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WORKING WITH LASERS IN DENTISTRY AND THEIR ADVANTAGES

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Abstract: Systems in dentistry. Based on the research findings, the author proposes practical recommendations for expanding the use of laser technologies in clinical practice, suggesting their potential to transform modern dental care by improving treatment outcomes and promoting patient well-being This scientific article provides an in-depth analysis of the application of laser technologies in modern dentistry, highlighting their clinical advantages and growing importance in dental procedures. The use of laser systems has become one of the most advanced methods in dental practice, offering minimally invasive, pain-free, and highly precise treatment alternatives to traditional techniques. The article examines the fundamental mechanisms by which laser beams interact with biological tissues, specifically photothermal, photochemical, and microexplosive effects. Furthermore, various types of lasers — including diode lasers, erbium (Er:YAG) lasers, and CO_2 lasers — are reviewed with regard to their application on both soft and hard tissues. Their technical specifications, therapeutic properties, and clinical benefits are thoroughly discussed. The article explores the use of lasers in periodontal therapy, caries removal, root canal treatment, teeth whitening, mucosal surgeries, and biopsy procedures. A comparative assessment between traditional and laser-based approaches reveals significant advantages in terms of reduced bleeding, lower risk of infection, shortened healing times, and enhanced patient comfort. In addition, the study emphasizes the importance of professional training, accurate device calibration, and adherence to safety protocols when using laser.

Keywords: Dentistry, laser technology, diode laser, CO_2 laser, erbium laser, photothermal effect, painless treatment, soft tissue, hard tissue, periodontal therapy, teeth whitening, biopsy, modern procedures.

The use of the laser system in medicine can be divided into 3 larger groups:

-Lazer surgery - based on detergent detection: heat, hydrodynamic and photochemical impacts of laser rays is called a designation in tissues.

- laser treatment based on photoschemical and photophysical properties of - laser. In this case, laser rays swallowed by tissues will cause atoms and molecules, resulting in a number of positive mechanisms in the body, rearigated processes will increase, acute inflammatory processes are reduced.

- With the help of lasers, the diagnosis is not yet to call the changes that lasers change the properties of tissue properties. Effects such as spreading, reflection, absorption of lasers are used. There are several procedures for lasers: impulses, uninterrupted and mixed. The

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voltage to be given according to the above procedure is selected. Laser species absorption depth and chromos and others.

Laser species used in medicine and dentistry

The technique equipment is as follows; A lightest patient is transferred to a chair, the beginning is fixed from 50-100sm from IQ radiation man. Cardboard protects with paper with eyes mirror with glasses, it protects the light from the sight of the eye. It is impossible to move the light phone around the patient who is lying to avoid random trauma. After the treatment, the patient should rest 20-30 minutes, especially in cold seasons. Advantages of laser treatment: The use of laser technology is a new procedure in terms of quality, Comfort, the range of opportunities, can be introduced. Features: laser light is monochromatic, it consists of the same frequency rays, and lasers consists only one color light. Transfer the laser light set through a prism, and you will only get one light while exit. The released laser light is a cognitive. This means that electromagnetic vibrations propagate in each other and on time. They form a wave line. Laser light is considered collected. This word means that the light spreads with a very few "consumption" on the straight line. These three qualities: monochogical, competitivity and collection ensures the necessary and necessary conditions to call light laser, ensuring the effectiveness of the biangic tissue.

Laser radiation and biological radiation are when the biological radiation comes into biologygic tissue, their interaction depends on the frequency and capacity of the tissue. This is also one of the four possiences come true:

1. Laser light can return from the tissue surface. In this case, it doesn't do anything to the biologicalGIC tissue. Only the direction of the light will change, the return corner is equal to the corner of the corner.

2. Laser light can pass through the substance, in which case the light does not change its direction. The types of some lasers pass only through clean glass or water.

3. The laser light is spread when it comes to the tissue. Itaki happens if this happens, the light loses its competitivity and collection (two laser signs) and light loses its entire energy and disperses into the surrounding tissues.

4. Laser light can be swallowed by a substance. In this case, it takes place into light energy.

The effect of laser light or the response reaction of the Nirthatic tissue depends on the connection of tissues and molecules, glazing. However, the minute power density for continued periods. Laser use in dentistry has been commonly used in dental surgery for 30 years and is currently unusual in the treatment of dental equipment, as well as additional treatment. A thing called treatment with dental laser is subject to laser dentist. Laser dental includes Periodontal treatment, assistant periodontal regeneration, minimum invasive oral regulations, advacial dental, advacial dental, adverational dental, adverfortern treatment, orthoditis and other industries.

