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BENEFITS OF REIKI THERAPY TO A SEVERELY NEUTROPENIC PATIENT WITH ASSOCIATED INFLUENCES ON A TRUE RANDOM NUMBER GENERATOR

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| Abstract: | : Reiki Therapy was added as an adjunct therapy for a severely ill 55 year old man with hepatitis C types 1 and 2 who failed conventional Interferon therapy. He was then treated with an experimental high dose Interferon/Ribavirin regimen, complicated by profound anemia and neutropenia throughout the treatment course. Energetic healing was initially administered to enhance the patient's sense of well being and to relieve anxiety. Possible effects on the patient's anemia and white count were incidentally noted. Reiki therapy was initiated at times of profound neutropenia to assess its possible effect on the patient's absolute neutrophil count (ANC). The Reiki sessions were monitored with a true random number generator. (RNG) Statistically significant relationships were documented between Reiki therapy, an organization of the data stream of the RNG during healing sessions, and improvement in the patient's ANC. The immediate clinical result was that the patient could tolerate the high dose Interferon regimen without missing doses because of absolute neutropenia. The patient was initially a late responder to Interferon and had been given a 5% chance of clearing the virus. He remains clear of the virus one year after treatment. The association between changes in the RNG during the Reiki sessions was an unanticipated response and the first to our knowledge in the medical literature. |
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BENEFITS OF REIKI THERAPY TO A SEVERELY NEUTROPENIC PATIENT WITH ASSOCIATED INFLUENCES ON A TRUE RANDOM NUMBER GENERATOR

Melvin L Morse MD, FAAP, Cheyenne Luzader MS, Lance William Beam MS.

ABSTRACT: Reiki Therapy was added as an adjunct therapy for a severely ill 55 year old man with hepatitis C types 1 and 2 who failed conventional Interferon therapy. He was then treated with an experimental high dose Interferon/Ribavirin regimen, complicated by profound anemia and neutropenia throughout the treatment course. Energetic healing was initially administered to enhance the patient's sense of well being and to relieve anxiety. Possible effects on the patient's anemia and white count were incidentally noted. Reiki therapy was initiated at times of profound neutropenia to assess its possible effect on the patient's absolute neutrophil count (ANC). The Reiki sessions were monitored with a true random number generator. (RNG) Statistically significant relationships were documented between Reiki therapy, an organization of the data stream of the RNG during healing sessions, and improvement in the patient's ANC. The immediate clinical result was that the patient could tolerate the high dose Interferon regimen without missing doses because of absolute neutropenia. The patient was initially a late responder to Interferon and had been given a 5% chance of clearing the virus. He remains clear of the virus one year after treatment. The association between changes in the RNG during the Reiki sessions was an unanticipated response and the first to our knowledge in the medical literature.

INTRODUCTION

DEFINITIONS: ANC: Absolute Neutrophil Count ($10^3/\text{UL}$) WBC: White Blood Cell Count ($10^6/\text{UL}$) CBC: Complete White Count RNG: Random Number Generator

BACKGROUND:

The National Institute of Health defines Reiki as one of several bio-field therapies which are intended to affect purported energy fields that surround and penetrate the human body. (1,2) The most recent extensive review of such distance and energy field therapies demonstrated minimal effects on biological systems. Two double blind placebo controlled studies documented clinically accelerated wound healing with the intervention of therapeutic touch (3). Although Reiki is well documented to decrease stress, pain, and anxiety in patients, there are fewer articles documenting the effects of energetic healing on specific biological markers such as white counts, pulmonary function tests, or other biological markers of health.(4,5,6)

Dan Benor MD, using a broader definition of energy healing, as "a systematic, purposeful intervention by one or more persons aiming to help another living being by means of focused intention", reviewed research confirming the biological effects of what he terms spiritual healing. (7) Dr. Benor reviewed over 100 well controlled scientific studies, many published in mainstream scientific journals, documenting that spiritually oriented energetic healing has biological effects on tumors cells in laboratory culture, enzymes, DNA telomerase activity, and increases in hemoglobin counts in patients, among many other examples. (8)

Dr. Morse is an Associate Professor of Pediatrics University of Washington (Retired) He practices in Delaware. Mrs. Luzader is Coordinator of Integrative Health, Beebe Medical Center, Lewes, Delaware, and a Reiki Master. Mr. Beam-Williams is a Research Plant Physiologist, former President of Beam Consulting (A Biostatics Company)

