

Guidelines for the Use of the

ULTRA *Pulse* ENCORE™

CO₂ Aesthetic Laser System in Treating Various Dermatologic Conditions

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A Breadth of Applications for the Aesthetic Practice

Advances in computerized laser systems, a better understanding of the laser/tissue interactions, and refinements in laser techniques, has made the UltraPulse Encore a safe and effective choice for your aesthetic practice. The UltraPulse Encore is the preferred treatment for facial resurfacing and is effective for treating an expanded number of cutaneous lesions, thus augmenting the current list of clinical indications.

Although the UltraPulse Encore laser system is often used in the defocused mode as a vaporization tool, it can also be used in the focused mode as a surgical scalpel in excising lesions such as pilar cysts of the scalp, lipomas, sebaceous cysts, basal cell carcinomas, squamous

cell carcinomas, and numerous other selected conditions. The focused laser technique has made the upper eyelid transcutaneous blepharoplasty and the lower eyelid transconjunctival blepharoplasty a bloodless procedure.

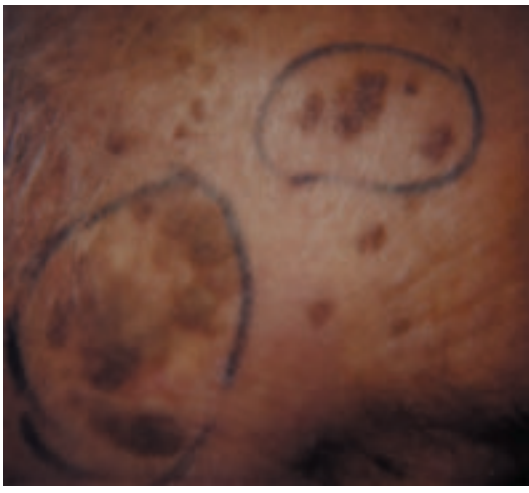
Other advantages of the UltraPulse Encore laser include the CoolScan™ and CO₂ Lite™ modes. The CoolScan mode delivers CPG™ spots within the preselected pattern non-contiguously. This feature allows more time for tissue to cool between adjacent spots. The CO₂ Lite mode allows for a gentle resurfacing that is confined to the epidermis. With this feature, only one pass is required for patients with fine lines, mild photodamage, and pigment dysfunction.



Aesthetic Accessories



The UltraScan™ Encore CPG™ in



Patient

71-year old male, skin type II

Condition

Seborrheic keratosis

Treatment

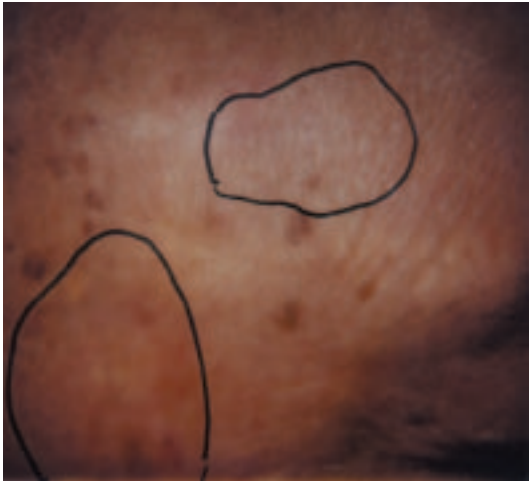
Laser ablation using the UltraPulse Encore with the TrueSpot™ 2 mm collimated handpiece

Laser Settings

Energy: 100 mJ; Repetition rate: 75 Hz; Power: 7.5 W

Technique

Vaporized, lightly curetted off vaporized keratosis and revaporized base



Postoperative Results

6 weeks post laser treatment: excellent clearing, subtle pinkness

Patient

8-year old male, skin type II

Condition

Benign congenital pigmented compound nevus on right lateral ridge of nose

Treatment

Laser ablation using the UltraPulse Encore with the TrueSpot 2 mm collimated handpiece

Laser Settings

Energy: 100 mJ; Repetition rate: 50 Hz; Power: 5 W

Technique

Vaporized lesion in layers; removed eschar with curette; end point is complete disappearance of pigment clinically



Postoperative Results

4 weeks post laser treatment: excellent clearing with only one treatment session, 80% improvement





