## WHAT IS NEURODYNAMIC BREATHWORK?

### PARAPHRASED FROM THE NEURODYNAMIC BREATHWORK INSTITUTE

- Nondirective The facilitator does not direct or guide your breathwork journey. It is all guided from within your own being. The facilitator supports a safe space for you to do your work.
- Empowerment It is based on the principle of radical self-empowerment. This supports simply trusting that the answers you need are inside of you, not outside of you.
- Unconscious Blockages Feeling stuck? Continuous circular high-volume breathing can allow direct access to the
  unconscious mind. This can help bring to conscious awareness your fears, anger, shame, and grief, as well as
  suppressed joy, pleasure, and acceptance, so you can start the healing process.
- Release This is an opportunity to move and transform stuck emotions and energetic blocks in the body. These may manifest as pain or tension, old thinking patterns or ideas, and may even go back to childhood.
- Organic This process requires no substances or anything unnatural. All you need is the healing power of breath and music in a supported environment.
- **Dynamic** The music is a carefully chosen evocative collection of songs to support your journey, that when combined with this type of breathing, can help create a mystical and transformative experience. It is dynamic in that you move out what no longer serves you and restore that which you desire more of in your life, such as peace, joy, happiness, balance, and more.

# KERRI HUSMAN, MD YOUR NDB FACILITATOR

- As you may already know, I am a lifelong lowa resident, providing psychiatric care for children and adults, and I also provide psychedelic medicine. I also have a separate practice where I work as a coach using energy psychology methods, an energy healer using Healing Touch, sound healing, and biomagnetic pairs therapy, and a spiritual healer and journey instructor using Core Shamanism. I also co-own a healing center where we collectively offer over 65 different services.
- Breathwork spoke to me as an alternative for individuals for whom psychedelic treatments are not an option, to help integrate psychedelic sessions, and for those who are curious to experience a secular or independently spiritual approach to expanded state work. Breathwork can be incredibly empowering as it is guided from within, not someone else telling you what to do or how to live.
- Neurodynamic breathwork was chosen after I experienced Holotropic breathwork in trainings and was draw to the option to offer the same circular breathing method of breathwork in person or virtually, and without the sitter role required, meaning it provides more efficiency for all our busy schedules.

# NON-NEGOTIABLE RULES FOR GROUP AND INDIVIDUAL SAFETY



Confidentiality – You are welcome to share your own experience after the session but not anyone else's experience.



No audio or video recording, no BOTS, and no photos of any part of this session.



NDB is an experience free from recreational substances. If you are not substance free today, please choose another session time.



Keep yourself, others, and property safe. No hitting, scratching, slapping or choking. Maintain minimal clothing during the session(tops and bottoms).



Stop means STOP as the safe word for any requested in person release work (resistance with a pillow to internal pressure) you request from a facilitator or sitter.



Warn others of highly intense/graphic shares and prioritize self care with others' shares. Say "warning: high intensity share" before you start.



Please keep political opinion statements out of the sharing circle. We want to keep it safe for everybody.



No "cross-talk," meaning providing unsolicited advice to others. Nondirective and supportive listening is our intention.



You agree to check out with the facilitator prior to leaving the breathwork session.

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EVERYONE GIVE A "THUMBS UP" that we all agree to these rules.

### PHYSICAL TOUCH DURING THE BREATHWORK SESSION

- **Medical Touch**: medical touch would be an unexpected need, however, just like a traditional appointment, vital signs may be checked, or any emergency services, such as use of Automated External Defibrillator or AED, or CPR, would be provided following standard procedures for these techniques as per CPR, AED, and ACLS training.
- **Assistive Touch**: If you need assistance sitting up, or being walked to the toilet, the facilitator will assist you in this way, such as steadying you at the level of touching your arm or shoulder if needed, or lending a hand as you get up out of your seat or providing her shoulder(s) so you can have a steadying presence in front of you as you walk to the toilet.
- **Therapeutic Touch**: During especially troubling or difficult imagery or memories during the breathwork experience, or feeling significant disconnection from the physical body, simple touch can be requested by you from the facilitator, such as a hand placed on the shoulder, hand, or feet to provide grounding and healing presence. Release work can also be offered to non-sensitive areas of the body with a pillow and resistance to meet pressure that needs to release. When possible, you will be empowered to use pillows, stuffed animals, and other ways to self soothe during sessions, to help preserve your autonomy.
- There will never be sexual touch of any type during the session. No hands-on healing or massage is provided. Physical touch is prohibited during the breathwork portion of sessions between breathers during group sessions.

# CONTRAINDICATIONS – YOU SHOULD NOT DO BREATHWORK TODAY IF ANY OF THESE ARE NEW ISSUES FOR YOU SINCE YOU COMPLETED YOUR INTAKE PAPERWORK

- If you are under the age of 18 you may not participate in this breathwork session without prior written parental consent.
- <u>Pregnancy</u> if you know or think you may be pregnant, rapid breathing (hyperventilation) can cause reduced oxygen concentration for the baby and can possibly contribute to harmful fetal outcomes.
- High blood pressure (hypertension) that is not well controlled with medication.
- Cardiovascular disease, an abnormal heart rhythm, heart surgery, or prior heart attack.
- Aneurysms if either you have had a brain aneurysm or if more than one person in your immediate family (parents, siblings, children) has had one.
- Hernia that is serious enough whereby moving around actively could cause physical damage to your body.
- History of stroke, mini stroke, or TIA (transient ischemic attack).
- If you're taking prescription blood thinning/anti-clotting medications.
- Epilepsy or any type of seizure disorder.
- History of a diagnosis of detached retina.
- Glaucoma which is a disease of the eye with elevated eye pressure that is not well controlled with medication.
- Osteoporosis that is serious enough whereby moving around actively could cause physical damage to your body.
- Still recovering from **Covid-19**.

If any of the above apply to you, please let the facilitator know now. Do not participate in the breathing aspect of today's session. Please discuss with the facilitator, so the facilitator can help you determine if listening to the music breathing normally today, which is referred to as a "musical journey," is an option.

