

# Benign pigmented lesions removal by IPL F-SR Applicator of Formatk Systems Ltd.

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**Background:** A solar lentigo (plural, solar lentiginos), also known as a sun-induced freckle or senile lentigo, is a dark (hyperpigmented) lesion caused by natural or artificial ultraviolet (UV) light. Solar lentiginos may be single or multiple. This type of lentigo is different from a simple lentigo (lentigo simplex) because it is caused by exposure to UV light. Solar lentiginos are benign, but they do indicate excessive sun exposure, a risk factor for the development of skin cancer. Another common name is Liver spots, which are blemishes on the skin associated with aging and exposure to ultraviolet radiation from the sun. They range in color from light brown to red or black and are located in areas most often exposed to the sun, particularly the hands, face, shoulders, arms and forehead, and the scalp if bald.

The spots derive their name from the fact that they were once incorrectly believed to be caused by liver problems, but they are physiologically unrelated to the liver, save for a similar color. From the age of 40 onward the skin is less able to regenerate from sun exposure, and liver spots are very common in this age group, particularly in those who spend time in the sun. In the vast majority of cases, liver spots pose no threat and require no treatment, though they occasionally have been known to obscure the detection of skin cancer. However, despite being a benign condition, liver spots are sometimes considered unsightly and some people choose to have them removed. This can be done by electrosurgery, cryotherapy or laser/IPL treatment.

**Objective:** To test the efficacy and safety of the F-SR IPL applicator (Formatk Systems Ltd.) in pigmented lesions removal

**Method:** one treatment was performed by the F-SR IPL technology (Formatk Systems Ltd.). F-SR applicator with a wavelength of 530-1100nm broad band light and a fluence up to 21.8 j/cm<sup>2</sup>. Pulse duration of 6 msec.

A group of 38 volunteers, females and males (ages 32-83) were chosen according to inclusion criteria. A total of 51 pigmented lesions (age spots/sun spots) were treated on different body zones: face, decolte, hands & arms

After taking photos of the pigmented lesions that were found suitable, the melanin concentrations level in the PL were checked by a Melaninometer device. (See photo no. 1). By pressing the device gently into clean skin the device will measure the melanin amount at the checked spot on a scale from 0-100.



Photo no. 1 - Melaninometer test

Following the Melaninometer test, a white paper with a hole in its center were placed on the PL, covering and protecting the skin around the lesions. Than a parker ultrasound 03 gel were placed on the lesion.



Photo no. 2

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2 shots were delivered to each lesion with the above mentioned parameters. Immediate erythema around lesion occurred and darkening of the lesion. Lenitive cream applied and patient was instructed to apply a daily SPF cream.

4 weeks following the treatment patients were invited for melanin concentration level measurements by the melaninometer device and photographs.

**Results:** In average 75% of the pigmented lesions that were treated were 60% lighter one month post 1 session. 8% of the lesions haven't responded at all to the treatment and the melanin level of them stayed the same.

7% of the lesions vanished completely 4 weeks following one treatment.

10% of the lesions became lighter in 40%.

**Side effects**

5% of the lesions developed an infection post treatment and were treated by an antibiotic cream.

Most of the patients reported a slight burning sensation in the treated area that lasted up to 1 hour post session.

**Conclusion:** F-SR applicator of Formatk Systems Ltd. results highly effective, fast and safe technology to eliminate benign pigmented lesions from different body zones.



*Facial PL Before and 4 weeks after*



*Pigmented lesions on hands: Before and 4 weeks later*

