

# Fast and Efficient Therapy of Plaque Psoriasis with MultiClear™ - a novel tunable wavelength targeted high intensity non-coherent light system

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## Introduction

It is known that normal skin can be exposed to up to 3 MEDs without blistering, while psoriatic skin may be exposed to up to 3 times this dose (9 MEDs) without blistering. [5,6] A therapy targeted only to psoriasis plaques sparing the "healthy" skin may thus employ higher fluences and may shorten time to clearance. Another advantage of targeted phototherapy is the sparing of non psoriatic skin from harmful UV effects.

The MultiClear™ is a novel tunable multiwavelength medical device which selectively targets a multitude of skin conditions. It emits high intensity incoherent light which is tunable to a few optimal narrow band emission spectra in the UVA and UVB range. Optimal treatment parameters are selected through a fully computerized built in expert system (figure 1.)

This high intensity novel device may expose psoriatic skin to high narrow band fluences totally sparing the non lesional skin. Basic setup provides a spot size as large as 23X23 mm. Computerized controls allows exposures of up to 7 MEDs in both continuous or pulses mode. UVB emission peak at 304-313 nm is optimized to fit best efficacy/erythema treatment ratio

## Materials and Methods:

The multicenter study utilized the MultiClear™ (Curelight Ltd.) operated with an enhanced metal halide lamp mixture. A specially designed light concentrator focuses the light on an optical fiber allowing a homogenous of 23X23mm effective treatment spot size. A built in computer guided MED test was performed at baseline. MED was assessed 24 hours later. Vitamin B based creams such as DAIVONEX are applied to the lesions between the treatments.

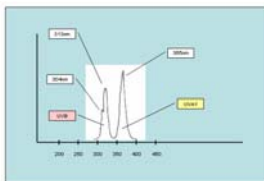


Figure 1: Optical Spectrum of the tunable MultiClear™ treatment station. (Emission in the UVB range with peaks in the 304nm and 313nm and emission in the UVA1 band (peak 365nm) . Only one band is emitted simultaneously).



Figure 3. Plaque psoriasis, Rt foot. 6 weeks, 8 treatments.



Figure 2. A. Before therapy; female patients, 55 years olds, stable psoriatic plaque on Rt. Elbow. Psoriatic plaque prior to the first treatment. B. Same plaque 5 months after 5 treatments. (Treatment parameters:5 MEDs. Per exposure)

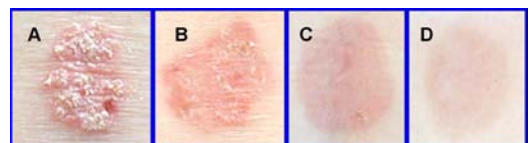


Figure 4. Female patients, 45 years old, stable psoriatic plaque on the lower back. A/B Before therapy . C. After 3 weeks (5 treatments) C. 4 months after last treatment. (Exposure dose was 5 MEDs.) Follow-up in progress show remissions of 8 months and more in the first patients that were enrolled.

## Clinical results and Discussion:

An initial study included 15 patients with a variety of plaques sizes. Patients had stable psoriasis and have not used any topical anti psoriatic medications for at least 4 weeks prior to trial. Eighty percent of the patients responded to the treatment with minimal side effects. . In responding patients, 80% Clearance was noted after an average of 6 treatment sessions. Lengths of a full treatment session/per patient was 5-10 minutes. The study also revealed the advantage of using a combined UVB and vitamin D based cream such as DAIVONEX between the treatments .

## Conclusions:

The MultiClear multiwavelength targeted phototherapy system tested in the current study allows high intensity optimized UVB therapy over a large 23X23mm spot size. Computer guided MED assessment allows an accurate and fast MED measurement crucial to accurate starting dose selection. Built in expert system suggests dose increases based on Modified PASI built in scoring. Treatment doses as high as 7 MEDs are used on psoriatic lesions while totally sparing non involved skin . Our preliminary data shows a response rate of 80% of the patients psoriasis plaques with average clearing after 6 biweekly treatments as compared to usual 30-40 treatments with classical full body UVB systems The MultiClear targeted phototherapy provides major advantages to other available full body or targeted UVB modalities. Accumulated lesional UV doses till clearing are a third than accumulated UV doses till clearing in classical full body systems. MultiClear targeted phototherapy totally spares non involved skin from UV - thus providing a superior safety profile. The faster results achieved with the MultiClear (compared to other targeted phototherapy systems) may be explained by its optimized UVB wavelength. It may be also due to better and easier dosing monitoring through the MultiClear UV assessment based Dosing System (MUDS™).