# CONTRAINDICATIONS – YOU SHOULD NOT DO BREATHWORK TODAY IF ANY OF THESE ARE NEW ISSUES FOR YOU SINCE YOU COMPLETED YOUR INTAKE PAPERWORK

- Prior diagnosis by a health professional of bipolar disorder or schizophrenia.
- **Hospitalization for any psychiatric condition** or serious emotional crisis in the past 10 years such as an attempted suicide, nervous breakdown or psychotic break, check in with me first before doing breathwork.
- PTSD Many people have profound healing experiences, but if you currently have symptoms of severe PTSD, make sure to check in with me before doing breathwork. It is important that you have a solid support structure to work with what might come up during the session and a willingness to process through the emotions that may come up.
- Panic Disorder breathing rapidly can trigger a panic attack as it is a panic symptom, but others have found the controlled rapid breathing in breathwork helps their panic symptoms.
- If you have asthma, you are welcome to breathe, but use typical pre-exercise asthma treatments and have your rescue inhaler with you.
- Recent physical injuries, or recent surgery that you are not fully healed from and could be re-injured through intense movement.
- Recent head or spinal injury with or without loss of consciousness.
- Any other medical, psychiatric or physical conditions which would impair or affect ability to engage in activities involving intense physical and/or emotional release and/or issues from the past being brought up for processing and release.
- You are responsible for honestly reporting your contraindications, and there may be unforeseen risks not listed here due to your unique physical and emotional makeup. If you decide not to breathe today, you can leave now and request a full refund. Moving forward today, you are choosing to breathe at your own risk, and it is understood that you believe yourself to be healthy enough to continue and have adequately discussed and reviewed any listed or "other" medical, psychiatric, or physical conditions with the Facilitator.

If any of the above apply to you, please let the facilitator know now. Do not participate in the breathing aspect of today's session. Please discuss with the facilitator, so the facilitator can help you determine if listening to the music breathing normally today, which is referred to as a "musical journey," is an option.

## **BODY EXPERIENCES**

- The body releases tension or blocks, which can be suppressed emotions, in a variety of ways.
- Let tension build, then maximize it, so your body can release it.
- Temperature changes (dress in layers, sheet, blanket). A t-shirt and shorts with heavier layers if desired can be a great choice.
- You may feel buzzing, tingling, trembling, shaking, or chi flow (the flow of subtle energy in your body).
- Numbness this is not harmful and is common. Focus your breathing into the numbness and let sensation gently return.
- Tetany usually in the hands/feet/lips, hands feel or look like "lobster claws," it is temporary, you can slow your breathing to
  reduce it, it can be uncomfortable, but it is not harmful, and can help physical tension release from the body.
- Sexual energy is not uncommon. Keep your sexual energy to yourself and contained to your process to assist in your healing. Please respect your need for privacy. Please respect other breathers and their need for privacy.
- Pain? Breathe into it so it can build and fully release.
- Unresolved physical tension at end of session? I can advise you on how to release it for yourself, and there are more ideas about this in later slides.

## OTHER EXPERIENCES

- Any emotion can come up and release, sometimes unexpectedly. Allow as much as you can!
- Biographical memories or re-experiencing things from the past. Remember, our memory systems are plastic, not concrete, and they may be experienced differently from the first time. You may see things from other perspectives. Invite your IGI to show you how to move beyond old stories.
- Insights into life issues. My favorite! New and creative ways to address potentially any problem.
- Rebirthing experiences (re-experiencing your own birth). Read <u>Holotropic Breathwork: A New Approach to Self-Exploration and Therapy</u> by Stanislav Grof and Christina Grof to learn more.
- Transpersonal experiences: oneness, deeper connection to self/universe/God/gods/goddess, past life experiences, lineage or ancestral healing, completions with deceased loved ones, and more.
- Dream-like visions. They may be colorful, black and white, morphing and changing.
- Religious and spiritual themes and images from a variety of belief systems may appear, even if they are new to you.
- Collective unconscious experiences, such as Jungian archetypes. Explore with curiosity.
- Neurodynamic Breathwork experiences can be very similar to psychedelic experiences, except for you are the medicine and you can slow down or stop the experience at any time.
- Remember: Let go of all expectations of what is happening. Your IGI is bringing what you need.

# HELP YOUR BRAIN AND BODY RELEASE EXPERIENCING BREATHWORK AS DEEPLY AS POSSIBLE

- Tune in to your physical body.
- Tune in to your emotions and feelings and allow them to fully express!
- Allow **movement**. Let yourself be moved, like tapping to the beat. Stay on the floor, bed, or chair if you can, but knee dancing is fine. You can be unsteady and lightheaded getting up, so please use caution, especially if getting up to use the restroom.
- **Sound.** Any sound coming out of you is fine. If you need, use a small pillow to scream or howl into. Online sessions can be great for those who need more privacy to fully express themselves with sound.
- Let the music carry you. It is carefully chosen to help you drop in. It is meant to take you on a
  journey.
- **Privacy**. To the best of your ability, set up your physical space so it will not be intruded upon by the outside world if possible. Consider pets and people, as well as phone and computer notifications.

# **OPTIMIZING YOUR EXPERIENCE**

- Ideally, eyes are closed for the entire music set. It is recommended that you wear a fully darkening eye mask that allows for opening and closing eyes without the mask touching the eyes. Options to purchase include Mindfold, Sleep Mask, Eyeco(moisture chamber goggles for dry eyes), or others.
- During the music, the facilitator will not be interrupting the music in any way. If you have questions, message in chat directly to me (virtual), or call me over (in person), and I will offer support to help you follow your inner guidance as deeply as possible. Your process is guided from within.
- You can do this sitting or laying (chair, recliner, bed, couch, floor).
- Bras, binders, and shapewear. Less is more so you can breathe without constriction.
- Pillows are nice (screaming, punching, for gentle pressure, comfort).
- Breathing with a partner (virtual): consider the relationship. Will you and your partner both be able
  to freely express yourselves? Will your experience interfere with theirs and vice versa? For safety
  reasons, both partners need to complete the medical contraindications and permission forms for
  breathing with me first.

