

The P*S*iO formula

P*S*i = mind in Greek

P*S*iO, the companion of the
mind



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Design



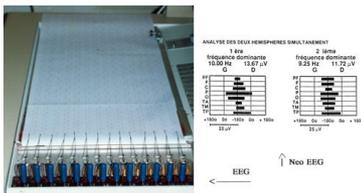
Stéphane Dumonceau

Stéphane Dumonceau

- Licenses and aggregations (teaching) from the University of Brussels (Faculty of Physical Education and Physiotherapy)
- Research associate at the ULB
 - Specialized in stress management for high-level athletes
 - New relaxation technologies - R&D of anti-stress products
- As part of a PhD in psychology at the University of Brussels and research at **Prof. Sorel's** neurology laboratory (EEG and EEG NEO), he updated the mode of action of pulsed light used in P*S*iO technology.



Prof. Sorel



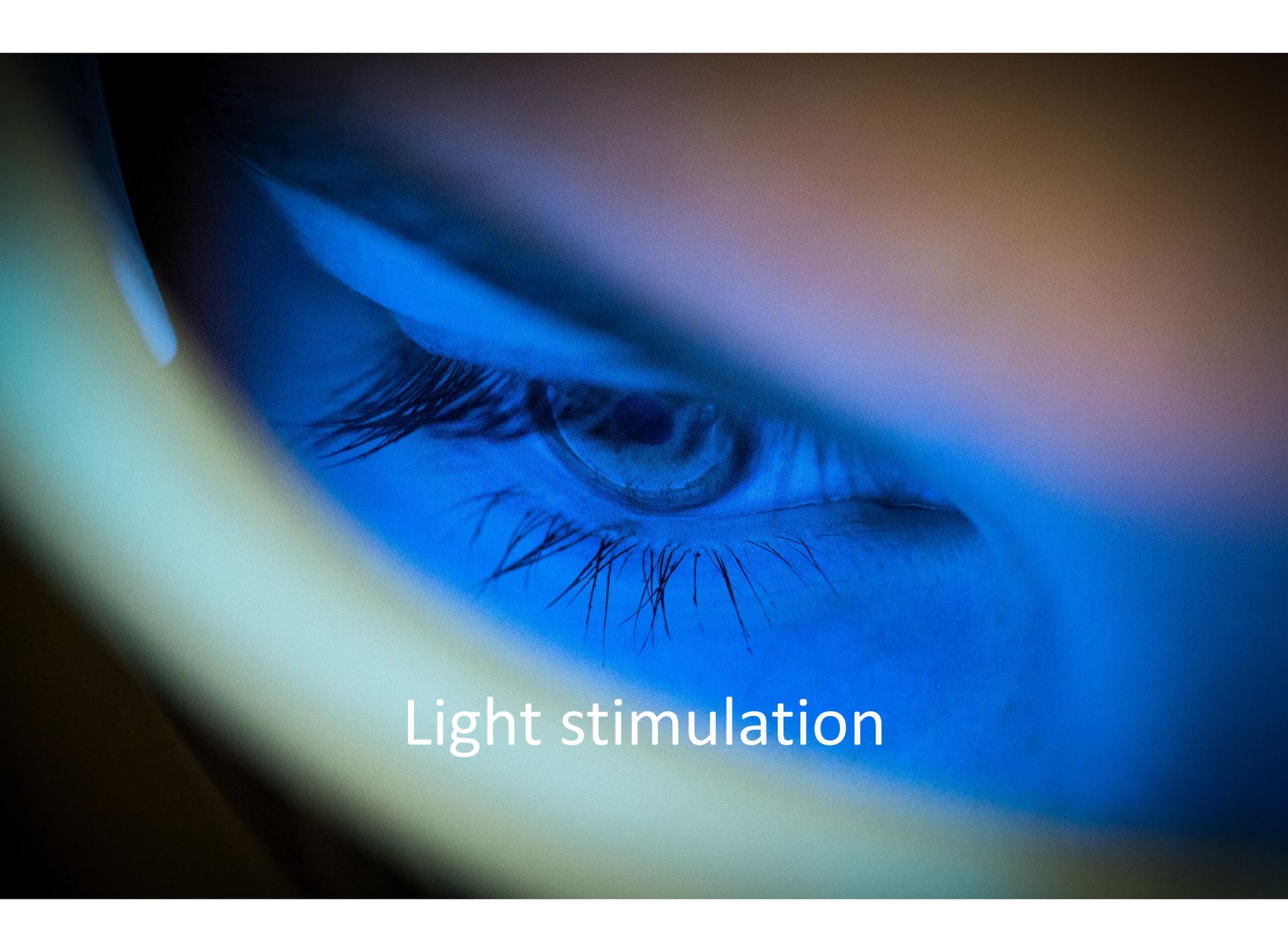
PSiO Technologies History



In 1988, Stéphane Dumonceau invested in a prototype and quickly produced the THETA +, a device that allows frequencies to be adjusted manually. He then developed the "Rêveur" or "Dreamer," the first portable, affordable, fully programmed device for private use. This was followed by an automated professional model (MENTALSTIM) and five generations of "Dreamer," then the "Mind Booster" in 2000, a simple decoder based on codes embedded in audio CD medications.

The problem was that there were four parts to connect together (GLASSES, HEADPHONES, CD PLAYER, and ELECTRONIC CONSOLE), and you couldn't open your eyes at all. In addition, only red light was emitted. Since 1992, Stéphane Dumonceau had been dreaming of an "all-in-one" device. But the technology did not allow for such a feat. In 2007, he created PSiO Technologies to revolutionize the field with the PSiO. It took him five years of research to achieve his goal.



