

emwave
personal stress reliever®

owner's manual

Disclaimer

The emWave® Personal Stress Reliever® and the exercises contained in this manual are intended as tools for stress reduction, individual balance, optimal performance and personal growth. This is not considered a medical device. It has been found to be very safe and helpful when used as intended for educational and entertainment purposes.

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I. Overview

About this Manual

This manual is intended to explain **emWave® Personal Stress Reliever®*** and help you utilize its full potential. It is recommended that you read the entire manual before using **emWave** or, at the very least, read Sections I-IV. If questions arise please refer back to the table of contents, pages 3 and 4, to find the information that you require. Enjoy getting to know **emWave**.

Package Contents

emWave Personal Stress Reliever

Coherence Coach CD

Ear Sensor

Battery Charger

Manual

Registration Card

Quick Start Guide

Jump Start Card

Carrying Case

*shortened to **emWave** in this manual

Reducing Stress with emWave® Personal Stress Reliever®

Welcome to emWave Personal Stress Reliever. Your **emWave** provides advanced technology that will help you reduce the negative effects of stress, allowing you to experience greater health, more energy, and improved emotional and mental clarity. The “em” in **emWave** stands for empowerment; **emWave** empowers you to shift your emotional state. The **emWave** is designed to have the full coherence measuring capacity of the emWave PC (formerly known as the Freeze-Framer® Interactive Learning Program) in a portable unit. For more information go to: www.emwavepc.com

The patented technology found in **emWave** is based on 15 years of scientific research conducted by Doc Childre and the Institute of HeartMath (IHM), the organization he founded in 1991. IHM is a world leader in understanding the dynamics of emotional physiology and heart-brain interactions. Many of IHM's groundbreaking findings have been incorporated into the creation of this easy-to-use device that monitors your level of coherence.

Practicing with **emWave** enhances your sense of well-being as you learn to create more “heart rhythm coherence.” Coherence is a term used by scientists to describe a highly efficient physiological state in which the nervous system, cardiovascular, hormonal and immune systems are working efficiently and harmoniously. Simply stated:

More coherence = Less stress

For most people in today’s high stress world, it is rare for sustained periods of coherence to occur. By using your **emWave** and learning to use the practical, easy-to-use Quick Coherence® technique, you can shift into a higher state of coherence anytime, anywhere. Your stress will diminish and your feelings of well-being, balance and enhanced energy will increase.

emWave measures your coherence level by analyzing the subtle beat-to-beat changes in the time intervals between heartbeats. This is called heart rate variability (HRV), which is an important indicator of physiological resilience and emotional flexibility. These beat-to-beat changes create your heart rhythm pattern. When you experience stressful emotions such as tension, anxiety, irritation, or anger, your heart rhythm pattern becomes irregular and incoherent, which negatively

affects health, brain function, performance and your sense of well-being.



Figure 1: Heart Rhythms When Stressed

When you are experiencing positive emotions such as appreciation, care, joy or love, your heart rhythm pattern becomes more ordered and coherent.

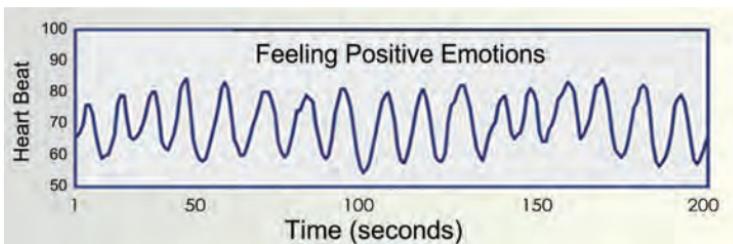


Figure 2: Heart Rhythms When Feeling A Positive Emotion

Ordered and harmonious heart rhythms (coherence) associated with positive emotional attitudes send signals to the brain that reduce stress, improve brain function, hormonal balance, immune response, coordination and reaction times.

emWave determines the degree of coherence found in your heart rhythm patterns and displays changes in real-time on the Coherence Level Indicator.

red = low-normal

blue = medium-improved

green = high-optimal

The goal in using emWave is to reduce stress by achieving and sustaining High Coherence (green). Using your **emWave** while practicing the Quick Coherence technique will help you improve your coherence levels and experience a life with less stress and more ease. Using the Coherence Coach™ CD can make practicing coherence more fun and accelerate your learning process. To learn more about the scientific validation behind **emWave** or for further understanding of heart rate variability, coherence, and the physiology of emotions go to:

www.emwave.com

II. Introducing emWave® Personal Stress Reliever®



Feature	Function
Sensor Button	Turns- Power On/Off Changes- Challenge Level, Display Modes, Volume, Display Brightness Senses- Pulse for Heart Rhythm Analysis
Heart Action Strip	Displays- Breath Pacer, Heart Rhythm Pattern, Coherence Score, Coherence Ratio, Challenge Level, Display Brightness
Coherence Level Indicator	Displays- Coherence Level
Pulse Indicator	Displays- Pulse
Charger Jack	Connects- Charger to emWave
Ear Sensor Jack	Connects- Ear Sensor to emWave

Sensor Button Controls:

Sensor Button:	Setup Mode	Basic Mode	Advanced Mode
	SP = Change Challenge Level LP = Enter Advanced Mode	SP = Briefly Displays Coherence Ratio LP = Enter Advanced Mode	SP = Briefly Displays Coherence Ratio MP = Changes Display Modes * LP = Return to Basic Mode
	SP = Change Display Brightness MP = Power Off	SP = Change Sound Level MP = Power Off	SP = Change Sound Level MP = Power Off
	SP= Short Press- 0.5 (1/2) seconds MP= Medium Press- 2 seconds LP = Long Press - 10 seconds		
	* 1) HRV Display 2) Breath Pacer Display 3) Stealth Display		