# SET UP SUGGESTIONS

- Nothing by mouth and ideally eat lighter but adequately 4 hours prior to your medicine session so your stomach is ideally empty, but not growling with hunger. Avoid a meal heavy in meat or cheese. Small sips of water after your meal. Remember to prioritize blood glucose levels and other health needs.
- Water (closed container best to avoid knocking over).
- Tissues.
- Remove jewelry that could get caught on clothing and with movement.
- Have a glasses case for your glasses (you have an eye mask on) and consider a container for removing your contacts (may be tearful, rub eyes) and dentures/partial (for comfort).
- Feminine hygiene products if a cycle may begin.
- Eye mask/eye cover(optional, but very highly recommended).
- Small or Large Pillows (for behind head, hugging, pounding, screaming into).
- Blanket and/or sheet, layered clothing if you may get warm.
- If you tend to dry out, consider dry eye spray/balm, lip balm, dry mouth spray/gel (Biotene, Oasis, Spry Spray).
- Avoid all lozenges, gum, and hard or soft candy due to choking risk.
- Minimize disruption during the music by people, pets, phone and computer notifications.
- Small plastic bag or waste basket for waste/spit/vomit.
- Print in advance pages such as Rose Thorn Bud for immediate integration, plain pages with a large circle for drawing your experience (mandala), or coloring pages for use. Also have some lined paper or a journal, or if you prefer typing or recording your thoughts that works as well, so you can capture the essence of your experience and start integrating.
- Set up for afterward: Ideally you are not rushing to provide childcare, return phone calls, and do occupational tasks. The rest of the day is yours to rest and truly care for yourself. This could be anything from staying overnight elsewhere as a mini-holiday, the kids have (or are at) a sitter, continue your out of office notifications, having a crockpot going from earlier in the day so food is ready, and more.

# **BREATHING TIPS**

- Your breath may change during the session and that's fine.
- Trust the process. Trust your body wisdom.
- Breath may fluctuate with the music.
- Breath may go in waves.
- You may instinctively slow down your breath at times.
- It may even feel like you're sleeping at times, but you may be experiencing a deep, healing state of stillness which some call a yogic trance or yoga Nidra state.
- Don't worry about if you are breathing correctly if you are releasing emotions, immersed in your journey, or having a physical experience.
- Any time you find yourself in "monkey-mind," you can simply send off those thoughts, set them aside, and return your awareness back to the breath.

# **REMINDERS**

- Trust your process.
- Subtle experiences can be as powerful as dramatic ones.
- Surrender to the moment –This moment is where life happens. Let go. Let life flow through you in whatever way it wants to.
- Trust your Innate Guiding Intelligence (IGI), that deeper part of your psyche that has all the answers. If something comes up, it is ready to be processed and released.
- The way past is through. Resist and it will persist!
- Let go of expectations. Let yourself be surprised.
- Make everything that happens during the Neurodynamic Breathwork process part of the healing process.
- Process until end, don't stop in middle.
- If you feel overwhelmed or that too much is happening all at once, you can slow down your breath to slow things down, or you can speed up your breath to move through what is coming up.
- Integration after the session builds durability for the experience and outcome. Integration helps the healing process. We learn from listening to each other share about their journey and process.

# **ABOUT THE MUSIC**

- Music is powerful and meant to evoke
  - The first 1/3 is high energy, tribal, drumming, lots of rhythm, and helps you get the deeper and faster breathing going.
  - The middle 1/3 still has plenty of rhythm, but more melodic, soaring, and can be intensely emotional.
  - The final 1/3 is much less rhythm based, and goes through a heart supporting period, then becomes more meditative before ending.
  - Don't stop in the middle, even if you feel you are "done" as the slower music helps support integrating the work you just did.
  - If you rest or fall asleep, please don't think you have done anything wrong. The music works with your IGI to bring you what you need right now.

# SHARING CIRCLE

The final part of our experience before integration.

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- This is a group opportunity to help to ensure you are fully grounded, present, and help you start to integrate your experience with the accompaniment of your left brain.
- Talking, listening, writing, and drawing bring the experience to consciousness to be integrated by your whole brain.
- During shares, it is ok to also be drawing, coloring, and writing, but you may find listening is quite helpful for you too. It may help you remember more of your own experience.
- You can raise your Zoom hand or post in chat. In the share circle you do not have to be on camera if you don't wish to be. It is ok to be messy! You will be on camera for your final check out with me 1:1.
- Share as much or as little of your experience as you feel comfortable with the group.
- Reminder: start with "warning, high intensity share" for what would likely be challenging content for others to hear. Take good care of yourself while listening to others' shares.

### AFTERCARE AND INTEGRATION SUGGESTIONS

Your invitation to prioritize rest and self care. Your Innate Guiding Intelligence (IGI) will remind you: if you feel more surface emotions in the hours and days ahead, listen, apologize if needed, and go back to these steps:

#### FIRST STEPS:

- Journal or other expression of your experience. Write, type, dictate. You don't have to keep it. GET IT OUT!
- If a single phrase comes up to support your process, such an intention or mantra, post it so you see it daily.
- Your next meal or snack will also help you ground back into your body. If you can, give yourself the opportunity to savor whatever it is you choose to enjoy, even if it is something you have had countless times before.
- Draw, color, collage creation, paint, sculpt, use AI to create, and more to capture and process content.

### NEXT STEPS:

- Explore nature, from a small sand tray, to a trip to a park, to a walk, yoga or meditation outdoors.
- Exercise of any type.
- Give yourself permission to invite in new ways to view current aspects of your life.
- Explore content with your own support (coach, therapist, sponsor, and/or a close confidant who can provide nondirective listening).
- Refrain from making impulsive decisions and major changes in your life. Take your time, reflect and plan, even if a major change feels right and urgent.
- Remember, integration is not black and white with a start and stop date. It is continuous, fluctuates, and ongoing.
- If you find yourself in crisis, the 24/7, locally staffed, national crisis line is 988.

