

Cell Salt Pilot Research Study

By Tishelle Betterman

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Man is not body. The heart, the spirit, is man. And this spirit is an entire star, out of which, he is built. If therefore a man is perfect in his heart, nothing in the whole light of Nature is hidden from him.

-- Paracelsus

Introduction

Medical research has shown that the condition of our cells is a critical component in maintaining good health. One reason for this is that our cells form the basis of bodily tissues and organ functions. Depleted soils, artificial foods, and hormone injected meat make up a large part of the American diet making optimum health more difficult. Organic foods and better nutrition are gradually gaining in popularity, but it is yet to be seen what difference this makes on our cellular health.

The simple fact is that nutrition feeds our entire system, impacting not only our physical bodies, but also our psychological health. The degree to which illness manifests is different for each individual. Some may experience mild depression, fatigue, loss of energy, or have more difficulty handling stress. Ever increasing numbers of people are becoming aware and suspicious of the benefits of allopathic medicine. The number of advances in modern allopathic medicine has tremendous value and save lives. However, many areas currently treated by modern medicine can be managed just as effectively using alternative medicine and therapy. Cell salts, also called tissue salts, are one of the many alternative treatments available to the public today.

The tie between cell salts and astrology is a fairly modern one, developed in the last few centuries. A basic search for cell salts on the internet will lead you to any number of health food stores; sites focused on homeopathic and alternative medicine; and to a surprising number of astrology web sites as well. In medical astrology, the cell salt association with zodiacal signs has been fairly well received. It is the ease with which the astrological associations have been accepted as truth that concerns me and resulted in the desire to conduct a pilot study to actually test the theory.

History of Homeopathy

Homeopathy began its humble beginnings in the early 16th century through the genius of Aureolus Phillipus Theostratus Bombastus von Honenheim, immortalized as Paracelsus, the father of chemical pharmacology and therapeutics. Paracelsus (1493 – 1541) was a progressive physician, alchemist, and surgeon, whose advanced scientific knowledge, therapeutic techniques, and use of chemicals over herbs defied the humoral pathology of his time.¹ He believed disease was caused by external natural forces that attacked the

body. This was contrary to traditional viewpoint, which considered inner imbalances of the body's humors (yellow bile, black bile, blood and phlegm) to be the cause of disease.² Furthermore, Paracelsus acknowledged the tie between astrology and medicine, a common viewpoint and practice in the Medieval and Renaissance periods.

With the advent of scientific progress and emphasis in the 18th century, new discoveries refuted the validity of the humor system as well as astrology, forcing them into decline. The high degree of emphasis and credibility placed on pure scientific thought and practice began to govern the direction of western culture and impacting, among other things, medicine and astrology.

With the breakdown of the humor system, chemical therapy and allopathic medicine began their climb to popularity. A German physician, Samuel Hahnemann (1755 – 1843), realized the limitations of chemical medicine and began to develop what we now term homeopathy. Modifying Paracelsus' theories, Hahnemann realized that "a poison could cure exactly the symptoms that it produced"³. It was through Hahnemann's examinations of poisons and minerals that it became apparent these substances had strong medicinal powers when highly diluted. The high dilution reduces the degree of aggravation (or poisonous effects that could harm a patient) while simultaneously attacking everything that is wrong within the body. These toxic substances were termed polycrystals, each of which was used to cure for a multitude of acute conditions.⁴

Hahnemann also developed a series of substances to assist with chronic diseases. He called these anti-psoric, now termed constitutionals.⁵ The theory of constitutionals is similar to the numerous personality categorizations now used in psychology. He identified the physical constitutional type by considering a patient's intellectual character, occupation, mode of living and habits, social and domestic relations, age, and sexual function. The basis of his idea, taken from Hippocrates (460 – 370 b.c.), was that an individual's (negative) personality characteristics had a gradual effect on the body which had a tendency to develop certain chronic illnesses. Hahnemann spent much of his life work probing the therapeutic uses and potencies of polycrystals and constitutionals for acute and chronic symptoms, which he documented in his six editions of *Organon*.