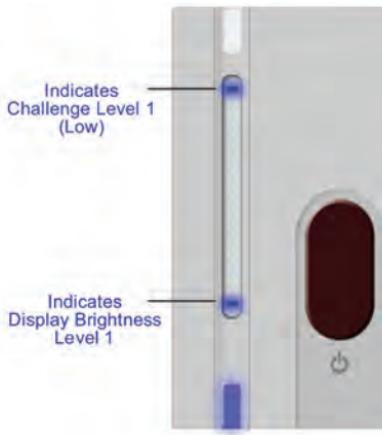
III. Your First Stress Relief Session with emWave

1. Power On: Setup Mode

Press the bottom of the Sensor Button. You do not need to hold the button down, as a brief press will suffice. You will hear tones indicating

that your emWave is on. When the **emWave** first powers up, a self-test is performed. During this phase it will cycle through the lights on the Heart Action Strip, Coherence Level Indicator and Pulse Indicator. When **emWave** is turned on and before it detects your pulse - roughly 15-30 seconds - it is in **Setup Mode**.

While in Setup Mode, you can change the Challenge Level and Display Brightness.

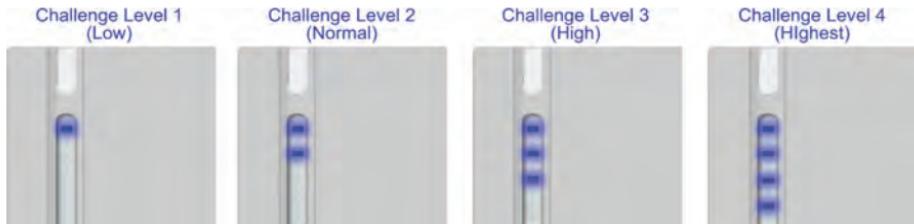


In Setup Mode two sets of blue lights appear on the Heart Action Strip. The bars at the top of the Heart Action Strip indicate the Challenge Level. The bars at the bottom indicate the Display Brightness.

Note: Setup Mode ends when emWave detects a pulse.

Challenge Level

The Challenge Level is set to a default level of one (low) on a scale of one to four (highest). Before a pulse is calibrated, a short press on the top of the Sensor Button will cycle you through the Challenge Levels.

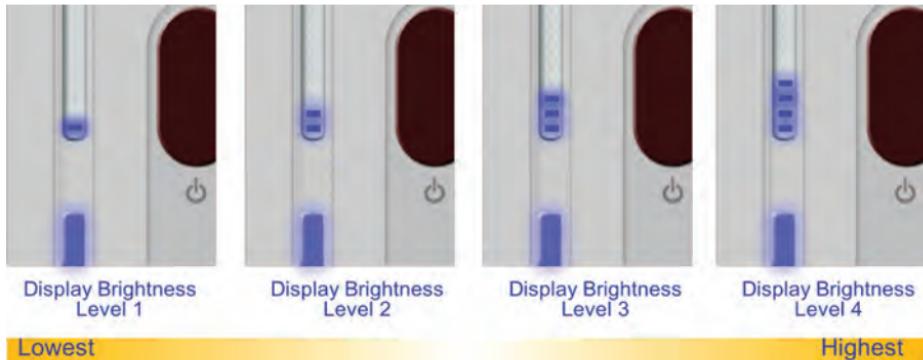


We recommend that you leave the Challenge Level on the default setting (low) for your first Stress Relief Session. When you can consistently keep the Coherence Level Indicator glowing green, you should then increase your Challenge Level.

Note: If your emWave is turned off while in Basic Mode, the Challenge Level will default back to Level 1. If your emWave is turned off while in Advanced Mode, your Challenge Level settings will be retained.

Display Brightness

The brightness of the lights is set to a default level of one, on a scale of one to four. A short press on the bottom of the Sensor Button will cycle you through the four levels of brightness.



Note: Brightness and Challenge Level cannot be changed once you enter an active session. An active session starts after the pulse sensor has detected 10-20 heartbeats. If you want to change these settings you need to turn emWave off and then back on, which restarts in Setup Mode.

2. Detecting your Pulse

emWave can detect a pulse from the Sensor Button or Ear Sensor. We recommend using the Ear Sensor until you get comfortable with using the Sensor Button to control settings.

Using the Ear Sensor

Before turning on your emWave plug the Ear Sensor into the Ear Sensor Jack and clip the sensor to your earlobe. Remove earrings and avoid sudden movements to get an accurate reading. Connect the lapel clip to your shirt so the weight of your cord is not pulling on the sensor.

Using the Sensor Button

If you are not using the Ear Sensor, hold emWave as you would a playing card and place your thumb squarely over the Sensor Button. Do not press down, just rest your finger gently on the Sensor Button.

Pulse Indicator

The Pulse Indicator will blink blue each time a heartbeat (pulse) is detected. With the first 10 - 20 pulses, emWave calibrates the sensitivity of the sensor for optimal pulse detection. Once calibration is completed, an active session begins. If the Pulse Indicator glows red or is blank,

adjust the ear clip or your thumb until you see the Pulse Indicator blinking blue.

3. Basic Mode

After pulse calibration (10-20 detected pulses) is completed, the emWave automatically starts an active session. For your first active session with emWave you will be in Basic Mode.

Breath Pacer

The Heart Action Strip will display a series of rising and falling blue lights – the Breath Pacer. Due to the natural interactions between the heart and lungs, breathing at a rate which matches the Breath Pacer can facilitate coherence.



Breathe in: As the lights in the Heart Action Strip rise

Breathe out: As the lights in the Heart Action Strip fall

Breathe evenly, do not hold your breath.

If you find the speed of the Breath Pacer to be too fast or too slow, just breathe at a comfortable steady pace and the Breath Pacer will begin

to adjust to your breathing rhythm as you maintain a medium or high coherence for at least 20 seconds.