PREVIOUS STUDIES OF THE EFFECT OF CONSCIOUSNESS ON RNGs

The effect of consciousness on the output of RNGs was first documented by physicist Helmut Schmidt of the Boeing Corporation. (9) This research was pioneered by physicists (10) and engineers (11) and has only recently come to the attention of health care professionals. (12) The entire literature on the human mind’s ability to effect RNGs was recently reviewed by Radin (13) He determined that meta-analysis of existing studies documented that there is a weak but real effect of consciousness on RNGs. Jahn and Dunne have documented that spiritually significant public events and meditation have the most profound effects on RNGs. However, most of the previous research in this area involves studies of research subjects in laboratory settings with the simple intent of attempting to influence the RNG.

Regardless, this research is solid enough that science writer Carl Sagan stated “that by thought alone humans can ‘barely’ affect random number generators, in my opinion, deserves serious study.” (14)

MATERIALS AND METHODS.

MEDICAL TREATMENT

The patient was then a 54 year old male who had been initially diagnosed with non A non B hepatitis in the 1980s, and subsequently was found to have Hepatitis C, types 1 and 2. A liver biopsy performed in 1991 showed inflammation only. This progressed to stage 1 fibrosis by 2001 and stage 2 fibrosis by 2006. Liver enzymes always remained mildly elevated.

The patient also suffered from hypertension, type 2 diabetes, asthma, obesity, and the metabolic syndrome. Medications included Metformin ER, Amlodipine Besylate, Lisinpril-Hydrochlorothiazide, Avandaryl 4, Adderall XR, Prozac, Singulair, Pulmocort, Albuterol, Multivitamins, and Milk Thistle.

The patient did not respond after six months of treatment with Interferon and Ribavirin. After consultation at Thomas Jefferson University, the patient then elected a regimen of high dose Interferon and Ribavirin for another 72 weeks. The patient immediately developed profound anemia (Hct 28%) and neutropenia (ANC fluctuating between 800 and 1200).

The Patient attended a regular meeting of the Baltimore Spiritist Organization and received a “healing pass” as part of the meeting. Within a week, his Hct increased to 34% and remained at that level for the remainder of his treatment. During the passes he had unanticipated spontaneous visual mental images of activity and healing within his bone marrow.

The patient was treated weekly with 180 to 240 micrograms of Pegylated Interferon (peginterferon alfa-2a) supplied to the patient by Hoffman LaRoche as part of the Pegasys Program for Indigent Patients. The patient had his blood drawn every one to two weeks several days prior to Interferon injections. He would not get scheduled doses if the ANC was less than

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750, according to the Manufacturer's recommendations. The patient was also treated with Ribavirin 600 mg bid. This regimen was given a 5% chance of working.

Energetic Treatments

Early in the treatment course, the patient's ANC dropped to 670 and his physician recommended ending treatment. The patient received an initial session of healing passes from Obstetrician and Brazilian Spiritist Marlene Nobre MD, President of the International Spiritist Medical Association (AME-Brazil). This is an association of physicians and other health care professionals dedicated to the understanding of the spiritual aspects of disease, inspired by Allan Kardec. The tradition of "healing passes" in Brazil is similar to Reiki therapy with similar mental intent and placement of the practitioner's hands on the patient. (Personal Communication Marlene Nobre MD) They do not charge for this practice.

Five Reiki sessions were then administered by two Reiki Masters in the Community setting, each with 15-20 years experience, over the treatment course. They were informed that the patient was neutropenic. Therapy sessions lasted from 30-60 minutes. Neither practitioner directly touched the patient as part of their practice. The patient presented to their offices for therapy. A Psyleron device was attached to a small laptop computer and placed on the floor in a semi-concealed spot. The patient paid the practitioners their typical fees and was treated exactly like all other patients seen by the practitioners. The practitioners did not have any specific intent to influence the output of the RNG.

After 5 Reiki Sessions, the patient attended a weekend workshop teaching energetic healing to health care professionals. The participants had no previous knowledge or training in energetic healing. He had one treatment given simultaneously by four workshop students. It consisted of their placing their hands over and around his body and visualizing good health for him.

The patient scheduled his own Reiki sessions, according to his monitoring of his ANC, and his physician's input as to the likelihood that falling ANC count would soon result in missing doses.