In the last half of the 19th century research continued on the physiology of the body, including a more accurate understanding about the healthy function of cells. Dr. Wilhelm Heinrich Schuessler (1821 – 1898) was one of the primary figures in testing the theories of cellular therapy. Schuessler inferred that: 1) disease could occur if cell metabolism was healthy or normal; 2) a normal cell metabolism was possible when cell nutrition was adequate; 3) the body recognized nutritional substances as comprised of inorganic or organic materials; and 4) the body's ability to assimilate, dispose, or use nutritional material was weakened when a deficiency existed. Schuessler's theory later became known as biochemistry.

Today we know that properly nourished cells are the building blocks of health. Our cells are comprised primarily of water and small amounts of organic and inorganic material, including enzymes and dissolved nutrients, such as sugars, amino acids, and minerals.

The cytoplasm component of each cell contains these essential minerals, supplying the nucleus as necessary in order to keep the cell healthy. As cell enzymes wear out they must be replenished with specific substances. Depleted soil and nutritional value of foods we eat do not supply the human body with adequate amounts. If these essential minerals are deficient within the cytoplasm, the cell will be hindered from maintaining the proper chemistry balance required to regenerate the cell. Over time, the deficiency causes the cell to become unhealthy and eventually results in physical illness and disease as well as mental or emotional imbalances.

To maintain normal function of cells, Schuessler believed that minimal, regular dosages of mineral salts were necessary to restore proper *balance* of body chemistry, cell function, and optimum health when supplemented by proper nutrition. Dr. Schuessler thought large amounts of minerals salts could actually destroy healthy cell function and thus chose to dilute cell salts into a homeopathic potency taken under the tongue where they could enter the blood stream directly through the small capillaries in the mouth. Schuessler stated there were more than twelve cell salts in any particular cell, but he identified twelve primary salts that he believed were always present in the body's cells. These became known as Schuessler's Cell Salts and constitute the basis of this study.

Astrological Connection to Cell Salts

The state of astrology in the 18th and 19th centuries was at a disadvantage due to the scientific revolution. With the advent of a rational model of medicine and thinking, astrology became stagnant, surviving on the shirt-tails of the occult and theosophical movement until there was a gradual shift in focus away from occult matters by the educated class. Therefore, minimal astrological advances were made during a time of tremendous growth in the understanding of the human body. Two primary references for medical astrology and astrological correlations for diseases, herbs, and body parts during this time were *Physic* authored by Richard Saunders (1613 - 1675) and Nicholas Culpepper's (1616 - 1654) herbal, both written in the Renaissance period.

By the late 19th century, astrological rulerships had been assigned for the twelve (12) cell salts. The man attributed to establishing these rulerships after spending a lifetime researching cell salts is Dr. George W. Carey (1845 – 1924). In *Astrology and Biochemistry*, Vanda Sawtell writes that Carey, “found that there was a relation between the twelve mineral elements [cell salts] and the twelve signs of the zodiac.”⁶ However, no mention was made to clarify how the relation was found or what his research entailed or revealed. It is obvious from reading Carey's books on cell salts that his approach, while rooted in biochemistry, was infused with a strong metaphysical viewpoint. Carey's work has been widely accepted in astrological circles. In fact, we see his cell salt rulerships referenced in the *Encyclopedia of Medical Astrology*, first written in 1933 by H.L. Cornell M.D. (b.1872).

Most of the books written on cell salts in the early 1900s begin their assessment about which cell salt to use by first identifying an individual's natal Sun sign. Some authors,

such as Dr. Carey, Dr. Perry, and Jansky, suggest additional consideration be given to the South Node of the Moon, the Ascendant, the sign of Saturn, and the zodiacal point opposing the Sun. While I do not want to minimize or rule out the possible importance of these additional considerations, the scope of this study was too small to permit such an extensive and exhaustive study of all possible exceptions and alternatives. The Sun sign, as the current, primary consideration for cell salt association, was therefore the sole subject of the pilot study.