Note: If your heart rhythms are too irregular or your breathing is too shallow the Breath Pacer will stay in a default pacing mode.

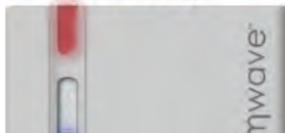
If you see a different display during a session other than what is explained on the previous page you may have entered Advanced Mode. Press and hold the top of the Sensor Button for 10 seconds to return to Basic Mode. See page 38 for more information on Advanced Mode.

Coherence Level Indicator

After a few cycles with the Breath Pacer, the Coherence Level Indicator on the top of **emWave** will light up red, blue, or green, depending on your initial heart rhythm coherence levels.

The Coherence Level Indicator may fluctuate between red, blue, and

**Low Coherence
(Normal)**



**Medium Coherence
(Improved)**



**High Coherence
(Optimal)**



green according to your heart rhythm coherence pattern. Whenever you shift into Medium Coherence a short reward tone will sound. Whenever you shift into High Coherence a different tone will sound.

Note: If the Coherence Indicator goes blank this means that emWave is not able to detect your pulse. Adjust the Ear Sensor or your thumb on the Sensor Button until you see the Pulse Indicator blinking blue and the Coherence Level Indicator turning red, blue, or green.

Your goal is to relieve stress by increasing the amount of time you have a blue or green glow in the Coherence Level Indicator. With practice, you will be able to sustain High Coherence as indicated by the Coherence Level Indicator glowing steadily green. Once you achieve this, you can increase your Challenge Level.

Coherence Training

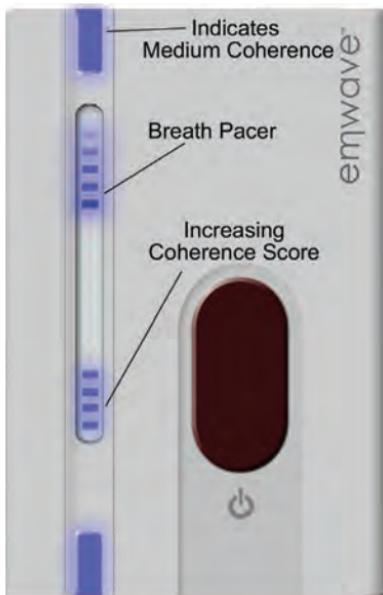
Tension, anxiety, irritation, frustration, worry—**stress**—cause emotional and mental blocks. Coherence Training teaches you how to neutralize and shift negative emotions on the spot, and opens up the pathway to mental and emotional clarity. See page 23 to learn about the Quick Coherence® technique. **You may want to practice Coherence**

Training with emWave for 5 minutes or longer several times a day. Soon you will be able to use emWave for just a minute or two to increase your coherence or to check your coherence level.

Coherence Score

The Coherence Score is represented by the sounds of reward tones and a series of blue lights. The lights can be either "half lit" or "fully lit". You will see the Coherence Score displayed while the Breath Pacer continues to rise and fall in the Heart Action Strip. Your goal is to fill the Heart Action Strip with blue lights by sustaining Medium or High Coherence.

While in Low Coherence you will notice a blue light, two points, is removed from the Heart Action Strip every five seconds. If you are in

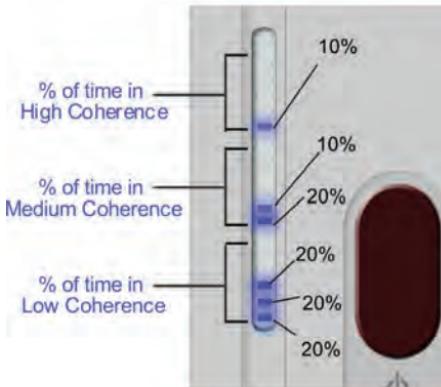


Medium Coherence you should hear a reward tone every five seconds. After five seconds you see a half lit light added to the Heart Action Strip. After the next five seconds the half lit blue light will turn fully lit. This half to fully lit cycle repeats every five seconds. During High Coherence, again, every five seconds you will hear the reward sound. Also, every five seconds a fully lit blue light, two points, is added to the Heart Action Strip.

Each time you fill the Heart Action Strip, you'll hear a reward sound and the process of accumulating lights will start over. However, the bottom-most light remains fully illuminated, indicating that you have successfully filled the Heart Action Strip once. Every time you completely fill the Heart Action Strip, another fully illuminated light is added to the bottom of the Heart Action Strip. For example, if you have completely filled the Heart Action Strip twice during an active session, you would see the bottom two lights fully illuminated.

Coherence Ratio

During an active session, you can also view your Coherence Ratio (the percentage of time you have been in Low, Medium or High Coherence since starting your session). A short press on the top of the Sensor Button will briefly display (ten seconds) your Coherence Ratio. The Heart Action



Strip will look similar to this picture above. The Heart Action Strip is separated in three sections as noted. Lights are either “fully lit” or “half lit” and each light represents a percentage of total session time:

A blue light “fully lit” represents 20% of the time of your active session.

A blue light “half lit” represents 10% of the time of your active session.

So in the picture on the previous page, the lights indicate that you have been in:

Low Coherence 60% of the time during your active session.
(3 fully lit lights x 20% = 60% low coherence)

Medium Coherence 30% of the time during your active session.
(1 fully lit light x 20% plus 1 half lit light x 10% = 30% medium coherence)

High Coherence 10% of the time during your active session.
(1 half lit light x 10% = 10% high coherence)

Ideally you would want to be in High Coherence for 100% of your time during an active session.

4. Using the Quick Coherence® Technique

Emotion Shifting

Breathing practices have been taught for thousands of years. They're helpful for calming, but shifting attitudes and strong stressful emotions takes much more than breathing. Using the Quick Coherence technique with **emWave** increases your ability to shift out of negative emotions and into a more positive and effective emotional state.

