Energy Resonance Technology (ERT): A Targeted Intervention For Electro-Magnetic Radiation (EMR) Induced Biological Effects[1][2]

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Abstract

The research reported here addresses the working hypothesis that subjects exposed to EMR from an active mobile telephone signal and who experience measurable organ related stress, could have those sub-clinical stress markers reversed by the introduction of an ERT field. Because putative energy can not be readily measured, surrogate measures for both the adverse impact of EMR and the impact reversal facilitated by the ERT field were utilized as dependent variables.

Based on known pathways of adverse cellular damage induced by EMR, it was reasoned that the composite effect of disrupted intercellular communication was responsible in large measure for observable organ specific stress response following exposure to the EMR field. Consequent observations showing reversal or lessening of organ-specific stress response following introduction of the ERT field would thus be mainly due to restoration of the intercellular communication.

A meta-analysis assessed data across five separate studies of volunteers who were recruited and tested in the United States, Canada, New Zealand and Australia under similar protocols. Measured organ-specific stress was evaluated as a surrogate for disruption of intercellular communication with three comparisons analyzed in each study group: baseline versus phone without ERT; baseline versus phone with ERT; phone without ERT versus phone with ERT. Student's T-tests were used to evaluate the statistical significance of observed differences.

Results indicate that ERT is a highly effective targeted intervention for EMR induced cellular communication disruption. While larger follow-up studies would provide further confirmation of these findings, the data strongly suggests it is highly unlikely the strong impact of ERT intervention on reversing biological effects observed in these series occurred by chance.

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Background:

Energy Resonance Technology. Energy Resonance Technology (ERT) is part of a class of wellness interventions defined as subtle-energy carriers. Over the past decade, researchers and clinicians in the field of complementary and alternative medicine have spearheaded development of diagnostic tools as well as therapeutic and preventive interventions based on electro-magnetic energy transfer. In this domain of energy medicine, there are two defined energy types: Veritable energies are those which can be measured and include diagnostics such as magnetic resonance imaging (MRI) and ultrasound, as well as therapeutics including magnetic therapy, millimeter wave based treatments, and sound and light energy medicine. Putative energies are those which defy conventional measurement and include acupuncture, homeopathy, therapeutic touch, subtle energies, and distant healing. ERT falls under the putative energy definition (National Institutes of Health, 2005).

Interventions involving these types of putative energy fields are based on the concept that living organisms are a vital energy system containing biological building blocks from molecules and cells to tissues and organs, including the organism itself. Studies confirm that these energies have therapeutic value in areas such as bone repair, nerve conduction stimulation and measurement, soft-tissue wound healing, osteoarthritis pain relief, immune system strengthening and neuro-endocrine modulation. While difficult to quantify, these energy remedies have clear clinical therapeutic value reaching far beyond placebo effect (Rubik *et al.*, 2006).

ERT itself was developed from the cumulative knowledge of scientific pioneers such as Samuel Hahnemann, Wilhelm Reich, Nikola Tesla, Winfried Otto Schumann, George Lawkowski, Fritz Popp,Alexander Lowen and others. ERT is a proprietary technology that uniquely connects core tenets in the fields of bioenergetics, quantum physics and molecular biology, thereby enabling a process of energetically entraining a virtually unlimited variety of carrier materials. The core charging technology was developed by a group of bioenergetics innovators from Central Europe and North America.

During ERT activation or charging, a material "carrier" - which can be a plastic chip, a metal card, liquid or a variety of other substances - is exposed to a powerful subtle energy field in an *Energy Elevation Chamber (EEC),* also known as a *Hollow Room Resonator*. This process of so-called *entrainment* takes place over a specific time period and transforms the carrier into an effective subtle energy transmitter. The carriers chosen effectively harness and emit subtle energies, as well as compatibly interacting with subtle energy structures including a person’s endogenous electro-magnetic field or biofield. After entrainment, the carriers produce beneficial effects on physical structures that correlate to the subtle energy structures. The term Energy Resonance Technology is derivative of resonance or vibration compatibility between the entrained carriers and corresponding target structures.

