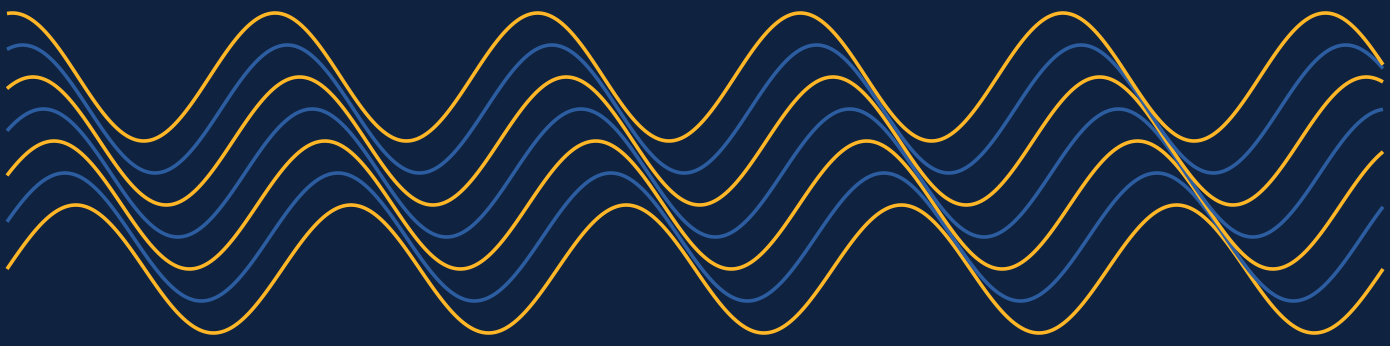
THE LUC COCHRAN FOUNDATION

EVIDENCE-INFORMED COMMUNITY WELLNESS

RESONANCE LAB

Sound, relaxation & the science.

A closer look at music, low-frequency sound and binaural beats — what research suggests, what remains uncertain, and how TLCF approaches nonclinical wellness.



NONCLINICAL RELAXATION. NOT MEDICAL OR PSYCHIATRIC TREATMENT.

01 / THE EXPERIENCE

A place to pause.

Resonance Lab is TLCF's sound-wellness program, inspired by biosound approaches and offered as a nonclinical relaxation experience.

What the program offers

Music timed to low-frequency tones and binaural beats creates a listening experience intended for relaxation, stress relief and focus. In-person sessions are available through TLCF; headphones are provided. At-home listening is available free through the Resonance Lab listening app.

Intentions are not clinical outcomes

Participants may approach a session as time to unwind, settle their attention or take a restorative break. These are wellness goals, not promised results. Individual responses can differ, and some people may find particular sounds distracting or uncomfortable. TLCF does not guarantee improvement in symptoms, sleep, cognition or health.

WHAT "BIOSOUND-INSPIRED" MEANS

The reference brochure combines music, binaural beats, vibration and biofeedback. Those are different modalities. "Inspired by" does not establish that TLCF uses that manufacturer's equipment, offers every modality, or achieves its advertised results.

What Resonance Lab is not

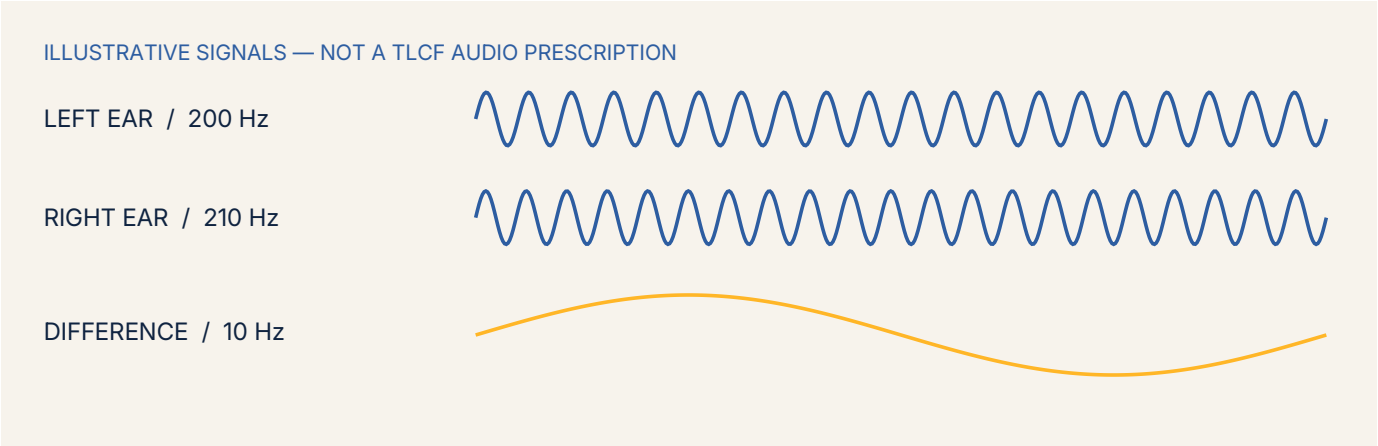
It is not psychotherapy, a psychiatric intervention, pain treatment or a substitute for evaluation by a licensed professional. This brochure is educational material, not a clinical study or an individualized treatment plan. It presents selected research on related modalities rather than evidence from a TLCF outcome trial.