The Sun seems to be given primary emphasis in most references on cell salts and thus first consideration when considering an individual's deficient mineral. I have found no sources to date that identifies why the Sun sign was selected, nor who or when this association was first made. Once again, I can only theorize as to its choice.

The Sun is the central and primary force of life in our solar system. It represents the source of life both scientifically as well as astrologically. In medical astrology, the Sun is viewed as representing the cardiovascular system, where the heart is similarly the central and primary life giving organ of the human body. As such, astrologers since ancient times have associated it with vitality and the overall health of an individual. Although I am not convinced the Sun sign is the best choice, I believe it was not a completely irrational attribution to associate cell salts or mineral deficiency with the Sun sign. A sustained imbalance in the body eventually results in depleted vitality or energy and increased fatigue. Over extended periods of time, this imbalance could also manifest into disease states. Cell salts can restore this imbalance, correct any mineral deficiency, and therefore potentially improve an individual's general health and vitality.

Proposed Pilot Study

Preliminary independent research has been conducted by Lee Lehman, Ph.D. on the cell salts and their possible correlation to medical astrology. Her exploratory study analyzes the properties of each cell salt in order to compare and contrast them with the astrological significations of the zodiac and planets.⁷ She came to the following conclusions: 1) a small number of rulerships attributed to cell salts actually seem to be viable; 2) a stronger case for correspondence may be possible using the planets instead of the signs; and 3) the twelve Schuessler salts may not be the "right" ones to correlate with the astrological significations of the planets and signs.⁸ Based on her research, Lehman believes that the Pisces, Aries, and Taurus sun signs have the strongest connection with their assigned cell salt.⁹

The research conducted by Lehman inspired me to determine whether there is any justification in the historical association of specific cell salts to Sun signs. It concerns me that most of the properties and benefits which make up the cell salts do not appear to correlate strongly with the zodiacal or planetary significations. It is a further point of frustration that not much literature describes how the association between the cell salts and zodiacal signs were first determined (other than through a metaphysical lens), nor why the Sun was selected as the primary planet of consideration for these associations.

As a result, I chose to conduct a self-funded pilot study to test whether a meaningful and statistically significant relationship could be found between cell salts and the natal Sun signs as historical, astrological theory suggests. The study was single-blinded and comprised a volunteer study population between the ages of eighteen (18) and seventy-four (74) who resided within North America. It was determined that the relationship between cell salts and the corresponding Sun signs would be measured as vitality and general well being. Vitality in this context equated with levels of energy and fatigue while general well-being was defined as levels of mental and emotional states. Considerable time and research was spent to determine the best instrument to use for the health assessment and is explained below in detail under Test Instruments.

Statistical astrological research is inherently complicated due to the multitude of astronomical considerations and astrological variables that need to be taken into consideration. Lehman's initial research on the correlation of cell salts to zodiacal and planetary significations was seriously considered when selecting which cell salt to use in the pilot study. The reasons for this are as follows: using a variable (cell salt) that by itself contains questions and doubts about its historical association to a Sun sign can only bring further complications and uncertain results to a study. Using the groundwork provided by Lehman, the probable complications were somewhat minimized. Secondly, any one specific cell salt can be used to help a variety of ailments. Lehman's research reviewed the historical astrological attributions of multiple authorities and authors, comparing their conclusions regarding planetary and zodiacal associations. Thirdly, if any result is to be identified, whether in support of or against the study hypothesis, I wanted to use a variable that would make the strongest statement possible about its success or failure.

