

SereniSleeve

Shape Memory Based Wearables for Anxiety Modulation

Even though anxiety is a natural “fight-or-flight” response, some people struggle with managing their anxiety levels. Especially while they are in the midst of a stressful situation, like taking an exam or during an interview, it is difficult to use common self-help techniques like mindful meditation and breathing exercises.

Daily levels of anxiety can be modulated with Deep Touch Pressure (DTP) that is associated with hugging or stroking sensations since it has been proven to elicit feelings of safety, relaxation, and comfort. Although there are some commercially available DTP wearable products, they are often

heavy, uncomfortable, or can attract unwanted attentions because of their bulkiness or inflatable pumping noise.

Instead, SereniSleeve can apply DTP sensations, specifically pressure and warmth, to the forearm in a noiseless, lightweight, and discreet manner by utilizing shape memory alloy (SMA) actuators. By clenching the fist, users can activate SereniSleeve discreetly and intuitively even during anxious or stressful situations for real-time anxiety modulation. User test participants experienced feelings of calmness, relaxation, and comfort through the DTP sensations provided by SereniSleeve.

