

The Orbit Weighted Blanket:

The science stuff

Welcome!

If you're reading this, it's because you want to know more about the science behind the Orbit Weighted Blanket, and what makes it so clever.

By now you've probably heard us talking a lot about something called 'Deep Pressure Therapy' (DPT). And that's because it's at the heart of what makes the Orbit™ so effective.

The insights we've collected are from 3 main academic studies listed below:

Study 1: The effects of deep pressure therapy on anxiety alleviation [HERE](#)

Study 2: The effects of deep pressure on insomnia [HERE](#)

Study 3: The effects of deep pressure therapy on physiology [HERE](#)

So, what is deep pressure therapy?

DPT is essentially a calming process activated through a physical stimulus such as a hug or another application of pressure across the body.

"Deep touch pressure (DTP) is generally referred to as a form of tactile sensory input, which is often provided by holding, stroking, hugging, swaddling, and squeezing. It can calm people who are anxious and thereby improve their coping behavior for adaptation [1-3]. The application of DTP is usually used to manage the anxiety of clients with cognitive developmental disorders, sensory modulation disorders, or psychological disorders [1,2,4]." ([study 1, 463](#))

"It has been increasingly employed in acute mental health care settings for crisis intervention, preparatory purposes, and as it gives subjects the feelings of safety, relaxation, and comfort [4,8]." ([study 1, p463](#))

"Deep pressure touch has been used as a therapeutic modality in occupational therapy practice because of the assumption that it can produce a calming effect through changes in physiological arousal (Kimball et al., 2007)." ([study 3, p.1](#))

And how does that connect to blankets?

DPT can be activated via a number of different objects.

Most commonplace are weighted blankets and clothing such as therapeutic vests. DPT has been widely used in therapeutic contexts for individuals who suffer from worry, stress, restlessness, anxiety or numerous other factors. But the end result is almost always the same: an inability to switch off and fall asleep.

Although the research around how deep pressure therapy works is still in development, some studies have suggested that it helps your nervous system switch from sympathetic (SNS - the 'fight and flight' stress system) to parasympathetic (PSNS - the 'rest and digest' relax system).



Evidence that DPT helps with sleep

“The weighted chain blanket used in the present study had a positive impact on sleep, both objectively and subjectively, where a number of physiological and behavioral measures were improved during weighted blanket use. When the participants used the weighted blanket, they had a calmer night’s sleep, with a decrease in movements. Subjectively, they believed that using the blanket provided them with a more comfortable, better quality, and more secure sleep.” [\(study 2, page 6\)](#)

“In conclusion, a weighted blanket may aid in reducing insomnia through increased tactile and proprioceptive inputs, may provide an innovative, nonpharmacological approach and complementary tool to improve sleep quality.” [\(study 2, page 6\)](#)

“Overall, these measures suggest the additional pressure stimulation from the weighted blanket provided a calming effect on the participants, by decreasing agitation and increasing the quality of their sleep. This was demonstrated through a decrease in movements during sleep with the weighted blanket, which were increased in the pre- and post-test periods, and also the subjective increased in sleep quality [...]” [\(study 2, page 6\)](#)

Evidence that DPT can help trigger ‘relaxation’ nervous system (PSNS) and help stop ‘stress’ nervous system (SNS)

“When using a WB [weighted blanket] as a calming modality, adult subjects have demonstrated lower activity in the sympathetic division of the ANS, as reflected by electrodermal activity (EDA) [4,8].” [\(study 1, p463\)](#)

“It has been proposed that deep pressure touch influences both parasympathetic activity (through increased vagal tone, reflecting increased parasympathetic activity [Field, Diego, & HernandezReif, 2010]) and sympathetic activity (through reduced activation of the stress response, reflecting reduced sympathetic activity [Kimball et al., 2007]).” [\(study 3, p1\)](#)

“Wearing the inflated Vayu Vest [which activates deep pressure], for even short periods of time (3 min), resulted in reduced arousal after a stressor [...] as reflected in sympathetic measures.” [\(study 3, p4\)](#)

“In addition, inflation of the vest after the stressor resulted in concomitant increases in parasympathetic activity, leading to an overall autonomic response that was calming to participants. This shift in both sympathetic and parasympathetic nervous system activity after deep pressure was applied to the thorax for a very short period of time has not been previously documented.” [\(study 3, p4\)](#)

“The application of a DTP has demonstrated a potential calming effect on the alleviation of anxiety in dental environment. Our main finding is that parasympathetic activity is obviously lower in the baseline condition, and is significantly enhanced by the appropriate DTP inputs during dental condition. This promising approach demands further investigation for the mechanisms underlying the effects of DTP for advance application in dental treatments.” [\(study 1, p469\)](#)

“This result might indicate that DTP balances ANS activity during dental treatment. Therefore, the higher PsNS activity is attributed to calming effects by both self-modulation and DTP.” [\(study 1, p 469\)](#)