



NeuroSonica® Sleep Solutions

Australian Register of Therapeutic Goods No. 282405

REGULATORY INFORMATION

Manufacturer:

NeuroSonica Pty Ltd
220 Daws Road, Daw Park, South Australia, Australia 5041

Product:

NeuroSonica SmartSound™ (Sleep Solutions version)
3 Audio Sessions delivered via digital media (CD, mp3
player, mobile App, Audio stream etc)

Batch No: SS001

Date of Manufacture: 12/10/2015

Intended Purpose:

NeuroSonica SmartSound™ (Sleep Solutions version) may provide the user with assistance for stress and anxiety, sleep management and sleep quality.

Intended Users:

May be used by those 18 years or older, or by teenagers 13-18 years if under adult supervision. All use is subject to the following contraindications.

Recommended Usage:

One or two sessions per day as needed.

Contraindications:

SmartSound™ includes pulse-based audio stimuli and is not recommended for those with the following conditions, unless under medical supervision:

- Epilepsy (seizures) or neuro-respiratory disorders
- Serious mental, psychiatric or neurological conditions
- Those wearing a Pacemaker or other electronic medical device
- Any other condition(s) that may be adversely affected by audio stimuli [More detail](#)

Possible Side Effects:

Initial adjustment to SmartSound™ audio stimuli may produce mild discomfort, tiredness, minor headaches or disorientation in some listeners.

If so, simply play at barely audible levels, stop the session(s) at any given point or listen less frequently. If you experience severe or ongoing discomfort discontinue use and consult a doctor.

WARNING:

Never listen while driving, operating machinery or equipment, under the influence of drugs or alcohol, or while undertaking any potentially hazardous activity.



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SmartSound™ is included as a Medical Device in the Australian Register of Therapeutic Goods

We are honoured to have this status and recognition, which also entails certain responsibilities, requirements and disclaimers, including the following:

- (1) While SmartSound™ has proven 100% safe and effective it must be used only as instructed and in accordance with our Disclaimer.
- (2) NeuroSonica SmartSound™ products are not intended as a replacement for medical or psychological treatments of any kind.
- (3) Those receiving treatment for any serious or contraindicated conditions should use SmartSound™ only under the guidance of a qualified medical or other health professional
- (4) We are not an advisory service and do not provide any form of medical or psychological advice.
- (5) All material and information provided herein is for educational purposes only.

Disclaimer:

NeuroSonica® and its affiliates assume absolutely no responsibility or liability whatsoever for the use or abuse of our products. The user/buyer hereby assumes full responsibility thereof and agrees to abide by any and all conditions laid out in this Sleep Solutions User Guide and elsewhere.





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Welcome to NeuroSonica® Sleep Solutions

Complete sleep & stress management. At home or on the move

Congratulations! At last you can get quality, effective Sleep and Stress Management anytime you need it – both at home and when travelling.

**Recommended Ages: 18+
(13-18 yrs under adult supervision only)**

Sleep Solutions is for the general day to day management of stress and sleep. If you have serious insomnia or stress/anxiety conditions please check out our more intensive and extensive suites: N-Sleeper for Insomnia and N-Calm for Stress/Anxiety.

A lack of sleep and stress often go hand in hand, and if ongoing can lead to serious, life threatening health issues – including heart disease and cancer.

Fortunately, your *Sleep Solutions* uses a powerful, proven new audio technology called SmartSound™ - which is explained in further detail below.

**SmartSound™ is not music.
It's a new genre of scientific sound.**

While your SmartSound™ sessions include musical elements, they are essentially highly complex, abstract therapeutic soundscapes. Their various hybrid sound technologies are designed to fully engage your brain and auditory processing.

SmartSound™ sessions work synergistically and may produce both short and long term benefits. In addition to providing evidence based assistance for sleep and stress management, they may also encourage additional health benefits with regular use including:

- Improved immunity and heart function (HRV)
- Rapid reduction of stress hormones including cortisol, adrenaline and noradrenaline
- Enhanced production of serotonin, endorphins, DHEA (anti-aging), Melatonin and other beneficial neuro-chemicals
- Rapid restoration of healthy sleep patterns and relief from Jet Lag
- Improved hemispheric balance, brain blood flow and general brain function leading to enhanced work performance
- Enhanced mental and emotional wellbeing
- Relief for headaches, help for PMT and high blood pressure

Yes, this is seriously effective new technology.

