminum Garnet Laser with Low Fluence. Dermatologic Surgery. 2011;37(4). doi:10.1111/j.1524-4725.2011.01923.x

Three sessions with 1064nm wavelength were completed every two weeks.

Laser parameters included fluence ranging from 1.8 to 2.5J/cm2, 7mm spot size, and two or three passses with appropriate overlapping.

After three treatments the skin lesions were nearly cleared.

Exogenous ochronosis – successful outcome after treatment with Q-switched Nd:YAG laser

Tan S-K (SK). Exogenous ochronosis - successful outcome after treatment with Q-switched Nd:YAG laser. Journal of Cosmetic and Laser Therapy. 2013;15(5):274-278. doi:10.3109/14764172.2012.758379

Hyperpigmented areas were treated at a fluence of 1.2J/cm2, 8mm collimated handpiece for a total of four passes with the 1064nm wavelength.

Exogenous ochronosis macules were further treated with direct shots until erythema or fine petechiae appeared at 4-6J/cm2 and 4mm spot size.

All patients had a high degree of satisfaction with significant clearance in the pigment.
All patients remained clear of hyperpigmentation and utilized a maintenace of non-hydroquinone skin-lighteners to maintain results.

Histometric changes and epidermal FGF9 expression in carbon photoenhancer-assisted Nd:YAG laser treatment

Zheng Z, Kim J, Choi MJ, Goo B, Chun SI, Cho SB. Histometric changes and epidermal FGF9 expression in carbon photoenhancer-assisted Nd:YAG laser treatment. Journal of Dermatological Treatment. 2012;(4):278-282. doi:10.3109/09546634.2012.723121

Treatments were performed on hairless mice following application of carbon cream on half of their back.
First group were treated in 3 passes with 7mm collimated handpiece at a rep rate of 10Hz with the 1064nm wavelength and 300microsecond pulse duration and fluence of 1.4J/cm2.
The second group were treated with mostly the same settings except a 1.6J/cm2 and 5ns pulse duration.
Carbon cream enhanced the effects of the laser treatment.
There were significant changes in epidermal thickness and FGF9 expression at variou timepoints

Histopathological study of the treatment of melasma lesions using a low-fluence Q-switched 1064-nm neodymium:yttrium–aluminium–garnet laser

Kim JE, Chang SE, Yeo UC, Haw S, Kim I -H. Histopathological study of the treatment of melasma lesions using a low-fluence Q-switched 1064-nm neodymium:yttrium–aluminium–garnet laser. Clinical and Experimental Dermatology. 2013;38(2):167-171. doi:10.1111/j.1365-2230.2012.04473.x

An average of 12.7 treatments (8-20 total) were given every 1-2 weeks with the 1064nm wavelength.
Parameters included the 7mm spot size, 1.8-2.3J/cm2 with 6-8 passes resulting in up to 3000 total pulses.
Histology showed a significant reduction in expression of TRP-1, TRP-2, NGF, α-MSH, and tyrosinase.

Intradermal tranexamic acid injections to prevent post-inflammatory hyperpigmentation after solar lentigo removal with a Q-switched 532-nm Nd:YAG laser

Sirithanabadeekul P, Srieakpanit R. Intradermal tranexamic acid injections to prevent post-inflammatory hyperpigmentation after solar lentigo removal with a Q-switched 532-nm Nd:YAG laser. Journal of Cosmetic and Laser Therapy. 2018;20:398-404. doi:10.1080/14764172.2018.1444770

Subjects presenting with two lentigines were treated first with the 532nm wavelength and then had one lesion injected with tranexamic acid.
Laser parameters included
Melanin index significantly decreased in both the laser only and laser plus TA group.
The use of intradermal TA appeared to have reduced the overall risk of PIH following treatment.

Long-Pulsed 755-nm Alexandrite Laser-Induced Postinflammatory Hyperpigmentation Treated with 1,064-nm Nd:YAG Laser: Time Course Follow-Up

Kim YK, Cho S, Goo BL, Kang J-S, Cho SB. Long-Pulsed 755-nm Alexandrite Laser-Induced Postinflammatory Hyperpigmentation Treated with 1,064-nm Nd:YAG Laser: Time Course Follow-Up. Medical lasers. 2014;3(1):31-34. doi:10.25289/ML.2014.3.1.31

Subject was treated 8 times with the 1064nm wavelength every week.
The full face was treated with a fluence of 1.6J/cm2, 5-10ns pulse duration, and a 7mm spot size for a

total of 2,000 pulses.
Treatment was followed up with a 755nm Alexandrite Laser
To treat the PIH induced by Alexandrite, subject was treated with 1064 parameters above in addition to Q-PTP treatments at 6.0J/cm2, 5-10ns pulse duration and 4mm spot size with 5 total shots per lesion.
Subject had improved melasma after the initial treatment protocol.
Spectra was used to treated in Q-PTP mode following instanced of 755nm Alexandrite induced PIH which cleared after 10 treatments and no recurrence noted after 3 months.

Long-Term Follow-Up of 1,064-nm Picosecond-Domain Neodymium:Yttrium-Aluminum-Garnet Laser Treatment for Acquired Bilateral Nevus of Ota-Like Macules

Kim SY, Park J, Kim H, Cho SB. Long-Term Follow-Up of 1,064-nm Picosecond-Domain Neodymium:Yttrium-Aluminum-Garnet Laser Treatment for Acquired Bilateral Nevus of Ota-Like Macules. Medical lasers. 2017;6(2):93-98. doi:10.25289/ML.2017.6.2.93

Subject receieved single treatment with the 1064nm wavelength and 7mm spot size, 1.8J/cm2 fluence and the Q-PTP mode for a total of 2,000 shots.
Additional pulses delivered on ABNOM lesions with a 4mm spot size and a fluence of 5.4J/cm2 in single pulse mode with three passes in total.
3 months following treatment there was a slight improvement noted with the subject.
Subject followed up with a PicoPlus treatment and saw significant improvement over 3 months after only one treatments