## PERSONAL INTEGRATION RESOURCES

- Rose Thorn Bud integration tool.
- After the Ceremony Ends: A Companion Guide to Help You Integrate Visionary Plant Medicine Experiences, Coder, K. (2017). ISBN-13: 978-0998837918. A one-two hour read about integration that can be applied to any expanded state work.
- <u>Integration Workbook: Planting Seeds for Growth and Change</u>, Psychedelics Today, Buller, K, and Moore, J. (2019). **ISBN-13**: 978-1986544610. Many writing prompts to integrate, and with Kyle's Holotropic Facilitator influence, easy to apply to breathwork.
- Shadow Work Journal and Workbook: The Comprehensive Guide for Beginners to Uncover the Shadow Self & Become Whole as Your Authentic Self | Guided Prompts for Inner Child Soothing, Healing & Growth, Stevens, V. (2021). ISBN-13: 979-8760363619. Many writing prompts that explore nurturing and healing the child self.
- Meeting the Shadow: The Hidden Power of the Dark Side of Human Nature, Zweig, C, and Abrams, J. (1991). ISBN-13: 978-0874776188. A beautiful introduction to shadow work from many experts in the field. Three-to-ten-page chapters. Great to read before bed and invite dreaming for deeper exploration.
- <u>The Power of Your Other Hand: Unlock Creativity and Inner Wisdom Through the Right Side of Your Brain</u>. Capacchione, L. (2019). **ISBN-13**: 978-1573247474. Write with the dominant, then non-dominant hand to gain insight.
- Holotropic Breathwork: A New Approach to Self-Exploration and Therapy (Suny Series in Transpersonal and Humanistic Psychology), Grof, S, and Grof, C. (2023). ISBN-13: 978-1438496443. The best book, IMHO, to introduce you to a more complete understanding of where NDB came from originally. Includes rebirthing experiences detailed above.
- <u>BioGeometry Signatures Mandalas Coloring Book</u>, Karin, D. (2016). **ISBN-13**: 978-1533347121. One of many mandala coloring books to consider. Specifically designed to support physical and emotional releases.

## LOCAL INTEGRATION RESOURCES

- Active for anger, rage, frustration, and more:
  - Hatchet Jack's. Iowa City, IA, axe throwing.
  - Civil Axe Throwing. Cedar Rapids, IA, axe throwing.
  - Hurling Hatchet. Cedar Falls, IA, and Cedar Rapids, IA, axe throwing.
  - Patty's Pummel Palace. Moline, IL, rage room.
  - <u>Brush and Barrel</u>. Coralville, IA, splatter room.
- Contemplative, personal spirituality, for grief, loss, sadness and more:
  - <u>Prairiewoods</u>. Hiawatha, IA, contemplative activities, variety of retreats.
  - Our Lady of the Prairie Retreat. Wheatland, IA, multiple spiritual retreats.
  - <u>Sisters of St. Benedict, St. Mary Monastery</u>. Moline, IL, multiple spiritual retreats.
  - Maquoketa Caves State Park. Maquoketa, IA, seasonal exercise and exploring nature, for example, or any of our state parks and forests.
- Miscellaneous for the days ahead: antiquing, arboretum, aromatherapy, artwork, bodywork (acupuncture, massage), camping, campfire s'mores, city park, culinary creations, drum circle, energy healing (craniosacral, healing touch, reiki), exercise of all types, gardening, martial arts, meet with clergy/spiritual inspiration, meditation, napping, neurographica, personal mini retreat at home, photography, playing and creating music, qigong, shamanic journey with percussion, soaking tub, sound bath, tai chi, visit wise elders, watching funny movies and videos, waterpark, yoga. Use your imagination and your IGI. Integration isn't a contest and can be entirely free(ing).
- <u>Linn County</u> Resources. <u>Johnson County</u> Resources. <u>Black Hawk County</u> Resources.

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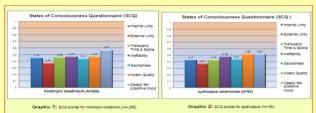
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- \*I can send you a copy of any article or poster if you have trouble accessing them via the links provided.

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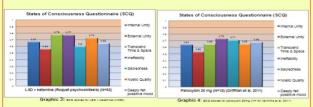
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#### RESULTS

The preliminary results of the study are presented, including: A) the results of the SCQ for 1) holotropic breathwork (HB), 2) ayahuasca and 3) LSD + ketamine; B) a comparison between volunteers ratings on the SCQ assessed during holotropic breathwork, ayahuasca, LSD + ketamine, and the psilocybin dose-response study conducted by Griffiths et al (2011).



Graphics 1 and 2: These graphics shows that the SCQ scores were very similar in all the subscales for the holotropic breathwork (N=266) and ayahuasca (N=95) groups. The higher scores were found on Ineffability, Noetic Quality and Deeply Felt Possitive Mood subscales in both groups.



Graphic 3: this graphic shows that the SCQ scores were higher in all the subscales for the LSD + ketamine group, compared with the scores of the holotropic breathwork and the ayahuasca groups. The higher scores were found on Transcendence of Time and Space, Ineffability and Noetic Quality subscales.

Graphic 4: this graphic shows the SCQ scores for the group who received 20 mg of psilocybin on the dose-response study conducted by Griffitsh et al (2011). After comparing the LSD-ketamine group scores with the scores of the different psilocybin doses of Griffitsh study, we found that they were more similar to the scores for the 20 mg psilocybin dose, and the 30 mg dose (see also Table 1).

Graphics 1, 2, 3 and 4: In these graphics the data on each scale of the SCQ are expressed as a proportion of the maximum possible score for the holotropic breathwork (graphic 1), ayahuasca (graphic 2) and LSD + ketamine (graphic 3) groups. Additionally graphic 4 includes the Griffiths psilocybin doseresponse study SCQ scores for the 20 mg psilocybin dose.

Table 1 includes the SCQ scores in each subscale for the holotropic breathwork, ayahuasca and LSD + ketamine groups, and also the Griffiths psilocybin dose-response study SCQ scores for 5 mg, 10 mg, 20 mg and 30 mg psilocybin doses, in order to compare them with the results of our study. The table includes at the bottom the number of participants from each group which have a "complete" mystical experience. The criteria for designating a volunteer as having had a "complete" mystical experience is that the scores on each of the scales had to be at least 0.6 (considering unity a single scale, and choosing either internal or external, whichever was greater).