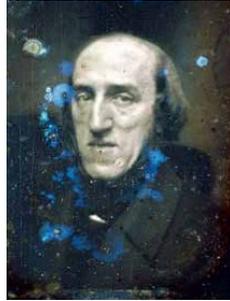


Light stimulation

History of Pulsed Light



Ptolemy 200 BCE



Joseph Plateau 1880



Pierre Janet 1890



W. Gray Walter 1948



Dr. Lefebure 1950



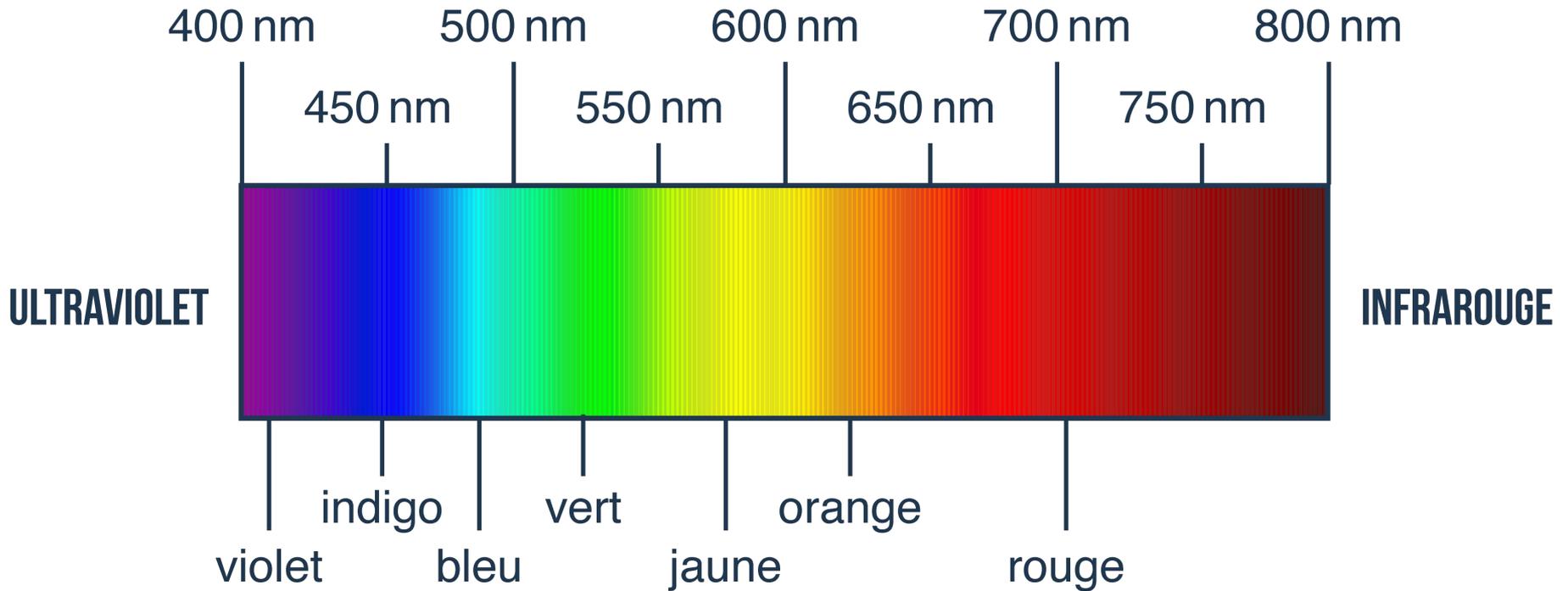
Brion Gysin 1958

The history of pulsed light began in the time of Ptolemy, 200 years after Christ! (a wheel with holes in front of the sun). In the 19^{ème}, Belgian scientist **Joseph Plateau**, who pioneered the invention of cinema, studied the oscillation of light. At the same time, French psychologist **Pierre Janet**, from the Salpêtrière Hospital in Paris, observed the benefits of pulsed light in increasing relaxation.

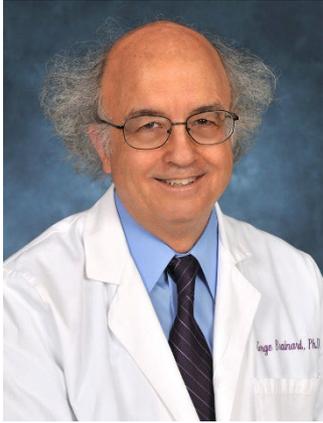
For a century, a multitude of scientists have been fascinated by pulsed lights and their highly distracting kaleidoscopic effect! In 1987, Stéphane Dumonceau discovered this principle and understood the power of this method for training his high-performance athletes.

More info at www.psioclinic.com

Light spectrum



Light therapy: major discoveries



Dr. George Brainard

2001 – Dr. George Brainard – Thomas Jefferson University

- discovers that light between 450 and 475 nm inhibits melatonin



Dr. David Berson

2002 – Dr. David Berson – Brown University

- Discovers a photosensitive pigment in ganglion cells: melanopsin
- Highlights a non-visual circadian system

Major discoveries



Dr. Siegfried Lehl

2005 – Dr. Siegfried Lehl – Nuremberg University

- Discovers that exposure to this light immediately improves:
 - ✓ Alertness
 - ✓ Memory
 - ✓ Reaction times
 - ✓ Cognitive processes
 - ✓ Learning abilities



Dr. Jamie Zeitzer

2014 – Dr. Jamie Zeitzer – Stanford University

- Discover that pulsed light is more effective than continuous light.

Pulsed light & circadian system

The Journal of Clinical Investigation

CLINICAL MEDICINE

Temporal integration of light flashes by the human circadian system

Raymond P. Najjar and Jamie M. Zeitzer

Department of Psychiatry and Behavioral Sciences and Stanford Center for Sleep Sciences and Medicine, Stanford University, Stanford, California, USA. Mental Illness Research, Education and Clinical Center, Veterans Affairs Palo Alto Health Care System, Palo Alto, California, USA.



BACKGROUND. Beyond image formation, the light that is detected by retinal photoreceptors influences subcortical functions, including circadian timing, sleep, and arousal. The physiology of nonimage-forming (NIF) photoresponses in humans is not well understood; therefore, the development of therapeutic interventions based on this physiology, such as bright light therapy to treat chronobiological disorders, remains challenging.

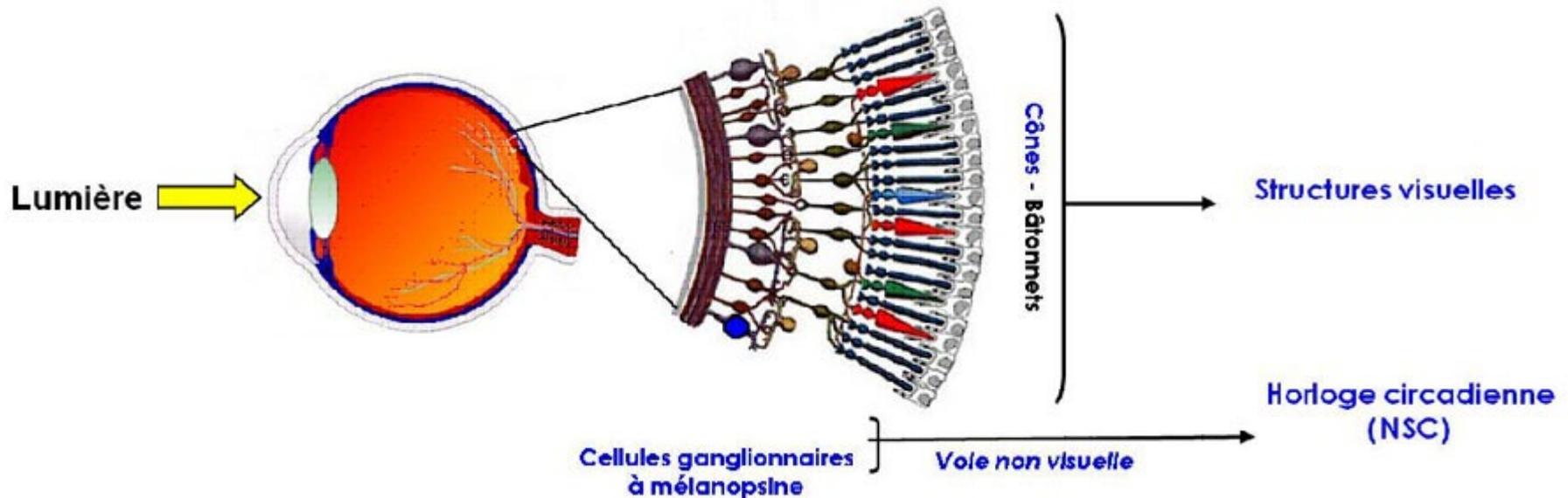
METHODS. Thirty-nine participants were exposed to 60 minutes of either continuous light ($n = 8$) or sequences of 2-millisecond light flashes ($n = 31$) with different interstimulus intervals (ISIs; ranging from 2.5 to 240 seconds). Melatonin phase shift and suppression, along with changes in alertness and sleepiness, were assessed.