Lehman's research, as mentioned above, suggests the signs of Pisces, Aries, or Taurus had the strongest tie with their associated cell salt – Ferrum phosphate (phosphate of iron), Kali Phos (potassium phosphate), or Natrum sulphuretum (sulphates of sodium) respectively. The decision regarding which of the three cell salts to be used in the study was made after the collection of volunteer birth data, and was based purely on which of the three Sun signs mentioned above had the greatest number of volunteers (see Test Procedures below for a more detailed explanation).

The pilot study attempted to answer whether individuals born with a Pisces Sun sign had a greater response to its associated cell salt (Ferrum phosphate) than other Sun signs. The hypotheses are stated below:

- **Null hypothesis:** Individuals with a Pisces Sun sign will not display a greater change in vitality and well-being to its associated cell salt than individuals with the other eleven Sun signs.
- **Alternative hypothesis:** Individuals with a Pisces Sun sign will display a greater change in vitality and well-being to its associated cell salt than individuals with the other eleven Sun signs.

Test Instruments

The SF-36® Health Survey (ver. 2), produced and copyrighted by QualityMetric Incorporated, was selected as the test instrument for this pilot study. One of the more significant reasons for its use as the test instrument is its validation and acceptance within the medical community. The survey has been tested over a period of several years in more than 13 countries and has undergone iterations and improvements to define its generic core measures. In fact, the survey was recognized in close to 4,000 publications between 1988 through 2000.¹⁰ According to QualityMetric, the SF-36® Health Survey “was judged to be the most widely evaluated generic patient assessed health outcome measure in a ... study ... of “quality of life” measures published in the *British Medical Journal*.”¹¹

The SF-36® is essentially a short, multi-purpose health survey consisting of 36 questions which “yield an eight-scale profile of functional health and well-being scores as well as psychometrically-based physical and mental health summary measures.”¹² Thus, its core measures have been constructed to measure two dimensions of health – physical and mental – where vitality is commensurate with levels of energy and fatigue, and general well-being is defined as levels of mental and emotional states.¹³ The eight (8) core measures consist of: physical functioning, limitations due to physical health problems, limitations due to emotional problems, social functions, pain, energy and fatigue, emotional well-being, and general health perceptions. Furthermore, as a generic measure, it does not target a specific age, disease, or “treatment group” and as such has “proven useful in survey’s of general and specific populations, comparing the relative burden of diseases, and differentiating the health benefits produced by a wide range of different treatments.”¹⁴

The construction of the SF-36® focused on achieving “high psychometric standards” in order to satisfy the minimum psychometric principles required to conduct group comparisons.¹⁵ The standards were derived from the American Psychological Association recommendations for validating psychological measures. Although the majority of the eight health concepts identified above have their roots in testing instruments used since the 1970’s and 1980’s, such as the General Psychological Well-Being Inventory (GPWBI) and Functioning and Well-Being Profile (FWBP), the primary source for the SF-36® questions was the Medical Outcomes Study (MOS). The health areas chosen to be used in the SF-36® Health Survey characterize the more commonly measured health concepts affected by disease and treatment. The questions also represent “behavioral function and dysfunction, distress and well-being, objective reports and subjective ratings, and both favorable and unfavorable self-evaluations of general health status.”¹⁶ With this format and a more specific concentration of core measures, the level of perceived change by a patient or study participants during a defined period of time can be measured for each area.

The first version of the SF-36® Health Survey was released in a “developmental form” in 1988 and standardized by 1990.¹⁷ The standard form eradicated over a quarter of the words borrowed from the MOS version and significantly improved the wording, format