Patient

53-year old male, skin type IV

Condition

Dermatosis papulosa nigra lesions on left cheek

Treatment

Test area treated with laser excision using the UltraPulse Encore with the 0.2 mm incisional handpiece

Laser Settings

Energy: 100 mJ; Repetition rate: 15 - 25 Hz; Power: 1.5 - 2.5 W

Technique

Vaporized, lightly curetted, and revaporized base, making sure not to overtreat; endpoint is complete disappearance of pigmented DPN tissue



Postoperative Results

4 weeks post laser treatment of test area: no pigmentation changes, 90% improvement

Patient

13-year old male, skin type IV

Condition

Nevus verrucosus (epidermal nevus) on right posterior axillary fold area

Treatment

Laser excision using the UltraPulse Encore laser with the 0.2 mm incisional handpiece

Laser Settings

Energy: 100 mJ; Repetition rate: 50 - 100 Hz; Power: 5 - 10 W

Technique

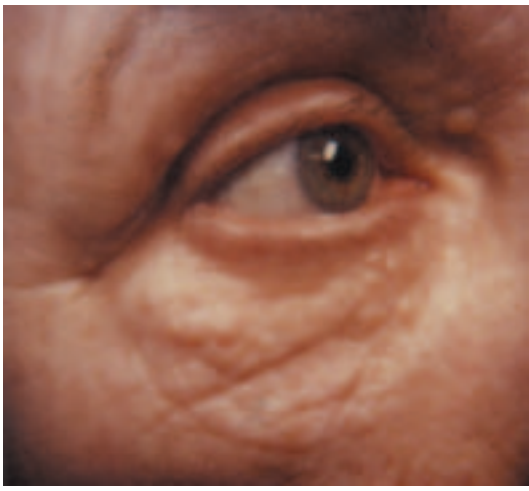
Completely excised verrucous tissue with UltraPulse Encore; removed eschar with the UltraFine™ Erbium: YAG laser (alternatively, eschar could be removed with curette); UltraFine Erbium: YAG laser settings: Fluence: 7 J/cm²; Repetition rate: 10 Hz; Spot size: 6 mm



Postoperative Results

4-1/2 weeks post combination laser treatment: excellent clearing, 90% improvement





Patient

68-year old female, skin type II

Condition

Syringomas on lower eyelid combined with elastotic wrinkling in the lower eyelid zone

Treatment for Syringomas

Laser excision using the UltraPulse Encore with the 0.2 mm incisional handpiece

Laser Settings

Energy: 100 mJ; Repetition rate 15-50 Hz; Power: 1.5 – 5 W

Treatment for Elastotic Wrinkling

Laser ablation using the UltraPulse Encore with the UltraScan Encore CPG (Computer Pattern Generator)

Laser Settings

CoolScan: On; Energy: 100 mJ; Repetition rate: 600 Hz; Pattern: Number 3, Size: 5, Density: 6; Repeat delay: 0.5 sec; 1 pass only

Technique

Excised syringomas, resurfaced lower lids using a single pass of the UltraPulse Encore CO₂ laser, feathered and blended edges with the UltraFine Erbium: YAG laser (another option would be to feather and blend with the UltraPulse Encore laser using lower energy or pattern density settings); UltraFine Erbium: YAG laser settings: Fluence: 7 J/cm²; Repetition rate: 10 Hz; Spot size: 6 mm



Postoperative Results

7 weeks post combination laser treatment: 85 - 90% improvement

Patient

65-year old female, skin type IV

Condition

Severe post ear piercing keloid scars on right ear lobe

Treatment for Excising Bulk

Laser excision using the UltraPulse Encore with the 0.2 mm incisional handpiece

Laser Settings

Mode: CW; Power: 10 W

Treatment for Resurfacing

Laser ablation using the UltraPulse Encore with the UltraScan Encore CPG

Laser Settings

CoolScan: Off; Energy: 100 mJ; Repetition rate: 600 Hz; Pattern: #3, Size 3-6, Density 7-8; Repeat delay: 0.1 sec