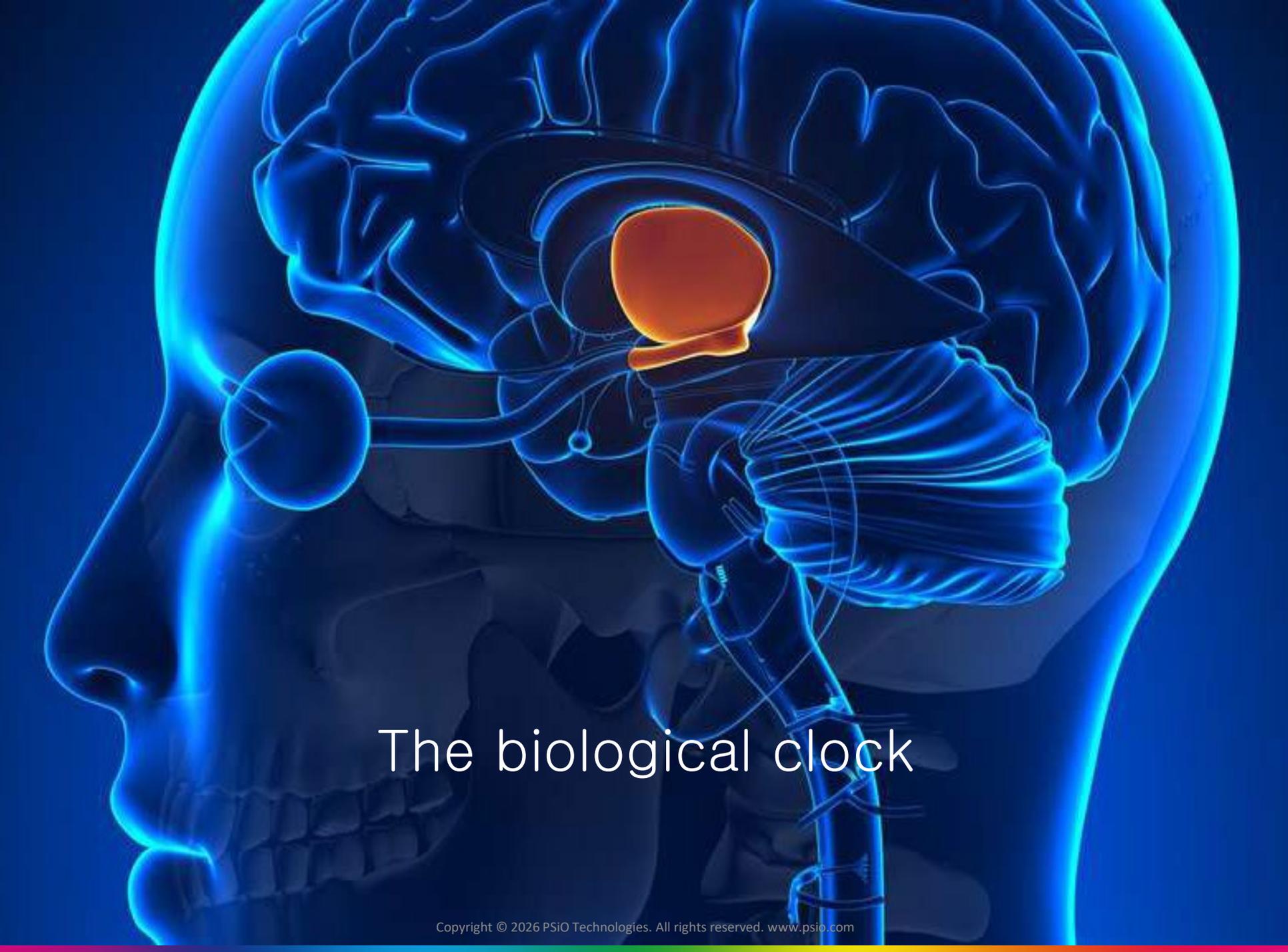
RESULTS. We determined that the human circadian system integrates flash sequences in a nonlinear fashion with a linear rise to a peak response ($ISI = 7.6 \pm 0.53$ seconds) and a power function decrease following the peak of responsiveness. At peak ISI, flashes were at least 2-fold more effective in phase delaying the circadian system as compared with exposure to equiluminous continuous light 3,800 times the duration. Flashes did not change melatonin concentrations or alertness in an ISI-dependent manner.

Conclusion: Pulsed light is more effective than continuous light for stimulating the circadian system.

Receptors (melanopsin)

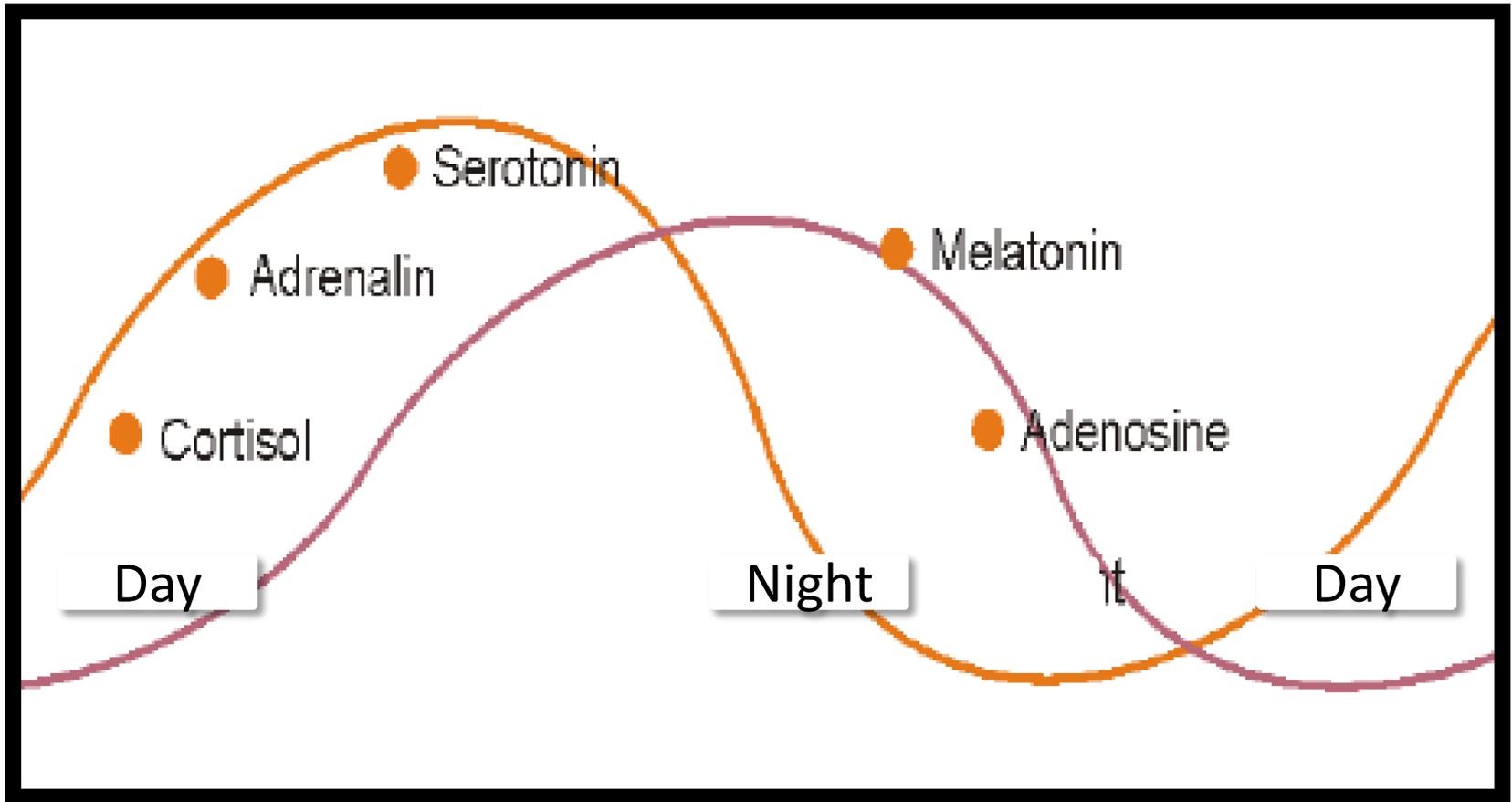
Ganglion cells, located in front of the cones and rods (responsible for vision), are equipped with a photosensitive pigment called melanopsin, which is particularly sensitive to the blue spectrum.