Low-Fluence 585 nm Q-Switched Nd:YAG Laser: A Novel Laser Treatment for Post-Acne Erythema

Panchaprateep R, Munavalli G. Low-fluence 585 nm Q-switched Nd:YAG laser: A novel laser treatment for post-acne erythema. Lasers in Surgery and Medicine. 2015;47(2):148-155. doi:10.1002/lsm.22321

Three treatments were performed at 2-week intervals with the 585nm wavelength.
Parameters included a 5mm spot size, 5-10ns pulse duration, 0.30-0.55J/cm2 with 2-4 passes.
Erythema lesions decreased by a total of 58.7% at the 6 week follow-up timepoint.
Significant improvement was also seen in inflammatory acne lesions counts,scarring, and erythema indices.

Low-Fluence Q-Switched 1,064-nm Neodymium-Doped Yttrium Aluminum Garnet Laser for the Treatment of Facial Partial Unilateral Lentiginosis in Koreans

Lee Y, Choi EH, Lee SW. Low-Fluence Q-Switched 1,064-nm Neodymium-Doped Yttrium Aluminum Garnet Laser for the Treatment of Facial Partial Unilateral Lentiginosis in Koreans. Dermatologic Surgery. 2012;38(1):31-37. doi:10.1111/j.1524-4725.2011.02147.x

Patients were treated 5-9 times at two week intervals with the 1064nm wavelength.
Parameters included a 7mm spot size, fluence ranging from 1.5-2.5 J/cm2, and 5-7ns pulse duration until lightening of pigment or mild erythema was seen without petechiae.
All patients showed at least 50% improvement, with half of the patients achieving 76-100% improvement.
Subjects all rated themselves as having at least 50% improvement.

Low-Fluence Q-Switched Neodymium-Doped Yttrium Aluminum Garnet Laser for Melasma with Pre- or Post-Treatment Triple Combination Cream

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Jeong S-Y, Shin J-B,Yeo U-C, Kim W-S, Kim I-H. Low-Fluence Q-Switched Neodymium-Doped Yttrium Aluminum Garnet Laser for Melasma with Pre- or Post-Treatment Triple Combination Cream. Dermatologic Surgery. 2010;36(6):909-918. doi:10.1111/j.1524-4725.2010.01523.x

Subject's either were treated with a laser or the triple combination cream for 8 weeks and then switched treatment protocol.

Laser treatments were completed on a weekly basis with a 1064nm wavelength, 5-7ns pulse width, a fluence of 1.6-2.0J/cm2, two passes per treatment session.

Subject's had better clearance of melasma when the triple combination cream was used prior to laser treatment.

There were no significant adverse events as a result of the treatment.

Low-Power Fractional CO2 Laser Versus Low-Fluence Q-Switch 1,064 nm Nd:YAG Laser for Treatment of Melasma: A Randomized, Controlled, Split-Face Study

Jalaly N, Valizadeh N, Barikbin B, Yousefi M. Low-Power Fractional CO2 Laser Versus Low-Fluence Q-Switch 1,064 nm Nd:YAG Laser for Treatment of Melasma: A Randomized, Controlled, Split-Face Study. American Journal of Clinical Dermatology. 2014;15(4):357-363. doi:10.1007/s40257-014-0080-x

Treatments were completed every three weeks for a total of 5 sessions on half the face.

Treatment parameters included a 1.5-2.0J/cm2 range with a 7mm spot size with up to five passes which were stopped upon lightening of pigment or mild erythema.

The Spectra exhibited reduced melasma severity scores.

Adverse events for the Spectra half of the face only included erythema and edema that were both mild and transient, lasting less than 6 hours.

Low-pulse energy Q-switched Nd:YAG laser treatment for hair-dye-induced Riehl's melanosis.

On HR, Hong WJ, Roh MR. Low-pulse energy Q-switched Nd:YAG laser treatment for hair-dye-induced Riehl's melanosis. J Cosmet Laser Ther. 2015;17(3):135-138. doi:10.3109/14764172.2015.1007058

Case 1 was treated 13 times every three weeks with a fluence of 1.8J/cm2 and an 8mm spot size.

Case 2 was treated 8 times at the same parameters.

The treatment effect from laser use lasted for longer than 3 months following end of therapy.

Marked improvements were seen as early as after two laser sessions.

Median canaliform nail dystrophy treated with a 1064-nm quasi-long pulsed Nd:YAG laser

Choi J-Y, Seo H-M, Kim W-S. Median canaliform nail dystrophy treated with a 1064-nm quasi-long pulsed Nd:YAG laser. Journal of Cosmetic and Laser Therapy. 2017;19(4):225-226. doi:10.1080/14764172.2017.1279330

Ten sessions per nail were perfomed every two to four weeks.

Laser parameters were set to a pulse energy of 3.0-5.0J, a 7-8mm spot size, repetition rate from 5-10Hz, and a pulse duration of 300us

Patient was satisfied with the results for their nails after the ten treatment regimen.

New Melasma Treatment by Collimated Low Fluence Q-switched Nd:YAG Laser

Se, Y.J. & Sung, E.C. & Bak, H. & Choi, Jaesoon & Kim, Il-Hwan. New melasma treatment by collimated low fluence Q-switched Nd:YAG laser. Korean Journal of Dermatology. 46. 1163-1170.

Eight treatments performed on a weekly basis with the 1064nm wavelength.

Subjects were treated with the 7mm spot size and a fluence between 1.6 - 2.5 J/cm2

Nearly 60% of subjects exhibited at least 50% improvement in their melasma as graded via photography.
No subjects experienced a full recurrence of their melasma.