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Laser sources are easier to make the process easily and faster and reduce the stress in the patient to treat dental cavity. The Convention Program According to the optical properties of the introductory mouthpieces, the lastern light energy will interact with target tissues, including: display, absorption, projection. In addition to the photobiological effect, it can also be divided into photographical photochemical florescent and micro explosive effect

Lasers widely used in the main treatment tools of oral medicines include: semiconductor lasers 808, 830, 980nm, Nd: 2940NM lasers and CO2 lasers and others. Below is a brief description of several of these treatments. for the mouthpiece. Periodontal treatment is responsible for treatment of 808, 830 and 980NM surgical periodontal treatment, helps a bactericidal effect and help coagulation; Nd: 1064 nm of 1064 nm wavelengths have the most melanin immilim, with less absorption of hemoglobin and a slight absorption of water in water has a bactericidal and hemostatic effects; 2940 NM: Young and 2780 NM Ercr: Ysgg is the highest point of water absorption, the availability of vulnerable and small heat rises, but no discomfort and faster healing speeds. Earth: Younin 2940nm is more used in lasers. The laser Nd: 830nm and 808, 830, 9801, creates a good hemostatic environment for high tissues, but the hemostatic mechanism of the Gem concentration is easily absorbed by the Gems. This is the collage of CO2 wave length and the collagen spiral polymer breaks down the collagen spiral polymer, and the structural change controlled the collagen fibers and controlled the reduction of the formal cavity of the vessels and is hemophostatic effects.

Patients who take an anti-peeled medicine such as aspirin, such as an anticoagulant drugs, are not in spices, curry, and saliteic acid affecting and saliteic acid affecting raging, laser treatment, lasers, lasers. Due to the low hemostatic effectiveness of the lasivectomy (2940 NM), the coagulation is usually carried out after a converted processing using laser such as semiconductor, Nd: individual or CO2.

The crown extension crown restores the profile and improve the patient's smile by cutting (i.e., smiling gating is a surgical instruction on the edge of the manual. 808, 830, 980 NM semiconductor lasers and Nd: 1064 NM lasers target a soft tissue of the toothpet and only the ground if you need to change the mob structure during the extension. The laser of the single nm of the single.

Connected resection can be used for resection associated with laser, but the penetration depth should be much higher and controlled from Herbium Laser (2940 NM) or CO2 laser (5 to 40 microns). During surgery to prevent periosteal and jawbone injury

Oral application products can be widely used periodontal treatment, oral invasion, minimal invasive oral surgery, encypring, orthalofasiyal external treatment, orthodical treatment and others. 2940nm Earth: Yane lee can also be adjusted according to customer requirements. Since its founding for more than ten years ago, Hürlin has claimed that he prepared perfectly talented talents for the independent development and industrialization of laser and laser software and presented many innovative and competitive products. Customers in various fields such as analytical instruments, medical beauty, radar range, laser processing and training.

Top 5 Reasons to Review Laser Treats

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1. Fewer inconvenience during and after Mumambo

Because dental lasers do not allow the dentist to use many regular dental treatments, and in some cases, patients are more convenient without fear of the needle. Traditional dental drills create noise and is not very clear in caring for gaps. On the other hand, the lasers remove a very precisely accumulative tooth without a negative impact on the rest of the tooth. If technology and appropriate wavelength is adjusted to the procedure correctly, the safe and effective form of the mouth carcase is modern technology that can be successfully used in various procedures. In addition, Waterling Lazer Periodontology was praised in a clinical test held at McGuIsir Institute.

2. Dental fertility and reduces the level of anxiety

Many dentists appreciate that adherence to the return of dental practice can be related to the fear associated with traditional dentistry. In particular, the children, in children, are very effective in establishing a trust line, as well as patients to ensure that they continue preventive aid through a positive frequency visitor.

3. Fast care, speedy recovery

Dental lasers are very good in terms of efficiency and convenience. The lasers do not require minimal invasive and do not require a minimum or at all, while you visit once, while they can eat, drink and drink to the patient, and may return to their daily life. Patients will continue to comment on the cost of saving daily hours during treatment and valuing the technology that it is necessary to avoid the need to return for additional meetings.

4. Appeals to Fabby Phobia

In addition to reducing the time of process, treatments themselves will be less scaring to traditional drillings because there are no loud noises except for small noise. This is especially suitable for children because it can create a healthy, positive relationship with dental visits. Waterlace combines water, air and laser energy for safe use in the human tissue in our mouth and assures only natural ingredients in the treatment of patients.

5. Railed the risk of contamination

The possibility of mutual content between patients in any dental or medical environment is always a factor. In addition, the American Dental Association (ADA) recommends reducing the production of aerosol production to prevent potential viral infection. Waterlace Dental Lazer produces 98 percent less aerosol than traditional high-speed hand tools.