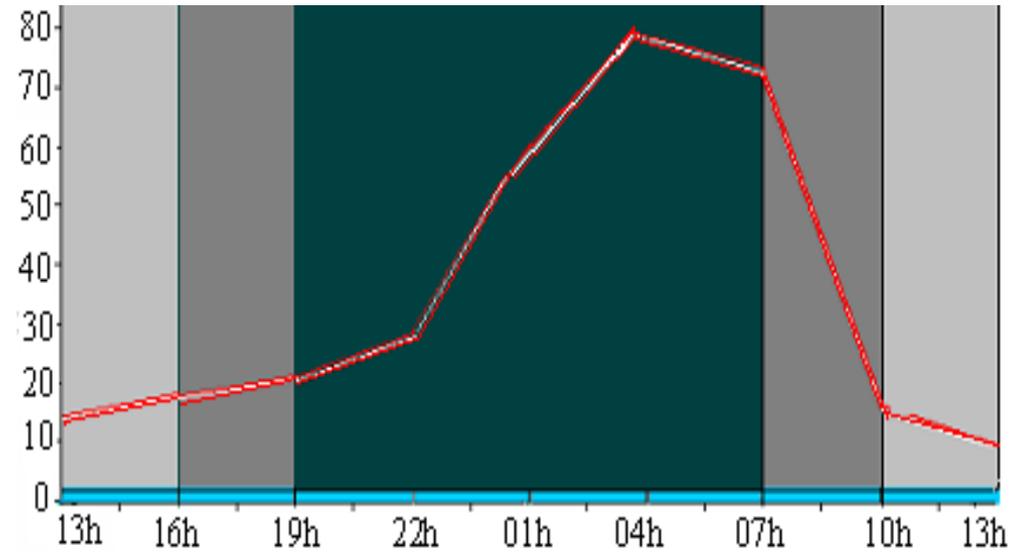
The biological clock

Hormone curves



Research on the influence of light

Melatonin curve



Experiment on 100 students

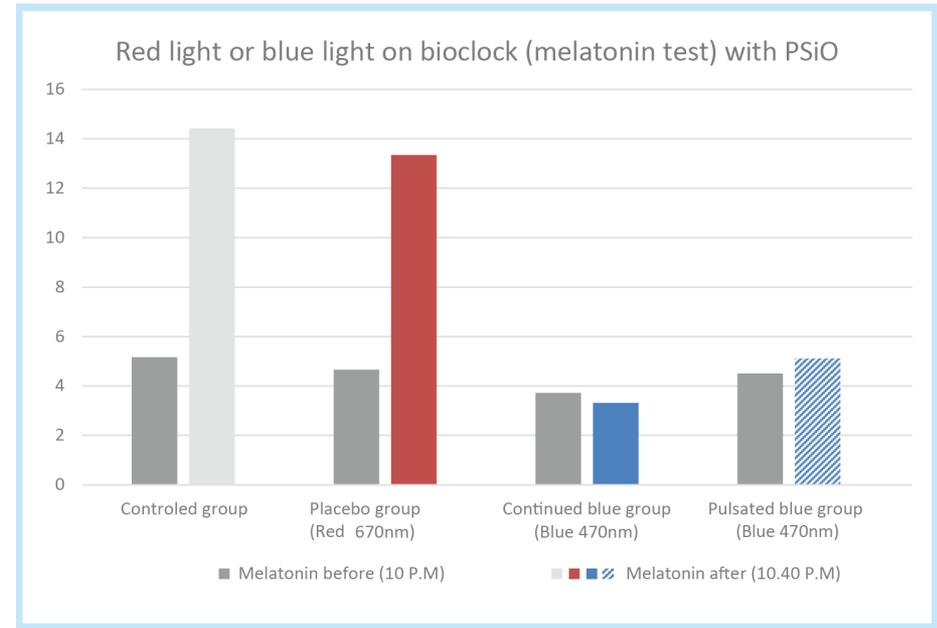
PSiO Technologies

Search: Results

- The blue light emitted by the PSiO in continuous mode inhibits melatonin secretion, demonstrating the benefits of morning sessions and power naps for seasonal depression and their usefulness in regulating the circadian cycle or jet lag.
- The blue light from the PSiO in pulsed mode has the same inhibitory effect but with half the illumination time and with the eyes closed (pulsed light is therefore significantly more powerful than continuous light).
- The red light from the PSiO—i.e., the light encoded for evening sessions ("audio medication")—does not inhibit melatonin production and therefore allows you to fall asleep naturally after a powerful relaxation session.

(*) Melatonin = Hormone associated with sleep

Study of the effectiveness of PSiO on melatonin inhibition (B)

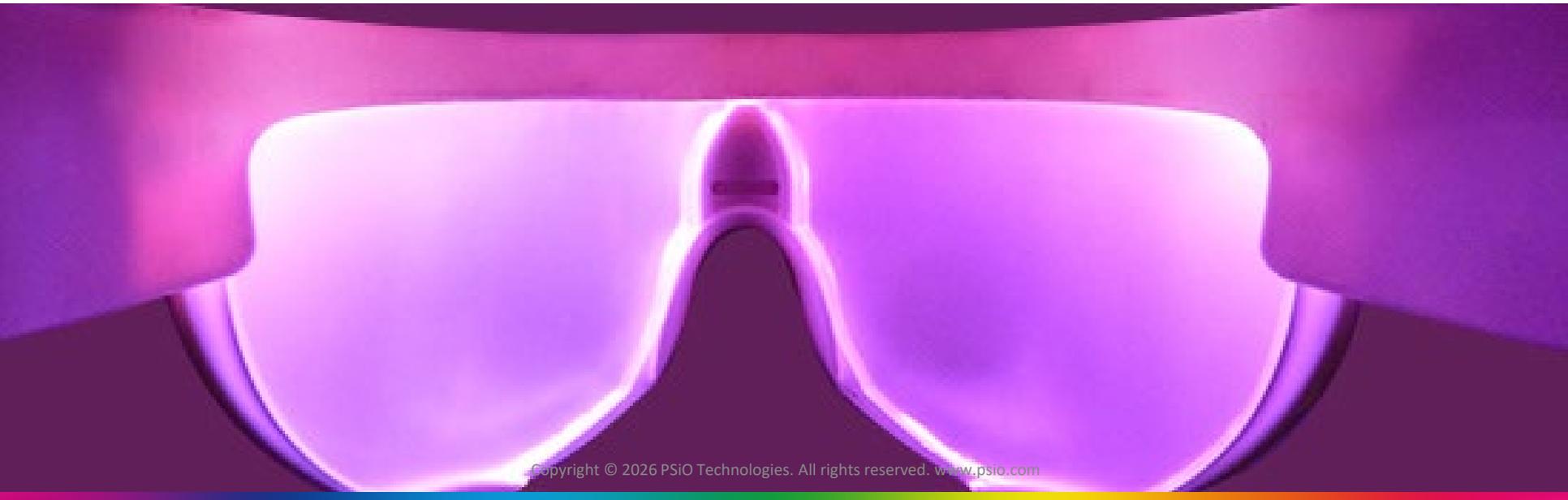


Melatonin at 10 p.m. (gray)
Next column: melatonin 40 min. later.