And that's why we know you'll love using it time and time again, at home or on the move.



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Your Sessions

ReGen (20 mins)

This session may produce a very enjoyable, unique relaxation response that includes some gentle, refreshing neural and auditory stimulation. It incorporates Alpha, particularly at 10 Hz enhanced with some gentle Gamma.

This combination can create a more focused, body relaxed/mind awake state ideal for rejuvenation, creative 'flow states' and de-briefing.

You can also play it quietly with your eyes open while reading or relaxing.

As it may leave you feeling both relaxed and refreshed, and it can also be helpful prior to that stressful business meeting or other task.

D-Stress (30 mins)

This session may produce a rapid, sustained deep relaxation response which can be used for stress and anxiety reduction or in preparing for sleep.

It modulates through the Alpha range and then descends down to the Alpha/Theta threshold and beyond.

It's ideal for rapidly reducing stress, anxiety or jet-lag, or as a quick 'power nap', restorative meditation and so on.

The frequencies included in D-Stress have been associated with many beneficial, healing hormones and other neurochemicals.

Sleep Science (60 mins)

Sleep Science's special combination of sound art, pulses, frequencies and other SmartSound™ technologies has been carefully engineered to be effective even in noisy environments using earbuds.

If you are in a quiet environment or have enclosed or noise cancelling headphones simply play at a comfortably low volume.

Because SmartSound™ is such an effective new technology you'll *feel* it working within minutes as you begin to relax and drift towards sleep – easily and effortlessly.

And as well as getting deeper and more refreshing Sleep, you may also enjoy many valuable health benefits with regular use.

The session modulates through the Alpha and Theta range before descending to Delta. It also includes some gentle Gamma.



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How to Listen

No active listening, concentration or other skills are required.

1. Choose your audio session as needed, get comfortable or lie down
2. Close your eyes for sleep or deep relaxation
3. Always listen through Stereo Headphones
4. Play at low to comfortable volumes
5. And let our Science of Sound do the rest!

Like any high energy audio, if played too loud or too much they may become overstimulating and tiring, but keep in mind that audio intensity can be easily regulated by volume levels.

Always allow at least a few minutes to readjust after a session.

In the highly unlikely event you experience significant discomfort or any other problems while using this audio please stop using it immediately.

When to Listen

Regen or D-Stress can be used morning, afternoon or early evening.

Sleep Science should only be used when you are about to sleep

A Built-In Bonus

Most SmartSound™ sessions are effectively two in one. This is because many of our sound technologies are asymmetrical, sending different sounds and effects to each ear. So by simply reversing your headphones before you play a session you'll enjoy a different neurological experience. Doing this on a regular basis may significantly enhance the effectiveness of your sessions! To help you, at the beginning the word 'neuro' is in your left ear and 'sonica' is in your right. So simply reverse this on a regular basis with 'neuro' in your right ear and 'sonica' in your left. Experiment and see what combinations work best for you.

NEVER play SmartSound™ while driving, operating equipment or machinery, or doing any potentially hazardous activity.



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Additional Tips & Considerations

If you fall asleep during a session will you still receive benefits? Yes, aside from the fact you'll still be wearing your headphones or other listening gear your brain will continue to receive helpful audio stimuli for the duration of the session. So as long as you're in a safe and comfortable position as instructed this should not be a problem.

SmartSound™ engages your brain and ears much more than any other 'brain audio' so please don't over use it - less can be more! By all means use Sleep Science during the day if you intend to sleep for shift-work or other reasons. However, if this is not the case, we suggest you try and limit your total daytime relaxation from D-Stress or ReGen to less than 50 minutes total or you may become too drowsy for optimal daytime functioning. Longer night time relaxation is fine and can also provide additional sleep assistance.