Technique

Excised bulk of keloid, Vaporized base of scar and blended edges



Postoperative Results

7-1/2 weeks post laser treatment: excellent healing with 90% improvement



Patient

35-year old female, skin type III

Condition

Pyogenic granuloma on left long finger

Treatment

Laser excision using the UltraPulse Encore with the 0.2 mm incisional handpiece

Laser Settings

Energy: 100 mJ; Repetition rate: 50 Hz; Power: 5 W



Postoperative Results

4 weeks post laser treatment: 100% clearing

Patient

28-year old female, skin type III

Condition

Severe paronychia warts on left fourth and fifth fingers

Treatment

Laser excision using the UltraPulse Encore with the 0.2 mm non-collimated handpiece

Laser Settings

Energy: 100 mJ; Repetition rate: 50 - 100 Hz; Power: 5 - 10 W

Technique

Vaporized warts, curetted lesion in layers, revaporized base, and feathered edges



Postoperative Results

5 weeks post laser treatment: 100% clearing





Patient

68-year old male, skin type II

Condition

Chronic sun damage and damage caused from cigarette smoking resulting in severe actinic cheilitis and leukoplakia of the lower lip; biopsy shows early well-differentiated squamous cell carcinoma

Treatment

Lower lip laser vermillionectomy using the UltraPulse Encore with the TrueSpot 2 mm collimated handpiece

Laser Settings

Energy: 100 mJ; Repetition rate: 50 - 100 Hz; Power: 5 - 10 W

Technique

Vaporized entire vermilion zone focusing on the more damaged tissue, curetted lesion in layers, revaporized base, and feathered edges

Postoperative Results

3 weeks post laser treatment: 100% clearing; saved integrity of the entire vermilion zone



Patient

65-year old male, skin type III

Condition

Post mixed hemangioma of left upper lip that was treated with vascular lasers resulting in a combination of pitted and hypertrophic scarring

Treatment

Laser ablation using the UltraPulse Encore with the UltraScan Encore CPG

Laser Settings

CoolScan: On; Energy: 100 mJ; Repetition rate: 600 Hz; Pattern: #3, Size 5-7, Density 7; Repeat delay: 0.3 sec

Technique

Performed multiple aggressive passes until base was vaporized and scars flattened, feathered and blended edges

Postoperative Results

6 weeks post laser treatment: 90% improvement





Patient

76-year old male, skin type II

Condition

Very severe long-standing rhinophyma

Treatment

Laser ablation using the UltraPulse Encore with the TrueSpot 2 mm collimated handpiece

Laser Settings

Energy: 100 mJ; Repetition rate: 75 - 150 Hz; Power: 7.5 – 15 W

Treatment for Blending and Feathering

Laser ablation using the UltraPulse Encore with the UltraScan Encore CPG

Laser Settings

CoolScan: On; Energy: 100 mJ; Repetition rate: 600 Hz; Pattern: #3, Size 5, Density 7; Repeat delay: 0.3 sec

Technique

Administered 4% regional blocks and sedation; aggressively vaporized all involved tissue using the TrueSpot handpiece, feathered and blended edges, and contoured nose to its previous shape using the CPG handpiece



Postoperative Results

6 weeks post laser treatment: 90% improvement

Patient

58-year old female, skin type II

Condition

Baggy upper eyelids caused by dermatochalasis and fat prolapse; elastotic wrinkling of crow's feet and lower eyelid

Treatment for the Upper Eyelid

Laser excision using the UltraPulse Encore with the 0.2 mm incisional handpiece

Laser Settings

Mode: CW; Power: 4W

Treatment for resurfacing

Laser ablation using the UltraPulse Encore with the UltraScan Encore CPG

Laser Settings

CoolScan: On; Energy: 100 mJ; Repetition rate: 600 Hz; Pattern: #3, Size 5, Density 6; Repeat delay: 0.5 sec

Technique

Performed upper eyelid transcutaneous blepharoplasty using the 0.2 mm incisional handpiece, made one pass with the Encore CPG, removed eschar with saline-soaked gauze



Postoperative Results

8 weeks post laser treatment: dramatic improvement



Patient

59-year old female, skin type II

Condition

Severe elastotic wrinkling of the perioral area, loss of lip lines, flattening of the upper lip, and loss of the philtrum (cupid's bow)

