Using Photobiomodulating Lasers in pediatric dentistry

Q1000 660nm probe & globe

660nm probe

Thor lasers

Off label use

Low Level lasers are considered by the FDA as a Medical device that poses NO SIGNIFICANT RISK (NSR) to patients.

No FDA -IRB (Institutional Review Board) review is required if the off label use is used to treat patients and is not part of a research project.

What are the benefits of using these lasers

Requires no injections of any drugs or needles

A procedure that has been tested for more than 30 years and poses no significant risk or side effects to patients.

A way prevent pain, reduces swelling and inflammation, improves wound healing, promotes bone formation and repairs injured nerves.

PBM safety

✓ PBM cannot cut tissue.
✓ PBM does not produce thermal effects.
✓ PBM produces therapeutic effects at the cellular level to restore cell health.
✓ PBM represents an alternative to pharmacologic treatment of pain, trauma and healing.
✓ Use has no effect on healthy cells
✓ Restores health to injured cells
✓ Accelerates healing and tissue regeneration
✓ Reduces pain
✓ Reduces inflammation: anti-inflammatory effect
✓ Photochemical effect
1. Lasers that operate using energy densities below the threshold where irreversible changes in cells occur.

2.*Stimulates natural biological processes preventing cells from operating in an acidic (redox) state to an alkaline state to perform optimally.

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Acupuncture + Photobiomodulating laser treatment

P6 (Nei guan meridian point)=reduce gag reflex

P6- Acupressure Point is located in adults on the anterior surface of the forearm, approximately three finger widths down from the first wrist crease. (children about two+ fingers)

NaCl

660nm probe, 3-4 joules one minute at the P6 point reduces gag reflex in many patients

Isolite placed on patient with gag reflex problem.


Procedures utilizing photobiostimulation in my office

- Control of bleeding
- Non-dental uses
- Reduces or eliminate the need for numbing or mandibular blocks
- Improved numbing when topical is used
- Treatment of TMJ Pain
- Soft tissue trauma
- Faster and improves
- Hard tissue trauma
- Treatment of herpes and other lesions

Treatment of chronic TMJ pain or post orthodontic adjustment

Intra-orally

Directly over TMJ site

Q1000 Mode 1, three minutes; 660 probe intraorally 1 minute ,Thor 2.5w 1 minute
Viral & herpes like lesions

- Mode 3: one minute each cheek, intraorally
- 660nm probe 30 seconds on large lesions
- Parent said excellent relief that night
- 4 days later returned almost lesion free

Avoid mandibular blocks, just infiltrations

- 660 nm probe 1 minute buccal and lingually

- Increased uptake of anesthetic agent (can also be used to get rid of numbing more quickly)
- Reduction of swelling if you injure a blood vessel during injection
- Effective patient management
- No more lip or tongue bitting!

Reduction or elimination for local anestheisa

- 660nm laser treatment for one-two minutes: 2-4 j

Creating laser initiated hard tissue analgesia with hot lasers

- A photobiostimulating effect
- Reduced local anesthetic requirements
- Allows for using High Speed handpiece
- Success rate 80-90 percent of the patients
Soft tissue trauma

Child fell on a coffee table and pushed maxillary gingival tissue upward, laceration of inside of upper lip, required suturing and repositioning of gingival tissue and removal of teeth g,e,f.

After suturing

2.5 days

6 days

6 days

2.5 days

Maintain tooth vitality (660nm)

- Traumatic injury to primary teeth
- In many cases normal effect of trauma causes primary teeth to devitalize in 2-6 weeks after traumatic injury.
- Laser 1 minute (day 1 and day 3) = vitality remains

Initial trauma

5 days post trauma

2 months post trauma

9 mo post trauma

2 years post

Trauma to upper anterior teeth, partially extruded

660 nm laser probe for 2 minutes

1 month

3 months

2/15/2006

3/10/2006

5/15/2006

1/28/2008

2 years

Maintain permanent teeth vitality

Tooth had 660nm laser placed for 2 minutes on partially avulsed left central incisor. This was repeated on day 4 and day 14 (4.4j)

Week two

Week six

17 months
Partial avulsion of lower central incisors and fracture of buccal plate of bone 11/3/2010

Lawrence Kotlow DDS
14 month old trauma Nov 2010

14 month old infant

Deep second or third degree burn using laser since day 3
Q1000 Photobiostimulating Laser Approx. 4 J/min 3 minutes

Bone fracture and soft tissue trauma
Thor Laser
Small globe
2.5 1 m
660 probe
2.5 1 m

11/5/2014 10:52 am
11/5/2014 10:55 am
11/6/2014 8:25 am
11/19/2014
12/2/2014
12/28/2015

Day 3 1st treatment
Day 4 view after 24 hrs & 2nd treatment
Day 5 view after 48 hrs & 3rd treatment
Day 6 view 72 hrs & 4th treatment
Day 7 /view after 4th treatment
1 year post burn

Day 10 /after 5 treatments
Day 13 /6 laser treatments
Day 18 after 7 laser treatments
5 weeks post treatment
1 year post burn

Thank you for your interest and time today