Finding the right volumes for your Sleep Science session is important. Your needs will also vary with your current state of mind and situation. Generally, low levels are recommended. However people vary greatly in their sleep 'triggers' so please experiment. We've had users recommend playing the first 10-15 minutes or so at louder volumes to gently 'overload' their brain before returning to lower levels. Similarly, some recommend immediately replaying the first 10 minutes or so as it seems to reinforce the neurological pathways just traversed. There is much to learn regarding sleep in general as well

as the use of this audio, so if you're having difficulties please experiment - and don't forget to try headphone reversals.

All Sleep Solutions sessions can be used to 'pattern interrupt' – to quieten and help neutralise intrusive, stressful or anxious thoughts and over analysis. However, if these do occur, try and re-direct your mind as best you can towards positive, constructive or at least neutral thoughts, images or associations as discussed in our section on neuroplasticity.

Experienced users can also play their D-Stress and ReGen relaxation sessions with eyes open to create various 'flow states' states for creative thinking or similar tasks. For this, use very low non-distracting volumes and ensure hazard free environments and situations as per our disclaimer.

Your sleep and relaxation sessions can still be effective (although much less immersive), if played through external stereo speaker systems. However, many of the spatial technologies will be compromised or cancelled. Sleep pillows can also produce good results.



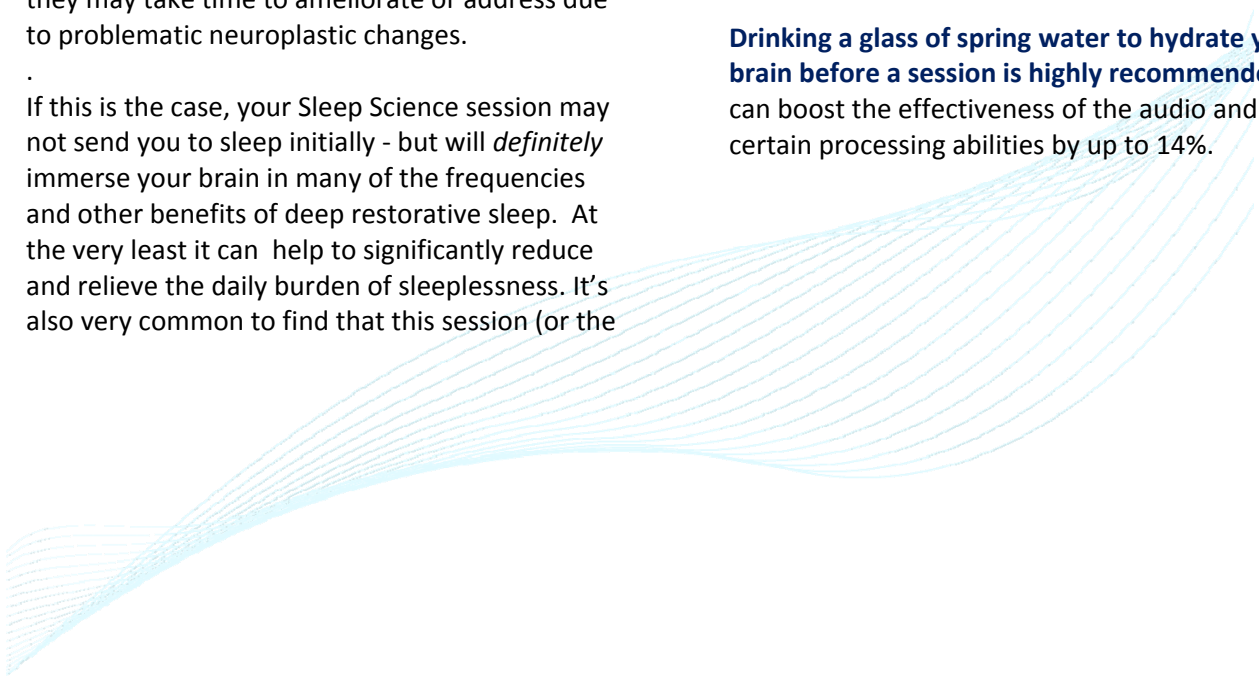
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Sleep Solutions in contrast to N-Sleeper is designed for day to day sleep and stress management, rather than assistance with serious insomnia or other severe sleep/stress issues, if you've experienced long term sleep difficulties they may take time to ameliorate or address due to problematic neuroplastic changes.