MONITORING ENERGETIC TREATMENT WITH A TRUE RANDOM NUMBER GENERATOR

The sessions were monitored with a RNG developed by Princeton University with a grant from McDonald Douglas Corporation. (PsyleronREG) It was purchased through the commercial sales department of Psyleron.com. The machine was calibrated and monitored and documented to produce a stream of random data in over 96 hours of various control situations by being placed in hospital and clinic exam rooms and offices during the night. PsyleronREG is the best known and tested RNG. Its output is calibrated after millions of samplings of electronic noise from a semiconductor.(15, 16)

GRAPH 1

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For example, this is a 15 hour session in which the RNG was placed in the business office of the hospital that one of the practitioners worked at. The total Z score for the entire 15 hour session was 0.03. This graph represents over 100,000 separate trials. None of the trials had a Z score greater than 2.

UNDERSTANDING THE GRAPHIC OUTPUT OF THE RNG

True RNGs create a sequence of random numbers based on natural phenomena such as the decay of radioactive isotopes, chaotic electronic “white noise”, or photon emissions from semi-conductors. (17, 18) The emissions are filtered and sampled to produce a truly random data stream that is significantly different from artificial RNGs created by man (such as those produced by software algorithms in a computer) in the following ways: 1) The random numbers are generated by measurements of natural chaotic phenomena, 2) It results in an irregular unpredictable random pattern similar to patterns seen in measurements of brain activity.

Each “trial” for the RNG used in this study consists of a stream of “1”s or “0”s produced by 200 samplings of the electronic noise of the semi-conductor. Software then translates this data stream into a visual event, such as the movement of a line on a graph with the X dimensional representing time and the Y dimensional representing the Z scores of each trial. With 200 samplings of the source emissions for each trial, every trial can have a Z score calculated for it. A given trial is significant if it’s Z score is greater than 2. When the line moves in the positive Y direction, this represents trials with more “1”s than “0”s and the negative direction represents trials with more “0”s than “1”s.

If we could directly experience the output of the RNG, we would see chaotic pulses of light or hear a chaotic white noise sound. The 200 samplings that make up a trial are not graphed, but are available to the researcher.

Any significant deviation of the graph from the center horizontal line represents a quieting of the chaotic behavior of the random number generator, whether the graph moves up or down. Theoretically, the graph could visually appear to be basically moving along the center line and still represent a session with a significant influence on the data stream of the Psyleron. If one trial was all “1”s and the next trial was all “0”s, each individual trial would be highly significant and yet the resultant graphic line would fairly flat. However typically the line moves either up or down in a fairly dramatic fashion.

Because of these unpredictable effects of consciousness on the RNG in terms of the visual graphic output, Dr. Beauregard of the University of Montreal has developed criteria for the statistical significance of a session based only on the Z scores of the individual trials. A session is determined to be clinically significant if they are 10 minutes of trials with Z scores greater than 2 in a given 30 minute session regardless of whether or not the graphic representation of the data stream moves up or down. (Personal Communication: Dr. Beauregard, who is correlating the EEGs changes of meditation by Carmelite Nuns with associated effects on the data stream of an RNG)

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We use the Beauregard criteria to identify a session as “significant” in this case report. (10 minutes of trials with Z scores >2 per 30 minutes of a session)

MONITORING SESSIONS WITH THE RNG

The RNG was brought to the Reiki healing sessions in advance of the patient presenting for treatment. The control sessions were typical activities of the practitioner and the patient prior to a session: chatting, scheduling appointments, paying his bill and other mundane activities. The healer and patient were not instructed in any way concerning the RNG. It was simply placed in an unobtrusive place. They were unable to see the graphic output of the device.

RESULTS: (CASE REPORT)

GRAPH 2

Control session: (Graph 2A) Total of 19.1 minutes, 1146 total trials. Z score was 0.85 for total session. 365 trials had Z scores > 2 (6.08 minutes or 31%). This session was immediately followed by the healing passes. The control session consisted of an initial brief prayer, followed by a discussion of Spiritism, the history of the movement, and Allan Kardec. There were several physician/energy healers present.

Healing Passes: (Table 2B). Total 12.6 minutes. (759 total trials) 8.62 Minutes has had score greater than 2. The Z score for the total session was 1.974. 68% of the trials had a Z score of greater than 2. (includes 2 minutes and 18 seconds of Z score greater than 3)

The patient's ANC rose from 670 to 1250 one day after the Healing Passes.