6. Decreased discomfort: laser treatment is due to less pain and discomfort than traditional dental treatments. This is because lasers are more accurate and lead to minimal damage to the surrounding tissues.

7. Reduction of bleeding: Lazers can effectively coagulate the blood vessels during treatments, which reduces bleeding. This is especially useful for patients with a trend of bleeding or conduct periodontal transactions.

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8. The increase in precision: laser dentistry allows dentists allowing dentists to keep healthy tissues and determine treatment in need of harm.

9. Minimum Need for Anesthesia: In some laser treatments, patients may not require traditional local anesthesia injections, which leads to a more convenient experience.

Soft tissue lasers

Soft tissue lasers are usually used to treat the problems associated with dental doctors. These lasers are primarily designed to target and manage the soft tissues in the mouth, including the soft tissue, the cheek and language. Soft tissue lasers are often used in procedures such as treating the diseases of the tissue, prolongation of the crown, and containing ingredients. One of the most common soft tissue lasers used in dentistry is LED laser. LED lasers emit the concentrated light light absorbed by pigments in soft tissues. This brings into the evaporation or coagulation of light energy, which allows dentist to form a tooth doctors or remove sick tissues. Another type of laser of soft tissue is CO2 laser. These laser produces the length of the waterlights easily by water molecules and makes it ideal for soft tissue operations. Co2 laser can clearly cut, destroy or evaporate soft tissues without causing excess injuries or bleeding.

Lasers of solid tissueIn addition to the lasers of soft tissue, dentists also use solid tissue losses for various dental treatments. The lasers of solid tissue are specially designed to target and treat solid tissues such as enamel and dentin. These lasers are usually used in procedures such as to identify the gap, draw the enamel to cover and remove the rotten tooth tissue. Herbium lasers are the lazer of the most used hard tissue in dentistry. These lasers form a high level of absorbed wavelength by water and hydroxicatitis, which is the main component of the tooth structure. As a result, the lasers of the lasers can effectively remove the rotten tissue, while damaging healthy dentiaReduces.

Using laser dental

Laser dental can contain large-scale programs and can be used in various dental treatments. Some common application of laser dentistry is:

1. Caution of Gum disease: Soft tissue lasers can be used to soft and efficiently destroy the bacteria, reduce inflammation and promote tissue of healthy dusk.

2. Root channel therapy: Laser technology can be used to clean and disinfect root canals, increase the success of bacteria and the treatment of root channels.

3. Polishing teeth: laser tooth whitening procedures help keep deep spots and color changes, providing a brighter smile to patients.

4. Dental fillings: The lasers of solid tissue can effectively remove the rotten tooth tissue, prepares the tooth for the filler and maintains the structure of a healthy tooth as much as possible.

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5. Biopsy: Laser Dentistry allows you to clearly remove the texture samples for further examination and diagnosis.

6. Cold treatment: Lasers can accelerate the process of treatment of cold wounds and use pain and discomfort.

7. Poy APSNY HERE: Laser surgical helps to re-form a soft tissue behind the throat, reduces the air flow during sleep.

Recommendations for working with laser in dentistry:

1. Proper preparation of the patient: The laser procedure must be selected accurately and properly if anesthesia is necessary before the laser procedure. You also need to use special tools to protect their eyes.

2. Cleaning the treated area: When the laser procedure is complete, the wound and the treated area should be stored clean. This is important for infection to accelerate the prevention and recovery.

3. Avoid hot and dramatic food: To protect the laser treated area and to protect the inconvenience, and to remain more than sharp foods to reduce discomfort.

4. Transfer to qualified dentists only: Laser technology is a complex and delicate method that should be done only by an experienced and qualified dentist.

5. Selection of Laser to reduce the pain: the correct laser species should be selected for minimizing pain during laser, such as CO2 laser for meal tissue.

6. Ensuring the benefit of the patient during the process: create comprehensive convenience for the patient during the laser procedure, regular inspection of its condition, additional measures to reduce pain.

7. After treatment: at the end of the laser procedure it is necessary to provide special instructions, such as consumption of light effects, restricting efforts in the field of harm.

8. Observation of the patient's actions: after treatment, the observation of patients, monitoring the recovery process and need additional assistance.

9. Priority to the patient analysis before the laser procedure: Before necessary to process the laser, if necessary, it is recommended to obtain the necessary analyzes from the patient and assess its total health.

10. Using the antisphthics of the laser: in the treatment of wounds using laser, the use of its antiseptic properties, effective in preventing infections.

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