The important part of the process is learning to shift your focus to the heart and activate a positive feeling or attitude. Using Quick Coherence with **emWave** is designed to help you shift the feelings, not just the thoughts. Once your feelings shift to a more positive state, then your thoughts automatically become more balanced.

HeartMath research demonstrates the importance of the heart when trying to shift emotions and attitudes. This is because, in most cases, breathing and the mind alone don't have the power to relieve emotional stress or change negative attitudes.

By learning and practicing the Quick Coherence technique with your emWave, you can improve your Coherence Scores and reduce your stress. It's a powerful three-step process that creates smooth, ordered, and coherent heart rhythms. Here's how to do it:

The Quick Coherence Technique

Three Steps for Stress Relief

Step 1—Heart Focus

Focus your attention in the area of your heart, the area in the center of your chest.

Step 2—Heart Breathing

As you focus on the area of your heart, imagine your breath is flowing in and out through that area. Use the Breath Pacer on emWave's Heart Action Strip to guide you and find a comfortable rhythm.

Step 3—Heart Feeling

Continue to breathe through the area of your heart. As you do, recall a positive feeling—a time when you felt good inside—and try to re-

experience it. This could be a feeling of appreciation or care you have towards a special person, a pet, a place you enjoy, or an activity that was fun. Allow yourself to feel this good feeling of appreciation or care. If you can't feel anything, it's okay; just try to find a sincere attitude of appreciation or care. Once you've found a positive feeling or attitude, you can sustain it by continuing your Heart Focus, Heart Breathing, and Heart Feeling. It's that simple. You can practice the Quick Coherence technique any time you feel stressed.

It is recommended that you install the Coherence Coach™ CD on your computer to receive further interactive training on how to practice the Quick Coherence technique. See page 29 for installation instructions.

Combining the Quick Coherence Technique with emWave

To gain skill and increase your Coherence Scores, practice the Quick Coherence technique with **emWave** several times a day.

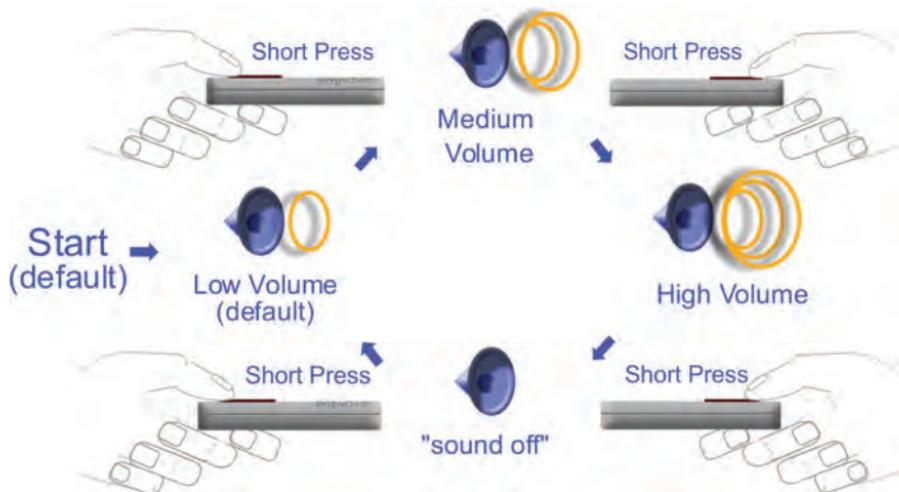
If you find it difficult to achieve and sustain Medium or High Coherence don't worry. Be patient with yourself. You're learning a new skill and it may take just a little time to see results. With practice you will see

improvement. Use the Coherence Coach to help you master the Quick Coherence technique. Make sure you are using your emWave on Challenge Level One and we recommend that you use the Ear Sensor when starting out.

If you find it easy to reach and sustain Medium or High Coherence simply increase the Challenge Level to sharpen your coherence building skills.

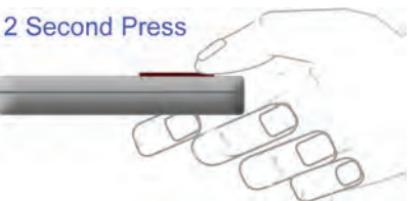
5. Volume Control

You can adjust the Volume Level or turn it off **only when in an active session**. The default Volume Level is Low. Once you have entered an active session, each short press on the bottom of the Sensor Button cycles you through the three Volume Level settings and "sound off". Each time you perform a short press, you will hear a sound that corresponds to that Volume Level.



6. Power Off

To turn the power off, perform a medium press (two seconds) on the bottom of the Sensor Button. When you see the lights fade out, emWave is shutting off.



emWave will automatically shut off after approximately 45 seconds of not detecting a pulse.

Note: When you turn off **emWave** while in the Basic Mode, the Challenge Level reverts back to level one but the Display Brightness level and Breath Pacer speed will be saved. In Advanced Mode the Challenge Level is saved also (see page 45). Turning off **emWave** resets and clears the Coherence Score and Coherence Ratio.

IV. Coherence Coach™ CD

We have provided you with the Coherence Coach CD. Your Coherence Coach will guide you through the Quick Coherence technique to achieve stress relief.



Install

Just insert the disk into the CD drive of your computer and install the Coherence Coach by following the installation instructions provided in the Read Me document on the CD. Versions of the Coherence Coach are provided for both Windows and Mac OS X.

After Installation

You are now ready to use the Coherence Coach in conjunction with **emWave**. First, power on **emWave** and start an active session by detecting your pulse with either the Ear Sensor or Sensor Button. After the Breath Pacer appears, open the Coherence Coach by double clicking on the Coherence Coach icon. Just follow along and listen as the Coherence Coach takes you through the Quick Coherence technique. Use the adjustable Breathing Pacer and enjoy the animations and music.