As Spiritist Healing passes were not routinely available to the patient, his physician suggested Reiki treatments to help with anxiety and general well being which, according to the physician, might in turn improve bone marrow function.

ANC RESULTS AFTER REIKI SESSIONS

On five occasions, the patient became concerned that treatment would have to be interrupted because of declining ANC values. After all five sessions, there was a statistically significant increase in both total WBC and ANC. (Table 1)

GRAPH 3

Total WBC and ANC over time. As can be seen, as ANCs approached or dropped below 1000, the patient scheduled Reiki sessions. There was an immediately and statistically significant improvement of ANC and WBC after the Reiki sessions. (see Table 1)

GRAPH 4

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The WBC and ANC immediately after healing sessions are compared to values in the immediate before a healing session. Only the Brazilian Healing passes and Reiki session values were used. The Laying on Hands workshop was done by untrained healers, whereas the Brazilian and Reiki sessions were done by healings with at least 15 years experience. The increase in WBC and ANC after the healing sessions is statistically significant. (Table 1)

GRAPH 5

All five Reiki sessions are graphically displayed. The control sessions are shaded. All five sessions met the Beauregard criteria for a significant session in terms of affecting the output of the RNG. None of the control sessions were significant in their effect on the RNG.

GRAPH 5A: Control session 40.85 minutes. 18.3 % of trials were significant. Reiki session was 36.81 minutes long. 62.29 % of trials were significant. (significance for a trial means the Z score was greater than 2. Session significance means that 10/30 minutes had significant trials, or 33%)

GRAPH 5B: Control session was 31.3 minutes. 16.7% of trials were significant. Reiki session was 31.7 minutes. 63.8% of trials were significant (includes 1.28 minutes of Z score greater than 3)

GRAPH 5C: Control session was 26.6 minutes. 7.5% of trials were significant. Reiki session was 60 minutes. 47.3% of trials were significant.

GRAPH 5D: Control session was 45.4 minutes. 7.2% of trials were significant. Reiki session was 32.3 minutes. 48% of trials were significant. (includes 1.36 minutes of Z score greater than 3).

GRAPH 5E: Control session was 33 minutes. 9.8 % of trials were significant. Reiki session was 39 minutes. 36% of trials were significant.

GRAPH 6

Graph 6A: Control session. 36 minutes long, 9.8% of trials were significant.

Graph 6B: Healing session was 27 minutes long, 4.1% of sessions were significant.

GRAPH 7

Control sessions for the Reiki Healing (columns 1-5) and the Laying on the Hands Workshop. None of the sessions were significant by the Beauregard criteria.

GRAPH 8

[Type text]

Reiki session (columns 1-5) and the active healing session of the Laying on the Hands Workshop (column 6) Numbers within the columns represent minutes.

TABLE ONE

This table represents the statistical analysis and the presentation of the data on which the graphs are based.

GRAPH 9

The percentage increase in WBC and ANC before and after the Brazilian Healing Passes and Reiki sessions. The column on the right represents the % increase in Z scores of the control sessions as compared to the energy healing sessions. Data for the Laying on the Hands workshop was not included.

DISCUSSION

This case reports documents that for this particular patient, significantly low ANCs responded to Reiki therapy. When energetic healing sessions were followed by increases in ANC, they were also associated with statistically significant changes in the otherwise random data stream of a true RNG. The energetic treatments were quieting the electronically created white noise.

Reiki therapy facilitated this patient in completing 18 months of high dose Interferon therapy. Reiki clearly played an important part in his current long term remission from a condition he had only a 5% chance of recovering from.

This report clarifies differences between the placebo effect and energetic healing. Energetic healing has an effect on biological systems which can be documented by biological markers. It is an energetic force or field effect from outside the human body.(19) The placebo effect is defined as originating from the human mind. While placebo has clinical benefits, it has not been shown to have specific effects in terms of biological markers.(20,21,22,23)

There are some intriguing findings in this study even as a single case study. The lengthy RNG control sessions in non-therapeutic settings such as a business office had Z scores of 0.03, as expected, with no trials having a Z score greater than 2. However, the control sessions in the offices of the Reiki practitioners had total trials with Z scores between 7.2 and 18 percent. There may be some residual factor apparently influencing the output of the RNG which should be further studied.

