

The Effects of the EarthCalm Quantum Cell on Heart Rate Variability and the Biofield – Part 2

Lisa Tully, PhD, December 28, 2011, Energy Medicine Research Institute

A heart monitor was used to assess Heart Rate Variability. HRV is a quantitative assessment of the balance of the two branches of the autonomic nervous system and therefore an objective measurement of overall health. Participants were assessed before and after a three-minute exposure to a cell phone. After exposure, the subject was allowed to return to baseline and assessed again with an EarthCalm Quantum Cell attached to the phone.

All subjects experienced a full or partial reversal of the negative effects of cell phone EMR. In 11 out of 14 individuals there was a complete reversal of the negative effects.

Results of this study are a dramatic demonstration of the ability of Earthcalm Quantum Cell to eliminate the harmful effects of cell phone exposure. In addition, it appears that the Earthcalm Quantum Cell has a protective effect on the nervous system.

Introduction

EarthCalm products are designed to protect the human nervous system from the hazards of manmade electromagnetic fields, which surround everyone. They do this by enhancing a person's connection to the earth's electromagnetic field, which allows the dissipation of stress producing currents.

Results of this study demonstrate the ability of the EarthCalm Quantum Cell to reverse the deleterious health effects of cell phone exposure to electromagnetic radiation (EMR). Exposure to a stressor can produce measurable changes in heart rate variability (HRV), which indicates overall health. Results of this study show that using the Earthcalm Quantum Cell reverses the negative health effects of cell phone use in all of the 14 participants that responded to cell phone exposure, as measured by the HRV test. A complete reversal of negative effects was observed in 11 of the subjects, a 75% reduction was seen in 1 individual and 50% reduction in 2 participants.

This study demonstrates that using the Earthcalm Quantum Cell is effective in preventing the negative health effects of cell phone use on the nervous system.

Heart Rate Variability

Heart rate variability refers to the beat-to-beat alterations in heart rate. It was developed over 40 years ago and has the ability to evaluate the impact of any intervention or

activity and to detect the early signs of pathological development or functional disorders, which would not be revealed by routine physical examination. Therefore, HRV is a useful assessment of the general health of an individual. It is a quantitative assessment of the relative balance of the two branches of the autonomic nervous system (ANS), which controls most physiological functions.

The algorithms used by Nerve-Express have been developed and tested for over twenty years and studies involving more than twenty thousand patients. These algorithms assess the level of activity of each branch of the ANS, the sympathetic nervous system (SNS) and the parasympathetic nervous system (PSNS).

Sympathetic and parasympathetic divisions usually function in a complementary manner. For an analogy, one may think of the sympathetic division as the accelerator and the parasympathetic division as the brake. The sympathetic division typically functions in actions requiring quick responses. The parasympathetic division functions with actions that do not require immediate reaction.

Consider sympathetic as “fight or flight” and parasympathetic as “rest and digest”. Over-activation of the SNS, which can occur in the presence of a stressor, or under-activation of the PSNS can lead to health problems.

Methods

In this study, healthy participants that respond to cell phone radiation exposure were assessed before and after a three minute exposure to an 3G Apple iphone (SAR 1.39 watts/kilogram). For this test, Heart Rate Variability was used to assess balance of the autonomic nervous system (www.nerveexpress.com). The subject wore a heart monitor while lying down to first collect a baseline measure. The participant was also lying down during the phone exposure and the phone was placed on a pillow next to the ear. After allowing the volunteer to return to baseline, the test was repeated with the Earthcalm Quantum Cell attached to the phone. The subject did not know when the phone had the Quantum Cell attached. Results are shown for 14 participants that responded to cell phone exposure, as measured by HRV.

Results

The balance of the two branches of the nervous system (SNS and PSNS) is an indicator of general health. A decrease in PSNS demonstrates a harmful effect on the nervous system, while an increase in the SNS is related to a decline in health. The results of HRV testing show that either or both of these effects in response to the cell phone were observed in all participants. All of the participants had negative responses to cell phone exposure in one or both branches of the autonomic nervous system that were reversed

by the Earthcalm Quantum Cell, which is a less stressed and thus a healthier state of the nervous system.

