The History and Evolution of the FotoFacial RF®

Congratulations to you the Reader! You have committed to learning the FotoFacial RF® procedure and the acres and acres of beautiful skin you will be able to create by understanding the FotoFacial RF® procedure from the outset. You are benefiting from years of experience, trial and error accumulated by the two authors. Even the authors themselves, both internationally recognized authorities, one a board certified plastic surgeon and the other a board certified dermatologist, bring a unique combination of understanding and experience in the aesthetic needs of patients and the unique cutaneous concerns they present with.

Dr. Bitter and I have been innovating, performing, refining and improving the non-ablative intense pulsed optical and FotoFacial RF® treatment since the very beginning of intense pulsed light. As developers of the original FotoFacial® skin rejuvenation procedure, we have, between both of us, performed over 8,000 FotoFacial® on our patients. We have personally advanced our FotoFacial RF® procedure from IPL alone, multiple pass IPL, IPL and YAG FotoFacial Plus® therapy and, most recently, to the FotoFacial RF® procedure, combining intense pulsed optical and radiofrequency energy.

Interestingly, Dr. Bitter and I arrived at this FotoFacial RF® approach from different perspectives of potential enhancement, but with one goal, namely the best possible non-ablative skin rejuvenation. As a plastic surgeon, with my entire practice focused upon cosmetic surgery, patients were naturally presenting to me with concerns about wrinkles and the signs of aging. Conversely, Dr. Bitter developed an initial interest in the panfacial treatment of rosacea, telangiectasia and hyperpigmentation. Our FotoFacial RF® procedure combines the optimal treatment of chromophores with the treatment of wrinkles, pores, texture and skin laxity.

I have had significant experience with ablative facial rejuvenation, chemical peels and macro-dermabrasion during my residency and early years in practice and carbon dioxide and erbium laser resurfacing during my more recent aesthetic plastic surgery practice. I continue to perform a significant volume of ablative facial procedures, either alone, or in combination with FotoFacial RF®, following resurfacing and facial cosmetic surgery. The results of resurfacing alone can be quite remarkable and, when used in combination with vascular and pigmentation lasers, can have a dramatic facial rejuvenation effect (Fig. 1). However, the recovery period from CO₂, and, to a lesser degree, erbium or the combined CO₂/erbium technology, is often very arduous for the patient (Fig. 1). Although results of ablative, superficial cutaneous rejuvenation can be quite pleasing, laser resurfacing, chemical peels and macro-dermabrasion are not without complication. Prolonged erythema, hypopigmentation, hyperpigmentation and scarring can all occur in the most experienced of hands (Fig. 2).
Six or seven years ago, while co-teaching a course with David Goldberg, a noted New York dermatologist, he told me of the improvement he had achieved treating wrinkles with Intense Pulsed Light (IPL). Excited, I returned home to investigate this non-ablative, wrinkle improvement technique of rejuvenation. My results with IPL alone at the 645 and 695 nm filter range, a variety of fluences, pulse durations and interpulse delay times for wrinkle reduction were inconsistent and often not noticeable to the patient. Then, I heard of the CoolTouch® laser, a Neodynium:YAG (Nd:YAG) system that purported wrinkle improvement without epidermal reaction, the so-called non-ablative, subepidermal resurfacing process. I was encouraged with the reported results of this early system. I realized that my ESC (now Lumenis) Vasculight Plus®, which was predominantly being used for isolated facial vascular, and pigmented lesions, some tattoos (blended with a Q-switched ruby) and leg veins, also had a Nd:YAG laser head and I enthusiastically set about experimenting with wrinkle therapy using a Vasculight™ combined IPL and Nd:YAG technique. My goal was to arrive at settings using IPL combined with the Nd:YAG on the Vasculight™ that deposited enough heat in the dermis to stimulate fibrocyte mediated collagen and ground
substance (the complex polysaccharides like Hyaluronic acids, Proteoglycans and Glucosaminoglycans) production and, at the same time, avoid epidermal reaction. After much trial and error, combined with an understanding of the critical laser biophysics, I arrived at a technique that would consistently diminish the appearance of fine and medium wrinkles. In addition, my technique also softened the appearance of wide based acne scars and smoothened irregular stretch marks and scars. By combining IPL and Nd:YAG, I was able to improve fine to moderate wrinkles by 20% with some consistency.

At the time, like most laser physicians, I was treating facial chromophoric blemishes, either vascular or melanin based, as isolated or, at most regional pass with Intense Pulsed Light, Pulsed Dye Lasers, Q-switched ruby or 532 vascular lasers. Although this “lesion in isolation” or “spot welding” approach produced improvement in the appearance of the isolated lesion, the majority of the facial dyschromia and vascularity was being left untreated. This “lesion in isolation” approach rarely resulted in significant facial rejuvenation. When Patrick Bitter, Jr. and I had an opportunity to discuss outcomes on a panel at an American Academy of Dermatology meeting, I was immediately struck by the quality of his panfacial chromophoric results with facial vascular and pigmentation conditions. It was apparent that Dr. Bitter's FotoFacial® technique for vascular and pigment dysharmony complemented my WrinkleLite® and Vector Laxity approach to wrinkles, texture and facial laxity. By combining the best of Panfacial IPL FotoFacial® therapy with Nd:YAG wrinkle and Vector Laxity treatments, I felt we had created a truly unique, non-ablative facial rejuvenation technique that enhanced the appearance of wrinkles, blood vessels, rosacea, hyperpigmentation, dyschromia, pore size, textural irregularity and scars. Dr. Bitter, Jr.’s depth of experience, knowledge and passion with his Panfacial, IPL and FotoFacial® techniques are truly world class contributions to the field of skin rejuvenation. The results of the FotoFacial RF® techniques described in this book are truly amazing in that the superficial cutaneous vitality that is achieved, with biopsy proven architectural dermal and epidermal changes, occurs without a significant risk of recovery time or “downtime”. Our IPL/YAG FotoFacial® patients were consistently pleased with the improvement in their skin, particularly with brown and pink discoloration, pores and texture. Dr. Bitter, Jr. and I, through our Advanced FotoFacial RF® Training Course, have taught 3,000 physicians worldwide the art, finesse and efficacy of the FotoFacial RF® procedure. The “holy grail” in non-invasive skin enhancement has always been wrinkle and laxity improvement and, with the old FotoFacial® procedure, had the least impressive results. Thus, it was with great interest and enthusiasm that I began to experiment with IPL and radiofrequency energy, and over eight months and 1,000 treatments, the FotoFacial RF® procedure was born. The FotoFacial RF® procedure itself has evolved to incorporate the FotoFacial RF® Galaxy. This procedure and platform combines an IPL-RF Aurora head with Laser Diode-RF heads (the Polaris WR, wrinkle reduction and the Polaris LV, leg vein reduction) for the most advanced non-ablative skin rejuvenation procedure ever devised.

Skin rejuvenation, through FotoFacial®, WrinkleLite® and Vector Laxity therapy and finally FotoFacial RF®, has been a tremendous, non-invasive and hence attractive addition to my aesthetic practice. I hope that you have as much success with these techniques as we have and that your patients can benefit as much as ours have from these non-ablative skin rejuvenation techniques.