In the Brazilian healing passes control session, 30% of the trials were statically significant. This is understandable as the control session began with a prayer. There were several physician/energetic healers present in the room. Previously Jahn and Dunne (12) have shown that prayer alone effects the RNG.

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The students at the energetic healing workshop did not seem to influence either the patient’s WBC or the output of the RNG. Similarly, Radin describes a study in which experienced meditators were able to influence the photon stream of a laser beam whereas inexperienced meditators could not.(24)

Other interesting findings include: 1) In Table 6, the percentage of healing sessions with Z scores >2 appears to drop off over time, in a linear fashion. It is possible that this represents the completion of the healing process. 2) In Table 5c, there is considerable variation around the average. As the entire association between the RNG and healing or control sessions was unanticipated, little documentation of the control sessions was done. In future research, we anticipate recording the control sessions to better understand the fluctuations seen in them. 3) In several of the control sessions, there are significant alterations in the RNG data 5-10 minutes prior to the Reiki session. Perhaps this represents a marker of a successful session or some sort of “pre-healing” phenomena. 4) In the healing sessions, there is overall an increase in the Z scores as the session progresses. This is particularly seen in Table 2b, which finishes with over two minutes of trials with Z scores greater than 3. This would perhaps indicate that the energy in the room must accumulate before it can have a significant effect on the electronic white noise of the semi-conductor which is the basis of the RNG.

The authors of this study hope that this case report will encourage future studies of energetic medicine’s effects on specific biological markers of disease and health. We feel that true RNGs are useful in clinical research and will also be used in future studies. We feel our results are more robust than previous studies of consciousness on the output of RNG because we took it out of the laboratory setting and directly monitored practitioners in the clinical arena.

ACKNOWLEDGEMENTS

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All Authors state that no competing financial interests exist.

The research subject and participants in this study signed consent forms and were fully informed of their rights according to the standards of the National Institutes of Health Human Subjects Protocol for participation in research studies.

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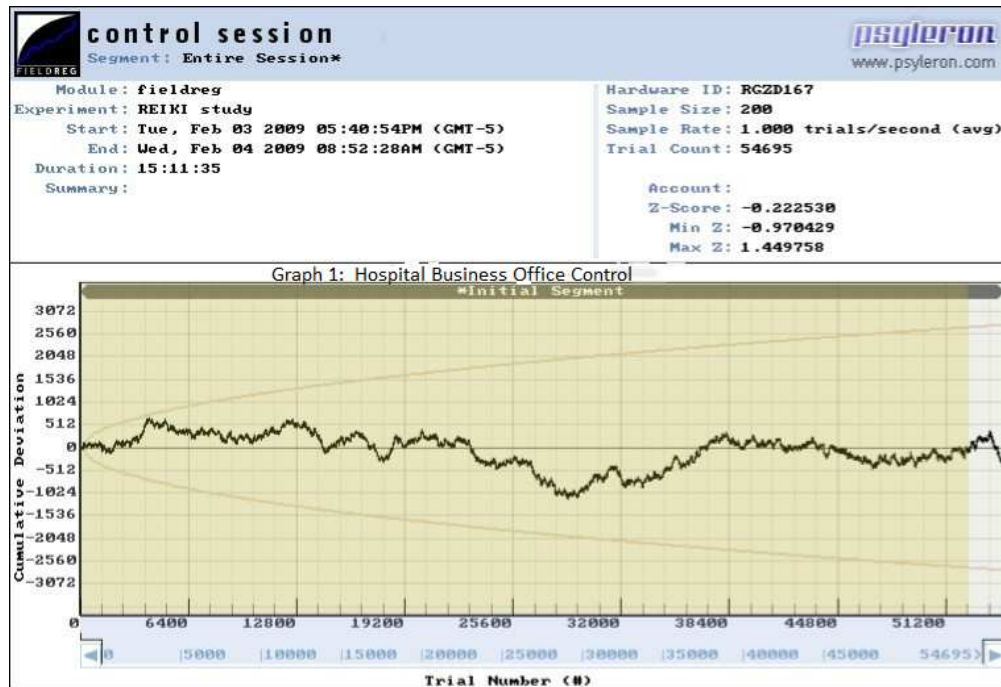
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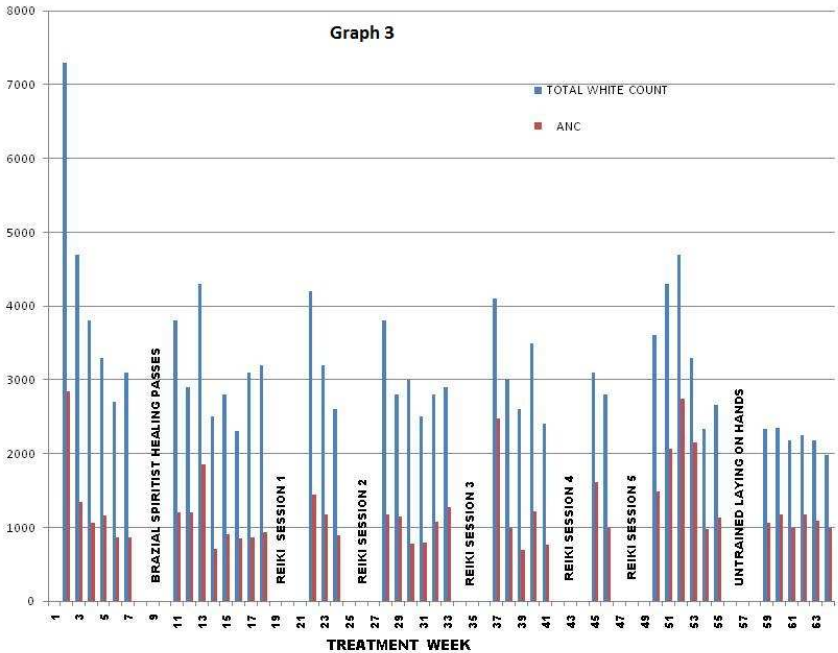
Graph 1: Hospital Business Office Control Session 15 hours
201x137mm (96 x 96 DPI)