V. More on the Quick Coherence® Technique for Stress Relief

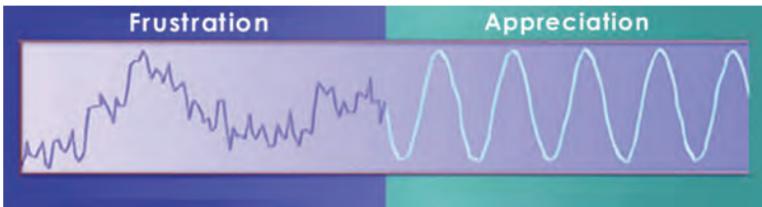
This powerful, effective technique was developed from research conducted by Doc Childre and scientists at HeartMath. The effectiveness of HeartMath techniques and technology has been scientifically validated in numerous studies conducted in Fortune 100 companies, major hospitals, government agencies, universities and schools all over the world. For more information on HeartMath's research and the scientific validation behind the Quick Coherence technique go to: <http://www.heartmath.com>

Why the Quick Coherence Technique Works

The "heart breathing" portion of the Quick Coherence technique helps to synchronize your nervous system and creates positive changes in your heart rhythm patterns. This in turn sends signals to the brain that have a calming and balancing effect on the brain and entire body.

However, in order to relieve stress, more is required than simply breathing and trying to relax. Emotions and feelings have a powerful

impact on the human body. Emotions like frustration, insecurity, despair and worry are stressful and inhibit optimal health and performance. Positive emotions like appreciation, care, and love not only feel good, they promote health, performance and well being.



HeartMath's research demonstrates that when you intentionally shift to a positive emotion, heart rhythms immediately change. A shift in heart rhythms, from chaotic to coherent, creates a favorable cascade of neural, hormonal, and biochemical events that benefit the entire body. The stress-reducing effects are both immediate and long-lasting.

emWave, used along with the Quick Coherence technique, helps you learn to change your emotional state and heart rhythms to reduce your stress levels and revitalize your entire system. This creates a new baseline for preventing and recovering from stress more effectively.

VI. Recommended Applications and Uses

Preventing Stress—**emWave** helps you balance your mental, emotional and physical systems. Without this balance, feelings of anxiety and worry block the connection between what you really know and what you can do. Heart rhythm coherence helps to prevent stress. Using your **emWave** before important conversations, meetings, public speaking, and potentially challenging situations increases your creative process and the likelihood of positive outcomes. The positive effect sustains for a time period after you've been in coherence.

Recovering from Stress—Use **emWave** with the Quick Coherence technique to recover physical energy you have drained from stress and to build back your energy reserves. You can also use **emWave** to rest the mind and body from emotional concerns and recoup the energy lost from emotional drains. Additionally, the body needs recovery time between periods of intense mental focus. Using **emWave** can help shorten your recovery time in whatever ways stress has affected you.

To Start Your Day—Have a 3-5 minute session with **emWave** in the morning to help reset your system, bringing your mind, emotions and

body into coherence so you are ready to have a productive and healthy day.

Before Sleep—Many people have difficulty falling asleep or awaken in the middle of the night due to unresolved worries and feelings of pressure. These worries and stressful feelings flood the body and mind, keeping you awake. Use **emWave** for a few minutes just before bed to calm your racing mind or disturbed emotions to help set the tone for a better night's sleep. If you wake up in the middle of the night, doing another **emWave** session can help you go back to sleep.

Before Conversations, Meetings or Presentations—Meetings and presentations can be intimidating and stressful for many people. Have a 1-2 minute session with **emWave** before important presentations or meetings to harness creative energy, focus your thoughts, and calm your emotions.

Before Meditation, Prayer or your Preferred Spiritual Practice—The time people spend in any spiritual practice is a special time. Being as balanced, calm and coherent as possible will only enhance the experience. Using **emWave** can provide a reliable way to prepare yourself for these special times.

Before a Test or Exam—Feelings of anxiety and nervousness before tests are huge issues for many students. These stressful emotions have been shown to shut down important cognitive abilities, limiting academic performance. Having a 3-5 minute session with **emWave** can reduce the stress and anxiety associated with taking tests, giving you a better chance to do your best.

To Improve Athletic Performance—Increasing your coherence can have a dynamic effect on athletic performance. Practicing with **emWave** is a great way to train your system to get in “the zone” while playing your favorite sport. In some sports it can even be used between activities. For instance, using **emWave** between shots when playing golf can improve your game. Make it a part of your pre and post shot routines to sharpen your emotional, mental and physical skills.

To Reduce Anxiety, Worry and Overload—Many events are beyond our control and the anxiety associated with them can tend to be overwhelming. When you feel anxious, worried or just overloaded, have a session with **emWave** using the Quick Coherence technique to help balance your emotions and reduce stressful feelings.

To Enhance Creativity—Stress often blocks creativity. When you

are involved in a creative task or need some mental clarity, take a short break to start up **emWave**, increase your coherence level and open yourself to new creative potential.

To Unwind—Unwinding from a high impact day or a stressful situation can be difficult. However, the mental, emotional and physical benefits can be dramatic. Spend a little time with **emWave** to increase your coherence level when you want to calm down, recharge your system and get back on track.

Dealing with a Health Challenge—Experiencing an illness, injury or disease can, of course, be quite stressful and challenging. Becoming excessively stressed about the situation only makes things worse. We recommend using **emWave** regularly, especially when you are sick or faced with a health challenge, to help reduce the negative effects of stress.

While Traveling—The stress that comes from traveling for business or pleasure can take its toll on the body and mind. Having short **emWave** sessions at various times during your trip, such as before or during a flight, in your hotel before going to sleep or while in heavy traffic, can help you stay more balanced and resilient.