Following this criteria, seventy five of the 408 volunteers had a "complete" mystical experience (18.5% of the volunteers which filled out the SCQ): thirty nine subjects from the holotropic breathwork group (N=266), twelve subjects from the ayahuasca group (N=59), and twenty four subjects from the LSD + ketamine group (N=52). The proportion of volunteers who met the criteria for having had a "complete" mystical type experience on the SCQ was very similar for the holotropic breathwork (14.7%) and ayahuasca (12.6%) groups, and to the Griffiths psilocybin dose-response study SCQ scores for the 10 mg psilocybin dose (11.1%). The proportion of volunteers who met the criteria for having had a "complete" mystical type experience on the SCQ for the LSD + ketamine group (46.2%) was significantly higher, compared with the holotropic breathwork and ayahuasca groups, and similar to the Griffiths psilocybin dose-response study SCQ scores for the 20 mg psilocybin dose (44.4%).

Questionnaire	Subscale description				Johns Hopkins pellocybin dose-response study (Griffitsh et al. 2011)			
		Holotropic Breathwork (N=266)	Ayahuasca (N= 55)	LSD + ketamine (N=52)	Pellocybin 5mg (N=18)	Pallocybin 10mg (N=18)	Pallocybin 20mg (N=18)	Pellocybin 30mg (N=18)
scq	Internal unity	0.45 (0.28)	0.43 (0.27)	0.67 (0.24)	0,38	0.45	0.64	0,70
	External unity	0.37 (0.28)	0.37 (0.25)	0.56 (0.24)	0.33	0.35	0.53	0,61
	Transcendence of time and space	0.46 (0.21)	0.43 (0.25)	0.78 (0.20)	0.40	0.44	0.65	0,78
	Ineffability	0.47 (0.26)	0.48 (0.25)	0.77 (0.17)	0.48	0.59	0.73	0.81
	Sacrednese	0.44 (0.26)	0.44 (0.25)	0.60 (0.21)	0.49	0.54	0.71	0.77
	Intuitive knowledge	0.47 (0.26)	0.52 (0.26)	0.73 (0.20)	0.48	0.54	0.65	0.71
	Deeply felt positive mood	0.57 (0.25)	0.52 (0.23)	0.65 (0.23)	0.48	0.57	0.68	0.73
	"Complete" mystical experience (5 of 6 subscales >0.6)	N= 39 (14.7%)	N= 12 (12.6%)	N= 24 (46.2%)	N= 1 (5.6%)	N= 2 (11.1%)	N= 8 (44.4%)	N= 10 (55.6%)

Table 1: mean and S.D. of the subsacles of the SCQ for the holotropic breathwork, ayahusaca and LSD + ketamine groups, and mean of the subsacles of the SC for the Johns Hopkins policylin dose-response study (Griffiths et al. 2011), and proportion of volunteers who met the orderia for having had a "complete" mystics type experience.

#### CONCLUSIONS

- The overall results of this study suggests that the three techniques explored (holotropic breatwhork, ayahuasca ceremony and LSD + ketamine following the Roquet Psychosyntesis model) are capable of occasioning mystical type experiences.
- The volunteers scores on the SCQ and the proportion of volunteers who met the criteria for having had a "complete" mystical type experience was higher after the administration of LSD + ketamine in the context of a workshop following the Roquet Psychosynthesis model (46.2%), compared with the holotropic breathwork and ayahuasca groups. The proportion of volunteers who met the criteria for having had a "complete" mystical type experience during the holotropic breathwork sessions (14.7%) and the ayahuasca ceremonies (12.6%) was similar.

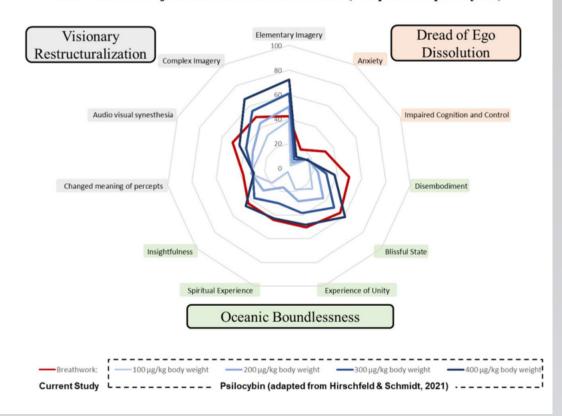
PUENTE, I. (2017). <u>A COMPARISON OF DIFFERENT PSYCHEDELICS AND HOLOTROPIC BREATHWORK USING THE SCQ. PSYCHEDELIC SCIENCE 2017</u>. DOI: 10.13140/RG.2.2.10728.01287.

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Fig. 5 Subjective Effects of Breathwork Compared to Dose-Dependent Subjective Effects of Psilocybin (adapted from Hirschfeld & Schmidt, 2021). Red line represents breathwork, blue lines are dose dependent effects of Psilocybin

### 11D - ASC: Subjective Effects of Breathwork (compared to psilocybin)



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### **Conclusions:**

- On all subscales of the 'Oceanic Boundlessness' subdimension (blissful state, experience of unity, spiritual experience, insightfulness, disembodiment) breathwork exhibited scores similar to high doses of psilocybin.
- On the 'Visionary Restructuralization' subdimension breathwork exhibited scores similar to medium doses of psilocybin, with 'changed meaning of percepts' showing highest scores.
- On the 'Dread of Ego-Dissolution' sub-dimension, participants scored very low compared to the other subdimensions, but higher compared to psilocybin (Fig. 5).

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#### SELECT REFERENCE IMAGES: MECHANISMS BEHIND BREATHWORK

FINCHAM, G. W., KARTAR, A., UTHAUG, M. V., ANDERSON, B., HALL, L., NAGAI, Y., CRITCHLEY, H., & COLASANTI, A. (2023).