Combination Treatment

Treatment and Laser Settings for First Pass

Laser ablation using the UltraPulse Encore with the UltraScan Encore CPG – CoolScan: On; Energy: 100 mJ; Repetition rate: 600 Hz; Pattern: #3, Size 5, Density 7; Repeat delay: 0.5 sec; eschar from first pass removed with the UltraFine Erbium: YAG (alternatively, eschar could be removed with saline-soaked gauze) – Fluence: 7 J/cm²; Spot size: 6 mm

Treatment and Laser Settings for Next Three Passes

Laser ablation using the UltraPulse Encore with the UltraScan Encore CPG – Cool Scan: On; Energy: 100 mJ; Repetition rate: 600 Hz; Pattern: #3, Size 5, Density 7; Repeat delay: 0.5 sec

Treatment and Laser Settings for Remaining Deep Fissures, Lateral Commissure and Upper and Lower Lip

Laser ablation using the UltraPulse Encore with the UltraScan Encore CPG – Cool Scan: On; Energy: 100 mJ; Repetition rate: 600 Hz; Pattern: #3, Size 3, Density 7; Repeat delay: 0.1 sec

Treatment and Laser Settings for Feathering and Blending Edges

Laser ablation using the UltraFine Erbium: YAG – Fluence: 4 J/cm²; Spot size: 4 mm (another option would be to feather and blend with the UltraPulse Encore laser using lower energy or pattern density settings)

Treatment and Laser Settings for Redrawing Lip Line

Laser ablation using the UltraPulse Encore with the UltraScan Encore CPG, still attached, but turned off – Energy: 100 mJ; Repetition rate: 40 Hz; Power: 4 W; Spot size: 1.3 mm



Technique

Made one pass over the whole treatment area and removed eschar with the UltraFine Erbium: YAG laser (alternatively, eschar could be removed with saline soaked gauze); made three passes with the CPG to resurface; assertively vaporized remaining deep fissures, lateral commissure, and upper and lower lip down to mid to low dermis with the CPG; redrew and accentuated the lip line and cupid's bow area with the CPG attached, but turned off

Postoperative Results

6 weeks post laser combination treatment: restoration of smooth lip line, re-establishment of philtrum (cupid's bow), 90% improvement of wrinkles





Patient

64-year old female, skin type II

Condition

Perioral wrinkling and severe elastotic changes

Combination Treatment

Treatment and Laser Settings for First Pass

Laser ablation using the UltraPulse Encore with the UltraScan Encore CPG – CoolScan: On; Energy: 100 mJ; Repetition rate: 600 Hz; Pattern: #3, Size 5, Density 7; Repeat delay: 0.5 sec, removed eschar from first pass with the UltraFine Erbium: YAG (alternatively, eschar could be removed with saline-soaked gauze) – Fluence: 7 J/cm²; Spot size: 6 mm

Treatment and Laser Settings for Next Three Passes

Laser ablation using the UltraPulse Encore with the UltraScan Encore CPG – Cool Scan: On; Energy: 100 mJ; Repetition rate: 600 Hz; Pattern: #3, Size 5, Density 7; Repeat delay: 0.5 sec

Treatment and Laser Settings for Remaining Deep Fissures, Lateral Commissure and Upper and Lower Lip

Laser ablation using the UltraPulse Encore with the UltraScan Encore CPG – Cool Scan: On; Energy: 100 mJ; Repetition rate: 600 Hz; Pattern: #3, Size 3, Density 7; Repeat delay: 0.3 sec

Treatment and Laser Settings for Feathering and Blending Edges

Laser ablation using the UltraFine Erbium: YAG – Fluence: 4 J/cm²; Spot size: 4 mm (another option would be to feather and blend with the UltraPulse Encore laser using lower energy or pattern density settings)