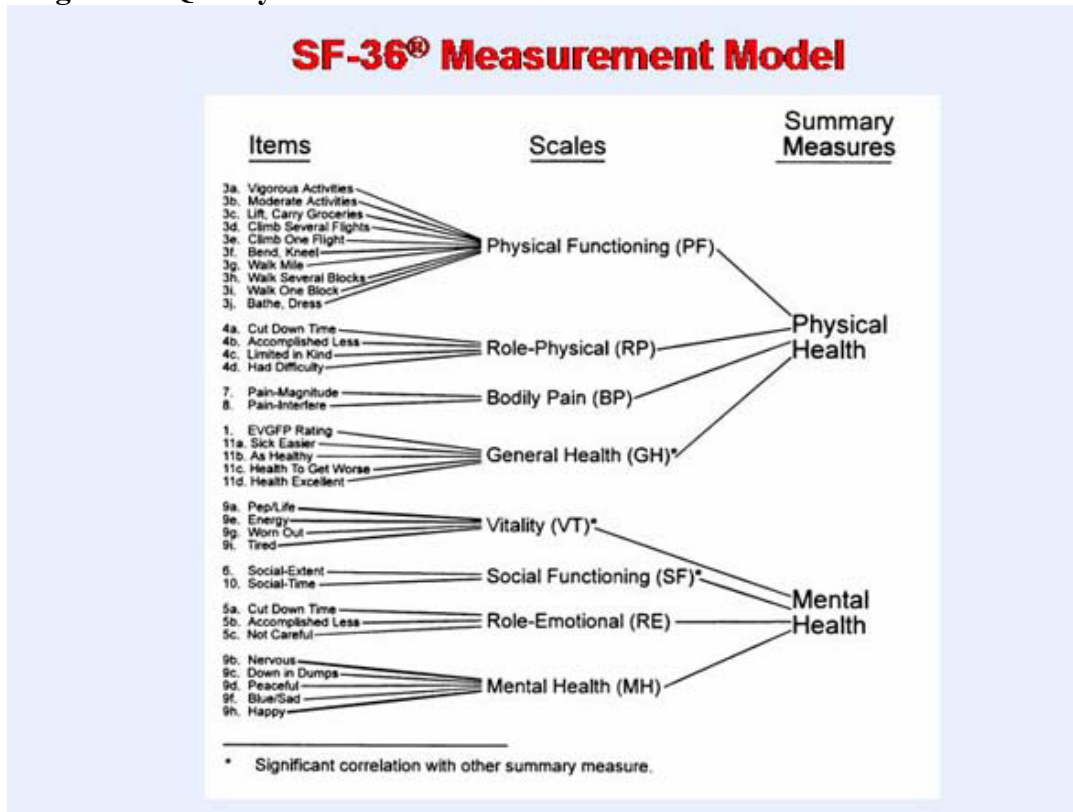
and scoring of the survey. In 1996 the second version (SF-36v2) was released after careful, qualitative and quantitative studies identified the need for corrections and improvements in instruction and wording, layout and readability, cultural adaptations, and more accurate scoring.

The second version of the SF-36® survey also updated the norms, or scores:

...using data from the 1998 National Survey of Functional Health Status (NSFHS) and norm-based scoring (NBS) algorithms were introduced for all eight scales. NBS, which employs a linear T-score transformation with mean = 50 and standard deviation = 10, makes it possible to meaningfully compare scores for the eight-scale profile and the physical and mental summary measures in the same graph.¹⁸

The categorization of the SF-36® Health Survey involves three key factors. First, the actual questions, or items as referred to by QualityMetric. Second, the eight core measurements that summarize two to ten questions each. And third, the use of two summary measures which create a physical and mental total using the eight core scales. All but one of the thirty-six (36) questions is used in scoring the eight scales. Each item is used only once. Diagram 1 below, provided by QualityMetric¹⁹ displays the survey taxonomy.

