## HeartMath Institute Research, Assessed by Research Quality Metrics and Empirical Evidence

HeartMath techniques and technology are based on a significant body of research and empirical evidence developed over the last 27 years.

## HeartMath Institute Research Quality Metrics

The <u>h-index</u> is a measurement created to describe the scientific productivity and impact of a researcher and their department or organization. Jorge Hirsch, creator of the h-index, states in his <u>paper on the h-index</u> that an h-index of 20 after 20 years of scientific activity characterizes a successful scientist, and that an index of 40 is outstanding. The HeartMath Institute's director or research and principal investigator is Rollin McCraty, PhD. <u>Dr. McCraty's Google Scholar</u> <u>profile</u> lists over 200 publications, conference presentations, and patents published over the last 25 years with over 8600 citations, and an h-index score of 43.

<u>Scholarmeter</u>, a Google Chrome Web browser add-on developed at Indiana University to calculate h-index scores using Google Scholar citations, produces an <u>hs-index</u> score, which is the h-index normalized by discipline. Dr. McCraty's hs-index scores vary from 1.78 to 2.02 when calculated for several relevant fields of research and his hs-index scores rank at the top 9% to 15% of researchers in those fields who have Google Scholar profiles. View the Scholarmeter results <u>here.</u>

These h- and hs-index scores and an increasing trend of citations per year are objective testaments to the quality and originality of HeartMath Institute research using standard research analytic measures.



A graph from Google Scholar of the number of citations per year of Dr. McCraty's papers shows a positive trend line over the last 22 years:

Publications by other HeartMath authors have been cited over 1100 times <u>according to Google</u> <u>Scholar</u>.

## **Independent Research**

The HeartMath Institute's research is confirmed by many independent research studies. Papers published by independent researchers, most of whom obtained their own funding, are listed on the <u>clinical and health section of the HeartMath Institute research library</u>. Other studies and dissertations done by independent researchers are listed on different sections of the same Web page. <u>See this Google Scholar Web page</u> that lists 400 HeartMath-related studies, research papers, dissertations, and conference presentations by independent researchers with 2900 citations and an h-index of 31.

The cumulative h-index scores and citation counts for Dr. McCraty, other HeartMath authors, and independent authors are 89 and 12,500 respectively.



## **Clinical Applications - Empirical Evidence**

Research is the foundation for any intervention, but the application in day-to-day practice is the most significant form of validation. Ultimately, it is health professionals who determine whether a particular intervention is successful or not, and tell their colleagues about the outcomes they're seeing. This is how HeartMath has come to be used by many tens of thousands of doctor-and masters-level health professionals around the world over the past twenty years in a wide variety of physical and mental health modalities.

The new <u>Science of the Heart research monograph</u> (free download) has a chapter on HeartMath intervention <u>health outcomes</u>.

SAMHSA, the Substance Abuse and Mental Health Services Administration, lists three HeartMath interventions 1 2 3 as evidence-based in the National Registry of Evidence-based Programs and Practices (NREPP).

**Couples therapy** is a significant application for HeartMath, as it's one of the most challenging practice areas due to the powerful emotions that therapists have to address. John and Julia Gottman, renowned couple therapy researchers, developed the Couples Together Against Violence program that uses emWave2<sup>®</sup> handhelds as an integral part of the intervention. See the <u>The Empirical Basis of Gottman Couples Therapy</u> document for details and published paper<u>here</u>. More details of the Gottman's use of emWave handhelds and HeartMath-focused couples therapy guides are available as a <u>couples</u> and <u>therapist</u> guide and in a Gottman webinar <u>here</u>.

**Trauma** is another very challenging area of practice that requires dedicated health professional specialists to help trauma sufferers clear intense emotional histories. Many trauma therapists incorporate HeartMath techniques and technology in their practice. See the <u>therapist</u> guide written by Sara Gilman PsyD, past president of EMDRIA. Her informative webinar can be found <u>here</u>.

- Two papers on HeartMath-based trauma interventions are available <u>here</u> and <u>here</u>.
- Bessel van der Kolk MD is a leader in trauma research and practice. Watch his webinar.
- Andrew Leeds, a senior trauma therapist and consultant, discusses his application <u>here</u>.
- Other HeartMath application-focused webinars by clinicians are available <u>here</u>.

**Military and veteran** applications of HeartMath techniques and technology have increased significantly in recent years. See <u>HeartMath Institute resources</u> for veterans, service members and their families.

- HeartMath for military and veterans introductory video
- <u>Online resilience training</u> for military personnel and veterans
- The <u>Navy's Family Readiness Toolbox</u> includes HeartMath resources.
- HeartMath is a <u>modality</u> in the VA's <u>Whole Health for Life</u> program <u>handouts</u>. <u>emWave</u> <u>Pro</u> is an <u>approved technology VA-wide</u>. The Washington DC Veterans Administration Medical Center, a trend setter for VA facilities across the country, lists HeartMath/emWave as an approved modality in their <u>Wellness Provider Validation</u> <u>Master Policy Toolkit</u>.
- The Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury listed HeartMath/emWave as intervention in the <u>Mind-Body Skills for Regulating</u> <u>the Autonomic Nervous System</u> publication.
- <u>The National Intrepid Center for Excellence</u> incorporates HeartMath/emWave for autonomic control as described in their <u>patient welcome guide</u>.

- Veteran testimonials and TBI testimonials
- The <u>Semper Fi Fund</u> will provide any OEF/OIF Marine or Navy veteran a free <u>emWave2</u> <u>handheld</u> or <u>Inner Balance sensor</u> upon request.

We look forward to the publication of more research studies by the HeartMath Institute and independent researchers in the future, and to supporting those who have dedicated their lives to helping others.

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