

Wollerau October 07th, 2019

TO: All distributors/ Cutomers

SUBJECT: INT. Medical INFO-September-19: Biopton studies and testimonials.

Dear colleagues,

We are delighted to share with you the newest study and testimonial contributing to our collection of supportive evidence on the beneficial, healing effects of our medical Hyperlight therapy system, Biopton Light:

- 1. Biopton Hyperlight as adjunctive treatment in chronic oral mucosal pain: a pilot study (Dr.Petruzzi, Italy, 2019)**
- 2. Biopton Hyperlight Therapy in the complex recovery after radiological treatment (Testimonial, Dr. Bryatova et al, Samara, Russia, 2019)**

By sharing such new findings you will send a reassuring message to owners of Biopton devices that they made the best choice by buying one, they will learn of wider application possibilities. On the other hand you will assist a new buyer in making a quicker buying decision. We kindly ask you to share this information with employees, customers, consultants, medical trainers and wider population through mailing, social media posts and other means available to you.

If you have recently received reports of completed research or testimonials done in your country, please send them to me, so they can be archived and shared with other Zepter countries and their customers.

For more information, please feel free to contact me.

Best wishes

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1. Polarized Polychromatic Non-coherent Light (Biopton Light) as adjunctive treatment in chronic oral mucosal pain: a pilot study (Dr. Petruzzi, Italy, 2019)

Mouth affections are very unpleasant and if it is not treated on time and correctly could evolve in more complex problems.

This study aimed to assess the efficacy of Biopton Light therapy in the treatment of Chronic Oral Mucosal Pain (COMP). COMP is defined as a pain lasting more than 3 months and outlasting the inflammatory stimulus. Different pathologies, including burning mouth syndrome, aphthous ulcers, stomatitis (inflammation of mouth and/or lips) and chronic ulcerations can cause COMP. The chronic pain is often characterized by a burning, stinging, or sore sensation that impairs the patients' quality of life and increases the risk of psychological morbidities such as anxiety and depression. There exists pharmacological treatments for COMP, but their long term use can cause side and/or undesired effects or in some cases be ineffective. New therapeutic strategies have been employed to limit pain and the consequent patients' frustration.

In this study 22 subjects suffering from COMP were diagnosed by two blinded independent medical doctors, who evaluate the severity of the symptoms. The pain and a degree of improvement was assessed and tested before starting the treatment, at the end of the fourth week, and at the end of the eight weeks. All patients were treated with the current pharmacological treatment used for each oral problem. Half of them were in addition treated with Biopton2, during 15 minutes twice a week (**Figure 1**).

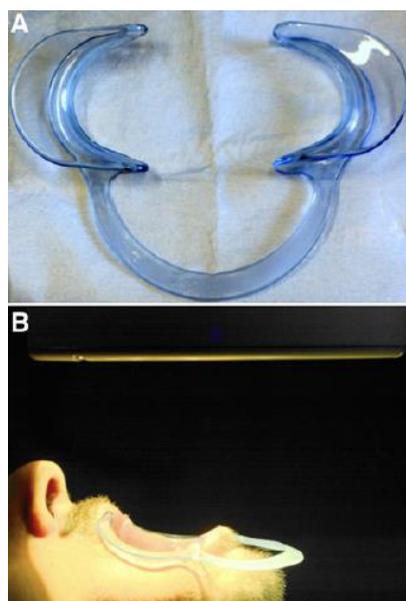


Figure 1 (A) C-shaped device used in dentistry. **(B)** Patient wearing the c- shaped device during Biopton treatment.

4 weeks after beginning of the treatment the patients who received Biopton therapy as adjuvant therapy presented a better healing state and they had less pain than the patients receiving only the pharmacological treatment.

After 8 weeks of treatments both groups improved, but again, group treated with Biopton Light Therapy presented a bigger improvement than those patients treated only with pharmacological products.

In conclusion, patients receiving additional treatment with Biopton showed a faster and more effective improvement of symptoms and oral signs, compared with patients undergoing exclusively pharmacological therapy.

Biopton therapy characteristics provide different biostimulative actions that are involved in pain relief, healing, anti-inflammation and signs reduction.

Available Reference upon Request:

Petruzzi M, Nardi GM, Cocco F, Della Vella F, Grassi R, Grassi FR. Polarized Polychromatic Noncoherent Light (Biopton Light) as Adjunctive Treatment in Chronic Oral Mucosal Pain: A Pilot Study. Photobiomodul Photomed Laser Surg. 2019 Apr;37(4):227-232.

2. Bioptron Light Therapy in the complex treatment and recovery after radiological treatment (Testimonial, Dr. Bryatova, Dr. Sivokhina and Dr. Zolotaryova, 2019, Samara, Russia)

Cancer is nowadays, unfortunately, one of the most common and complicated diseases to treat. The treatments of the disease, such as chemo and radiotherapy have a lot of side effects. In the Rehabilitation Department of the Samara Regional Clinical Oncologic Dispensary at Samara (Russia) the medical doctors were using Bioptron Light Therapy as an adjuvant Therapy to treat the side effects of radiotherapy in 65 women who suffered a mastectomy.

To diminish the pain of women who have undergone radiological treatment the doctors used transcranial electrostimulation (TES, it consists to give small electrical currents through external electrodes on the skull, to modulate the analgesia at central nervous level) in combination with Bioptron as a local method for treating post-radiation changes of the skin and mucosae. They used Bioptron 2, because the light diameter of 15 cm is sufficiently large to cover the area irradiated with radiotherapy. Procedures were carried out daily, once a day, for 6-8 minutes per area for 7-10 days (**Figure 2**).



Figure 2. Woman receiving Bioptron Light Therapy, with a Bioptron 2 device, after radiotherapy treatment.

After 3-5 sessions of combined therapy (TES and Bioptron), patients noted an improvement in their general condition, decrease of edema and pain in the affected area. As clinical results, doctors observed:

- a stabilization of blood flow parameters (76% of cases)
- reduction of pain syndrome and skin sensitivity disorders (96%)
- decrease of edema in the radiation zone and the arm on the surgery side (84%)
- acceleration of the regeneration period of damaged tissues (in 3-4 days)
- return of a positive psycho-emotional state in almost all patients.

In patients with cancer the treatment to fight against the disease is very important, but also the therapies aiming to improve the rehabilitation and the general state of patients. In this Hospital of Samara, the use of Bioptron light therapy in combination with TES allows to optimize the rehabilitation process, reducing the degree of disability and improving the prognosis and quality of life of patients. These health improvements have also positive consequences in a more global level, decreasing the period of hospitalization and also the number of patients who need to be re-hospitalized. Logically, these improvements in patients' health and recovery have a big impact in the economic budget of the hospitals and institutions, decreasing the costs derived from new hospitalizations and care of patients.

Bioptron Light Therapy is a very effective adjuvant treatment in cancer patients who underwent a mastectomy and received radiotherapy. Bioptron Light Therapy will help patients to fight against the negative side effects of radiotherapy, by decreasing pain and inflammation as well as by improving their general well-being. Subsequently the psycho-emotional state of patients will improve boosting even the recovery progress. In general patients spend less time in the hospital thanks to their health improvement. Bioptron Light Therapy is not medically certified to treat cancer, but is a good ally to enhance the recovery during and after the delicate period of radiotherapy.