Taking a Break—Throughout the day stress can accumulate, compromising your performance and quality of life. Taking just a few minutes during the day to stop and use **emWave** can help you shake off the effects of accumulated stress and give you a boost of energy.

Fostering Sincere Communication—There are times when you need to share important information with others. Listening and communicating sensitively and clearly are essential. Using **emWave** to become coherent can enhance your communication skills to facilitate mutual understanding and coherent communication.

Creating Work/Life Balance—It's often difficult to leave work at the office and shift into quality time with your family or friends. **emWave** can help with this transition. Use it for a few minutes at the end of the work day or just before you arrive home to reconnect with yourself and let go of your stress. This always makes it easier to connect with others.

Committing to Changes You Want to Make—Coherence helps you stabilize your emotions to make the changes you want. It aligns your emotions with your heart and mind intent, so that your actions are more genuine and effective. It's coherent emotion that powers up your sincere intention.

Often, people understand the importance of intent, yet when their emotions are not aligned, the power dwindles to sustain their commitment. The emotions are preoccupied, so they aren't in sync or fully aligned. For example, if your emotions are brooding over a family problem while you're trying to build a positive intention for an important meeting or for a better golf game, then your emotional power is scattered and diffused. This leaves less creative energy to achieve your desired intent.

Daily coherence training with the **emWave** helps you build the self-commitment to lifestyle changes you know you need to make. It helps you to stabilize if your commitment starts to waver and you feel yourself slipping. **emWave** will help you boost your heart power for more action and follow through.

VII. Advanced Mode

In addition to **emWave's** Basic Mode **emWave** also offers you additional functionality in the Advanced Mode. Advanced Mode adds two more displays, HRV display and Stealth Display. In Advanced Mode the goal remains the same—achieve and sustain High Coherence to reduce your stress.

How to Enter the Advanced Mode

To enter Advanced Mode, turn **emWave** on (page 12). Next, press and hold the top of the Sensor Button for ten seconds. Your entrance into Advanced Mode is confirmed by five distinctly fast beeps (low, low, low, low, high). Now connect to **emWave** using the Ear Sensor or Sensor Button and wait for pulse calibration to start an active session. After pulse calibration you will see the HRV Display. (It is recommended that you attach your Ear Sensor before turning on your emWave.)

Note: You can also enter the Advanced Mode from an active session in Basic Mode the same way, by pressing and holding the top of the Sensor Button for ten seconds. Entrance into Advanced Mode from an active session will be indicated by the five fast beeps.

HRV Display

In the HRV Display, the sequence and timing of the moving lights follow your heart rhythm. The moving series of blue lights on the Heart Action Strip follows your heart rhythm as it speeds up and slows down in real-time. This is also described as the beat-to-beat variability in your heart rate, or heart rate variability (HRV). Unlike the Breath Pacer, the HRV display is not programmed to rise and fall in a smooth rhythmic pattern, but reflects the **detailed and real-time changes in your heart rate.** When you are in High Coherence, your HRV pattern will be smooth and rhythmic. This is depicted on the emWave HRV Display as a smooth rising and falling blue light. Your goal is to create a smooth rising and falling blue light, indicating a highly coherent heart rhythm pattern.

Why Use the HRV Display?

Seeing your heart rate variability (HRV) displayed in real-time as you practice the Quick Coherence technique, can help you improve your Coherence Scores and increase your HRV range. Remember, HRV is an important indicator of physiological resilience and emotional flexibility. HRV coherence, or heart rhythm coherence, has the same physiological benefit as what's commonly called the relaxation response. But it is much more than that. HRV coherence also improves your brain's ability

to process information, including decision-making, problem solving and creativity. HRV coherence improves memory, mental clarity and performance in learning or sports, including eye-hand coordination and reaction times. Over time, you will find it also increases your energy level.

What is the HRV Range?

Your Heart Rate Variability HRV range reflects how much change occurs in your beat-to-beat variability. A higher range of variability is an indicator of good health. The range of HRV naturally decreases as people age. Stress and negative feelings can cause the range of your HRV to temporarily decrease. Chronic stress can cause an overall reduction in your HRV range. You can learn to increase your HRV range as you practice obtaining new levels of coherence.

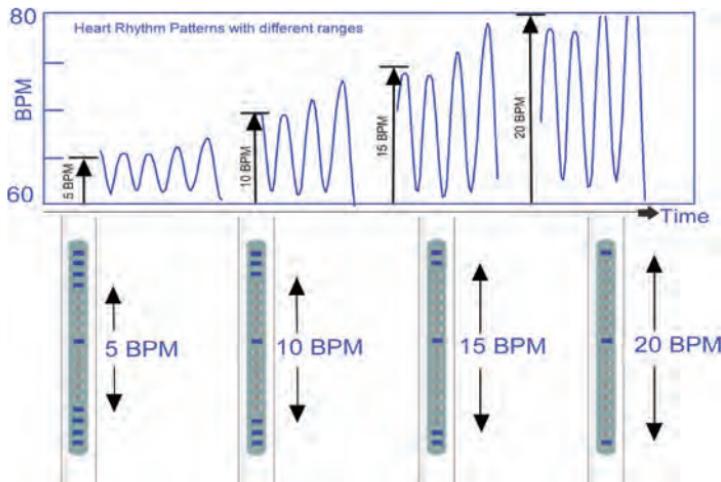
Because people have different ranges of HRV, the Heart Action Strip automatically scales its display to best fit your HRV range. The range is indicated by the number of lights on both ends of the Heart Action Strip. These range indicator lights are dimly lit, with the more brightly lit HRV wave moving up and down over them.