ERT interventions are charged with proprietary blends of harmonic frequency-spectra and subsequently stored onto the molecular structure of the carrier inside the EEC. During ERT entrainment, photons trigger a molecular chain reaction in the carrier. Through elevation of an electron to a higher trajectory, photons are emitted that in turn stimulate other molecules. As a result, an intense subtle energy chain reaction is triggered. These subtle energy fields, when targeted at molecular mechanisms, exert a normalizing and regulating effect.

Electro-magnetic Radiation Health Risks. While specifically structured energy carriers show clear therapeutic and preventive value, studies conducted over the past twenty years confirm that energies incompatible with biological systems are dangerous (Carlo and Schram, 2001; Hardell *et al.*, 2002, 2004, 2005; Kundi *et al.*, 2004). Most relevant to the population at large are electro-magnetic radiation (EMR) fields generated by wireless communication devices.

Current science shows two distinct types of radiation plumes capable of contributing to development of disease in those exposed to EMR. The near-field plume has been studied most extensively relative to mobile phone exposure because this plume – usually within six to eight inches of the center of the antenna – is the most intense in terms of the amount of energy it contains. The far-field plume has less energy associated with it, although studies indicate that energy intensity is not the only determinant of adverse biological impact (Carlo and Schram, 2001; Carlo and Thibodeau, 2000; Carlo and Steffens, 2000). At least one study has suggested that genetic effects can indeed result from far-field exposures (Gandhi 2005a; 2005b; 2005c; 2006). Anyone who uses a mobile phone or uses wireless connections to access the Internet is exposed to both near-field and far-field radiation. Those living or working in the vicinity of base-stations or masts are exposured also to ambient far-field EMR.

Over the past four years, dosimetry science has become very precise with respect to hand-held wireless devices. It is now clear that the primary indicator of near-field plume size is the amount of power being used by the phone in carrying an information signal - The further away the nearest base station, the more power is needed to carry the signal. Distance and resultant power are more important to the size of the radiation plume than number of calls or length of calls made. Thus, while intensity of the radiation plume is a complicated variable, the most important aspect is that the intensity of the plume determines the amount of tissue exposed. (Carlo, Supley et al., 1998)

The science also shows that intensity of the radiation plume is not the primary determinant of damage severity caused by cell phone use when power levels used produce non-thermal effect fields. Instead, the determining factor in non-thermal exposures is coherence, or form, of the information carrying wave. (DiCarlo et al. 2000; 2002; Litovitz et al. 1997, 2002). This adds another complicating aspect to the elements of dose, but also adds plausbility to the plethora of disease conditions now considered related to far-field or ambient EMR exposures through base stations and masts. It is possible that some exposures in mobile phone users reach thermal limits, however, most scientists now assume the mechanism to be non-thermal. The primary non-thermal mechanism of danger to human tissue within the near-field plume and likely from far-field exposures derives from a series of events triggered by recognition by the biological cell membrane that a coherent, invading radio wave is present. (DiCarlo, 1998)

It is noteworthy that the carrier wave in the radiofrequecies bands of the EMR spectrum – ranging from around 837 megahertz to around 1900 megahertz – is not easily recognized by biological cell membranes. It is oscillating too fast to be picked up by cell membrane sensor proteins that respond to compatible vibration. Membrane recognition occurs when the information carrying wave – a secondary wave oscillating in the hertz range – is present. For example, a 2 hertz signal identifies the presence of a cell phone in range of a base station; when talking occurs there are also hertz frequency waves carrying packeted voice information.

Once the membrane recognition occurs, a series of protective biochemical reactions are initiated inside the cell as a means of cellular protection. Included are stress protein responses that serve to effectively "harden" the cell membrane and disrupt active transport. The "membrane hardening" effect causes an intracellular build-up of waste products including highly reactive free radicals. These reactive molecules are involved in at least two pathways associated with disease induction. The first occurs when mitochondria are attacked resulting in both cellular dysfunction (evidenced by studies showing leakage in the blood-brain barrier following EMR exposure), and interference with normal DNA repair processes (evidenced by studies showing the presence of micronuclei in cells following EMR exposure). It is noteworthy that several experiments have shown these effects eliminated when EMR exposure is removed.