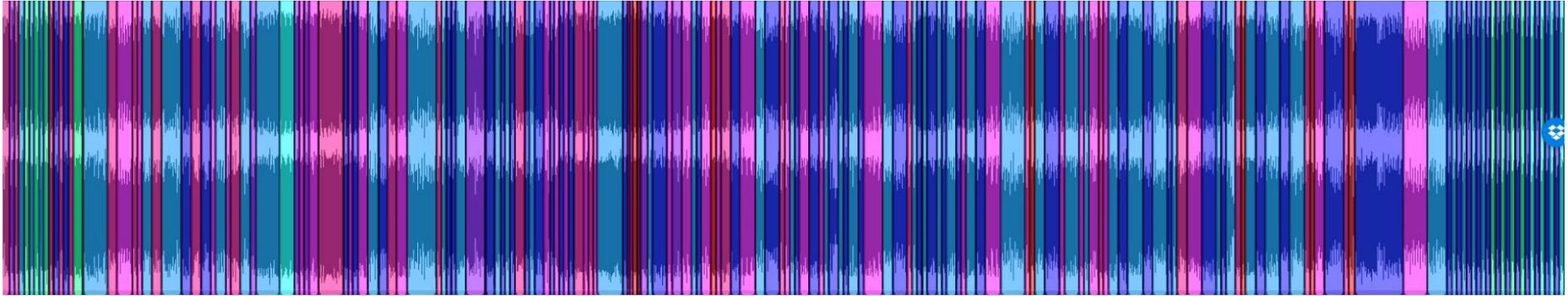
N.B. No significant difference between the continuous blue and pulsed blue groups.

PSiO: two modes for light

- Programs in "**pulsed light**" mode focus on stopping rumination. They are therefore suitable for sleep problems or stress. They also enhance all deep relaxation programs.
- Programs in "**continuous light**" mode constitute what are known as photosensitive sessions.



PSiO Technologies invents the turbo nap

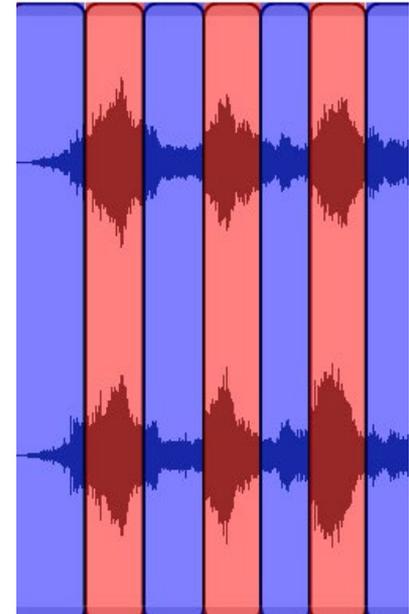


Pulsed light sequencing on audio recording

What is a turbo nap?

It is a pause in cortical activity accompanied by light that stimulates the biological clock into "day" mode.

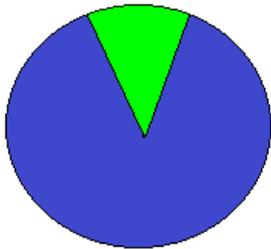
PS: PSiO Technologies has developed proprietary software: MP3 Color Editor



Wavelengths & colors



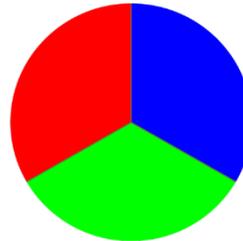
Morning sessions
Positive visions
Enriched with blue



470 nm
They allow you to wake up more effectively thanks to continuous light and start the day in great shape thanks to positive visualization practiced with your PSiO



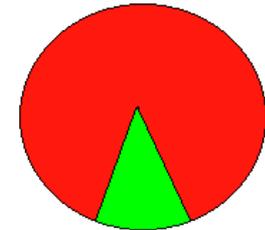
Afternoon sessions
Afternoon sessions
Music
Multicolored



470, 528 & 625 nm
These are real turbo naps, allowing you to take a restorative break with music while stimulating your mind with pulsed light. The result: energizing!



Evening sessions
Relaxing voices
Enriched with red

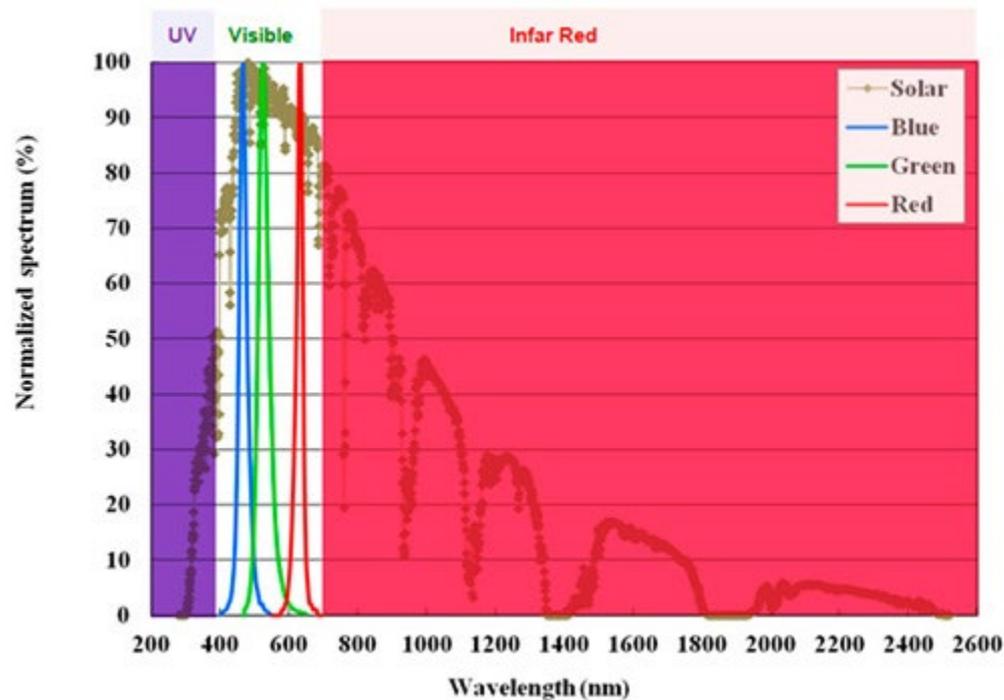


625 nm
Red pulsed light combined with voices and music stops ruminative thoughts and naturally puts the mind at rest; it is the ideal alternative to sleeping pills.

Technical Specifications

Valeurs			Unité
Rouge	Vert	Bleu	
625	528	470	Nanomètres (nm)

- No UV
- No infrared



Couleurs	Magenta	Ecarlate	Rouge	Orange	Jaune	Pomme	Vert	Turquoise	Cyan	Indigo	Bleu	Violet	Blanc
1	90	43	26	41	79	67	63	77	116	74	54	63	135
2	178	86	61	84	160	125	107	141	211	138	101	123	249
3	253	130	94	130	232	176	149	199	298	194	141	174	342
4	325	170	126	170	293	222	190	249	362	249	180	235	454

Sound stimulation



Recordings by P*Si*O Technologies

- ✓ Meditation through voice
- ✓ Musical power naps
- ✓ Relaxation through voice

PSiO sessions

With over 200 applications already available, the CATALOG is growing with a variety of themes.



Morning sessions: **guided MEDITATION (mindfulness)** and positive visualization sessions to be practiced with HIGH ATTENTION.



Afternoon sessions: generally short (2-5 min), medium (10-15 min), or long (30-40 min) **power naps with music.**



Evening sessions: **guided RELAXATION** sessions offering total letting go of attention and soothing suggestions in multi-evocations (25-40 min).

Morning sessions – mindfulness



A. The "STOP TIME" series

This series offers the basics of meditation.

B. The "NOVA ERA" series

This series offers guided visualization followed by letting go to music.

C. The "DOUBLE YOU" series or double listening

This series of tracks is unique in that it offers two different and even opposing types of integration: conscious and subconscious.

Use will prove that these two approaches complement each other very well.