HIGH VENTILATION BREATHWORK PRACTICES: AN OVERVIEW OF THEIR EFFECTS, MECHANISMS, AND CONSIDERATIONS

FOR CLINICAL APPLICATIONS. NEUROSCIENCE & AMP; BIOBEHAVIORAL REVIEWS, 155, 105453.

HTTPS://DOI.ORG/10.1016/J.NEUBIOREV.2023.105453.

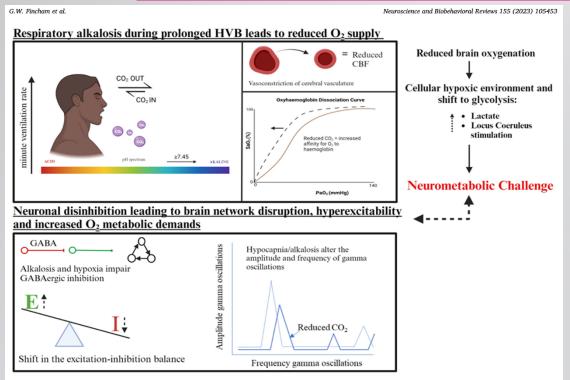


Fig. 2. Neurophysiological mechanisms of HVB practices occurring in parallel during continuous HVB. As ventilation rate/depth is increased and CO<sub>2</sub> is eliminated faster than it is taken up, respiratory alkalosis ensues, causing cerebral vasoconstriction and oxyhaemoglobin dissociation curve shift, resulting in reduced supply of O<sub>2</sub> delivery to the brain. This induces a hypoxic environment, neuronal metabolic shift towards glycolysis causing lactate accumulation and stimulation of adrenergic Locus Coeruleus. In parallel, alkalosis/hypocapnia impair GABAergic inhibition of excitatory neurons leading to disruption of gamma oscillatory networks (Stenkamp et al., 2001), hyperexcitability of neurons and increased neurometabolic demands, which cannot be matched by adequate O<sub>2</sub> supply (Diagram created by the authors with BioRender.com).

More generally, the global physiological disruption induced by HVB has been viewed as a form of 'eustress': a 'hormetic' intervention that confers beneficial health characteristics as a function of moderate stress on multiple biological systems. This was proposed to occur by reversing dysregulation or defective adaptive stress responses, resulting in increasing resilience to (future) emotional, cognitive, and biological stressors (Faye et al., 2018).

#### SELECT REFERENCE IMAGES: MECHANISMS BEHIND BREATHWORK

FINCHAM, G. W., KARTAR, A., UTHAUG, M. V., ANDERSON, B., HALL, L., NAGAI, Y., CRITCHLEY, H., & COLASANTI, A. (2023).

HIGH VENTILATION BREATHWORK PRACTICES: AN OVERVIEW OF THEIR EFFECTS, MECHANISMS, AND CONSIDERATIONS

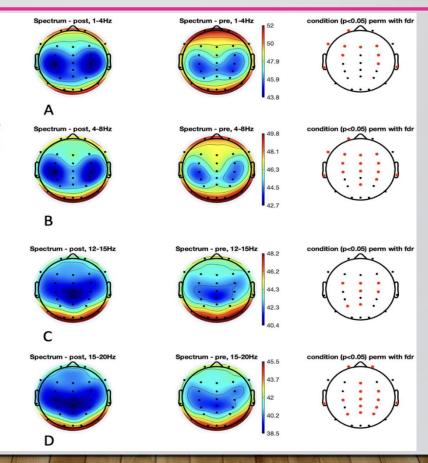
FOR CLINICAL APPLICATIONS. NEUROSCIENCE & AMP; BIOBEHAVIORAL REVIEWS, 155, 105453.

HTTPS://DOI.ORG/10.1016/J.NEUBIOREV.2023.105453.

- The extent of support that high volume breathwork (HVB) practices have accumulated over centuries indicates huge potential in terms of therapeutic applications. However, its popularity has not been matched by advances in clinically and mechanistically focused research investigating its neurobiological mechanisms and clinical efficacy in rigorous, controlled studies. Our review summarizes the historical roots, common and distinguishing characteristics, and acute effects of the best known HVB practices. Established autonomic and neurometabolic effects of hyperventilation clearly support the notion that HVB can induce profound modulatory effects at various levels of central and autonomous nervous systems, altering their functions and reciprocal interactions, and ultimately impacting high order metacognitive functions that might be relevant to HVBs therapeutic effects. However, direct support for specific clinical application of HVB practice is scarce at present. The evidence we have reviewed could contribute to define clinical indications and contraindications for therapeutic use of HVB, and to set an agenda for future empirical clinical testing.
- To advance the field of HVB research and practice, a roadmap of well-designed studies is needed. Rigorous pilot and feasibility studies are required to gauge both safety and tolerability as well as therapeutic potential. Moreover, regarding clinical efficacy, non-inferiority and superiority trials should use appropriate active control groups depending on the population being studied. Rigorous psychophysiological studies should also explore both brain and body physiological responses and phenomenological correlates to further uncover objective and subjective outcomes of HVB.
- Research on breathwork is poised for an extraordinary surge in both public and scientific inquiry, much like meditation over the past few
  decades, and now psychedelics. Given HVBs close ties with these, we expect substantial growth in the field and, as such, encourage
  robust examination of HVB at the outset.

BAHI, C., IRRMISCHER, M., FRANKEN, K., FEJER, G., SCHLENKER, A., DEIJEN, J. B., & ENGELBREGT, H. (2023). EFFECTS OF CONSCIOUS CONNECTED BREATHING ON CORTICAL BRAIN ACTIVITY, MOOD AND STATE OF CONSCIOUSNESS IN HEALTHY ADULTS. CURRENT PSYCHOLOGY. HTTPS://DOI.ORG/10.1007/S12144-023-05119-6.