From a chronic disease perspective, these two mechanistic pathways impact all critical stages of tumorigenesis. DNA repair interference and disruption of normal apoptosis can lead to genetic mutational changes that many times are self-replicating – consistent with the process of tumor initiation. Fixation of deviant cells is evidenced by the presence of micro-nuclei in a number of mobile phone radiation exposure studies. General impairment of normal cellular function, especially mechanisms that are meant to stop aberrant cell growth, can facilitate tumor promotion or growth to a neoplastic stage and progression to metastases.

Considering these mechanistic bio-effect pathways, one composite effect of cellular dysfunction caused by exposure to EMR is disruption of intercellular communication in both gap-junction and microtubule systems. When cells are not able to communicate properly, functional requirements between cells, tissues and organs are not met and physiologic processes are compromised. For example, when intercellular communication is disrupted, messages from local cell groups or tissues are not carried to the immune, nervous or endocrine systems. The effects of this break in communication are felt at the organ and organism level resulting in clinical symptoms much of the time.

Hypothesis:

The working hypothesis in the research reported here was that subjects exposed to EMR from an active mobile telephone signal and who experience measurable organ related stress, could have those sub-clinical stress markers reversed by introduction of an ERT field. Because putative energy can not be readily measured, surrogate measures for both adverse impact of EMR and impact reversal facilitated by the ERT field were utilized as the dependent variables.

The rationale for interpreting specific observations was as follows:

- Based on known pathways of adverse cellular damage induced by EMR, it was reasoned that the composite effect of disrupted intercellular communication was responsible in large measure for any observable organ specific stress response following exposure to the EMR field.

- Following from that thesis, any observed reversal or lessening of the organ specific stress response following introduction of the ERT field would thus be due in large measure to restoration of the intercellular communication.

Methods:

<u>Meta-Analysis Data Sources.</u> Over the 2005-2006 calendar years, five separate volunteer intervention studies were conducted by the present investigators addressing the impact of ERT on EMR-induced biological effects as measured through stress response indicators. The sample sizes in each of those studies were modest, ranging from 16 to 29. To increase statistical power and the resultant reliability of interpretations based on those data, a meta-analysis combining the information from the specific studies was undertaken. Detail on the parameters of the individual studies is presented in *Table 1*.

<u>Selection of Study Subjects.</u> Subject volunteers were recruited at five different locations in the United States, Australia, Canada and New Zealand. In most cases, the volunteer subjects were part of technical and business gatherings. In the Canadian study, volunteers were taken during a clinic workshop. There was no pre-ordained sampling protocol, and no subject category restriction or other sample balancing was attempted. The study design was reliant on an expectation that volunteers would be random and thus representative of the population at large. It was understood at the outset that this assumption could be tested by an assessment of internal inconsistencies in the data generated.

<u>Exposure and Intervention Protocol.</u> The exposure and intervention protocols were designed to allow for three separate comparisons of independent (i.e. EMR and ERT variations) and dependent (i.e. biological effects) variables in each study. The data were then combined for the meta-analysis.

A similar measurement schedule was followed in each of the studies, adhering to the same timing sequence. Each subject was first tested without having any specific EMR exposure or ERT intervention – this first measurement was considered the baseline control. The subject was then asked to make a cell phone call to a specific phone number and to talk for the duration of time that the second measurement protocol was being administered. These measurements were considered the positive control. Finally, each subject was asked to make a second phone call, but this time using a phone equipped with an ERT device. This final reading was taken during an active call, as well. Overall, the total time elapsed for all three iterations of measurement were between five and seven minutes.

At all locations, two Samsung SPH-A620 Dual-band Tri-Mode cell phones were used for testing. One was outfitted with an ERT device and the other was not. At one location, a body worn ERT pendant was tested along with the point-of-use phone device.