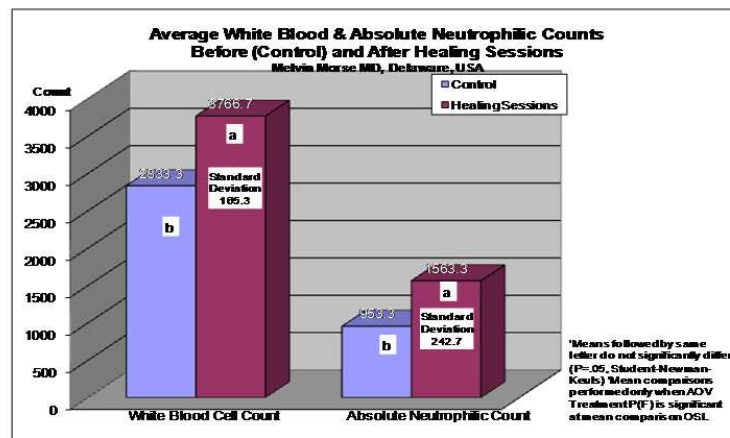
Graph 2A: Control Session Spiritist Healing Passes-Began with a prayer
200x85mm (96 x 96 DPI)



Graph 2B: Spiritist Healing Passes Session- ANC nearly doubled after this session
200x83mm (96 x 96 DPI)



Graph 3: Changes in WBC and ANC over time. Intervention of energetic healing session is clearly indicated.
254x190mm (96 x 96 DPI)



Graph 4: Before (b) and After (a) healing sessions: WBC and ANC values (Stastically significant, see Table 1)
254x190mm (96 x 96 DPI)



Graph 5A Reiki Session 1
198x87mm (96 x 96 DPI)



Graph 5B Reiki Session 2
199x87mm (96 x 96 DPI)



Graph 5C Reiki Session 3
199x86mm (96 x 96 DPI)



Graph 5D Reiki Session 4
200x87mm (96 x 96 DPI)