Afternoon sessions



They differ in length:

- 2 to 5 min
- 5 to 15 min
- 25 to 50 min

Their content:

- music
- music + beats
- relaxation through voice and colored in shades of blue)

Special case



Shop

Shop

MP3 Programs

Morning
(Positive Visions)

Afternoon
(Music & Beats)

Afternoon
(Music)

Afternoon
(Relaxing Voices)

Stress Management

- ▶ Joy of Life
- ▶ Addictions
- ▶ Weight
- ▶ Functionnal Disorders

Evening
(Relaxing Voices)

Evening
Dr L. Glaberman

Stress Management ▶ Afternoon
(Relaxing Voices)

Title	Duration
 Letting Go (Voices) PHOTOSENSITIVITY	31'27"
 Stress Management (Voices) PHOTOSENSITIVITY	47'0"

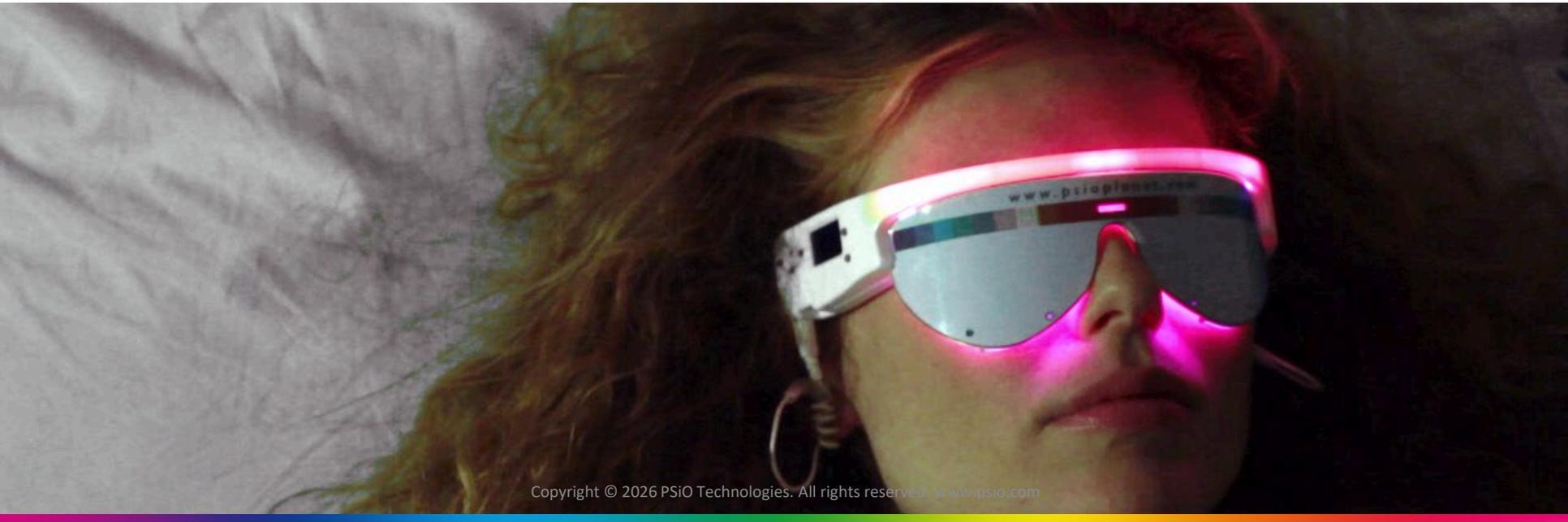
Total : 2 titles

These Audiocaments are the same as those in the "Evening" section but are colored blue specifically for patients suffering from depression.

Evening sessions

All evening sessions are designed for RELAXATION and letting go of your attention.

This is precisely what the "Audiocament" series is all about: an exclusive brand that P*SiO* Technologies has integrated into pharmacies, originally in the form of audio CDs, now colored with red-orange tones (does not influence the biological clock).



Audiocaments – Active Ingredients

Active ingredient no. 1: relaxation of the body



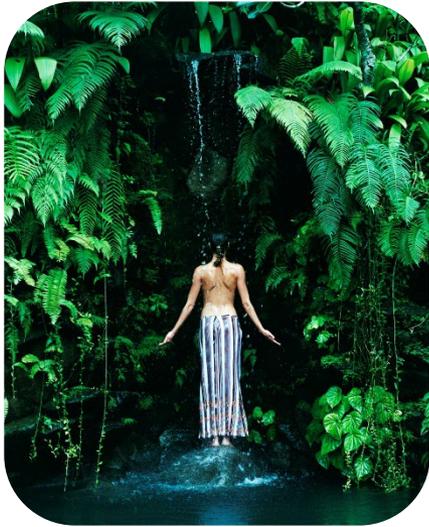
The relaxation technique offered is based mainly on **relaxing voices**, but also includes soft music and nature sounds. Using recognized techniques, Audiocaments first offer **guided physical relaxation** based on sophrology, contraction and relaxation, awareness of body parts and their state of tension, slow breathing, controlled exhalation, etc.

Active principle #2: relaxation of the mind



Specific sound frequencies that induce alpha brain waves (a state of relaxation) play in the background. Gradually, rumination decreases. Then, different stories, sometimes in the right ear, sometimes in the left ear, automatically cause the listener to let go of their attention. The suggestion phase can begin...

Audiocamements – Active Ingredient



Active ingredient no. 3: targeted suggestion

This technique is based on metaphorical stories featuring soothing, symbolic images laden with meaning: a vacation landscape, a walk in the forest accompanied by birdsong, memories of a weekend at the seaside, climbing a hill with the pleasure of reaching the summit, etc. Visualizing positive and pleasant images has an immediate calming effect on the emotions and nerves. The suggestions and images differ depending on the theme!



Active principle #4: factors that trigger self-repair

Several of the keys that unlock natural self-repair processes are found in audio remedies:

- Soft voices
- Empathy
- Warmth
- Emotion
- Intention
- Conviction

Audiocaments



Optimizing self-healing

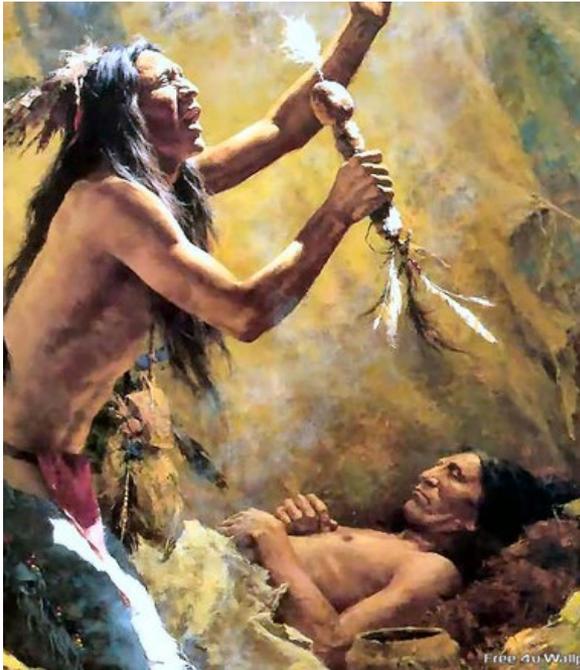
It is the oldest medicine in the world: that of the heart! Nature has endowed us with an astonishing power of self-healing, which, as we know, is activated in the presence of various purely emotional factors. Thus, the best medicine a doctor can prescribe is the doctor himself! But the time that caregivers have to devote to patients is limited. PSiO and audio medicines thus become **the emotional extension of the relationship** initiated by the care provided by healthcare professionals.