If you're in a stressful state, your HRV wave may not move as high and low (up and down) on the Heart Action Strip. It will hover more around the center indicating a lower range of HRV. Breathe more deeply if this happens and use the Quick Coherence technique. In the Advanced Mode you have two goals: to increase your coherence and get your HRV wave to move higher and lower.

The figure on the next page shows the four HRV ranges on the Heart Action Strip. **emWave** automatically changes its display to indicate your HRV range. It is the number of lights on the top and bottom of the Heart Action Strip that indicate the range of your HRV pattern. If your range is low (5 BPM) then you will see 4 blue lights at the top and bottom of the Heart Action Strip.

If your HRV range is high (20 BPM) then you would see only one light at the top and bottom of the Heart Action Strip. The moving blue lights in the middle of the Heart Action Strip traces your HRV pattern; rising as your heart rate increases and falling as it decreases. These displays give you a better indication of your HRV range.

The Four Ranges Of Emwave



One light = 20 BPM full scale range—depicted in the top figure

Two lights = 15 BPM

Three lights = 10 BPM

Four lights = 5 BPM—depicted in the bottom figure

As you practice increasing your coherence and reducing your stress levels, your HRV range may start to increase. As your HRV range increases, you'll see fewer lights at the top and bottom on the Heart Action Strip. In simple terms, the fewer lights, the wider the range of your HRV. The more lights that display on the Heart Action Strip, the narrower the range of your HRV. For more information on HRV go to:

www.emwave.com

Cycling through Advanced Mode Displays

During an active session in Advanced Mode, you can cycle through three display options: HRV Display, Breath Pacer Display and Stealth Display. To cycle to each display, you must perform a medium press (two seconds) on the top of the Sensor Button. Changing into a different display is indicated by one distinct tone.

Breath Pacer Display

The Breath Pacer is the same as when you are in the Basic Mode. Watch your Coherence Score fill up the Heart Action Strip.

Stealth Display

Stealth Display turns off the Heart Action Strip and Pulse Indicator. The only display providing feedback is the Coherence Level Indicator with sound. This display is great for focusing on increasing your Coherence Level. This will also give you the longest battery life. (*Examples of times to use Stealth Display are at night before sleep, when you're in a hurry, or when you don't need the other functions turned on.*)

Exiting Advanced Mode: Getting back to Basic Mode

When you're in the Advanced Mode, you can return **emWave** back to Basic Mode at any time. To do this, you perform a long press of ten seconds on the top of the Sensor Button. This ten second press is marked by four tones and a brief green glow from the Pulse Indicator. If you are in an active session you will see the Breath Pacer re-emerge.

Power Off from Advanced Mode

If **emWave** is turned off while in Advanced Mode, all of your current settings will be retained. Thus, when you turn **emWave** back on, it will still be in the Advanced Mode display it was in when you turned it off.

Your settings of Challenge Level, Display Brightness, Volume Level and Breath Pacer speed are saved. When you turn **emWave** back on, you know you are in Advanced Mode if you hear three tones (low, low, high). Before it detects your pulse, you can change the Challenge Level and Display Brightness.

VIII. Owner Information

Battery

The **emWave** contains a Lithium-Ion battery which may be replaced by HeartMath, an authorized representative or distributor. Should you ever wish to permanently dispose of your **emWave**, remember that because of environmental concerns, disposal of this product may be regulated. For disposal or recycling information, please contact your local authorities.

Charging emWave

Your **emWave** battery will operate for approximately 6 hours of continuous use when fully charged. To insure a full charge we recommend an initial charging time of 2-3hours. Attach the charger to a standard 110V/220V outlet and plug the charger securely into the charger jack. When **emWave** receives power you should see a green light in the Pulse Indicator. If you do not see a green light try plugging the charger into a different outlet. Caution: Only use the recommended battery charger.

Recharging emWave

The normal charging time for **emWave** is 2-3 hours.

When charging, a completely discharged **emWave** can take up to 20 minutes before lights at the bottom of the Heart Action Strip illuminate – indicating charging has begun, however a green light in the Pulse Indicator should turn on as soon as you have the charger connected to indicate that **emWave** is receiving power from the outlet.

Note: The battery contained in emWave does not have a memory effect and can be recharged often. The rechargeable Lithium Ion battery cannot be changed or replaced by the user. Contact emWave tech support for more information.

Safety

Do not use **emWave** for any application other than its intended use as described in this manual. Do not try to open or tamper with **emWave**. This may damage **emWave** and will void the warranty. Do not use **emWave** as a substitute for treatment by a health professional.

Cleaning

Clean **emWave** with a soft and dry cloth. Avoid exposure to water and other liquids that could cause internal damage.

Storage

Prolonged exposure to extreme hot and cold temperatures may damage your **emWave**. Do not expose to high temperatures (140° F / 60° C).

Keep out of direct sunlight when not in use.

emWave Training

For additional training and learning resources visit

<http://www.emwave.com/training.html>.

Registration

Register **emWave** by filling out the Registration Card located in the Quick Start Guide, or register online at: <http://register.heartmath.com>

Technical Support

For technical support visit <http://support.heartmath.com>. You can also email questions to support@heartmath.com or fax questions to 831-338-9861.

IX. Usage, Trademarks, Copyrights, Patents and Warranty

emWave AND TRAINING HEARTMATH TECHNIQUES

emWave may only be used to teach HeartMath techniques to others in a training program if you are a licensed HeartMath Trainer. If you are not licensed, you may only demonstrate the use of **emWave** in a training program, but not teach the proprietary techniques included in this manual. Purchase of **emWave** does not give you a license to use the HeartMath brand in advertising or marketing that would imply that you are a licensed or certified trainer of the HeartMath® system techniques nor to charge fees specifically for the use of emWave by others. If you are interested in becoming licensed to use the HeartMath brand and teach HeartMath techniques in a commercial setting, using **emWave** and/or to charge fees for allowing others to use **emWave**, please contact HeartMath LLC, 14700 West Park Avenue, Boulder Creek, CA 95006; Phone: 831-338-8700 ext 14 for information about eligibility for certification.