Bio-effects Measurement Device. Biomeridian Corporation's Meridian Stress Assessment System (MSAS) Professional, an FDA registered and ISO certified device, was used in each specific study for measuring surrogates of disrupted intercellular communication and biological effects. This model is capable of measuring energy potential differences in more than 60 areas of the human body, following meridians based on Voll Acupoints which frequently correlate to traditional Acupuncture points. This version of the MSAS has a high level of field use, with over 2000 practitioners globally using the device clinically to assess resistance to a variety of stressors in symptomatic and asymptomatic patients.

To study a range of potentially effected tissues and organs, the following seven acupuncture systems with their meridians and points were included as dependent variables:

- Lymphatic System
- Lung and Respiratory System
- Large Intestine and Digestive System
- Nervous System
- Circulatory System
- Immune System and Allergy Response
- Cellular Metabolism

These seven acupuncture points fairly represent the human energy system, and the points are confirmed to react to external stimuli within seconds to minutes after exposure. When compensatory reactions are induced within the body, they too are reflected in the MSAS measurement within seconds to minutes after introduction of an intervention.

During each measurement sequence, the subject was asked to hold a tubular terminal device, called the 'brass hand mass', in one hand while the trained MSAS technician depressed points on the opposite hand. This completes the electric circuit. The subject was not able to view the results being printed on the computer screen and was thus blinded with regard to their own biofeedback. The technician was not blinded with regard to whether or not the test regimen was fundamental control, positive control or ERT intervention. However, measurements were computer-recorded and for the most part would not be subject to non-detectable technician manipulation.

It was assumed that evidence of induced energy imbalance and the subsequent observation of organ related stress as measured by the MSAS was a clear indication of disrupted intercellular communication.

Quantitative Measurement Scale. A host of energy-based medical assessment devices derive from the principles first published by Voll, in the early 1950s based on electronic measurements of common acupuncture points. He and his colleagues posited that a network of energy channels, or meridians, flow through the body and are associated with specific organ function. Imbalances in various organs manifest as energetic disturbances in associated meridian points, some of which correlate to acupuncture points, and can be used to collect energetic data. This work established that each meridian point has a different resistance to a tiny electrical current passed through the body, than do adjacent tissues – findings that have been corroborated over the past twenty years. Voll and his colleagues confirmed that the changes were differential fields of electro-magnetic energy being emitted from specific organs, and that these energy fields were instantaneously communicative across the entire body. The MSAS is a state-of-the-art measurement tool based on these principles.

Data Gathering Methods. In the core series of studies, each of seven defined meridian areas were measured in test subjects on a data output scale of 0-100 according to the Voll Scale depicted in *Figure 1*. The ideal target zone, using the MSAS, falls within the 45-55 score range for most systems. Any measurement above 55 indicates stress and inflammation; measurements below 45 indicate stress and impaired, weakened or "blocked" energy systems – mechanistically defined as disruptions in intercellular communication pathways. The closer to the mean, the closer an individual is to being in an ideal performance zone.

Analytical Parameters and Statistical Tests. The primary comparisons were between the baseline control and the cell phone with no intervention; between the baseline control and the cell phone equipped with the ERT intervention; and between the cell phone with and without the ERT intervention. Results of three iterations of measurements for each subject were first arrayed according to the Voll Scale and then simplified to a measure of "in or out of the ideal or normal range", according to the MSAS assessment. Dependent variables for analytical purposes were expressed as either average number of readings within the normal range (in location specific analyses) or average percent of readings within the normal range (in the meta-analyses).

For each comparison, an unpaired T-test was performed to assess the probability that, assuming the null hypothesis of no effect from the EMR exposure or the ERT intervention, the observation occurred by chance. Ninety-five percent confidence intervals were calculated to show the range of values around the mean point estimates assumed within the statistical significance tests.

Results:

Tables 2 and 3 include comparisons of baseline control readings with those taken during an active phone call where there was no ERT intervention applied. From these data, it is clear that EMR exposure from the cell phone indeed causes adverse biological effects, inferred here to be mediated by significant disruption of intercellular communication. In every case, EMR exposure resulted in adverse biological response, with four of six hypothesis tests presented in the tables highly significant from a statistical perspective.