Table 1 shows the overall results of the study. As shown, in 6 out of 14 participants, negative effects on the SNS (increase in activity) were fully or partially reversed by the Earthcalm Quantum Cell and in 8 subjects, the PSNS was negatively impacted (decrease in activity) by cell phone exposure and these effects were partially or fully reversed by the Earthcalm Quantum Cell. In addition, in 4 people, there was an up-regulation of the PSNS.

Table 1. Overall results of HRV testing show a reversal of deleterious effects by the Earthcalm Quantum Cell.

Table 1. Overall results of HRV testing show a reversal of deleterious effects by the Earthcalm Quantum Cell.				
SNS Decrease	Reversal by Earthcalm	PSNS Increase	Reversal by Earthcalm	PSNS up-regulation
6	6	8	8	4

Table 2 shows the testing results for each individual. Nearly all of the negative effects of cell phone exposure were fully reversed. In 11 out of 14 individuals there was a complete reversal of the negative effects, in 1 person there was a 70% reduction and in 2 people there was a 50% reversal. As seen, the EarthCalm Quantum Cell fully reverses the harmful changes in the activity of the SNS in 4 subjects, produces a 75% and 50% reduction each in 1 person. The Quantum Cell fully reverses the effects on the PSNS of cell phone exposure in 7 volunteers and produces a 50% reduction in 1 person.

Table 2. HRV testing results for each individual.

Table 2. HRV testing exults for each individual.				
SNS Increase	Reversal by Earthcalm	PSNS Decrease	Reversal by Earthcalm	SNS up-regulation
Y	100%	Y	100%	Y
Y	100%	Y		
Y	100%			Y
Y	100%			
Y	70%			
Y	50%			
		Y	100%	Y
		Y	100%	Y
		Y	100%	Y
		Y	100%	
		Y	50%	

Figures 1 through 10 show results of HRV testing for each participant. In these figures, the changes in the PSNS are shown in blue an the changes to the SNS are shown in red. Again, a decrease in PSNS or an increase in SNS indicate harmful effects of cell phone EMR. Figure 1 shows results for a participant that responded with both the SNS and PSNS negatively affected by the cell phone. As seen, both of these negative responses were completely eliminated by the EarthCalm Quantum Cell.

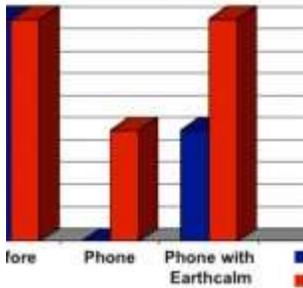


Figure 1.

Heart rate variability (HRV) testing shows reversal of all deleterious cell phone EMR effects. The y-axis shows HRV readings and the x-axis shows HRV measures for before cell phone use, after cell use and after cell phone use with the EarthCalm Quantum Cell attached to the phone. The SNS activity is shown in red and the PSNS activity is shown in blue.

Figure 2 shows results for a participant that only the SNS was negatively affected by cell phone exposure. As shown, the negative response on the SNS activity induced by the cell phone exposure was 100% reversed by the EarthCalm Quantum Cell. Interestingly, the PSNS activity was increased or up-regulated by using the phone with the EarthCalm Quantum Cell.

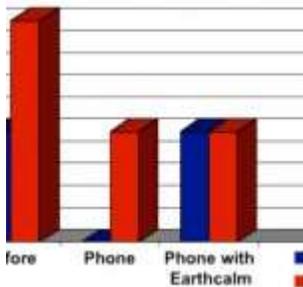


Figure 2.

Heart rate variability (HRV) testing shows reversal of all deleterious cell phone EMR effects. The y-axis shows HRV readings and the x-axis shows HRV measures for before cell phone use, after cell use and after cell phone use with the EarthCalm Quantum Cell attached to the phone. The SNS activity is shown in red and the PSNS activity is shown in blue.

Figure 3 shows results for a volunteer that only the SNS was negatively affected by cell phone exposure. As shown, the negative response on the SNS induced by the cell phone exposure was 100% reversed by the Earthcalm Quantum Cell.

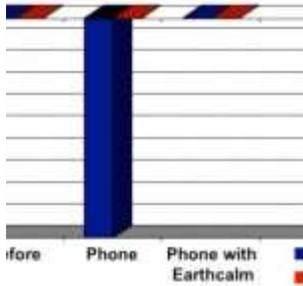


Figure 3.