If this is the case, your Sleep Science session may not send you to sleep initially - but will *definitely* immerse your brain in many of the frequencies and other benefits of deep restorative sleep. At the very least it can help to significantly reduce and relieve the daily burden of sleeplessness. It's also very common to find that this session (or the

others) may calm you down so much that you fall asleep sometime after playing it - but please don't sabotage this with counterproductive clock watching or anxious expectation as discussed elsewhere!

Drinking a glass of spring water to hydrate your brain before a session is highly recommended, it can boost the effectiveness of the audio and certain processing abilities by up to 14%.





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Extra Strategies for Sleep and Stress Management

To enhance the benefits of your SmartSound™ sessions we recommend exploring the synergies offered by other strategies and practices which are covered below.

As you'll see below, sleep and stress/anxiety issues are frequently interrelated, and assistance with one often assists another.

Although the following information is based on some of the latest findings in sleep hygiene and stress/anxiety management it is not intended as medical or psychological advice. Please always refer to a medical professional for such advice.

Firstly, it is important to rid yourself of misinformation concerning stress and sleep. For starters, a certain amount of stress - and even anxiety, can be beneficial. The short term energizing and motivating effects of positive stress (or eustress) or the 'fight -flight' survival response of anxiety for example can encourage optimal psychological or physical performance - especially when faced with important, urgent or life threatening situations.

It is usually when you are unable to 'switch off' or from these responses after the stimulus has been removed and they become chronic, that they become problematic. Regarding sleep, it is important to understand that natural sleep is mostly a 'roller coaster' of light, deep and REM states over 90 minute cycles. It's *perfectly natural* to become semi-awake or to wake up completely at various times during the night.

Not understanding this can lead to irrational anxieties which only serve to speed up brain function and thus further keep you awake. By understanding and accepting this when it happens you'll be far less likely to escalate into a self-defeating anxiety loop and far more likely to fall back into sleep!

Related to this is the run-away 'monkey-mind-chatter' that so often keeps us awake and prevents us from falling asleep in the first place. This is typically high-range Beta based brain activity- also involved in stress/anxiety states, which needs to slow down to Alpha and below to allow sleep. In addition to those used in your audio there are other strategies to counteract this, apart from counting sheep! Because the mind constantly seeks



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attachment to something, one technique is to allow it to play and explore freely at will – to go where it wants without hyper-vigilant, frontal lobe Beta based analysis, censorship and interference.

The only time you should consciously re-direct it is if you notice you have fallen back into counterproductive anxiety and worry about not sleeping! Fantasize, recall fond memories or movies, imagine beautiful places or a big blue sky- anything that frees up your imagination and your minds associative abilities is likely to be helpful. Surrender; let it go as best you can.

Developing daily stress/anxiety management practices, in addition to using your audio, can assist with sleep issues and even heart health! Some studies suggest the most dangerous stress is the low-level chronic variety, e.g. ongoing daily worries about finances, family and so on. While chronic low-level stress may not trigger an emergency 'fight, flight, freeze' response via your sympathetic nervous system (SNS), it can compromise your parasympathetic nervous system (PSNS) and its healing 'rest and digest' functions. Reduced PSNS, as indicated by low heart rate variability (HRV) is believed to precede over 80% of heart attacks. Another reason to use our heart friendly relaxation and sleep audio on a regular basis!

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Emotional issues, stresses and anxieties tend to get stored biochemically/energetically at a cellular level so they can often be integrated and released through various bodymind or psychosomatic modalities. These include various forms of physical exercise, massage, yoga, chi kung, energy psychology (including EFT), certain meditation and breathing techniques and so on. All are worth investigating and you'll find many excellent resources available on the net.

Get adequate daily exercise - especially aerobic. It can help release stored stress and tension as well as significantly assist mood stabilization and general mental/emotional health. If possible exercise out-doors or in nature – natural environments, fresh air and sunshine are profoundly therapeutic and restorative. Exercise will also increase your SMR brainwaves (included in N-Sleeper and N-Calm) which have been linked to better sleep, stress reduction and physical relaxation.



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Minimize or avoid stimulating (and especially negative or violent) media on TV, movies, music, computer games etc. in the evenings. Try to limit the use of blue screens before bed as the light can be counter-productive for melatonin production. Likewise, use technology responsibly. Reduce the harmful effects of radiation from mobile phones, tablets and computers by keeping them away from your body.

