# PHOTODYNAMIC THERAPY

## Photodynamic Therapy for Acne

A new procedure is now available that treats active acne as well as older acne scars leaving your skin smoother and clear of blemishes. The procedure is called Photodynamic Therapy (PDT) using Levulan.

Photodynamic Therapy is a process by which a photosensitizing agent (Levulan) is applied to your skin. The Levulan is then activated with a specific wavelength of light, which turns it on. Levulan has been used extensively for the treatment of a variety of different skin conditions, and it is approved by the FDA and Health Canada for the treatment of sun damaged skin.

Levulan is a 20% solution of Aminolevulinic Acid (ALA). ALA is a natural substance found throughout your body, as it is a precursor for hemoglobin synthesis. You would be unable to make red blood cells to carry oxygen without ALA in your body. Consequently, it is a natural product found in all humans.

Acne results from the obstruction and inflammation of the sebaceous glands, and it affects 80% of the population. Acne typically begins in adolescence with hormonal changes. However, there are many older individuals who suffer from adult acne.

There are several different presentations of acne ranging from comedonal (blackheads and whiteheads), papular, pustular, and cystic acne. In many cases, many of these presentations of acne can be present simultaneously.

Prior to Photodynamic Therapy, the best available treatment option for cystic acne was Accutane. However, with Accutane there are many systemic side effects including birth defects, liver abnormalities, mood depression, and virtually all patients get dryness and night vision changes. PDT now provides a viable alternative for all types of acne.

## Photodynamic Therapy is performed as follows:

The Levulan is applied to the skin and left on for 30-60 minutes. Levulan is a clear solution and painless. Levulan is then activated with a specific wavelength of light called BLU-U. This takes about 8 minutes. The Levulan targets active cells. Acne sebaceous glands are comprised of active cells. These cells preferentially absorb Levulan, and these cells are targeted by the Levulan once it is activated. The Levulan will also target sebaceous hyperplasia (which are those small (1-3 mm), benign bumps on the skin) and the papules of acne rosacea. Skin oiliness is decreased and the appearance of pores is minimized. The entire skin texture improves following Photodynamic Therapy.

The downside of Photodynamic Therapy is that the treated area will be red and have some skin peeling and crusting for several days after the treatment. Usually, the first 1-2 days are the worst. We advise remaining indoors the day following treatment to avoid sun exposure, as the treated area is photosensitive for about 24 hours after PDT. Most patients are able to resume normal activities in 2 or 3 days. The downside of this procedure is clearly outweighed by the dramatic improvement in skin complexion.

## Photodynamic Therapy for Photodamage

**What is Photodynamic Therapy?**
Photodynamic Therapy (PDT) is a special treatment performed with a topical photosensitizing agent called Levulan (5-aminolevulinic acid or ALA) activated with the correct wavelength of light. This is also known as ALA/PDT treatment. These treatments remove sun damaged pre-cancerous zones and spots called actinic keratoses. Sun damage, fine lines, and blotchy pigmentation are also improved because of the positive effect of Levulan and the light treatment. PDT also has the unique ability to minimize pores and reduce oil glands, effectively treating stubborn acne vulgaris, acne rosacea, and improve the appearance of some acne scars.

**How much improvement can I expect?**
Patients with severe sun damaged skin manifested by actinic keratoses, texture and tone changes including mottled pigmentation and skin laxity may see excellent results. You may also see improvement of large pores and pitted acne scars. Active acne can improve dramatically.

**How many treatments are required?**
To achieve maximum improvement of pre-cancerous (actinic keratoses) sun damage, skin tone and texture, a series of three treatments 2-4 weeks apart is most effective. Some patients with only actinic keratoses are happy with just one treatment. More treatments can be done at periodic intervals in the future to maintain the rejuvenated appearance of the skin.

**What are the disadvantages?**
Following PDT, the treated areas can appear red with some peeling for 2-7 days. Some patients have an exuberant response to PDT, and experience marked redness of their skin. Temporary swelling of the lips and the area around the eyes can occur for a few days. Darker pigmented patches can become temporarily darker and then peel off leaving normal skin. This usually occurs over seven to ten days. Repeat treatments may be necessary as PDT is not an exact science.