Heart rate variability (HRV) testing shows reversal of all deleterious cell phone EMR effects. The y-axis shows HRV readings and the x-axis shows HRV measures for before cell phone use, after cell use and after cell phone use with the EarthCalm Quantum Cell attached to the phone. The SNS activity is shown in red and the PSNS activity is shown in blue.

Figure 4 shows results for a individual that only the SNS was negatively affected by cell phone exposure. As shown, the negative response on the SNS induced by the cell phone exposure was 100% reversed by the EarthCalm Quantum Cell.

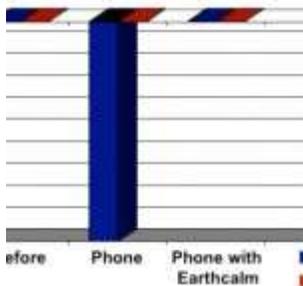


Figure 4.

Heart rate variability (HRV) testing shows reversal of all deleterious cell phone EMR effects. The y-axis shows HRV readings and the x-axis shows HRV measures for before cell phone use, after cell use and after cell phone use with the EarthCalm Quantum Cell attached to the phone. The SNS activity is shown in red and the PSNS activity is shown in blue.

Figure 5 shows results for a participant that responded with only the SNS negatively affected by the cell phone. As seen, this negative response was 70% reversed by the EarthCalm Quantum Cell.

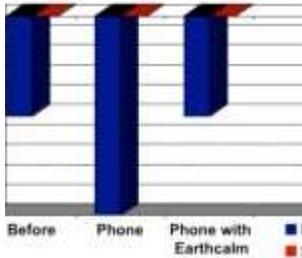


Figure 5.

Heart rate variability (HRV) testing shows reversal of all deleterious cell phone EMR effects. The y-axis shows HRV readings and the x-axis shows HRV measures for before cell phone use, after cell use and after cell phone use with the EarthCalm Quantum Cell attached to the phone. The SNS activity is shown in red and the PSNS activity is shown in blue.

Figure 6 shows results for a participant that responded with only the SNS negatively affected by the cell phone. As seen, this negative response on the SNS was 50% reversed by the EarthCalm Quantum Cell.

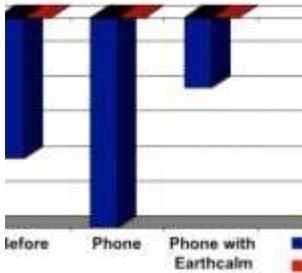


Figure 6.

Heart rate variability (HRV) testing shows reversal of all deleterious cell phone EMR effects. The y-axis shows HRV readings and the x-axis shows HRV measures for before cell phone use, after cell use and after cell phone use with the EarthCalm Quantum Cell attached to the phone. The SNS activity is shown in red and the PSNS activity is shown in blue.

Figure 7 shows results for a participant that only the PSNS was negatively affected by cell phone exposure. As shown, the changes induced on the PSNS by the cell phone exposure were 100% reversed by the EarthCalm Quantum Cell. Additionally, PSNS activity was enhanced above baseline or up-regulated by the EarthCalm Quantum Cell.

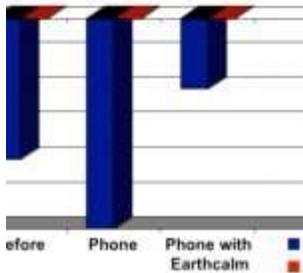


Figure 7.

Heart rate variability (HRV) testing shows reversal of all deleterious cell phone EMR effects. The y-axis shows HRV readings and the x-axis shows HRV measures for before cell phone use, after cell use and after cell phone use with the EarthCalm Quantum Cell attached to the phone. The SNS activity is shown in red and the PSNS activity is shown in blue.

Figure 8 shows results for a participant that only the PSNS was negatively affected by cell phone exposure. As shown, the changes induced by the cell phone exposure were 100% reversed by the EarthCalm Quantum Cell. Additionally, PSNS activity was up-regulated by the EarthCalm Quantum Cell.

