Question - I was just curious about skin pigmentation

I only have used it a few time and noticed my skin getting darker. I am ok with that as I am in sun but I usually sunscreen up when out. Is this normal or would I be more sensitive?

FEEDBACK - Photobiomodulation (PBM) **does not typically cause darkening of the skin** (hyperpigmentation) when used correctly. Here's a breakdown:

✅ **What the Research Shows:**

- PBM, using red or near-infrared light (usually 600–1100 nm), **penetrates the skin to stimulate cellular activity**—not to affect melanin production directly.
- **Melanin stimulation and tanning** typically result from **UV light** (e.g., from sun exposure or tanning beds), which PBM devices do not emit.
- Most clinical studies on PBM report **no pigmentation changes** as a side effect, especially in the wavelengths commonly used in therapy (630–850 nm).

⚠️ **Potential Exceptions or Misinterpretations:**

- **Localized warmth or increased blood flow** may cause temporary redness or a slight "glow," but this is not pigmentation.
- **Blue light (400–500 nm)** used in some dermatological PBM applications (e.g., acne treatment) has a **very shallow penetration** and theoretically could affect melanocytes, but this is rare and still under investigation.
- **Skin with higher melanin content** may respond differently due to the way light is absorbed, but again, darkening is not a documented or expected outcome in controlled PBM treatments.

🧪 **Clinical Context:**

If PBM is applied with proper **dosimetry** (e.g., power density, wavelength, duration), **skin darkening is not a known side effect**. However, if someone experiences unusual pigmentation changes after PBM:

- Consider **underlying skin conditions** (e.g., melasma, post-inflammatory hyperpigmentation)

- Review the **device type**, **wavelength**, and **treatment protocol –** PBM Wellness devices only use red and IR light
- Rule out **photosensitizing medications or topicals**

In fact, several clinical studies suggest that PBM may help *reduce* hyperpigmentation in certain skin conditions.

🔬 **Clinical Evidence on PBM and Skin Pigmentation**

1. PBM in Melasma Treatment

A comprehensive review of nine studies found that PBM using specific wavelengths—such as red (630 nm), amber (585–590 nm), and near-infrared (830–850 nm)—can reduce melanin content by modulating tyrosinase activity and gene expression in melanocytes. These effects were observed at radiant exposures between 1 and 20 J/cm², with no reports of increased pigmentation

https://pubmed.ncbi.nlm.nih.gov/38018017/

2. Safety in Skin Rejuvenation

A randomized, double-blind, placebo-controlled clinical trial investigated the effects of 839 nm PBM on skin reactions following photodynamic therapy. The study concluded that PBM did not exacerbate skin reactions, including hyperpigmentation, indicating its safety in skin rejuvenation procedures .

https://pubmed.ncbi.nlm.nih.gov/28548228/

3. Comprehensive Dermatological Review

A 2024 narrative review encompassing various dermatological applications of PBM reported minimal side effects across multiple studies. The review highlighted PBM's versatility and safety profile, noting its suitability for patients of all ages and skin tones, with no significant reports of pigmentation changes .

https://www.mdpi.com/1422-0067/25/8/4483?utm_source=chatgpt.com

✅ **Conclusion**

Current clinical evidence supports the safety of PBM concerning skin pigmentation, with studies indicating no adverse effects and potential benefits in reducing hyperpigmentation in conditions like melasma. As with any treatment, it's crucial to use appropriate parameters and consult with healthcare professionals to ensure optimal outcomes.

Disclaimer

The information provided in this document is for educational and informational purposes only. It is not intended as a substitute for professional medical advice, diagnosis, or treatment. Individuals should always consult with a licensed physician or qualified healthcare provider before beginning any new therapy, including the use of photobiomodulation (PBM) devices. PBM devices such as the SPRB and GPRB are wellness tools designed to support general health and well-being. They are not medical devices and are not intended to diagnose, treat, cure, or prevent any disease or medical condition. No medical claims are made or implied. Results may vary based on individual factors, and PBM should not be considered a replacement for appropriate medical care.