Fig. 1 Averaged topography across frequency bands that displayed significant changes for p < 0.05, significance displayed at individual channels. Panel 1 and 2 represent the averaged power of the pre and post condition, respectively, while significant difference in power is represented by the red dots in the third panel. A shows the averaged topography across delta frequency band. B Averaged topography across theta frequency band. C Averaged topography across beta 1 frequency band. D Averaged topography across beta 2 frequency band



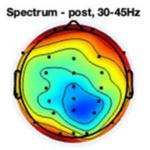
BAHI, C., IRRMISCHER, M., FRANKEN, K., FEJER, G., SCHLENKER, A., DEIJEN, J. B., & ENGELBREGT, H. (2023). EFFECTS OF CONSCIOUS CONNECTED BREATHING ON CORTICAL BRAIN ACTIVITY, MOOD AND STATE OF CONSCIOUSNESS IN HEALTHY

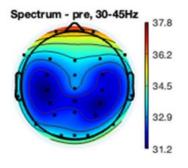
ADULTS. CURRENT PSYCHOLOGY. HTTPS://DOI.ORG/10.1007/S12144-023-05119-6.

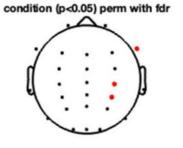
- Breathwork decreases power in lower frequency bands.
- Comparing resting state before (pre) and after (post) breath-work showed a significant decrease in delta (1–4 Hz) and theta (4–8 Hz) frequencies especially in parietal and temporal regions (see Fig. 1 A-B).
- Decrease in Delta was pre-dominantly frontotemporal. Alpha (9–12 Hz) and beta (12–30 Hz) showed no significant change, however, when the beta waves were decomposed in beta 1 (12–15 Hz), beta 2 (15–20 Hz), beta 3(20–30 Hz) sub frequency ranges, significant decreases in power were observed across beta 1 and beta 2 (see Fig. 1C-D) at a parieto-temporal level.
- To learn more about brain waves click here.

BAHI, C., IRRMISCHER, M., FRANKEN, K., FEJER, G., SCHLENKER, A., DEIJEN, J. B., & ENGELBREGT, H. (2023). EFFECTS OF CONSCIOUS CONNECTED BREATHING ON CORTICAL BRAIN ACTIVITY, MOOD AND STATE OF CONSCIOUSNESS IN HEALTHY ADULTS. CURRENT PSYCHOLOGY. HTTPS://DOI.ORG/10.1007/S12144-023-05119-6.

Fig. 2 Averaged topography across gamma frequency band and significant changes in experienced breathwork participants for p < 0.05 displayed at individual channels







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ADULTS. CURRENT PSYCHOLOGY. HTTPS://DOI.ORG/10.1007/S12144-023-05119-6.

- Breathwork increases gamma frequencies in experienced practitioners. Since a significant change in power across gamma frequency band was observed before correction for multiple comparison, a subgroup analysis was conducted on participants with breathwork experience.
- A significant increase in gamma power was observed at the right parietal level and temporo-frontal level (see Fig. 2), which remained significant after correction for multiple comparison, in this subset of participants.
- To learn more about brain waves, and benefits of increasing gamma waves click here.

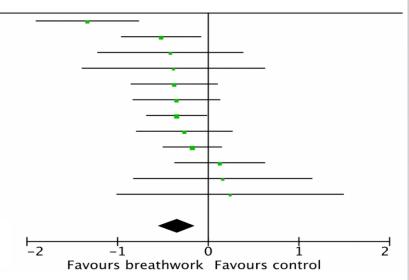
FINCHAM, G. W., STRAUSS, C., MONTERO-MARIN, J., & CAVANAGH, K. (2023). EFFECT OF BREATHWORK ON STRESS AND MENTAL HEALTH: A META-ANALYSIS OF RANDOMIZED-CONTROLLED TRIALS. SCIENTIFIC REPORTS, 13(1). HTTPS://DOI.ORG/10.1038/S41598-022-27247-Y.

### Figure 3

From: Effect of breathwork on stress and mental health: A meta-analysis of randomised-controlled trials

Fiskin & Sahin (2018)
Mahendru et al. (2021)
Gerbarg et al. (2015)
Rosenberg & Hamiel (2021)
Shehab (2021)
Goldstein et al. (2020)
Laudenslager et al. (2015)
Ravindran et al. (2021)
Huang et al. (2019)
Alberts et al. (2020)
Dhruva et al. (2012)

James et al. (2021)



Forest plot comparing breathwork interventions to non-breathwork control groups on primary outcome of self-reported/subjective stress at post-intervention. Squares and their size represent individual studies and their weight, respectively. Lines through squares are 95% CIs and diamond is the overall effect size with 95% CIs. More negative values denote larger effect of breathwork on self-reported/subjective stress in comparison to control condition. Effect sizes calculated using Hedges' *g*. Figure produced using RevMan v5.4.

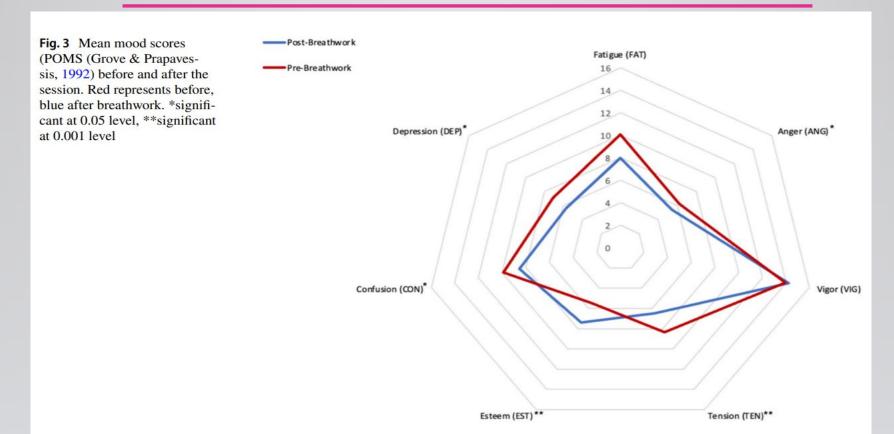
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HTTPS://DOI.ORG/10.1038/S41598-022-27247-Y.

- We conducted the first comprehensive systematic review and metaanalysis of RCTs on the effect of breathwork on self-reported/subjective stress, analyzing 12 studies which comprised a total of 785 participants.
- Breathwork yielded a significant post-intervention between-group effect
  of breathwork on stress compared to non-breathwork controls, denoting
  breathwork was associated with lower levels of stress than controls.