Novel Method of Treatment of Post-Q-Switched Nd-YAG Laser Depigmentation with Trichloroacetic Acid: A Report of Two Cases

Chandrashekar BS, Sriram R, Madura C. Novel Method of Treatment of Post-Q-Switched Nd-YAG Laser Depigmentation with Trichloroacetic Acid: A Report of Two Cases. Journal of Cutaneous and Aesthetic Surgery. 2014;7(1):56-57. doi:10.4103/0974-2077.129983

Case 1: 1064nm wavelength, 15 treatments every 6 weeks with an energy of 6.0-8.6J and a spot size of 3-6mm.
Case 2: Two treatments with three passess each with the 1064nm wavelength, 1.6-2.0J energy setting, 8mm spot size
65% TCA was able to achieve re-pigmentation in 2-4 weeks following initiation of treatment

Oral tranexamic acid enhances the efficacy of low-fluence 1064-nm quality-switched neodymium-doped yttrium aluminum garnet laser treatment for melasma in Koreans: A randomized, prospective trial

Shin JU, Park J, Oh SH, Lee JH. Oral Tranexamic Acid Enhances the Efficacy of Low-Fluence 1064-Nm Quality-Switched Neodymium-Doped Yttrium Aluminum Garnet Laser Treatment for Melasma in Koreans: A Randomized, Prospective Trial. Dermatologic Surgery. 2013;39:435-442. doi:10.1111/dsu.12060

Two treatments at 4 week intervals with a fluence of 2.0 J/cm2 and a spot size of 7mm.
Subjects in the combination group also took oral tranexamic acid for 8 weeks with laser treatments in the middle of the oral regimen.
The laser only and laser plus oral TA group were both able to achieve clinical improvement compared to baseline severity.
Transient erythema was the only reported event in the study.

Paradoxical darkening of unperceived tattoo ink after relatively low fluence from a Q-switched Nd:YAG (1064-nm) laser in the course of treatment for melasma

Chung WK, Yang JH, Lee DW, et al. Paradoxical darkening of unperceived tattoo ink after relatively low fluence from a Q-switched Nd:YAG (1064-nm) laser in the course of treatment for melasma. Clinical and Experimental Dermatology. 2009;34(8):e555-e557. doi:10.1111/j.1365-2230.2009.03234.x

Subject was treated with the 1064nm wavelength, 5-7ns pulse duration, and 1.5 - 2.0 J/cm2 fluence for up to 8 passes on their melasma.
On the darkened tattoos, subject was treatmed with 1064nm wavelength and 7.5-8.0J/cm2 every 4 weeks.
After 8 treatments on the tattoos and 13 treatments on the melasma the pigmentation was nearly gone from the patient.
Treatments were discontinued due to patient satisfaction.

Partial Unilateral Lentiginosis Successfully Treated with a High-fluence 1,064-nm Q-switched Neodymium:Yttrium-aluminum-garnet Laser

Hong JK, Han HS, Shin SH, Yoo KH. Partial Unilateral Lentiginosis Successfully Treated with a High-fluence 1,064-nm Q-switched Neodymium:Yttrium-aluminum-garnet Laser. Medical lasers. 2021;10(2):120-122. doi:10.25289/ML.2021.10.2.120

20 treatments with the 1064nm wavelength every two weeks, each with 2-3 passes.
Parameters included a spot size of 7mm, a fluence of 2.4J/cm2, and a pulse rate of 10Hz until mild erythema was achieved.
Treatment was well tolerated by the subject with no instances of mottled pigmentary changes due to the treatment.
Pigmented lesions had disappeared by the 20th treatment with no noted recurrence.

Partial Unilateral Lentiginosis Treated with 532-nm and Subsequent Low-Fluence 1,064-nm Q-Switched Neodymium-Doped Yttrium Aluminum Garnet Lasers

Kim J, Kim DH, Chun SH, Ryu HJ. Partial Unilateral Lentiginosis Treated with 532-nm and Subsequent Low-Fluence 1,064-nm Q-Switched Neodymium-Doped Yttrium Aluminum Garnet Lasers. Medical lasers. 2016;5(1):42-46. doi:10.25289/ML.2016.5.1.42

Subject was treated with the 532nm wavelength, 4-5mm spot size, fluence of 2.1-2.3J/cm2, 5-7ns pulse width.
Subject was treated a total of 5 with 3-6 month intervals due to patient preference.
Treatments were followed by a 1064nm wavelength treatment with 8mm spot size, a fluence of 2.2J/cm2 and a 2 week treatment interval
The lesion did not exhibit a significant response to the 532nm treatment until a fluence of 2.3J/cm2 was utilized.
The lesion was nearly cleared after 5 treatments with the 1064nm with no recurrence up to 3 years after.

Perfluorodecalin-infused patch in picosecond and Q-switched laser-assisted tattoo removal: Safety in Fitzpatrick IV–VI skin types

Vangipuram R, Hamill SS, Friedman PM. Perfluorodecalin-infused patch in picosecond and Q-switched laser-assisted tattoo removal: Safety in Fitzpatrick IV–VI skin types. Lasers in Surgery and Medicine. 2019;51(1):23-26. doi:10.1002/lsm.23022

Treatments were completed with either the 1064nm Spectra or competetive picosecond device following application of liquid PFD patch.
Spot sizes ranged from 3-10mm and a fluence range of 0.25-12.0J/cm2 dependent on patient tolerance.
Patients were able to tolerate additional passes with the laser following applicated of the patch.
The PFD patch enabled the treatment of multiple tattoo colors safely and without harming the patient.