In every hypothesis test where ERT intervention was tested against baseline controls, the effect was statistically significant, with the probability of these observations occurring by chance less than 1 in 1,000.

In six hypothesis tests addressing the difference in biological effect readings when the person was using the cell phone with ERT intervention compared to phone calls made on phones without the device, the reduction in bio-effects was highly significant.

In *Table 4* are results of comparisons between two distinct delivery vehicles for ERT: the point-of-use device, which in this case was attached to a cell phone, and the body-worn device, which in this case was in the form of a pendant worn around the neck. While these two delivery vehicles have different applications – the point of use addressing mainly near-field exposures and the pendant addressing ambient exposures – this aspect was included as an internal consistency check. If findings with two delivery systems are consistent, it suggests strongly that the technology itself is causing the effect. First, it is noteworthy that the beneficial effect of the ERT pendant was statistically meaningful as compared to the baseline control readings. Second, comparison of readings taken during phone calls without ERT intervention compared to readings taken during an active phone call while the subject was wearing the ERT pendant showed a beneficial effect that was highly significant. Thus, consistent findings were gleaned using the two delivery systems.

Discussion:

In addition to the findings presented, thirty patients were studied by Drs. M. Rahman and N. Torres at the University of Toronto in August 2005. Only three meridian points were tested; thus, those patients were not included in the meta-analysis presented here. The results of those tests, however, indicated a statistically significant effect of the ERT intervention with respect to reversing EMR induced bio-effects. Overall, there appears to be a remarkable consistency in these data gathered over more than one year, in different parts of the world, in different seasons and with arguably different populations.

Nonetheless, there are a number of caveats that must be considered while interpreting these data.

Subjects were recruited in a business environment where expectations regarding the beneficial effect of ERT would be high. The study protocol only blinded the subject to his or her own biological readings; the subject was not blinded with respect to the presence of absence of the EMR exposure and the ERT intervention. Such a study design might be expected to produce placebo effect responses. However, placebo responses are usually in the twenty-five to thirty percent range of difference. These data show differences that are in the hundreds of percent range; that magnitude in difference is far greater than any previously observed placebo effect. In the point-of-use technology application, the observer technician also was not blinded to either the EMR or ERT status at the time of conducting the tests. It is possible that unintended drift toward an observer bias in favor of the positive effect hypothesis occurred. However, these data were gathered by five different technicians in different environments. It is unlikely that the same unintended drift would happen systematically across all of the study sites. In addition, the magnitude of the differences observed are far greater than what would be expected with casual observer bias. Of note is that in the body-worn application, the tests were double-blind and placebo controlled.

Misclassification bias is a possibility with this type of design because the data were gathered mostly in a non-clinical, non-controlled setting. Mistakes could have been made in data recording, data management or data quality control. However, there is no reason to believe that such misclassification would be anything but random, and random or non-differential misclassification always biases findings toward the null hypothesis – meaning toward underestimating the true effect. The observed effects in these data are large and robust, so such a problem is not likely to limit confidence that the data indicate a true finding.

The study was small in terms of numbers of participants – in total less than one-hundred. The impact of small sample size is usually most important when a small effect is being sought or when there are no statistical differences observed. Had this study not shown the dramatic impact of ERT intervention, it would have been difficult to conclude that there was no effect. The robust statistical findings presented here overtake most concerns associated with small sample size. Nonetheless, caution is warranted in over-interpreting these data until other similar findings are reported.

Finally from a methods and statistics perspective, there were no readily available inconsistencies in the data that would suggest fundamental flaws in either the logic of the study or the underlying data. The data trends within the study were consistent in showing that EMR from cell phones resulted in the types of bio-effects that would be anticipated based on the published scientific literature. In every case the direction of those findings was consistent with the underlying biological tenets.

Perhaps the strongest aspect of this work when compared to other studies addressing subtle energy impacts is its reliance on biologically plausible and provable mechanisms relative to both the EMR induced bio-effects and the ERT intervention. Studies that rely on general holistic measures such as stress response are often subject to skepticism because there is little attempt to bridge from the clinical observations to accepted biological tenets. In this case, the hypotheses posed at the outset were based on fundamental biochemical, biophysical and bio-energetic principles supported by a wide range of published, peer-reviewed studies.