Some research suggests doing 30 minutes of exercise and taking a hot shower 2 hours before bed can help promote ideal body temperatures for sleep as well as reduce stress or anxiety levels. Avoid doing these activities just before bed however! If you're in a hot climate you may have to employ cooling strategies.

Reset your body-clock by going to bed and waking to a strict schedule. Most studies suggest being in bed with lights off by 10-11pm and waking by 7-00am. 7-8 hours sleep seems to be optimal for most people, although there can be considerable variation between individuals. In keeping with our sleep/wake balance avoid naps after 5-00pm as they may interfere with sleep onset later on.

Stimulate melatonin production by ensuring a dark sleeping environment. Likewise, on awakening, get some bright light exposure (preferably natural) to turn off melatonin production. (If you have N-Sleeper or N-Calm your stimulation sessions will help with this). Also try to get at least 30 minutes of natural sunlight per day if possible. Our artificial separation from nature's natural cycles and circadian rhythms is a cause of many of our problems - sleep included.

Ensure your bedroom is predominantly associated with being a place for sleep, relaxation or intimacy only - not office work, entertainment, eating and so on. Remove distractions and elements that suggest uses other than sleep and relaxation.

Some people develop a form of conditioned insomnia which may be triggered by environmental cues. (This is why some actually find it easier to sleep in motels etc. than at home). So experiment with your sleep environment - reposition your bed, change your position in bed, experiment with different lighting, pillows etc. If your partner is contributing to your sleep difficulties through snoring, movement etc. try sleeping in another bed or a different room, at least temporarily.

If you're really having difficulties getting to or staying asleep consider getting up and doing something constructive in order to break your 'stuck' psychological state. Alternatively, try using some of your audio sessions to rapidly shift your mental state.



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Minimise or avoid these chemicals

Try to limit your intake of caffeine and other stimulants which may contribute to anxiety, agitation, sleeplessness and more. Avoid the chemical cocktails found in junk and processed foods whenever possible.

Especially avoid refined sugars - a leading cause of obesity with links to a range of mental health conditions including mood disorders and depression.

If you like sweeteners try those made from the plant Stevia, a natural, and zero calorie sweetener with actual health benefits.

Other commonly consumed substances increasingly linked to various forms of neurological damage and impairment include MSG, artificial sweeteners (including aspartame, sucralose and saccharin) and gluten.

Drink plenty of pure water and eat brain friendly foods

The average human body is around 50-65% water and your brain, up to 75%. So drink plenty of filtered or spring water - avoid chlorine and fluoride where possible, both are known carcinogens

Not surprisingly some cognitive functions can be improved by up to 14% when your brain is properly hydrated, which is another reason to take a few sips before a session.

Foods that are known to boost psychological wellbeing and brain health include:

- fish or krill oil
- blueberries
- flax seeds
- dark chocolate.

Herbs that may help include:

- Siberian ginseng,
- panax ginseng
- ginkgo biloba
- St John's Wort



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Unleash your own inner pharmacy!

The evidence is now overwhelming, a healthy gut is vital for a healthy brain - so ensure you feed it correctly. It's now understood that the bacteria in your gut (microbiome) produce enormous amounts of vital neurotransmitters and other 'psychobiotics' that assist with stress, anxiety, depression, insomnia, mood disorders, autism and many other conditions. Think of them as loyal workers in your very own natural 'pharmaceutical factory', and look after them. After all, this little eco-system is working 24/7 to ensure the correct functioning of your 'gut-brain' (located in your gastrointestinal system or GIS) and its links to immune functioning and mental health.

The following are believed to be especially harmful for these vital bacteria and should be avoided or kept to a minimum:

- processed foods, especially those high in sugar/fructose
- antibiotics (including those in commercial meat products)
- agricultural chemicals of all kinds
- GMO's
- antibacterial soap
- chlorinated/fluoridated water

The best gut friendly foods include natural, probiotic or unpasteurized fermented foods including:

- organic yoghurt
- fermented soy products
- pickled vegetables including sauerkraut
- Kim chi
- Kefir
- kombucha
- brine cured olives

... and lots of fresh fruit and vegetables.