Perioral Hyperpigmentation Treated with 1,064-nm Q-switched Neodymium:Yttrium-aluminum-garnet Laser Toning

Kim WJ, Cho HK, Lee SJ. Perioral Hyperpigmentation Treated with 1,064-nm Q-switched Neodymium:Yttrium-aluminum-garnet Laser Toning. Medical lasers. 2021;10(1):49-51. doi:10.25289/ML.2021.10.1.49

9 laser treatments with one week intervals were performed wit the 1064nm wavelength.
Laser parameters were set to 7mm spot size, fluence of 1.2-3.0J/cm2 and a 10Hz repetition rate to deliver a total of 500 shorts to induce mild erythema.
The severity of the perioral hyperpigmentation was significantly reduced following the treatment regimen.
The patient did not report any side effects from the treatment that restricted their daily life.

Periorbital melasma: Hierarchical cluster analysis of clinical features in Asian patients

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Jung YS, Bae JM, Kim BJ, Kang J -S., Cho SB. Periorbital melasma: Hierarchical cluster analysis of clinical features in Asian patients. Skin Research and Technology. 2017;23(4):552-557. doi:10.1111/srt.12370

All patients were treated with the 1064nm wavelength with most subjects also treated with a copper bromide laser and a small number with invasive pulsed-electric signal treatment.

No specific parameters outside of "low fluence" were discusssed.

A majority of subjects presented with at least 50% clearance of their melasma.

Patients who received more treatment sessions over longer treatment sessions responded the best to laser therapy.

Pore and Acne Scar Treatment with a Q-switched Laser Using a Novel Fractional MDF (Multi-depth Focusing) Handpiece: A Pilot Study

Park J, Lee H, Hwang JK. Pore and Acne Scar Treatment with a Q-switched Laser Using a Novel Fractional MDF (Multi-depth Focusing) Handpiece: A Pilot Study. Medical lasers. 2022;11(1):31-39. doi:10.25289/ML.2022.11.1.31

Patients were treated either 3 or 4 times every month with the MDF handpiece.

Acne scars and pores saw significant improvement at the follow-up visits, with more improvement seen at the three month follow-up as compared to the six week.

There was not a difference in improvement seen in subjects who were treated three times versus four times.

Preliminary experience of the Q-switched 1064-nm neodymium:yttrium aluminum garnet laser in the treatment of Café-au-lait macules

Lin Y, Liu HX, Shi WH, et al. Preliminary experience of the Q-switched 1064-nm neodymium:yttrium aluminum garnet laser in the treatment of Café-au-lait macules. Journal of the European Academy of Dermatology and Venereology. 2019;33(4):e185-e186. doi:10.1111/jdv.15364

Up to 5 treatment sessions were performed in 2 month intervals.

Laser parameters were a fluence of 3.6-4.0J/cm2 and a spot size of 5mm with up to 2 passess until the appearance of petechiae.

Patients who received a full 5 treatments were all able to achieve either excellent or complete clearance of their CALMs.

A majority of patients who receieved three treatments exhibited 50% clearance of their pigmentation.

Prospective randomized controlled clinical and histopathological study of acne vulgaris treated with dual mode of quasi-long pulse and Q-switched 1064-nm Nd:YAG laser assisted with a topically applied carbon suspension

Jung JY, Hong JS, Ahn CH, Yoon JY, Kwon HH, Suh DH. Prospective randomized controlled clinical and histopathological study of acne vulgaris treated with dual mode of quasi-long pulse and Q-switched 1064-nm Nd:YAG laser assisted with a topically applied carbon suspension. Journal of the American Academy of Dermatology. 2012;66(4):626-633. doi:10.1016/j.jaad.2011.08.031

3 treatment sessions with the laser at a 7mm spot size and 10Hz repetition rate along with a carbon suspenson in 2 week intervals.

The laser was first set to a 300ms pulse width with a fluence of 1.8-2.0J/cm2.

The second to fourth passes in the same treatment were performed with a 5ns pulse width and a fluence of 1.8-2.3J/cm2

Inflammatory acne lesions were reduced by nearly 60% on the laser treated side.

Histology showed an overall skin rejuvenation effect.

Pulse in Pulse Intense Pulsed Light for Melasma Treatment: A Pilot Study

Chung JY, Choi M, Lee JH, Cho S, Lee JH. Pulse in Pulse Intense Pulsed Light for Melasma Treatment: A Pilot Study. Dermatologic Surgery. 2014;40(2):162-168. doi:10.1111/dsu.12414

Half of the face was treated with IPL then 6 laser treatments every two weeks compared to pulse in pulse IPL on the second half.
Laser parameters were the 8mm collimated spot size handpiece, 10ns pulse width, 1.0-1.2J/cm2 and multiple passes to achieve mild erythema.
The pulse in pulse IPL and IPL followed by laser both exhibted a 50% improvement in melasma severity scores.
There were no reports of aggravation of melasma up to 6 months following completion of treatment

Q-PTP is an optimized technology of 1064-nm Q-switched neodymium-doped yttrium aluminum garnet laser in the laser therapy of melasma: A prospective split-face study

Guo X, Cai X, Jin Y, Zhang T, Wang B, Li Q. Q-PTP is an optimized technology of 1064-nm Q-switched neodymium-doped yttrium aluminum garnet laser in the laser therapy of melasma: A prospective split-face study. Oncology Letters. 2019;18(4):4136-4143. doi:10.3892/ol.2019.10743

Subject's were treated five times every four weeks with the 1064nm wavelength with the 7mm collimated spot size, single-pulse laser mode.
The Q-pulse to pulse mode was applied to one side of the face and the single-pulse laser mode was used with the other at a fluence setting of 1.8J/cm2. for a total of 1,600 shots on each side.
A majority of patients exhibited at least 50% clearance in their melasma, regardless of the laser pulse mode.
Erythema assessments indicated that the Q-PTP setting resulted in less erythema overall in the treated skin

Q-Switched 660-nm Versus 532-nm Nd:YAG Laser for the Treatment for Facial Lentigines in Asian Patients: A Prospective, Randomized, Double-Blinded, Split-Face Comparison Pilot Study

Noh TK, Chung BY, Yeo UC, Chang S, Lee MW, Chang SE. Q-Switched 660-nm Versus 532-nm Nd: YAG Laser for the Treatment for Facial Lentigines in Asian Patients A Prospective, Randomized, Double-Blinded, Split-Face Comparison Pilot Study. Dermatologic Surgery. 2015;41(12):1389-1395. doi:10.1097/DSS.0000000000000493

The 660nm and 532nm wavelength were both compared in a split face study.
660nm parameters included a fluence of 2.6 - 3.0J/cm2, a pulse duration of 10ns, and a 3mm spot size.
532nm parameters included a fluence of 1.2-1.5J/cm2, a pulse duration of 10ns, and a 3mm spot size.
Both laser wavelengths were effectivel in removing the lentigines with slightly better performance seen with the 660nm wavelength across the clinical assessments.
There were no reports of serious adverse events and the treatment was well tolerated.