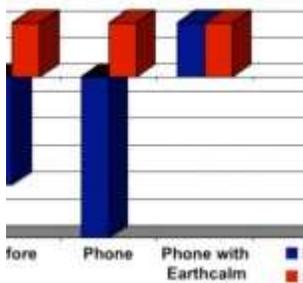


Figure 8.

Heart rate variability (HRV) testing shows reversal of all deleterious cell phone EMR effects. The y-axis shows HRV readings and the x-axis shows HRV measures for before cell phone use, after cell use and after cell phone use with the EarthCalm Quantum Cell attached to the phone. The SNS activity is shown in red and the PSNS activity is shown in blue.

Figure 9 shows results for a participant that only the PSNS was negatively affected by cell phone exposure. As shown, the changes induced by the cell phone exposure were 100% reversed by the EarthCalm Quantum Cell. Additionally, PSNS activity was enhanced above baseline by the EarthCalm Quantum Cell.

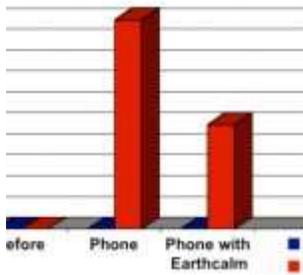


Figure 9.

Heart rate variability (HRV) testing shows reversal of all deleterious cell phone EMR effects. The y-axis shows HRV readings and the x-axis shows HRV measures for before cell phone use, after cell use and after cell phone use with the EarthCalm Quantum Cell attached to the phone. The SNS activity is shown in red and the PSNS activity is shown in blue.

Figure 10 shows results for a participant that only the PSNS was negatively affected by cell phone exposure. As shown, the changes induced by the cell phone exposure were 100% reversed by the EarthCalm Quantum Cell.

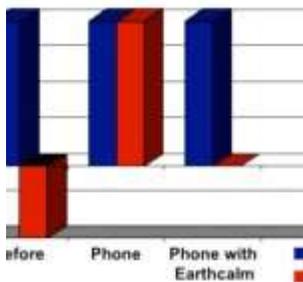


Figure 10.

Heart rate variability (HRV) testing shows reversal of all deleterious cell phone EMR effects. The y-axis shows HRV readings and the x-axis shows HRV measures for before cell phone use, after cell use and after cell phone use with the EarthCalm Quantum Cell attached to the phone. The SNS activity is shown in red and the PSNS activity is shown in blue.

Figure 11 shows results for a participant that only the PSNS was negatively affected by cell phone exposure. As shown, the changes induced by the cell phone exposure were 100% reversed by the EarthCalm Quantum Cell.

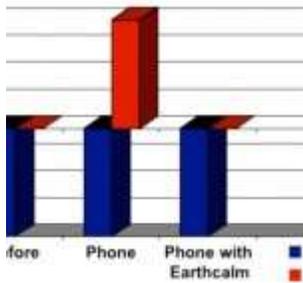


Figure 11.

Heart rate variability (HRV) testing shows reversal of all deleterious cell phone EMR effects. The y-axis shows HRV readings and the x-axis shows HRV measures for before cell phone use, after cell use and after cell phone use with the EarthCalm Quantum Cell attached to the phone. The SNS activity is shown in red and the PSNS activity is shown in blue.

Figure 12 shows results for a participant that only the PSNS was negatively affected by cell phone exposure. As shown, the changes induced by the cell phone exposure were 100% reversed by the EarthCalm Quantum Cell.

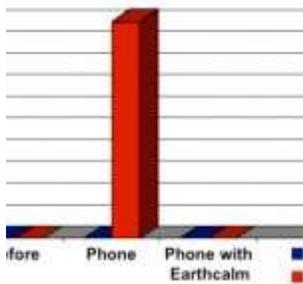


Figure 12.

Heart rate variability (HRV) testing shows reversal of all deleterious cell phone EMR effects. The y-axis shows HRV readings and the x-axis shows HRV measures for before cell phone use, after cell use and after cell phone use with the EarthCalm Quantum Cell attached to the phone. The SNS activity is shown in red and the PSNS activity is shown in blue.

Figure 13 shows results for a participant that the PSNS was negatively affected by cell phone exposure. As shown, the changes induced by the cell phone exposure were 100% reversed by the EarthCalm Quantum Cell. Interestingly, the SNS was positively affected by both the cell phone and the phone with the EarthCalm Quantum Cell.