02 / SOUND FUNDAMENTALS

What is a binaural beat?

A simplified explanation of an auditory phenomenon — not a diagram of measured brain activity.

A binaural beat can be perceived when two slightly different tones are presented separately to the left and right ears. The perceived beat relates to the difference between the tones. Stereo separation is central to this example; playing both tones together through speakers instead creates a different acoustic situation. [1, 2]



Perception is not proof of entrainment

Hearing a beat does not demonstrate that the brain has synchronized to it, entered a specific meditative state, or undergone lasting change. A systematic review of EEG studies reported inconsistent findings for brainwave entrainment. Sound can be experienced without a reproducible neural effect. [2]

Low-frequency sound is a separate concept

Frequency describes cycles per second; loudness concerns sound level. A low tone is not automatically safer or more effective. Vibroacoustic systems deliver physical vibration through equipment, while binaural beats are an auditory effect. Evidence from one approach should not be treated as evidence for every other approach.

03 / RESEARCH LANDSCAPE

Music and stress.

Research offers a rationale for studying sound-based relaxation — not a guarantee for a particular service.

Music interventions: a broader evidence base

A systematic review and meta-analysis found that music interventions were associated with reductions in psychological and physiological stress-related outcomes across included studies. The interventions, settings and measurements varied. This evidence covers a broad category of music-based approaches, not the TLCF Resonance Lab program. [3]

Context matters

Music selection, personal preference, environment and the purpose of listening can shape the experience. A controlled study of music and a laboratory stressor found a more complex pattern across physiological and subjective measures than a simple “music reduces all stress” claim. It does not justify assuming that every sound session lowers every stress marker. [4]

RESEARCH-INFORMED, NOT CLINICALLY PROVEN

A study can support a hypothesis without establishing a service’s efficacy. The relevant question is not only “Did music help?” but “Which intervention, for whom, compared with what, measured how, and for how long?”

Why we do not reproduce the reference percentages

The supplied manufacturer brochure advertises symptom-decrease percentages. Those numbers are not TLCF results and are not presented here as outcomes people can expect. Without a directly applicable study design, sample, comparison group and follow-up, a percentage can imply more certainty than the evidence supports.

04 / EVIDENCE AND UNCERTAINTY

Promising is not proven.

Binaural-beat findings need careful interpretation alongside the wider music literature.

What one meta-analysis suggests

A meta-analysis evaluated binaural beats in relation to cognition, anxiety and pain perception and reported overall effects across included studies. Protocols and outcomes differed, so the findings should not be read as proof of a universal dose, a particular frequency prescription, or a lasting clinical benefit. [1]

What the brainwave review adds

A systematic review focused on whether binaural-beat stimulation produces brainwave entrainment in EEG recordings. Its findings were inconsistent. A reported behavioral effect and a proposed neural mechanism are separate questions; evidence for one does not automatically validate the other. [2]

ABOUT “NEURAL REMAPPING”

“Neural remapping” is not an established outcome of TLCF Resonance Lab. This brochure does not claim that listening rewires the brain, treats trauma, cures psychiatric illness or repairs neurological function. Such claims require direct, appropriate evidence.

How to read the literature

Prioritize controlled studies and transparent methods. Ask whether samples are large enough, whether blinding is credible, and whether the outcome is a brief self-report or a meaningful long-term change. A short-term laboratory result may not generalize to daily life. No TLCF clinical-outcome dataset is provided in this brochure.

05 / RESPONSIBLE PARTICIPATION

Comfort comes first.

General listening precautions support a respectful wellness experience; they are not individualized medical advice.