Recovery of Pigmentation Following Selective Photothermolysis in Adult Zebrafish Skin: Clinical Implications for Laser Toning Treatment of Melasma

Kim JH, Kim DH, Kim JH, et al. Recovery of pigmentation following selective photothermolysis in adult zebrafish skin: clinical implications for laser toning treatment of melasma. Journal of Cosmetic and Laser Therapy. 2012;14(6):277-285. doi:10.3109/14764172.2012.738908

The zebrafish were treated with a singular pulse of the laser set to 1064nm wavelength.
Parameters of laser were set to 5-7ns pulse duration, a 0.4J/cm2 fluence, and a 7mm spot size.
Zebrafish can act as a suitable model to mimic melanocyte regenerative systems.

Role of oral tranexamic acid in melasma patients treated with IPL and low fluence QS Nd:YAG laser

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Cho HH, Choi M, Cho S, Lee JH. Role of oral tranexamic acid in melasma patients treated with IPL and low fluence QS Nd:YAG laser. Journal of Dermatological Treatment. 2011;(4):292-296. doi:10.3109/09546634.2011.643220

Patients were treated with the laser 3 to 4 times in conjuction with IPL as well as oral TA in one group.
Laser parameters included the 1064nm wavelength, a spot size of 8mm, fluences from 1.0 to 1.2J/cm2, and a repetition rate of 10Hz.
The overall study population exhibited a significant improvement in modified MASI scores.
No serious adverse events related to the laser procedure were noted in the study.

Subcellular Selective Photothermolysis of Melanosomes in Adult Zebrafish Skin Following 1064-nm Q-Switched Nd:YAG Laser Irradiation

Kim Jae Hwan, Kim Ho, Park Hae Chul, Kim Il-Hwan. Subcellular Selective Photothermolysis of Melanosomes in Adult Zebrafish Skin Following 1064-nm Q-Switched Nd:YAG Laser Irradiation. Journal of Investigative Dermatology. 2010;130(9):2333-2335. doi:10.1038/jid.2010.129

Singular pulse of energy with the 1064nm wavelength, 5-7ns pulse duration, 7mm spot size, and fluences ranging from 0.3 to 0.9 J/cm2
Fluences of 0.4J/cm2 and above significantly reduced the number of pigmented spots.
Spots treated with the 0.9J/cm2 fluence saw little to no regeneration of melanosomes.

Successful treatment of argyria using a low-fluence Q-switched 1064-nm Nd:YAG laser

Han TY, Chang HS, Lee HK, Son S. Successful treatment of argyria using a low-fluence Q-switched 1064-nm Nd:YAG laser. International Journal of Dermatology. 2011;50(6):751-753. doi:10.1111/j.1365-4632.2010.04796.x

Subject was treated with the 1064nm wavelength, 0.7-1.3J/cm2, pulse duration of 5ns and 7mm spot size for a total of 7 treatment sessions each treating a different part of the face.
Treatments on each part of the face were completed every two days to ensure no adverse effects.
The patients skin color returned to normal shortly after one session in each part of their face.

Successful Treatment of Laser Induced Hypopigmentation with Narrowband Ultraviolet B Targeted Phototherapy

Mysore V, Anitha B, Hosthota A. Successful treatment of laser induced hypopigmentation with narrowband ultraviolet B targeted phototherapy. Journal of Cutaneous and Aesthetic Surgery. 2013;6(2):117-119. doi:10.4103/0974-2077.112677

Subject had black tattoo treated with 1064nm wavelength, 3mm spot size, 2Hz repetition rate, and a 3J fluence.
6 total treatments were performed with the fluence increasing up to 8J.
Tattoo was 85% cleared at the 1 month follow up after their sixth treatment.

Successful Treatment of Paradoxical Darkening

Bae YC, Alabdulrazzaq H, Brauer J, Geronemus R. Successful treatment of paradoxical darkening. Lasers in Surgery and Medicine. 2016;48(5):471-473. doi:10.1002/lsm.22482

Subjects were treated with a 3.4mm spot size, 3J/cm2 fluence to remove unwanted red and black tattoo ink.
The laser resulted in black discoloration of the tattoo ink that was subsequently treated with the picosecond laser.

The degree of erythema in melasma lesion is associated with the severity of disease and the response to the low-fluence Q-switched 1064-nm Nd:YAG laser treatment

Park G-H, Lee JH, Choi JR, Chang SE. The degree of erythema in melasma lesion is associated with the severity of disease and the response to the low-fluence Q-switched 1064-nm Nd:YAG laser treatment. Journal of Dermatological Treatment. 2011;(4):297-299. doi:10.3109/09546634.2011.646938

5-10 treatments were completed every two weeks with the 1064nm wavelength.
Laser parameters included the collimated 7mm spot size handpiece, with a fluence of 1.2-1.4J/cm2, a repetition of 10Hz, and 5-8 passes at each treatment.
It was found that laser treatment was able to reduce both the erythema and pigmentation within the melasma lesion.
Erythema is closely correlated with the severity of the melasma.