Scientific and therapeutic validation

While PLACEBO is a sham, the physiological self-repair response is a scientific fact: it is the "PSYCHEBO RESPONSE," the body's physiological response to psycho-emotional care. Understanding how this response works on the one hand and how to improve it on the other is an interesting approach that has recently emerged in medical schools. Science has identified this self-repairing power very precisely through double-blind studies. We can thus appreciate the importance of the emotional relationship on natural self-repairing processes, even when no substance is delivered.

The origin of self-repair



Two types of kindness

1. Kindness towards oneself
2. Kindness received from others.

Over 27 audio remedies already available

Introduction to the Audio-Medicine

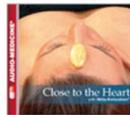
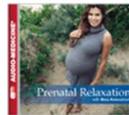
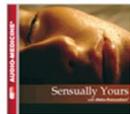
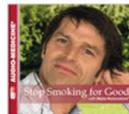
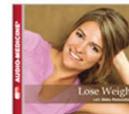
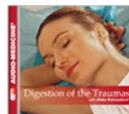


Letting Go
Title to help the listening of Audio-Medicine

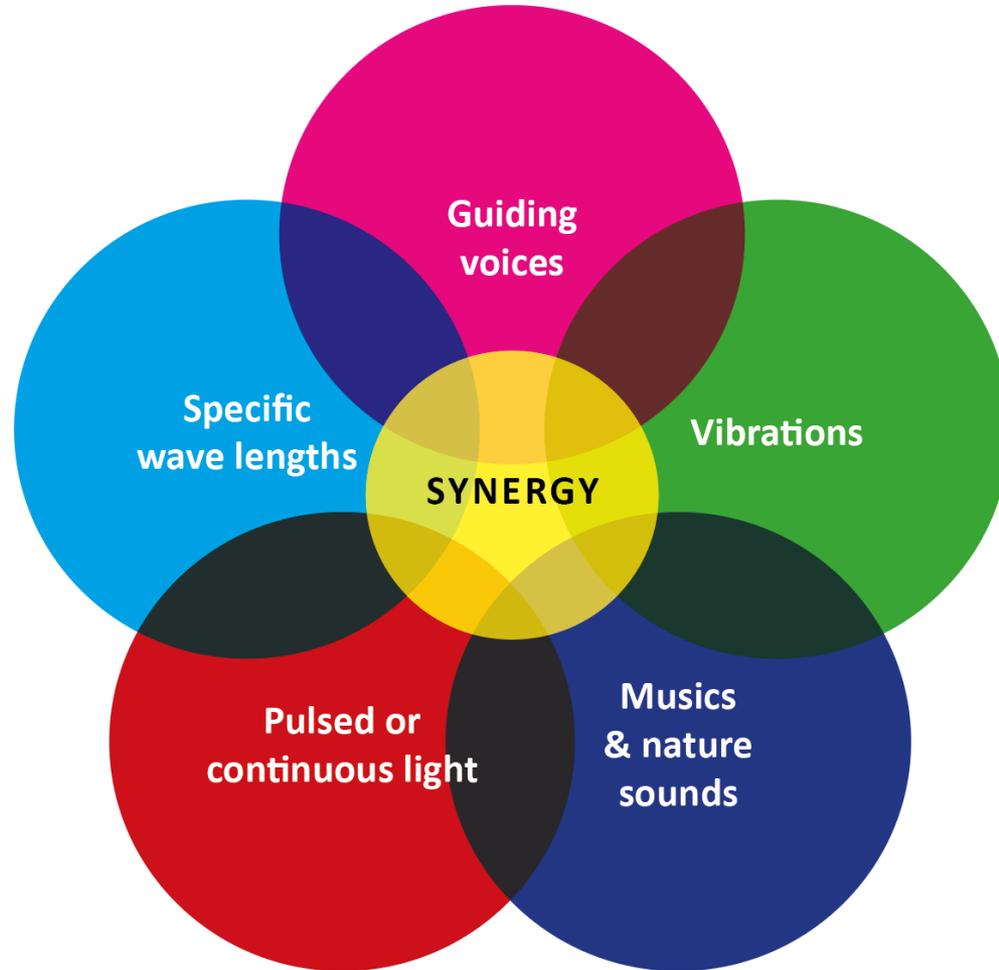
Track 1 of this recording includes preparation for the technology of audio-medicine and some advice about how to listen to audio-medicine. Track 2 offers a guided relaxation session and then helps you to let go in order to benefit as much as possible from the technology used in this audiomedicine.

Listening to this recording first is therefore essential for people who have never experienced a state of deep relaxation. We wholeheartedly recommend it before listening to your first audiomedicine.
Length: 35:09

Audio-Medicine

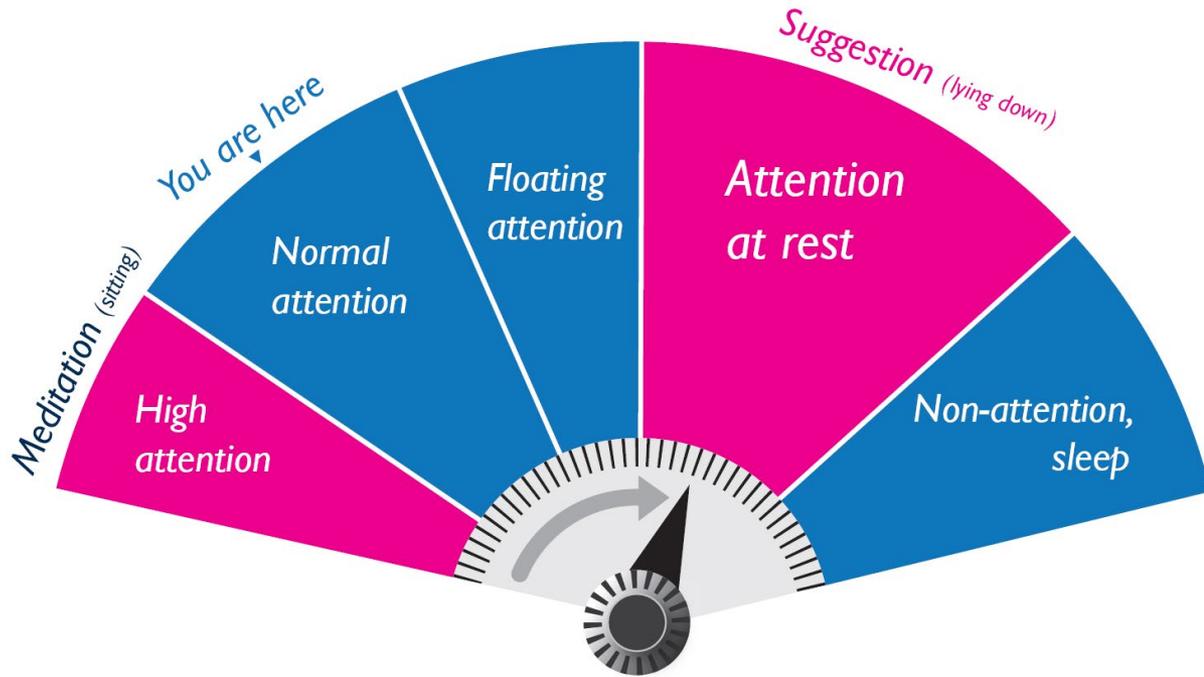
 Headaches	 Respi-Relaxation	 Meta-Climax	 Managing Psoriasis	 Relaxing at the Dentist's	 Before the Operation
 During the Operation	 After the Operation				
 Joy of Life	 Cardio-Relaxation	 Close to the Heart	 Prenatal Relaxation	 Managing Stress After a Separation	 Managing Bulimia
 Table Yoga	 Fall Asleep in The Garden of Gods	 Sensually Yours	 Stop Smoking for Good	 Be Happy Again	 Lose Weight
 Stress Management	 Zen Attitude	 Pain Management	 Digestion of the Traumas	 Free One's Mind	 Sugar-Free

Sound & light



The ingredients that make up PSiO technology

What is the target field of consciousness?