While larger follow-up studies would be useful as further confirmation of these findings, these data strongly suggest it is highly unlikely that the robust impact of ERT intervention in reversing biological effects observed in these series occurred by chance. As such, follow-up work should focus on enhancing the precision of clinical outcome variables that would provide further insight into other avenues of protective intervention.

Conclusion:

The results of this meta-analysis indicate that ERT, when delivered through a point-of-use device, is a highly effective targeted intervention for EMR induced cellular communication disruption.

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Table 1

Samples, Dates of Testing and Participating Investigators in Five Separate Studies of the Effect of ERT on EMR Induced Bio-effects Conducted in Five Cities across the World During 2005-2006

Location	Sample	Dates	Investigators
San Diego, CA	13 males; 10 females	July 7-8, 2005	S. McGregor
Carlsbad, CA	10 males; 19 females	September 8-9, 2005	S. McGregor
Auckland, NZ	6 males; 11 females	October 8-9, 2005	D. Taylor
Melbourne, AUS	9 males; 8 females	October 15-16, 2005	D. Taylor
Carlsbad, CA	4 males; 12 females	October 1-15, 2006	A. Hanser

Note:

30 patients were tested by Drs. M. Rahman and N. Torres at the University of Toronto, August 30, 2005. Because only three meridian points were considered, those patients were not included in the meta-analysis presented here. The results of those tests, however, indicated a statistically significant effect of the ERT intervention with respect to reversing EMR induced bio-effects.

Table 2

Composite Results of Analyses Conducted on Subjects From Five Separate Studies Conducted During 2005-2006 Addressing The Impact of ERT* on EMR-induced Bio-Effects

Location	Mean**	95% CI	P-value
San Diego, California (N=23)			
Baseline	3.78	3.23, 4.34	
Phone w/out ERT	0.83	0.27, 1.38	<0.001
Baseline	3.78	3.23, 4.34	
Phone w/ ERT	6.04	5.61, 6.48	<0.001
Phone w/out ERT	0.83	0.27, 1.38	
Phone w/ERT	6.04	5.61, 6.48	<0.001
Carlsbad, California (N=29)			
Baseline	2.55	2.13, 2.97	
Phone w/out ERT	0.72	0.28, 1.17	<0.001
Baseline	2.55	2.13, 2.97	
Phone w/ ERT	5.86	5.44, 6.28	<0.001
Phone w/out ERT	0.72	0.28, 1.17	
Phone w/ ERT	5.86	5.44, 6.28	<0.001
Auckland, New Zealand (N=16)			
Baseline	0.31	0.09, 0.54	
Phone w/out ERT	0.19	0.04, 0.41	0.431
Baseline	0.31	0.09, 0.54	
Phone w/ ERT	5.69	5.01, 6.37	<0.001
Phone w/out ERT	0.19	0.04, 0.41	
Phone w/ ERT	5.69	5.01, 6.37	<0.001
Melbourne, Australia (N=17)			
Baseline	0.71	0.38, 1.03	
Phone w/out ERT	0.18	0.02, 0.50	0.026
Baseline	0.71	0.38, 1.03	
Phone w/ ERT	5.41	4.92, 5.90	<0.001
Phone w/out ERT	0.18	0.02, 0.50	
Phone w/ ERT	5.41	4.92, 5.90	<0.001
Carlsbad, California (N=16)			
Baseline	0.37	0.20, 0.54	
Phone w/out ERT	0.17	0.05, 0.39	0.156
Baseline	0.37	0.20, 0.54	
Phone w/ ERT	0.74	0.52, 0.96	0.010
Phone w/out ERT	0.17	0.05, 0.39	
Phone w/ ERT	0.74	0.52, 0.96	0.001

*Average number of readings within the normal range
** ERT placed on the phone

Table 3

Composite Results of Meta-Analysis Conducted on Subjects From Five Separate Studies Conducted During 2005-2006 Addressing The Impact of ERT* on EMR-induced Bio-Effects (N=85)