The Dual Toning Technique for Melasma Treatment with the 1064 nm Nd:YAG Laser: A Preliminary Study

Kang H, Kim J, Goo B. The dual toning technique for melasma treatment with the 1064 nm Nd: YAG laser: A preliminary study. Laser therapy : an international journal of low level laser therapy and photobioactivation. 2011;20(3):189-194. doi:10.5978/islsm.20.189

Subjects were treated with the 1064nm wavelength with up to 3 passes in Q-switched mode and then 3 passes in micropulsed mode.
Laser parameters included the 5ns pulse duration, 1.2J/cm2 fluence, and a 8mm collimated handpiece with multiple passes.
Laser parameters then set to micropulsed mode with 300us pulse duration, 7.0J/cm2 and 5mm spot size.
A majority of patients saw either a fair or excellent degree of improvement.
There were no reported adverse events.

The new treatment of cafe au lait spot using dr. hoon hur's golden parameter therapy with a high fluence 1064nm q-switched nd: yag laser

Hur H., Kim JH., Park Il, et al. The new treatment of cafe au lait spot using dr. hoon hur's golden parameter therapy with a high fluence 1064nm q-switched nd: yag laser. International Journal of Current Research. 2018;10(4):68082-68086.

Subjects were treated 50 times every week with the 1064nm wavelength, 7mm spot size, a fluence of 2.4J/cm2 and a repetition rate of 10Hz.
Pigmentation was treated with a single pass.
All 97 subjects exhibited complete clearance of their lesions.
The only reported adverse event was slight pain with no instances of recurrence 12 months after treatment.

The New Treatment Of Partial Unilateral Lentiginosis Using Dr. Hoon Hur'S Golden Parameter Therapy With A High Fluence 1064Nm Q-Switched Nd: Yag Laser Without Side Effects

Hur H., Choi YJ., Cheon MS., Kim YR. The New Treatment Of Partial Unilateral Lentiginosis Using Dr. Hoon Hur'S Golden Parameter Therapy With A High Fluence 1064Nm Q-Switched Nd: Yag Laser Without Side Effects. International Journal of Current Research. 2017;9(12)

Patients receieved 50 treatment sessions every week with the 1064nm wavelength, a 7mm spot size, a fluence of 2.4J/cm2 and a repetition rate of 10Hz.
All patients achieved complete clearance of their pigmentation.
There were no instances of hyperpigmentation, hypopigmentation, or recurrence of lesions up to 28 months following treatment

The Treatment of Café Au Lait Spot Using Dr. Hoon Hur's Golden Parameter Therapy

Hur H. The Treatment of Café Au Lait Spot Using Dr. Hoon Hur's Golden Parameter Therapy. Journal of Dermatology and Therapies. 2016;1(1):1-4.

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Patients treated with 30-50 sessions of 1064nm wavelength laser therapy every week.
Parameters of laser were set to 7mm spot size, fluence of 2.4J/cm2, and a repetition rate of 10Hz in a single pass.
Smaller lesions require only 30 treatments while larger lesions may require up to 50 treatments.
All patients are able to achieve complete clearance with no recurrence noted up to 12 months post treatment.

The Treatment of Café Au Lait Spot, Partial Unilateral Lentiginosis and Becker's Nevus Using a High Fluence 1064-nm Q-Switched Nd:Yag Laser

Hur H., Kim YR., Shim DT. The Treatment of Café Au Lait spot, Partial Unilateral Lentiginosis and Becker's Nevus Using a High Fluence 1064-Nm Q-Switched Nd: Yag Laser. Journal of clinical and cosmetic dermatology. 2017;1(2). doi:10.16966/2576-2826.111

Up to 50 treatments were performed on a weekly basis with the 1064nm wavelength.
Laser parameters were set to a spot size of 7mm, a fluence of 2.4J/cm2, and a repetition rate of 10Hz with only a single pass per treatment.
All patients were satisfied with their treatments.
The only reported side effect related ot the treatment was slight pain during the laser treatment itself.

The Treatment Of Erythema Ab Igne Using Dr. Hoon Hur'S Golden Parameter Therapy With A High Fluence 1064Nm Q-Switched Nd: Yag Laser

Hur H., In SI., Cheon MS. et al. The Treatment Of Erythema Ab Igne Using Dr. Hoon Hur'S Golden Parameter Therapy With A High Fluence 1064Nm Q-Switched Nd: Yag Laser. International Journal of Current Research. 2018;10(10):74218-74221

Patients receieved 20 treatments in one week intervals with the 1064nm wavelength.
Laser parameterse were set to a spot size of 7mm, a fluence of 2.4J/cm2, and a repetition rate of 10Hz with a single pass per session.
At the final treatment visit all subjects arrived with a complete clearance of their lesions with no reported side effects.
No recurrence was noted up to 10 months following treatment.

The Treatment of Ota's Nevus Using Dr. Hoon Hur's Golden Parameter with a High Fluence 1064 nm Nd: YAG Laser without Side Effects

Hur H., Park CH., Kim YR., Hyun DN. The Treatment of Ota's Nevus Using Dr. Hoon Hur's Golden Parameter with a High Fluence 1064 nm Nd: YAG Laser without Side Effects. Journal of dermatology research and therapy. 2017;3(2). doi:10.23937/2469-5750/1510047

Patients underwent 30 treatment sessions with a 1064nm wavelength laser every week.
Laser parameters were set to 7mm spot size, a fluence of 2.4J/cm2 and a repetition rate of 10Hz with a total of three passess per treatment.
All patients presented with complete clearance of pigmented lesions and there were no reported side effects outside of treatment pain.