Before you listen

Choose a comfortable setting where you do not need to remain alert for driving, machinery or other safety-critical tasks. Keep the volume comfortable, not forceful. Do not assume a strong sensation means a stronger benefit. WHO's safe-listening guidance emphasizes limiting sound exposure to protect hearing. [5]

During a session

You remain in control of the experience. Lower the volume or stop if you notice discomfort, headache, dizziness, ringing in the ears or distress. There is no need to push through an unpleasant response. Persistent or concerning symptoms warrant advice from an appropriate healthcare professional.

When to seek individual guidance

If you have a condition that may be affected by sound, sensory sensitivity, hearing concerns, a seizure history or questions about participation, discuss your situation with a qualified clinician. If physical vibration or other equipment is offered, request equipment-specific precautions rather than assuming these listening notes cover it.

WELLNESS ALONGSIDE APPROPRIATE CARE

Do not stop prescribed treatment or delay seeking care because of a sound-wellness experience. For a medical emergency, call 911. If you or someone else needs immediate emotional-crisis support in the United States, call or text 988.

TLCF does not diagnose conditions or prescribe listening as treatment. These precautions are general and are not an exhaustive list of risks or contraindications.

06 / ACCESS AND SCOPE

Your options at TLCF.

A first-session introduction, monthly in-person plans and free at-home listening.

First in-person session	$15	First-session offer
Pay as you go	$25	1 session
Essential	$49 / month	2 sessions • $24.50 each
Plus	$89 / month	4 sessions • $22.25 each
Premium	$159 / month	8 sessions • $19.88 each*
Additional session	$20	1 session after first purchase

*Premium's displayed per-session rate is rounded. Plans renew monthly. Confirm scheduling and current terms with TLCF; no session duration, rollover or refund terms are specified here.

Pay online: Sign in to your TLCF member account at luccares.org before paying program fees or subscribing through Stripe. Payments are linked to that account. Free at-home listening: tlcf-resonance-lab.lovable.app, also available through the program page's popup.

Nonclinical wellness & insurance

TLCF is a nonprofit community wellness organization, not a licensed mental health treatment provider. Resonance Lab offers nonclinical relaxation and wellness experiences rather than medical or psychiatric treatment. TLCF holds an organizational National Provider Identifier (NPI 1679470538) to support its organizational identification and potential insurance-related partnerships. Depending on your insurance plan, you may be eligible for reimbursement through qualifying wellness benefits. Coverage and reimbursement vary by insurer and plan and are not guaranteed. An NPI does not constitute medical licensure or insurance network participation.

TLCF does not represent that it currently accepts insurance. Ask your insurer whether your specific benefit permits reimbursement and what documentation it requires before relying on coverage.

07 / SOURCES AND CONTACT

Read the research.

Selected literature on related modalities. None of these sources is a clinical evaluation of TLCF Resonance Lab.

[1] García-Argibay M, Santed MA, Reales JM. (2019). Efficacy of binaural auditory beats in cognition, anxiety, and pain perception: a meta-analysis. Psychological Research, 83, 357–372.
https://doi.org/10.1007/s00426-018-1066-8

[2] Ingendoh RM, Posny ES, Heine A. (2023). Binaural beats to entrain the brain? A systematic review of the effects of binaural beat stimulation on brain oscillatory activity, and the implications for psychological research and intervention. PLOS ONE, 18(5), e0286023.
https://doi.org/10.1371/journal.pone.0286023

[3] de Witte M, Spruit A, van Hooren S, Moonen X, Stams GJ. (2020). Effects of music interventions on stress-related outcomes: a systematic review and two meta-analyses. Health Psychology Review, 14(2), 294–324.
https://doi.org/10.1080/17437199.2019.1627897

[4] Thoma MV, La Marca R, Brönnimann R, Finkel L, Ehlert U, Nater UM. (2013). The effect of music on the human stress response. PLOS ONE, 8(8), e70156.
https://doi.org/10.1371/journal.pone.0070156

[5] World Health Organization and International Telecommunication Union. (2019). Safe listening devices and systems: a WHO-ITU standard. Guidance on limiting sound exposure; not a prescription for TLCF sessions.
https://www.who.int/publications/i/item/9789241515276

Scope: a selected educational overview, not an exhaustive systematic review. The manufacturer brochure supplied as a visual reference is not used as evidence of TLCF effectiveness, and its proprietary outcome percentages are not reproduced.

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