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Inside Innovation

PHILIPS BLUECONTROL

A convenient way to treat the skin disease psoriasis

A wearable drug-free therapy that controls mild-to-moderate psoriasis vulgaris with blue LED light

Psoriasis vulgaris is a chronic, incurable skin disease that can impact every aspect of a patient's life. Traditional therapies are perceived to be inconvenient, time-consuming and can cause a wide range of side-effects. Research has shown that irradiating the skin with blue light stimulates certain natural processes and effects. Philips has harnessed these effects to develop a wearable medical device which reduces the redness, scaling, thickness and extent of psoriasis vulgaris plaques. It's an effective at-home therapy which can be easily integrated into a patient's daily routine.

What is it?

Philips BlueControl is a wearable treatment device (medical device class 2a) which uses the anti-proliferative (counteracting the rapid division of cells)[1] and anti-inflammatory effects[2] of blue LED light to control mild-to-moderate psoriasis vulgaris plaques. It can be worn comfortably on arms and legs as well as on elbows and knees. Thanks to its natural and gentle mode of action, BlueControl can be used to treat multiple psoriasis vulgaris plaques per day. Psoriasis plaques are recurring and can appear on different parts of the body, even if they have been reduced or cleared during treatment. The product is expected to be integrated into national healthcare reimbursement schemes in Germany, France, the UK and the Netherlands within the next year.

What is innovative about it?

- **It's a completely new treatment modality**
  "We are the first in the world to offer a wearable blue LED light treatment for patients suffering from mild-to-moderate psoriasis vulgaris." Matthias Born, Principal Scientist

- **It's a safe and effective treatment without the possible side effects of medication**
  "It's a UV-free LED light without the possible side effects of medication." Matthias Born

- **It's a wearable home therapy** - this battery-driven, automated treatment device uses 40 high power LEDs in a compact design, wearable in a fabric strap that is also machine washable. It is convenient to use, helping patients stay mobile and it can be easily integrated into the daily routine.

What is the benefit of this innovation to 'you'?

For patients, Philips BlueControl offers an effective, easy to use, and convenient treatment for psoriasis vulgaris – it improves plaques and avoids the possible side effects of medication. The treatment can be easily integrated into daily life and allows patients to be more in control of their own treatment. For clinicians, BlueControl is cost effective as a home-based therapy. It is a natural, drug-free treatment, without the side effects of medication. The effectiveness is proven by clinical data.[3] [4]

[1] Liebmann J, Born M, Kolb-Bachofen MV. JID. DOI: 10.1038/jid.2009.194
[2] Fischer M et al. Experimental Dermatology. DOI: 10.1111/exd.12193
[3] Weinstabl A et al. Dermatology. 2011. DOI: 10.1159/000333364
[4] Data on file at Philips Lighting B. V

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How did we do it?

Bringing together experts from across the company, Philips is exploring the potential applications in which light and health come together. *"We found that blue light in particular stimulates processes and effects that are beneficial to the treatment of psoriasis vulgaris,"* says Matthias Born, Principal Scientist. "*The condition, characterized by painful plaques on the skin, is caused by the overly rapid division of skin cells accompanied by a sustained inflammation. Blue light treatment has the effect of slowing down rapid cell division while at the same time showing anti-inflammatory actions."*

In the design phase, patient input was crucial. Especially because compliance for psoriasis vulgaris treatment tends to be low: *"We asked patients to tell us what they think would be the right design for their needs, to be able to integrate blue light treatment into their daily lives,"* says Matthias Born.

The first clinical investigation at the University Hospital Aachen involved treating 40 mild-to-moderate psoriasis vulgaris patients with blue LED light for four weeks, resulting in a statistically significant improvement of plaques[5]. A second clinical study with 47 mild-to-moderate psoriasis vulgaris patients completed in July 2014, investigated the effects of blue LED light over 12 weeks. The local Psoriasis Area Severity Index (PASI) value at the beginning of the trial was about 5, and improved on average by 50% following blue LED light treatment, demonstrating the positive effects especially over a longer period[6].

Did you know?

1. Psoriasis vulgaris can have devastating psychological effects on people. For example, the unsightly plaques tend to appear mostly on visible parts of the body. And because it is incurable, patients are desperate for effective and safe therapies. During the initial research stage, a selection of patients shared the following insights:
   "My skin condition excluded me from all professions which required a presentable appearance... teacher, businessman."
   "I immediately got married when I found a woman who accepted my skin."
2. The treatment compliance during the second clinical trial was 98% over 12 weeks.

Find out more

http://www.newscenter.philips.com/main/standard/news/press/2014/20140930-Philips-launches-BlueControl.wpd

Contacts

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[5] Weinstabl A et al. Dermatology. 2011. DOI: 10.1159/000333364
[6] Data on file at Philips Lighting B. V (A final report with further details will be available in October 2014.)