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About NeuroSonica SmartSound™

What's in SmartSound™?

In order to bring you an unsurpassed therapeutic listening experience we spent more than a decade evolving our current SmartSound™ format.

Our holistic, multi-functional approach to the science of sound, combined with our unique proprietary processes has produced a new genre of 'brain audio' that lets you enjoy a range of neurological, physiological, psychological and auditory benefits found nowhere else.

While some of our key proprietary processes are confidential, below you'll find sound technologies commonly used in SmartSound™, as well as some of their effects and possible benefits. Please note that the particular technologies used in any SmartSound™ product will depend on the intended purpose of that product, so not all of these are necessarily present in your Sleep Solutions Program.

NeuroSonica SmartSound™ includes:

A full spectrum of natural brainwave frequencies

These range from Gamma down to Sub-delta (Epsilon) and are applied selectively for their therapeutic potentials in accordance to the latest research and evidence based protocols. We may also use special frequency 'blends' (coupling) to further optimise these potentials and the outcomes for a particular session.

The latest evidence based and clinical entrainment protocols

These have proven to be of assistance for various conditions and issues, including help for generic brainwave imbalances and related phenomena. Clinical entrainment protocols also have well documented evidence for increasing cerebral blood flow, improving hemispheric balance and connectivity and much more.



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Rhythmic pulse technologies

SmartSound™ includes proprietary 'rhythmic entrainment' pulse technologies in order to deliver far more effective, enjoyable and neurologically engaging entrainment than standard simplistic, mechanical repetition. Uniquely, these are also often featured as actual 'musical elements' within the soundscapes themselves.

Complex cross-hemispheric auditory stimulation

We utilise a range of sound technologies to encourage maximum cross-hemispheric communication and electrical activity between various brain centres. Some session protocols also include various forms of bilateral auditory stimulation similar in principal and effect to those employed in EMDR. Conversely, certain lower frequencies are believed to deeply relax/de-energise the brain and may even assist vestibular function through ear and bone conduction.

Virtual '3 D' acoustic technologies, binaural field recordings and bioacoustics

These help to encourage deeply immersive, spatially realistic sound experiences, full auditory engagement/processing and some interesting psychoacoustic phenomena. Included amongst these are Holophonics™ which have been described as the acoustic equivalent of holographs.

High and low frequencies

Drawing on the research of Dr Tomatis and others we often incorporate variously modulated frequencies at the upper and lower thresholds of hearing. Certain higher frequency bands are thought to energise the brain, exercise the inner ears and may even assist with hearing and tinnitus.

A wide range of alternative 'healing sounds'