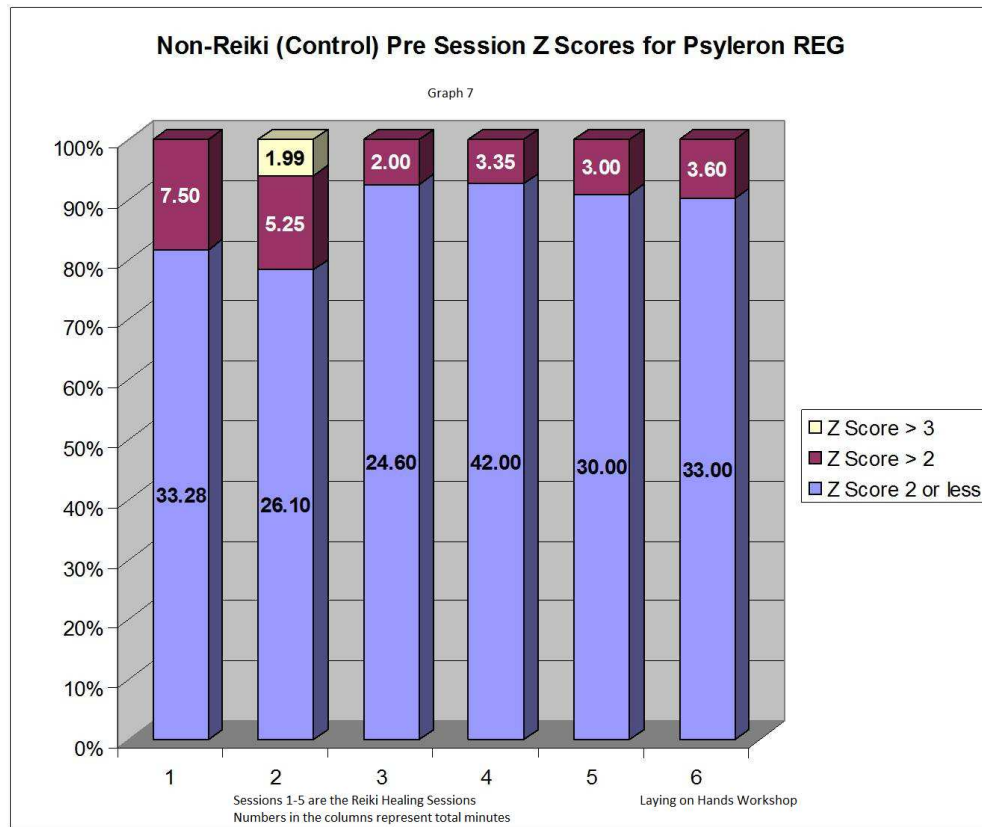
Graph 5E Reiki Session 5
198x87mm (96 x 96 DPI)



Graph 6A: Laying on Hands Workshop Control Session
196x82mm (96 x 96 DPI)

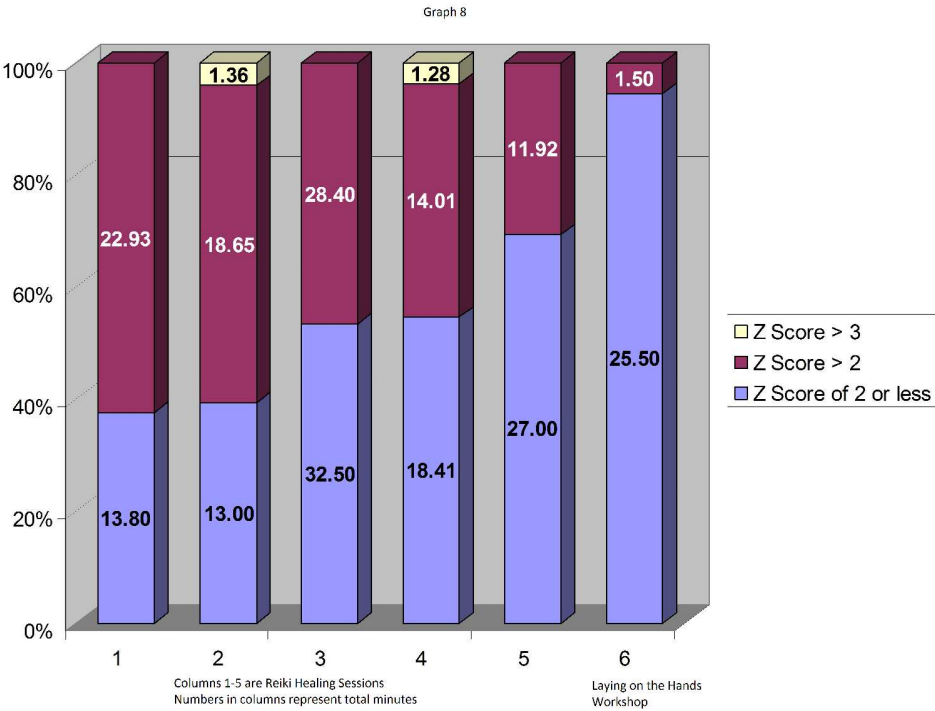


Graph 6B: Laying on Hands workshop. Healing Session
199x87mm (96 x 96 DPI)