The Treatment Of Postinflammatory Hyperpigmentation Due To Prurigo Pigmentosa Using Dr. Hoon Hur'S Golden Parameter Therapy With A High Fluence 1064Nm Q-Switched Nd: Yag Laser

Hur H., Kim JH., Park Il, et al. The Treatment Of Postinflammatory Hyperpigmentation Due To Prurigo Pigmentosa Using Dr. Hoon Hur'S Golden Parameter Therapy With A High Fluence 1064Nm Q-Switched Nd: Yag Laser. International Journal of Current Research. 2018;10(4):68082-68086.

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Subjects were treated with a 1064nm wavenelgth every week for 30 total treatment sessions.
Laser parameters were set to a 7mm spot size, a fluence of 2.4J/cm2, and a repetition rate of 10Hz with only a single pass per treatment visit.
All subjects exhibited complete clearance of their pigmentation at the final treatment visit.
Subjects returned between 6-12 months post final treatment and there were no instances of recurrence.

Therapeutic Efficacy and Safety of Wavelength-Converted 660-nm Q-Switched Ruby-Like Versatile YAG Treatment on Various Skin Pigmentation Disorders

Goo BL, Kang J-S, Cho SB. Therapeutic Efficacy and Safety of Wavelength-Converted 660-nm Q-Switched Ruby-Like Versatile YAG Treatment on Various Skin Pigmentation Disorders. Medical lasers. 2014;3(2):48-54. doi:10.25289/ML.2014.3.2.48

The 660nm wavelength was used for an average of 1.3 treatments occasionally combined with a 755nm alexandrite or 1064nm NdYAG.
Laser parameters for 660nm were set to a fluence of 2.6-3.0J/cm2, a pulse duration of 5-10ns, and a spot size of 2mm.
Subjects treated with the 1064nm recieved a full face treatment with the single pulse mode and then the Q-PTP was used on specific lesions.
The average subject was satisfied at the end of their treatment regimen and were considered moderately improved.
Small brown lesions and darkly pigmented seborrheic keratosis lesions both responded excellently to the 660nm wavelength treatment.

Treatment and Classification of Nevus of Ota
A Seven-Year Review of a Single Institution's Experience

Nam J-H, Kim H-S, Choi YJ, Jung HJ, Kim W-S. Treatment and Classification of Nevus of Ota: A Seven-Year Review of a Single Institution's Experience. Annals of dermatology. 2017;29(4):446-453. doi:10.5021/ad.2017.29.4.446

Parameters were adjusted on a per patient and lesion basis, with both the standard and PTP delivery method utilized.
Spot size utilized ranged from 2-8mm, fluence and a fluence from 0.4 to 6.0J/cm2
Patients saw reliable and significant improvement with the laser by itself and in combination with other devices.
A 1064nm QS NdYAG laser was the efficient modality for treating Nevus of Ota

Treatment of a Congenital Melanocytic Nevus by New Combination Therapy: Intense Pulsed Light Therapy and Dr. Hoon Hur's Golden Parameter Therapy

Hur H., Park CH., Kim YR., Kim PS. Treatment of a Congenital Melanocytic Nevus by New Combination Therapy: Intense Pulsed Light Therapy and Dr. Hoon Hur's Golden Parameter Therapy. Journal of Dermatology and Therapies. 2017;1(1):12-16.

Subject was first treated with 10 sessions of IPL and then 10 sessions of 1064nm wavelength laser.
Laser parameters were set to 7mm spot size, fluence of 2.4J/cm2 and a repetition rate of 10Hz.
Subject was satisfied with their overall clinical result.
No report of side effects or recurrence up to 24 months following the treatment regimen.

Treatment of Café-au-Lait Macules with a High-Fluenced 1,064-nm Q-switched Neodymium:Yttrium Aluminum Garnet Laser: a Golden Parameter Therapy

Kim J., Hur H., Kim YR., Cho SB. Treatment of Café-au-Lait Macules with a High-Fluenced 1,064-nm Q-switched Neodymium:Yttrium Aluminum Garnet Laser: a Golden Parameter Therapy. Medical Lasers. 2017;6(1):1-6.

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Patients were treated with the 1064nm wavelength up to 24 times every two weeks.
Laser parameters used in the study were a spot size of 7.0-7.5mm, a fluence of 2.4-2.5J/cm2, and up to two passess until mild erythema was induced.
All patients showed marked improvement and clearance in their pigmented areas after treatment.
No reports of remarkable side effects or recurrence during follow up periods up to two years post treatment.

Treatment of café-au-lait macules with a high-fluenced 1064-nm Q-switched neodymium:yttrium aluminum garnet laser

Kim J, Hur H, Kim YR, Cho SB. Treatment of café-au-lait macules with a high-fluenced 1064-nm Q-switched neodymium:yttrium aluminum garnet laser. Journal of Cosmetic and Laser Therapy. 2018;20(1):17-20. doi:10.1080/14764172.2017.1349324

Patients were treated with the 1064nm wavelength up to 24 times every two weeks.
Laser parameters used in the study were a spot size of 7.0-7.5mm, a fluence of 2.4-2.5J/cm2, and up to two passess until mild erythema was induced.
All patients showed marked improvement and clearance in their pigmented areas after treatment.
No reports of remarkable side effects or recurrence during follow up periods up to two years post treatment.

Treatment of early-stage erythematotelangiectatic rosacea with a Q-switched 595-nm Nd:YAG laser

Goo BL, Kang J-S, Cho SB. Treatment of early-stage erythematotelangiectatic rosacea with a Q-switched 595-nm Nd:YAG laser. Journal of Cosmetic and Laser Therapy. 2015;17(3):139-142. doi:10.3109/14764172.2014.1003239

Subjects were treated six times with the 1064nm for melasma and 595nm for erythematotelangiectatic rosacea every two weeks.
1064nm was delivered to full face with Q-PTP, fluence of 1.6-2.0J/cm2, pulse duration of 5-10ns, 7mm spot size, repetition rate of 10Hz for a total of 2,000 shots.
The 595nm settings were a fluence of 0.4-0.5J/cm2, a pulse duration of 5-10ns, a 5mm spot size, repetition rate of 5Hz for a total of 500 shots.
Subjects exhibited significant clinical improvement as early as after three treatments.
Both subjects were satisfied with their clinical results and reported no significant side effects.