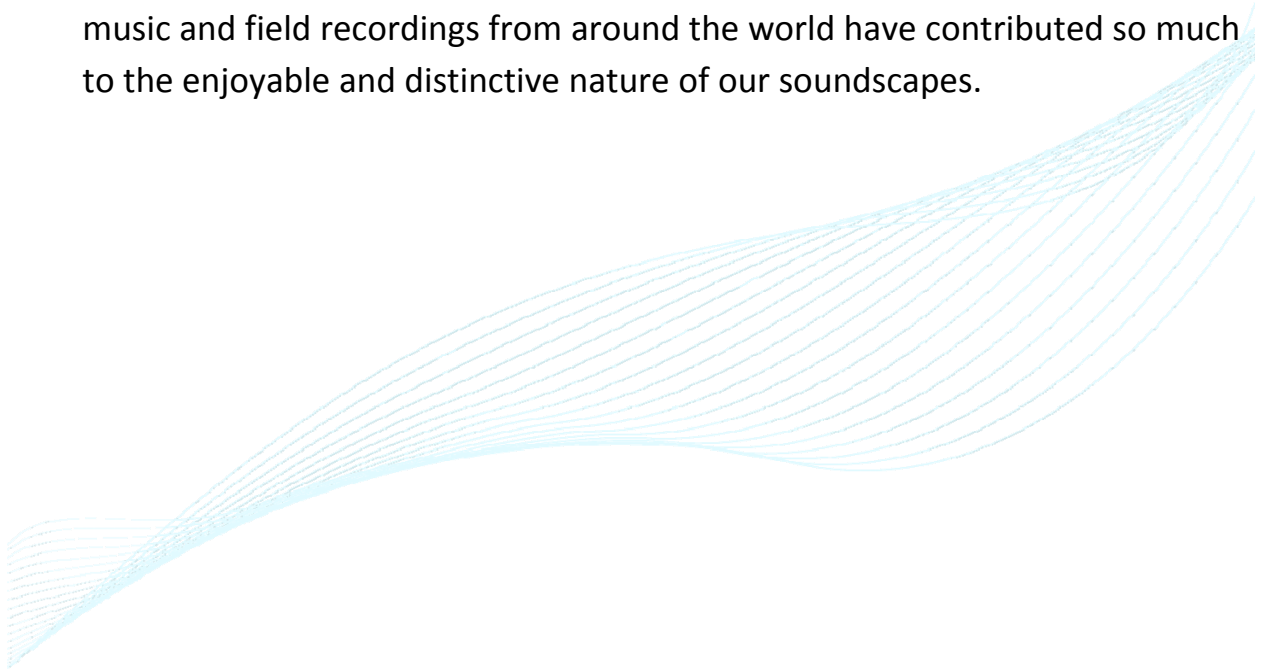
We incorporate a range of the most popular 'healing sounds' as used in other 'sound therapy/medicine' philosophies and modalities. These include everything from pure Solfeggio tones (including the 528 'DNA' frequency), chakra and energy chimes, Schumann's Resonance, modified Rife Frequencies and many more. While some of these more esoteric sounds may lack scientific evidence of efficacy or are otherwise controversial, at the very least they can do no harm and add to the aural richness and diversity of SmartSound™.



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Amazing Sound Art

While there are many other audio technologies and processes that go into SmartSound™ we would be remiss if we did not thank and express our deep gratitude to the many creative geniuses whose wonderful sound art, music and field recordings from around the world have contributed so much to the enjoyable and distinctive nature of our soundscapes.





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Waves of possibility

Your brain is constantly immersed in an electro-chemical sea of waves upon waves of brainwave frequencies. These occur in ever changing patterns and combinations and those that are dominant determine your state of consciousness at any given time. One of the primary functions of your sessions is to align (entrain) your brainwaves to optimal patterns and frequencies for the purpose at hand.

All humans produce the exact same suites of brainwave frequencies (and their corresponding mental states), although dominant frequencies can vary with age and other factors. Children for example typically produce more waking Theta than adults; hence their vivid imaginations and accelerated learning abilities, seniors often exhibit slower Alpha activity and so on.

Also, some areas of the brain operate in their own specific frequency range. The limbic system (your emotional centre) which includes the amygdala and hypothalamus for example is thought to operate primarily in the Delta range while your frontal lobes (your rational 'executive' centre) typically operate in faster frequencies like Beta while performing tasks and so on.

Medications alter brainwaves

Medications, including pharmaceuticals for treating 'slow wave' conditions like depression and ADD/ADHD as well as insomnia, anxiety and so on are known to work at least in part through the promotion and/or inhibition of certain brainwave frequencies. Ritalin for example is known to encourage Beta production as do many amphetamines.

Although they can offer significant help in many situations, medications are also well known for producing adverse and sometimes serious side effects.

Brainwave balance and flexibility

All brainwaves play a vital role but need to be balanced and occur at the right time and right place in the brain. Brainwave imbalances caused by the chronic over or under-production of particular frequencies can create too much or too little activity in certain areas of the brain. These imbalances can be highly problematic and a root cause of many serious physiological and psychological conditions.

Brainwave imbalances can also produce brainwave inflexibility, making it difficult to shift out of unwanted mental or emotional states (and their associated brainwave patterns) into more optimal ones. This is one of the reasons we get 'stuck' in non-productive patterns of thought, emotion and behaviour. We include various processes and technologies to help with this and have many reports of transformational "shifts" away from unwanted habitual mental and emotional states after using SmartSound™ on a regular basis.

We believe regular immersion in these corrective frequencies and other SmartSound™ technologies may assist your brain and nervous system to recalibrate back into balance and coherence, stabilise and improve moods and much more.



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