Enkidu AVE Safety Guide

(Audio-Visual Entrainment, Flickering Light & LEDs)

Audio-Visual Entrainment (AVE) combines rhythmic light and sound to gently guide the brain into states of relaxation, focus, or deep rest. While AVE has been shown in many studies to be safe and beneficial, it's important to understand the potential risks and how to use Enkidu correctly.

*This guide explains the main areas of concern – **flickering light, audio levels, and LED technology** – and shows how **Enkidu** is designed for **safe, comfortable use**.*

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1. Flickering Light: Risks & Safe Use

Potential Risks

- ***Photosensitive epilepsy:** Some people are sensitive to flashing light, especially in the **10–25 Hz** range, which can rarely trigger seizures.*
- ***Eye strain & discomfort:** Harsh strobing or overly bright light can cause headaches, fatigue, or visual discomfort.*
- ***Dizziness or nausea:** Flickering light may sometimes cause temporary disorientation in sensitive individuals.*

How Enkidu Keeps It Safe

- ***Safe frequencies:** Enkidu avoids the most problematic flicker rates linked to seizures and uses patterns tested in AVE research.*
- ***Smooth modulation:** Instead of harsh on/off flashes, Enkidu uses **gentle sinusoidal** light pulses, reducing visual stress.*
- ***Adjustable brightness & distance:** You can set the lamp to a **comfortable level** and position it **70–100 cm away**, minimizing eye strain.*
- ***Eyes-closed use:** All AVE sessions are designed to be enjoyed **with eyes closed**, further reducing risk while still producing strong effects.*
- ***Stop if discomfort occurs:** If you experience nausea, dizziness, or visual aura, **pause immediately**.*

Studies show that AVE, when used at appropriate frequencies and intensities, is safe for the vast majority of users (Fisher et al., 2022; Epilepsy Society).

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2. Audio Stimulation: Hearing Safety

Potential Risks

- ***Hearing damage:*** *Prolonged exposure to loud sound can harm hearing.*
- ***Overstimulation:*** *Very intense sound combined with light can be tiring.*

How Enkidu Keeps It Safe

- ***Moderate volume:*** *The audio signal works effectively even at* ***comfortable listening levels****.*
- ***Separate controls:*** *Keep the* ***player volume high*** *(so the lamp detects the signal) but adjust* ***headphone volume*** *lower using its own control.*
- ***Follow safe listening guidelines:*** *WHO recommends limiting prolonged exposure to* ***80–85 dB or less****.*
- ***Take breaks:*** *Use the* ***60/60 rule****—no more than 60% of your max comfort volume for 60 minutes at a time. Max comfort volume refers to the maximum volume for comfortable listening, not the lamp's maximum volume.*

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3. LED Light & Blue-Light Exposure

Potential Risks

- ***Excessive blue light:*** *Standard LEDs often emit strong blue wavelengths (400–500 nm) linked to* ***eye fatigue*** *and potential long-term retinal stress.*
- ***Glare & heat:*** *Cheap LEDs may produce uncomfortable glare or overheat.*

How Enkidu Keeps It Safe

- ***Natural-spectrum LEDs:*** *Enkidu uses* ***Bridgelux Vesta Thrive LEDs****, engineered to* ***mimic natural sunlight*** *with a balanced spectrum.*
- ***Warm color temperature (2700K):*** *This greatly* ***reduces blue light content****, replacing it with* ***red-rich wavelengths*** *that are gentle on the eyes.*
- ***Low heat, no glare:*** *High-quality components ensure* ***cool operation*** *and* ***soft illumination****.*
- ***Eyes-closed usage:*** *Experiencing sessions with eyes closed further limits any direct light exposure.*

Independent assessments (IEC 62471) classify warm-spectrum LEDs as ***safe for normal use****; Enkidu's LEDs fall well within these guidelines.*

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4. Recommended Use: "Low & Slow" Start

- ***First week:*** *10–15 minutes per session,* ***once per day****, brightness at* ***20–40%, eyes closed****, 70–100 cm from your eyes.*
- ***After adaptation,*** *gradually increase to* ***15–30 minutes****, adjusting as needed for personal comfort.*

- ***Timing:*** *Avoid stimulating sessions, such as in the Beta range, late in the afternoon, after sunset, or during rest periods, as they can interfere with sleep.*

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5. When to Avoid AVE

- *If you have* ***epilepsy*** *(especially* ***photosensitive epilepsy****) and have not been cleared by a doctor.*
- *If you've had a* ***recent concussion****,* ***migraine with aura****, or other* ***neurological conditions*** *unless advised otherwise.*
- *If under the* ***influence of drugs or alcohol*** *that lower seizure threshold.*
- ***Never listen to sessions*** *while driving or operating machinery.*

References (Plain Language)

- ***Fisher et al., 2022 (Epilepsia):*** *Flashing light most likely to trigger seizures at 10–25 Hz; risk is low with proper design.*
- ***Epilepsy Foundation:*** *Most people with epilepsy are not photosensitive; proper precautions make light use safe.*
- ***WHO / NIOSH:*** *Listening at safe levels prevents hearing damage; ~80–85 dB is a practical upper limit.*
- ***ANSES / IEC 62471:*** *Warm-spectrum LEDs reduce blue-light risk; most consumer-grade devices are low-risk.*
- ***Bridgelux Vesta Thrive:*** *Spectrum engineered to replicate daylight with minimal blue peaks.*