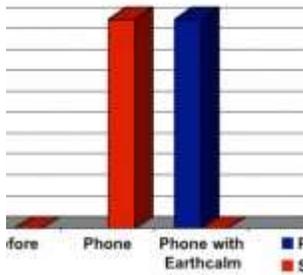


Figure 13.

Heart rate variability (HRV) testing shows reversal of all deleterious cell phone EMR effects. The y-axis shows HRV readings and the x-axis shows HRV measures for before cell phone use, after cell use and after cell phone use with the EarthCalm Quantum Cell attached to the phone. The SNS activity is shown in red and the PSNS activity is shown in blue.

Figure 14 shows results for a participant that the PSNS was negatively affected by cell phone exposure and the SNS was positively influenced by the cell phone. As shown, the negative changes induced by the cell phone exposure were 50% reversed by the EarthCalm Quantum Cell and the affect on the SNS was reversed.

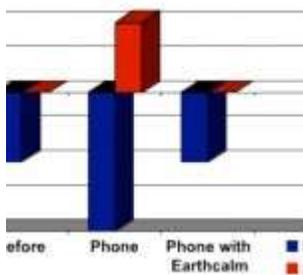


Figure 14.

Heart rate variability (HRV) testing shows reversal of all deleterious cell phone EMR effects. The y-axis shows HRV readings and the x-axis shows HRV measures for before cell phone use, after cell use and after cell phone use with the EarthCalm Quantum Cell attached to the phone. The SNS activity is shown in red and the PSNS activity is shown in blue.

Discussion

Results of this study indicate that exposure to a cell phone for three minutes causes deleterious health effects (as demonstrated by HRV assessment of the SNS and PSNS activity) in all 14 subjects. These negative effects are fully reversed by the EarthCalm Quantum Cell in 11 out of 14 participants, 75% in 1 and 50% in 2 subjects. In addition, the EarthCalm Quantum Cell generated an up-regulation of the PSNS in 4 out of 14 subjects.

The balance between the SNS and PSNS indicates physiological functioning of the body and can be correlated with overall health. Most individuals have an increased

activity of the SNS in response to stressors, which is deleterious to health. In contrast, an enhancement above baseline or up-regulation of the PSNS likely produces restoration of the body. Therefore, the EarthCalm Quantum Cell protects from the negative effects of cell phone exposure on the nervous system and likely reduces or eliminates harmful effects on other physiological systems. This is supported by [another study](#) conducted by this group in which the negative effects on meridian flow (as measured by electrodermal screening) are fully or partially eliminated by the Quantum Cell.

Nearly half (6) of the participants had only an increase in SNS and nearly all of these effects were fully reversed by the Quantum Cell.

Interestingly, in more than half (8) of the subjects, only the PSNS was negatively affected by cell phone EMR. It was postulated that the primary response to the EMR would be on SNS activity, as that branch of the ANS regulates response to a stressor. Apparently, the PSNS system, which regulates regenerative functions of the body, can be negatively affected by stressors and the EarthCalm Quantum Cell reverses these responses. Furthermore, the observation that the Quantum Cell up-regulates PSNS activity in over half of the subjects indicates that it may produce protective health effects beyond reversing the harmful effects of cell phone exposure. These results are very interesting and indicate that the Quantum Cell may have additional beneficial health effects other than protecting from cell phone EMR. This finding may be significant and further studies need to be conducted to confirm this.

Only one participant demonstrated a negative response to cell phone exposure in the SNS. It is not understood why the individual responded positively to the cell phone. This could be a paradoxical response and interestingly, the Quantum Cell reversed these effects. In addition, the PSNS exhibited a negative response with full reversal by EarthCalm.

Conclusions

Results of this study indicate that the EarthCalm Quantum Cell produces a less stressed (as measured by HRV) and thus healthier state when using a cell phone. All subjects experienced a full or partial reversal of the negative effects of cell phone EMR. These results are a dramatic demonstration of the ability of EarthCalm Quantum Cell to eliminate the harmful effects of cell phone exposure. In addition, it appears that the EarthCalm Quantum Cell may have a protective effect on the nervous system and thus health when using a cell phone.