Who are PSiO programs intended for? For people who are in great need of rest, recovery, or deep relaxation. The target field of consciousness will therefore be the one preceding sleep, with optimal letting go of attention.

Meditation sessions, which by definition involve working with high levels of attention, are therefore generally excluded from basic healthcare offerings.

Understanding changes in EEG (electroencephalogram) activity

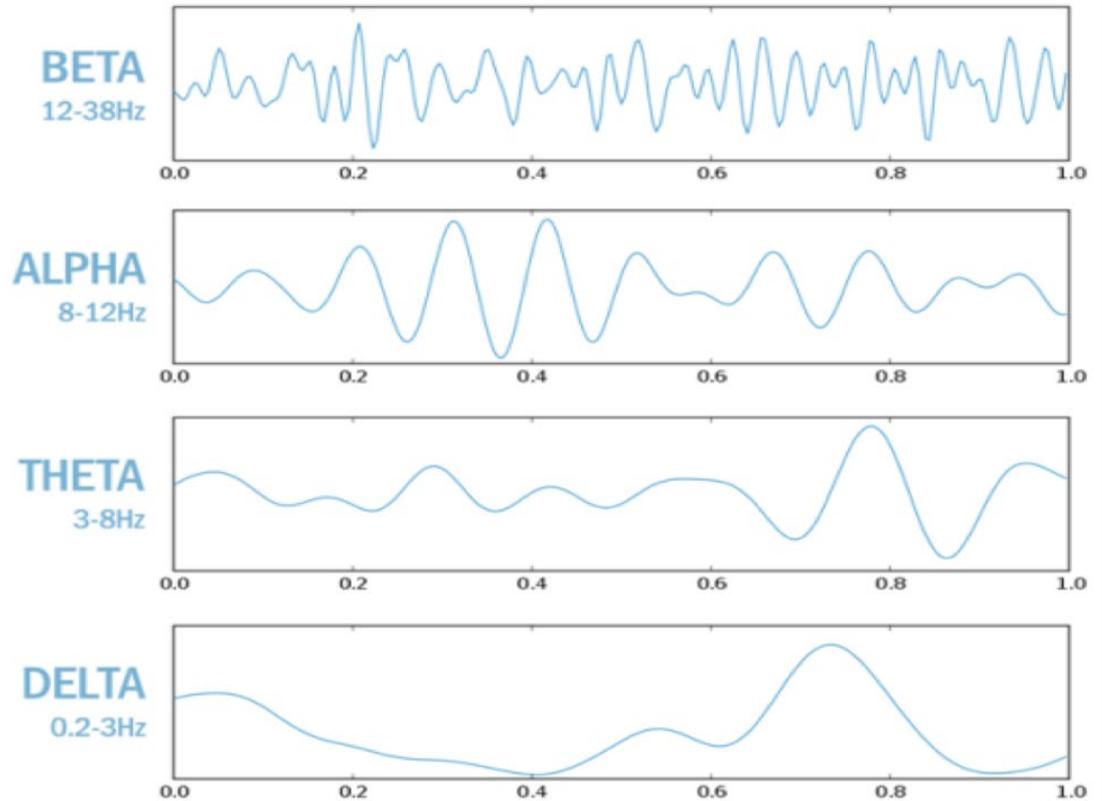


The bioelectrical activity of neurons results from biochemical exchanges in the cortex.

Electrodes placed on the scalp detect the electrical activity of neurons.

The greater the cortical activity, the faster the frequency of the brain waves. And vice versa.

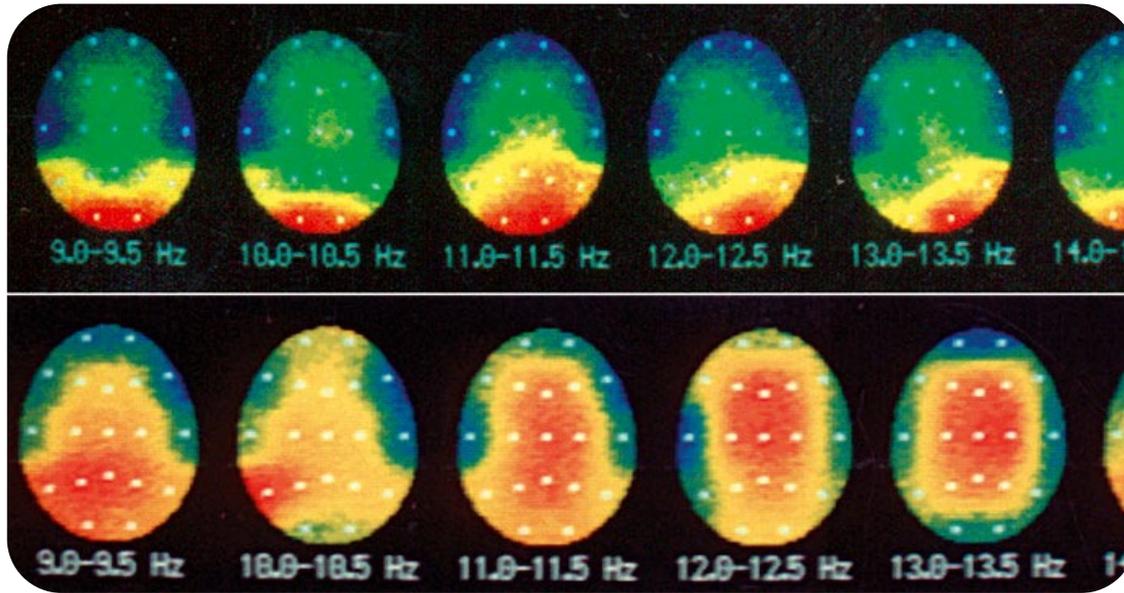
Brain waves



Images: Hugo Gamboa, Creative Commons Attribution Share Alike 3.0

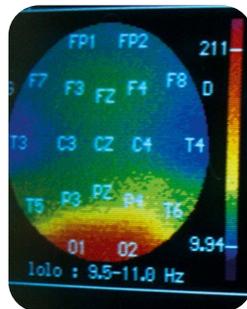
Here are the cortical wave patterns reflecting different activities:
BETA (attention), ALPHA (floating attention), THETA (resting attention), and
DELTA (sleep).

Influence on brain waves

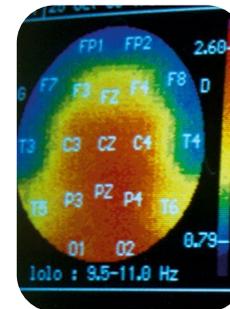


This brain mapping view shows us in color the influence of PSiO technology on brain waves specific to relaxation (red = alpha waves).

N.B.: Alpha waves are the waves associated with relaxation.

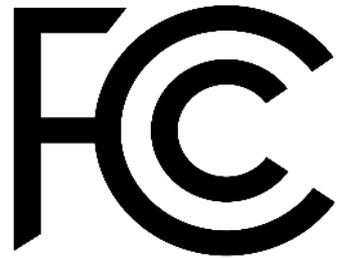
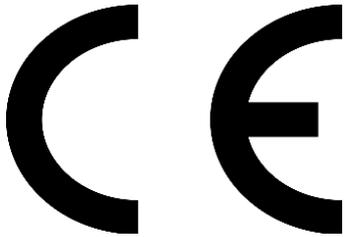


Before PSiO



After 10 minutes of PSiO

Standards and Certifications



PSiO Technologies has all the necessary certificates and standards:

- CE Certificate
- Medical CE Certificate
- FCC Certificate (no electromagnetic interference)
- LNE Safety Certificate
- Utility Certificate
- ISO 13485 Standards
- ISO 9001 standards
- Patent