BAHI, C., IRRMISCHER, M., FRANKEN, K., FEJER, G., SCHLENKER, A., DEIJEN, J. B., & ENGELBREGT, H. (2023). EFFECTS OF CONSCIOUS CONNECTED BREATHING ON CORTICAL BRAIN ACTIVITY, MOOD AND STATE OF CONSCIOUSNESS IN HEALTHY

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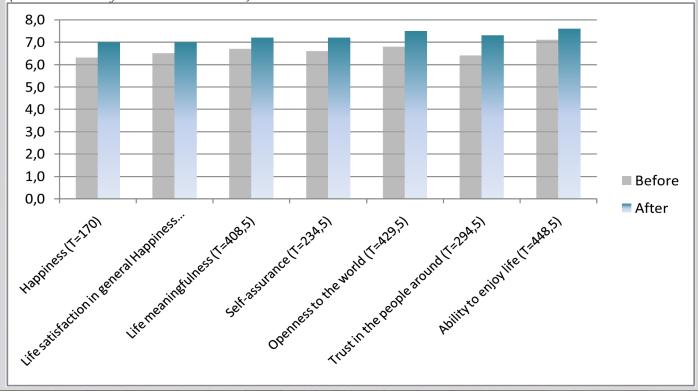
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ADULTS. CURRENT PSYCHOLOGY. HTTPS://DOI.ORG/10.1007/S12144-023-05119-6.

- Changes in 11- ASC are comparable with dose–response profile of psilocybin.
- Figure 3 shows the response data gathered via the 11D-ASC scale immediately after breathwork. Since our study did not have a control condition, we plotted the subjective experience during breathwork alongside the dose-dependent relationships of psilocybin-induced subjective experiences(Hirschfeld & Schmidt, 2021) for the purpose of qualitative comparison, and because the subjective effects of these two techniques have been compared in the past (Eyerman, 2013). We did not conduct a quantitative comparison given that these data stem from independent studies.
- The mood states as measured by the POMS questionnaire indicated that after the breath-work session, participants experienced a reduction in negative affect states (tension, confusion, depression and anger), while esteem increased.

AFANASENKO, I. V., EMELIANENKO, V. A., & EMELIANENKO, A. V. (2014). SPIRITUAL TRANSFORMATION: A QUALITATIVE-QUANTITATIVE ANALYSIS OF THE APPLICATION OF THE HOLOTROPIC BREATHWORK METHOD. JOURNAL OF TRANSPERSONAL RESEARCH, 6(1), 25–37.

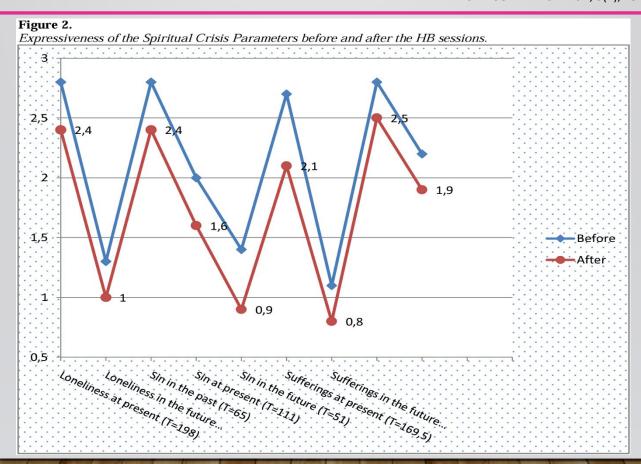
**Figure 1.**Life constructs self-assessment parameters before and after the HB-sessions (with statistically relevant differences).



AFANASENKO, I. V., EMELIANENKO, V. A., & EMELIANENKO, A. V. (2014). SPIRITUAL TRANSFORMATION: A QUALITATIVE-QUANTITATIVE ANALYSIS OF THE APPLICATION OF THE HOLOTROPIC BREATHWORK METHOD. *JOURNAL OF TRANSPERSONAL RESEARCH*, 6(1), 25–37.

- After the Holotropic Breathwork (HB) sessions, the respondents assessed the
  following categories higher than before (p<0.05): Happiness (T=170), Life satisfaction
  in general (T=401), Life meaningfulness (T=408.5), Self assurance (T=234.5),
  Openness to the world (T=429.5), Trust in the people around (T=294.5) and Ability to
  enjoy life (T=448.5).</li>
- Thus, the obtained data show that, as a result of participation in the HB seminar comes awareness and qualitative reassessment of some life events by the subjects, and peculiarities of their manifestation in them, that contributes to the increase of life meaningfulness, trust in themselves and other people (Figure 1).

AFANASENKO, I. V., EMELIANENKO, V. A., & EMELIANENKO, A. V. (2014). SPIRITUAL TRANSFORMATION: A QUALITATIVE-QUANTITATIVE ANALYSIS OF THE APPLICATION OF THE HOLOTROPIC BREATHWORK METHOD. JOURNAL OF TRANSPERSONAL RESEARCH, 6(1), 25–37.



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- The study of the dynamics of existential life categories made it possible to distinguish statistically significant (at p<0.05) and close to credible in significance (at p ≤ 0.06) changes towards a decrease of the categories parameters of Sin (T=48; p=0.006) and Death anxiety (T=140; p=0.057) in the past, Sin (T=65; p=0.002), Loneliness (T=198; p=0.007), Sufferings (T=169,5; p=0.0007) and Death anxiety (T=129; p=0.056) at present, and Sin (T=65; p=0.046), Loneliness (T=11; p=0.060) and Sufferings in the future (T=29,5; p=0.008) (Figure2).
- In general, the results illustrate a tendency towards decrease in expressiveness of
  existential life categories associated with negative feelings. At the same time, after
  participation in HB-sessions, a rise in expressiveness of positive life constructs was
  registered, that was manifested in acceptance of a person's own personality, other
  people and the world, and readiness to take on the responsibility for life, which is
  regarded as more meaningful and enjoyable.