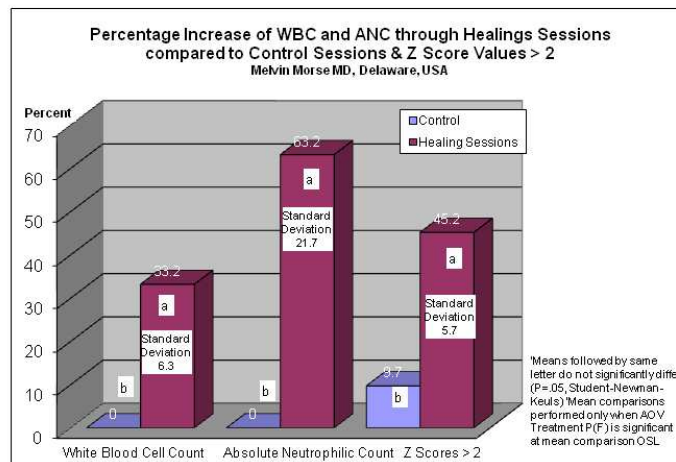


Graph 7: Five Reiki Sessions and Laying on Hands Workshop: Percentage of Z scores less than 2 and greater than 2

Reiki Session and Hand Laying In-Session with Z Scores for
Psyleron RNG



Graph 8: 5 Reiki Sessions and Laying on Hands Workshop. Percentage of minutes with Z score less than 2 and greater than 2.
1270x1060mm (96 x 96 DPI)



Graph 9: % increase of WBC, ANC, and RNG trials > 2, for healing sessions (Laying on Hands not included)
254x190mm (96 x 96 DPI)

Melvin Brazil & ReikiSessionswithREG

Trial ID: MRSREG

Protocol ID: Morse Healing Sessions

Location: Delaware

Study Director: Dr. Melvin Morse

Investigator: Dr. Melvin Morse

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|--------------------|----------------|-----------------|---------------------|-----------------|------------|-----------|-------------|
| Character Rated | WB Count | WBC Increase | AN Count | ANC Increas | REG Trials | REG Z>2.0 | % of Z >2.0 |
| Rating Data Type | White Blood Ct | None vs Healing | Absolute Neutrophil | None vs Healing | Trials | Trials | Trials |
| Rating Unit | Number | % Increa | Number | % Increa | Number | Number | Percent |
| Number of Decimals | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Trt | | | | | | | |
| No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 1 Control | 2833.3 b | 0 b | 953.3 b | 0 b | 3078.0 a | 196.5 b | 9.7 b |
| 2 Healing Sessions | 3766.7 a | 33.2 a | 1563.3 a | 63.2 a | 3714.3 a | 1597.3 a | 45.2 a |
| LSD (P=.05) | 245.41 | 9.33 | 360.25 | 32.197 | 1827.76 | 1107.48 | 7.53 |
| Standard Deviation | 165.33 | 6.28 | 242.69 | 21.691 | 1231.34 | 746.1 | 5.07 |
| CV | 5.01 | 37.83 | 19.29 | 68.68 | 36.26 | 83.18 | 18.51 |
| Bartlett's X2 | 0.336 | 0 | 4.069 | 0 | 1.131 | 13.835 | 0.03 |
| P(Bartlett's X2) | 0.562 | | 0.044* | | 0.288 | 0.001* | 0.864 |
| Replicate F | 7.976 | 1 | 3.347 | 1 | 3.349 | 0.924 | 10.015 |
| Replicate Prob(F) | 0.0199 | 0.5 | 0.1055 | 0.5 | 0.1054 | 0.5335 | 0.0122 |
| Treatment F | 95.61 | 83.848 | 18.952 | 25.442 | 0.801 | 10.576 | 146.825 |
| Treatment Prob(F) | 0.0002 | 0.0003 | 0.0073 | 0.004 | 0.4118 | 0.0226 | 0.0001 |

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Table 1

Table 1: Stastical data that the graphs are based on.
156x105mm (600 x 600 DPI)