Treatment and Laser Settings for Redrawing Lip Line

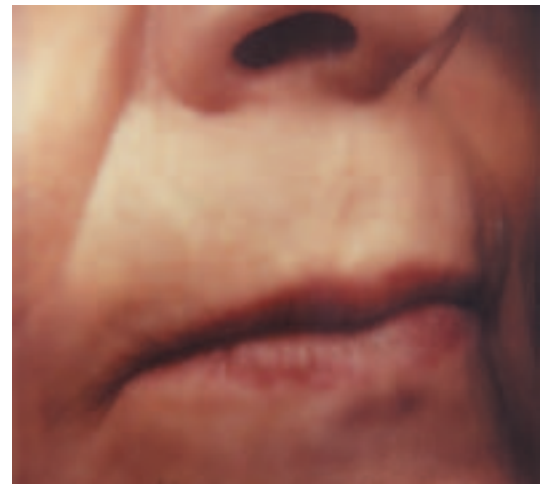
Laser ablation using the UltraPulse Encore with the UltraScan Encore CPG, still attached, but turned off – Energy: 100 mJ; Repetition rate: 40 Hz; Power: 4 W; Spot size: 1.3 mm

Technique

Made one pass over the whole treatment area and removed eschar with the UltraFine Erbium: YAG laser (alternatively, eschar could be removed with saline-soaked gauze), made three passes with the Encore CPG to resurface, carefully vaporized the lateral commissure and vertical wrinkles to the mid dermis level with the CPG, redrew and accentuated the lip line and cupid's bow area with the CPG attached, but turned off

Postoperative Results

7 weeks post laser combination treatment: 90% improvement of wrinkles, lip lines restored





Patient

72-year old female, skin type II

Condition

Severe elastotic wrinkling involving the perioral area influenced by actinic damage, genetics, and smoking

Treatment and Laser Settings for First Pass

Laser ablation using the UltraPulse Encore with the UltraScan Encore CPG – CoolScan: Off; Energy: 100 mJ; Repetition rate: 600 Hz; Pattern: #3, Size 5, Density 7; Repeat delay: 0.5 sec, removed eschar from first pass with the UltraFine Erbium: YAG (alternatively, eschar could be removed with saline-soaked gauze) – Fluence: 7 J/cm²; Spot size: 6 mm

Treatment and Laser Settings for Next Four Passes

Laser ablation using the UltraPulse Encore with the UltraScan Encore CPG – CoolScan: Off for first two passes and On for last two passes; Energy: 100 mJ; Repetition rate: 600 Hz; Pattern: #3, Size 5, Density 7; Repeat delay: 0.5 sec.

Treatment and Laser Settings for Remaining Deep Fissures, Lateral Commissure and Upper and Lower Lip

Laser ablation using the UltraPulse Encore with the UltraScan Encore CPG – Cool Scan: On; Energy: 100 mJ; Repetition rate: 600 Hz; Pattern: #3, Size 3, Density 7; Repeat delay: 0.1 sec

Treatment and Laser Settings for Feathering and Blending Edges

Laser ablation using the UltraFine Erbium: YAG – Fluence: 4 J/cm²; Spot size: 4 mm (another option would be to feather and blend with the UltraPulse Encore laser using lower energy or pattern density settings)

Treatment and Laser Settings for Redrawing Lip Line

Laser ablation using the UltraPulse Encore with the UltraScan Encore CPG, still attached, but turned off – Energy: 100 mJ; Repetition rate: 40 Hz; Power: 4 W; Spot size: 1.3 mm

Technique

Made one pass over the whole treatment area and removed eschar with the UltraFine Erbium: YAG laser (alternatively, eschar could be removed with saline-soaked gauze), made four additional passes with the Encore CPG, carefully vaporized the lateral commissure, vertical wrinkles, and horizontal wrinkles through the philtrum to the mid to low dermis level with the CPG, feathered and blended the edges with the UltraFine Erbium: YAG laser (another option would be to feather and blend with the UltraPulse Encore laser using lower energy or pattern density settings), redrew and accentuated the lip line and cupid's bow area with the CPG attached, but turned off



Postoperative Results

2 months post laser combination treatment: 90% improvement of wrinkles, upper and lower lip lines restored, improved philtrum



Patient

52-year old female, skin type IV

Condition

Baggy upper and lower eyelids caused by dermatochalasis and fat prolapse

Treatment

Laser excision using the UltraPulse Encore with the 0.2 mm incisional handpiece

Laser Settings

Mode: CW; Power: 4W

Technique

Performed upper eyelid transcutaneous blepharoplasty and lower eyelid transconjunctival blepharoplasty using the focused incisional handpiece; 75% - 80% of lateral, middle, and medial fat pads were removed from the lower lid