Authorized resellers of **emWave** may use the product to give demonstrations of its features to groups and may instruct individuals on how to use the product, but may not charge customers for the demonstration sessions. Health Practitioners may use **emWave** as a tool in the normal course of their delivery of health services. Hospitals, clinics, companies, schools and other organizations may make **emWave** available in a public location for demonstration purposes, as long as fees are not charged for this use.

EMWAVE AND COHERENCE

HeartMath programs and products teach people about physiological coherence and how to shift to this state, as described and defined by the Institute of HeartMath's published scientific research. We are not aware of any research to imply that **emWave** validates any other methodologies that may be taught in other training programs. Other approaches may also lead

to some coherence; however, that does not also mean that they lead to the same health and performance benefits as **emWave**.

The Institute of HeartMath is credited with first describing and defining the concepts of physiological and psychophysiological coherence and researching and developing the methodologies to accurately measure coherence. The first scientific publications describing coherence were published in peer-reviewed journals in 1993, although the concepts were taught in HeartMath programs even earlier. The first use of the term “cardiac coherence” was published in 1996 in a HeartMath paper titled: Cardiac Coherence: A new non-invasive measure of autonomic system order. Alternative Therapies in Health and Medicine. 1996;2(1):52-65.

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PATENT NOTICE

emWave is manufactured under US Patent Nos.: 6,358,201; 7,117,032 and 7,163,512. AU Patent No. 770323. EU Patent No. 1156851, China Publication No. 1358074, Hong Kong Publication No., HK1042056 and Korea Patent No. 10-0616370.

WARRANTY

emWave The Personal Stress Reliever LIMITED WARRANTY. QUANTUM INTECH warrants that the device will perform substantially in accordance with the accompanying printed materials for a period of one year from the date of purchase (the Limited Warranty). Any implied warranties on the device are limited to one year.

SOME STATES/PROVINCES/COUNTRIES DO NOT ALLOW LIMITATIONS ON DURATION OF IMPLIED WARRANTIES, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU. IN THE UNITED KINGDOM: NOTHING IN THIS LIMITED WARRANTY WILL AFFECT YOUR STATUTORY RIGHTS, INCLUDING YOUR RIGHTS, IF ANY, AGAINST QUANTUM INTECH.

CUSTOMER REMEDIES. QUANTUM INTECH's entire liability and your exclusive remedy in respect of this Limited Warranty, shall be, at QUANTUM INTECH's option, either (a) return of the price paid or (b) repair or replacement of the device that does not meet this Limited Warranty, and that is returned to QUANTUM INTECH with proof of purchase (i.e., a copy of your receipt). This Limited Warranty is void if failure of the device has resulted from accident, abuse, or misapplication. Any replacement device will be warranted for the remainder of the original warranty period or thirty (30) days, whichever is longer.

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NO LIABILITY FOR CONSEQUENTIAL DAMAGES. To the maximum extent permitted by applicable law, in no event shall QUANTUM INTECH or their respective suppliers be liable for any damages whatsoever, including, without limitation, damages for loss of business profits, business interruption, loss of business information or other pecuniary loss arising out of the use or inability to use the device, malfunction, or any and all other commercial damages or losses, even if QUANTUM INTECH or any of such suppliers has been advised of the possibility of such damages. In such case, QUANTUM INTECH and their respective suppliers' entire liability shall be limited to the amount paid by you for the device. Because some states/provinces/countries do not allow the exclusion or limitation of liability for consequential or incidental damages, the above limitation may not apply to you.

THIS LIMITED WARRANTY DOES NOT COVER:

- 1) QUANTUM INTECH will not repair defects under the limited warranty related to servicing not performed by QUANTUM INTECH.
- 2) QUANTUM INTECH will not provide any warranty service if emWave shows evidence that it has been tampered with, misused, or altered; for example: moisture damage sufficient to affect the proper function of the sensor; damage to the case.
- 3) QUANTUM INTECH IS NOT LIABLE FOR INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES.

INQUIRIES. Should you have any questions concerning this Agreement or the Limited Warranty, or if you desire to contact QUANTUM INTECH for any other reason, please contact our office:

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Some states/provinces/countries do not allow limitations on how long implied warranties last, so the above limitation may not apply to you. This limited warranty gives you specific legal rights, and you may also have other rights which vary from state to state, province to province or country to country. **emWave** is a registered trademark of Quantum Intech, Inc. in the U.S. and other countries. Copyright © 2006 Quantum Intech, Inc. All rights reserved.

X. Regulatory Information

FCC Statement

This device complies with part 15 of the FCC Rules. Operation is subjected to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

FCC Warning

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-
- Reorient or relocate the receiving antenna.
 - Increase the separation between the equipment and the receiver.
 - Connect the equipment into an outlet different from that to which the receiver is connected.
 - Consult the dealer or an experienced radio/TV technician for help.

You are cautioned that changes or modifications of the unit not expressly approved by Quantum Intech could void the user's authority to operate the equipment.

European EMC Directive DoC Notice

This product carries the CE mark to indicate that it meets the requirements of the European Directive on Electromagnetic Compatibility (89/336/EEC). It has been tested to the following standards: EN55022; EN55024; IEC61000-4-2/3/4/5/6/8/11; IEC61000-3-2/3

Warning

This is a Class B product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

Canadian DoC Notice for Class B Computing Devices

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the Radio Interference Regulation of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la class B prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada



VCCI Compliance for Class B Equipment (Japan)

More resources can be found on reducing stress and managing emotions, including downloadable e-books, learning programs, music, and computer applications at: www.heartmathstore.com



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