Treatment Of Enlarged Pores With The Quasi Long-Pulsed Versus Q-Switched 1064 Nm Nd:Yag Lasers: A Split-Face, Comparative, Controlled Study

Roh M, Goo B, Jung J, Chung H, Chung K. Treatment Of Enlarged Pores With The Quasi Long-Pulsed Versus Q-Switched 1064 Nm Nd:Yag Lasers: A Split-Face, Comparative, Controlled Study. Laser therapy : an international journal of low level laser therapy and photobioactivation. 2011;20(3):175-180. doi:10.5978/islsm.20.175

Carbon lotion was applied to one half of the face and then the entire face was treated with the 1064nm wavelength; this was done 5 times every three weeks.
A single pass was first done with fluence of, 2.3J/cm2, pulse duration of 300microsecond and 7mm spot size.
Immediately after the settings were changed 5ns pulse duration with 2.5J/cm2 and 7mm spot size.
75% of subjects showed improvement in the lotion plus 1064 treated side which was slightly reduced to 67% in the laser only side.
Pore sze and sebum levels were also significantly reduced on both treatment sides.

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Treatment of Erythema Ab Igne with Combination of Topical Hydroquinone and 1,064-nm Q-switched Neodymium-Doped Yttrium Aluminum Garnet Laser with Low Fluence

Kim JI., Seo HM., Kim YH. et al. Treatment of Erythema Ab Igne with Combination of Topical Hydroquinone and 1,064-nm Q-switched Neodymium-Doped Yttrium Aluminum Garnet Laser with Low Fluence. Medical Lasers. 2013;2(2):73-75.

Patient was treated with the 1064nm wavelength in monthly intervals in addition to hydroquinone cream used every night.

Laser settings included a fluence of 1.8J/cm2, an 8mm spot size, and two passes per treatment.

The patient's lesions were almost cleared after four treatments with no complications.

Treatment of melasma with a low-fluence 1064 nm Q-switched Nd:YAG laser: Laser toning in Caucasian women

Micek I, Pawlaczyk M, Kroma A, Seraszek-Jaros A, Urbańska M, Gornowicz-Porowska J. Treatment of melasma with a low-fluence 1064 nm Q-switched Nd:YAG laser: Laser toning in Caucasian women. Lasers in Surgery and Medicine. 2022;54(3):366-373. doi:10.1002/lsm.23474

Subjects were treated 9 times with the 1064nm wavelength.

Laser parameters were set to a fluence of 1.7-3.2J/cm2, a spot size of 6-8mm, pulse duration of 5ns and a total of 2-8 passes.

The mean melanin index and melasma severity scoring indicated a statistically significant improvement in subject's conditions.

70% of patients rated that the treatment met their expectations, with results persisting up to one year following treatment.

Treatment of Nevus of Ota using a Low Fluence Q-switched Nd:YAG Laser

Choi CW, Kim HJ, Lee HJ, Kim YH, Kim W. Treatment of nevus of Ota using low fluence Q-switched Nd:YAG laser. International Journal of Dermatology. 2014;53(7):861-865. doi:10.1111/ijd.12085

Laser treatments with the 1064nm wavelength were performed every two weeks, with an average of 17 sesesions.

The fluence for the treatments was 2.0-5.0J/cm2.

All but one patient achieved total clearance of their lesions.

Adverse events were minimal with only one instance of hyperpigmentation.

Treatment of Traumatic Tattoo with the Q-Switched Nd:YAG Laser

Gorouhi F, Davari P, Kashani MN, Firooz A. Treatment of traumatic tattoo with the Q-switched Nd:YAG laser. Journal of Cosmetic and Laser Therapy. 2007;9(4):253-255. doi:10.1080/14764170701708263

The patient was treated with the 1064nm wavelength with each half of the face treated one time in two separate sessions.

Fluence was set to 7.96J/cm2, spot size set to 4mm.

Patient was assessed as having a clearance rate of 75-100% at his follow-up visits and the patient was highly satisfied.

There were no complications resulting from the treatment.

Use of 1,064-nm Q-switched Neodymium:Yttrium-aluminumgarnet Laser Therapy Assisted with Diamond Particle Suspension and Gold Microparticle Application for Acne Vulgaris and Enlarged Facial Pores

Park HU, Cho H, Lee SJ, Cho HK. Use of 1,064-nm Q-switched Neodymium:Yttrium-aluminumgarnet Laser Therapy Assisted with Diamond Particle Suspension and Gold Microparticle Application for Acne Vulgaris and Enlarged Facial Pores. Medical lasers. 2021;10(4):242-245. doi:10.25289/ML.2021.10.4.242

The subjects were treated with the 1064nm wavelength and a total of 3000 pulses were delivered per treatment session.
Laser parameters were set to a spot size of 8mm, a fluence of 1.3J/cm2, and repetition rate of 10Hz.
The treatment protocol improved subject's sebum secretion, acne outbreak, pore size, skin texture, redness, and hyperpigmentation scars of acne lesions.

Use of 532-nm Q-switched Nd:YAG Laser for Smoker's Gingival Hyperpigmenation

Cho SB., Lee JH., Seo W., Bang D. Use of 532-nm Q-switched Nd:YAG laser for smoker's gingival hyperpigmentation. Journal of Cosmetic and Laser Therapy. 2010;12(2):77-80. doi:10.3109/14764171003706174

Subjects were treated up to 3 times with the 532nm wavelength in one month intervals.
Laser parameters were set to 1.2J/cm2 with a 5mm spot size.
Clinical improvements in addition to full healing of the gingiva were found within 2 weeks post treatment.
Results lasted more than 6 months and patients were highly satisfied