Postoperative Results

2 months post laser treatment: 90% improvement

Patient

35-year old female, skin type II

Condition

Post acne scarring ice pick scars, split pores, and some atrophic scars

Treatment and Laser Settings for Resurfacing

Laser ablation using the UltraPulse Encore with the UltraScan Encore CPG – CoolScan: Off for two passes and On for three passes; Energy: 100 mJ; Repetition rate: 600 Hz; Pattern: #3, Size 5-9, Density 7, Repeat delay: 0.3-0.5 sec

Treatment and Laser Settings for Feathering and Blending Edges

Laser treatment using the UltraFine Erbium: YAG – Fluence: 7 J/cm²; Spot size: 6 mm (another option would be to feather and blend with the UltraPulse Encore laser using lower energy or pattern density settings)

Technique

Performed full face resurfacing with Encore CPG, making 2 passes with CoolScan Off and then another three passes with CoolScan On; removed eschar between passes and feathered edges with the UltraFine Erbium: YAG (alternatively, eschar could be removed with saline-soaked gauze and edges could be feathered with the UltraPulse Encore laser using lower energy or pattern density settings)

Postoperative Results

8-1/2 weeks post combination laser treatment: 50% improvement in texture, tone and color



ULTRA *Pulse* ENCORE™

CO₂ Aesthetic Laser System

Selected Cutaneous Lesions/Conditions Treated with the UltraPulse Encore Laser

Nevoid Lesions

Generally collimated beam, defocused vaporization method (TrueSpot 2 mm collimated handpiece)

Aggressive Seborrheic Keratoses
Benign Protruding Nevi
Dermatosis Papulosa Nigra (DPN's) — Face and neck

Pre-Malignant & Malignant Cutaneous Lesions

Generally collimated beam, defocused vaporization method or excision technique depending on the circumstance of the lesion

Collimated beam, defocused vaporization method

Hypertrophic Actinic Keratoses
Cutaneous Horns
Keratoacanthomas
Bowen's Disease
Basal Cell Carcinomas (only selected cases)
Squamous Cell Carcinomas (only selected cases)

Excision mode only (0.2 mm incisional handpiece)

Lentigo Maligna
Malignant Melanomas
Basal Cell Carcinomas
Squamous Cell Carcinomas

Inflammatory Lesions

Pyogenic Granulomas

Other lesions

Collimated beam, defocused vaporization method (Option of excision mode)

Aggressive or Resistant Warts (Condylomata Acuminata, Paronychial, Subungual and some Plantar Warts)
Epidermal Nevi—Nevus Verrucosus
Tuberous Sclerosis Lesions of the Face and Koenon's Fibromas (nailfolds)
Bowenoid Papulosa (Genital Area)
Multiple larger facial Milia and Sebaceous Hyperplasia
Oral lesions (Leukoplakia; Fibromas)
Chondrodermatitis Nodularis Chronica Helicis — ears
Facial Keloids
Acne Keloidalis Nuchae — nape/occiput of neck
Syringomas (usually periorbital area)
Xanthelasma (eyelids)
Trichoepitheliomas

Excision mode

Epidermal inclusion cysts — Sebaceous Cysts, Pilar Cysts or equivalent, Mucous Cysts of the lips
Lipomas

Special treatments

Collimated beam, defocused vaporization method

Rhinophymas
Facial resurfacing with CPG (wrinkles; certain facial scars)
Lower lip Vermilionectomy (Leukoplakia/Actinic Cheilitis)
Bowenoid Papulosa Lesions
Erythroplasia of Queyrat (Pre-cancerous genital lesions)

Excision Mode

Upper eyelid transcutaneous blepharoplasties
Lower eyelid transconjunctival blepharoplasties

Note:

Laser treatment parameters are provided as a guide. Individual treatments should be based upon clinical observation of laser-tissue interaction and appropriate clinical end points.

Clinical commentary and photographs courtesy of B. Kent Remington, M.D., F.R.C.P. (C), Calgary, Alberta, Canada

Caution: U.S. law restricts this device to sale by or on the order of a physician.



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PB0000175