

## PETRA LARANJO - THE ALIGNMENT ADVANTAGE

### Science References Sheet (March 2026)

#### The Science Behind Sleep, Stress, Movement and Wellbeing

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##### 1. Sleep and Emotional Regulation

Research shows that sleep plays a critical role in regulating emotional responses in the brain.

A study from **UC Berkeley** found that sleep deprivation leads to significantly increased activity in the **amygdala**, the brain's emotional alarm centre. Without sufficient sleep, the amygdala becomes more reactive while the **prefrontal cortex**, which helps regulate emotional responses, becomes less effective.

Participants who were sleep deprived showed **up to a 60% increase in emotional reactivity**.

##### Key insight for radio

Sleep helps reset the brain's emotional circuits so we respond to life more calmly and proportionally.

##### Source

Yoo, S. S., Gujar, N., Hu, P., Jolesz, F., & Walker, M. P. (2007).

**"The human emotional brain without sleep."**

Current Biology, 17(20), R877–R878.

<https://doi.org/10.1016/j.cub.2007.08.007>

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##### 2. Movement and Mood

Physical movement improves mood by influencing both brain chemistry and hormone levels.

Exercise increases the release of **endorphins**, **dopamine**, and **serotonin**, neurotransmitters associated with improved mood and wellbeing. It also helps regulate **cortisol**, the body's primary stress hormone.

Even short periods of moderate exercise have been shown to reduce symptoms of anxiety and depression.

##### Key insight for radio

Movement changes brain chemistry, which is why even a short walk can shift emotional state.

### Source

Craft, L. L., & Perna, F. M. (2004).

**“The benefits of exercise for the clinically depressed.”**

Primary Care Companion to the Journal of Clinical Psychiatry, 6(3), 104–111.

<https://doi.org/10.4088/pcc.v06n0301>

Also referenced by:

Harvard Medical School – Exercise and mood research summaries.

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## 3. The Nervous System and Stress Response

The nervous system operates through two major systems that influence stress and recovery.

### Sympathetic nervous system

Activates the fight-or-flight response when the body perceives threat or stress.

### Parasympathetic nervous system

Activates rest-and-digest processes that promote recovery, digestion, and sleep.

Healthy nervous system regulation involves the ability to shift between these states appropriately.

### Key insight for radio

Stress is not the problem. The problem is when the body cannot return to recovery mode.

### Source

McEwen, B. S. (2007).

**“Physiology and neurobiology of stress and adaptation.”**

Physiological Reviews, 87(3), 873–904.

<https://doi.org/10.1152/physrev.00041.2006>

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## 4. Writing Thoughts Down Before Bed

Writing down tasks or concerns before bedtime can help reduce mental rumination and improve sleep onset.

A study from **Baylor University** found that participants who wrote a **to-do list before bed fell asleep significantly faster** than those who wrote about completed tasks.

This is linked to the **Zeigarnik Effect**, where the brain continues thinking about unfinished tasks until they are recorded or completed.

### **Key insight for radio**

Writing things down helps the brain “close open loops” so it can relax.

### **Source**

Scullin, M. K., Krueger, J. M., Ballard, H. K., Pruett, N., & Bliwise, D. L. (2018).

**“The effects of bedtime writing on difficulty falling asleep.”**

Journal of Experimental Psychology: General.

<https://doi.org/10.1037/xge0000374>

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## **5. Arianna Huffington’s Work on Sleep and Burnout**

After collapsing from exhaustion in 2007, Arianna Huffington began advocating for sleep as a critical pillar of health and performance.

Her book **The Sleep Revolution** compiles research from sleep scientists and highlights how sleep deprivation contributes to burnout, poor decision-making, and reduced productivity.

She argues that modern culture often treats sleep as optional, when in reality it is **a biological necessity for cognitive function, emotional stability, and long-term health.**

### **Key insight for radio**

Sleep is not a luxury. It is a foundation for performance and wellbeing.

### **Source**

Huffington, A. (2016).

**The Sleep Revolution: Transforming Your Life, One Night at a Time.**

Harmony Books.

Also referencing research from sleep scientists including **Matthew Walker** and **Charles Czeisler (Harvard Medical School)**.

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## **Additional Authoritative Resources**

These institutions publish reliable research on sleep and stress:

### **National Sleep Foundation**

<https://www.sleepfoundation.org>

**Harvard Medical School Division of Sleep Medicine**

<https://sleep.hms.harvard.edu>

**American Academy of Sleep Medicine**

<https://aasm.org>

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The **CDC reports that about one-third of adults regularly do not get enough sleep**, which is associated with increased risk of chronic disease, depression, and impaired cognitive function.

Source

Centers for Disease Control and Prevention (CDC).

<https://www.cdc.gov/sleep>