Comparison Categories	Mean**	95% CI	P-value
Baseline	0.34	0.29, 0.39	
Phone w/out ERT	0.11	0.05, 0.16	<0.001
Baseline	0.34	0.29, 0.39	
Phone w/ ERT**	0.84	0.79, 0.89	<0.001
Phone w/out ERT	0.11	0.05, 0.16	
Phone w/ERT	0.84	0.79, 0.89	<0.001

* ERT placed on the phone
* * Average percentage of readings within the normal range

Table 4

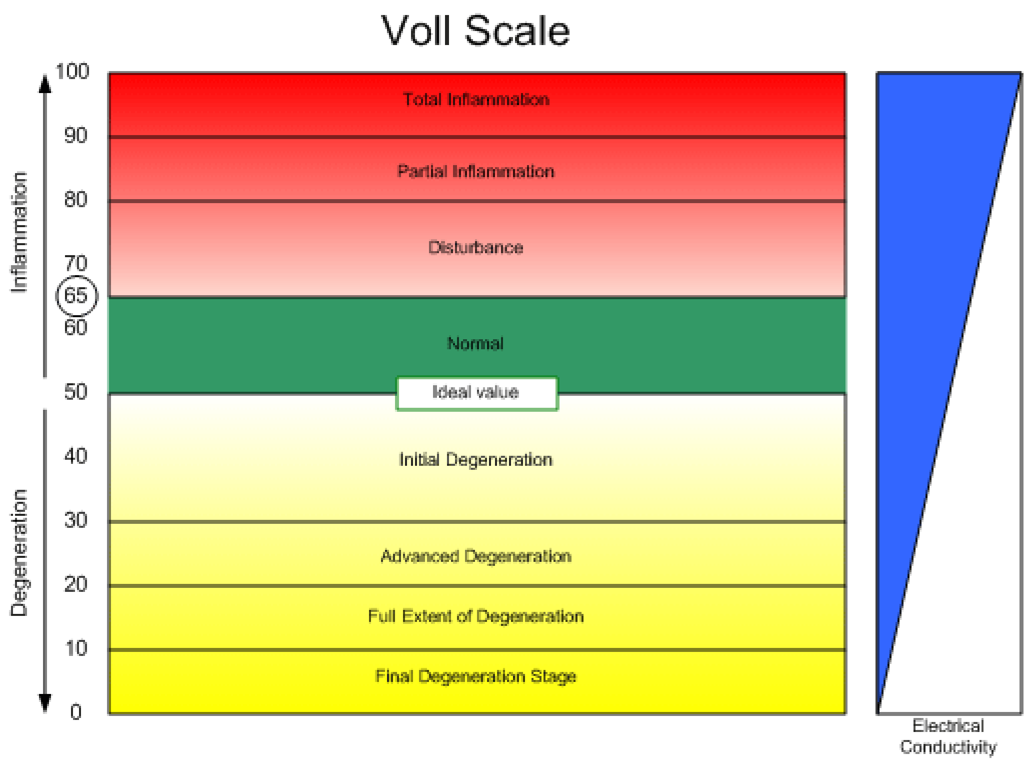
Analyses Conducted on Subjects in Carlsbad, CA Addressing the Impact of a Body-Worn ERT Pendant on EMR-induced Bio-Effects

Comparison Categories	Mean*	95% CI	P-value
Baseline (n=16)	0.37	0.21, 0.52	
Subject with ERT Pendant (n=8)	0.71	0.49, 0.94	0.015
Phone w/out ERT(n=10)	0.17	0.05, 0.39	
Subject with ERT Pendant (n=10)	0.74	0.53, 0.96	0.001
Phone w/ ERT (n=8)	0.71	0.50, 0.93	
Subject with ERT Pendant (n=10)	0.74	0.55, 0.93	0.831

*average percentage of readings in the normal range

Figure 1

The Voll Scale Measuring Differential Fields of Electro-magnetic Energy Emitted from Specific Organs Reflecting Instantaneous Communication Across the Body, and the Basis for MSAS Measurement



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