Diagram 1: QualityMetric SF-36® Measurement Model



This scoring methodology assumes items within the same scale can be combined without further standardization of scores or item weighting and thus can be scored using “Likert’s (1932) method of summated ratings.”²⁰ Summarized scores assume not only that the item variances are relatively equal, but that there is also item internal consistency. Both of these factors have been tested by QualityMetric. All items were shown to have a strong correlation, “greater than 0.40, corrected for overlap,” with their associated scale.²¹ The SF-36 Health® Survey also has established levels of validity and reliability. While 0.70 is the recommended minimum reliability for measures used in group comparisons,²² QualityMetric documentation indicates a mean reliability coefficient exceeding 0.80 for each scale and summary measure.²³

Standardized content and scoring is an important factor of the SF-36®. The survey was constructed in this manner for two reasons. First, when the standardization is adhered to, the score results are likely to have the same reliability and validity as noted above and in other published results. Secondly, it becomes possible to compare results across studies for those who follow the standardization.²⁴

Norm-based scoring, incorporated into the 2nd version of the SF-36® Health Survey, makes interpreting scores across scales as well as between the physical and mental summary measures more meaningful and straightforward. Algorithms based on (non-institutionalized) 1998 norms within the U.S. population accounts for the general population norm for each of the eight (8) scales and summary measures. Therefore,

scores above or below 50 can be considered above or below the general U.S. population norm. In addition, because the standard deviation has been equalized to 10 across all core and summary measures, it is easier to determine just how much the study mean is above or below the U.S. population.²⁵

As in any study related to health, an important consideration and confounding variable is the dietary and nutritional habits of the participants since nutritional habits have a direct impact on the cellular health of the body. I felt it was important to control for these nutritional factors and account for the possibility that the post-treatment health survey may reflect a higher than normal improvement due to a poor diet before or during the study period.

The best control in any experiment is to assure equal representation between your control and experimental groups. In this pilot study it would have been preferable to randomly assign participants, including considerations for dietary habits. However, it was not possible to conduct true randomization due to the fact that the study was based on volunteers and the independent variable was tied to a specific Sun sign. However, a partially random determination was made regarding which Sun sign(s) would make up the sample and control groups. In order to account for the minimal randomization, it was important to control for additional health factors.

A short questionnaire was created and used to assess basic dietary habits. The purpose of the survey was to identify any impacts to the study results that may result in outliers. The dietary questionnaire consisted of seventeen (17) multiple-choice questions with three choices. The first choice was scored at 3 points, the second at 2 points, and the third at 1 point. The range of possible points was 17 – 51. A score between 17 and 24 was considered poor dietary habits, 28 to 40 was considered moderate, and 40 to 51 was considered “very good.” The final SF-36® results for any volunteer who scored “poor” on the health questionnaire were monitored for scores higher than the average.

Test Procedures

The study population consisted of volunteers living in North America and between the ages of eighteen (18) and seventy-four (74). Participants’ birth dates were collected, reviewed and recorded. The birth data was calculated manually²⁶ and used to determine the Sun sign of each volunteer. A total of one hundred and thirty-five (135) volunteers participated in the study. Of the 135 participants, seventeen (17) were born with a Pisces Sun, thirteen (13) with an Aries Sun, and nine (9) with a Taurus Sun. As a result, volunteers with a Pisces Sun were selected as the sample group with Ferrum phosphate as the independent variable and all other volunteers classified as the control group.

Once the sample and control groups were identified, the pre-treatment dietary and SF-36® health surveys were mass distributed through pre-formatted email to and returned from each participant. The choice to distribute the material using electronic means was due, in part, to the geographic distance of volunteers to researcher. Furthermore, the

probability of the researcher being acquainted with a majority of the volunteers required some level of control for socially desirable responses.

Circulation of the cell salt tablets followed the receipt of the pre-treatment survey. Since this pilot study was single blind, volunteers did not know whether they were receiving a placebo or an unidentified cell salt. Neither were they aware of the exact hypothesis being tested. All volunteers were given a 6X dilution of the same Ferrum phosphate cell salt tablets. The decision not to use a placebo for the control group was threefold. First, the ability to obtain placebos was limited and required the creation of both the placebos and cell salts by a non-lab technician in a less than pristine environment. This option presented some liability issues in addition to possible mishandling of the independent variable. Second, since no known statistical study of cell salts and their association with astrology has been attempted, I did not want to introduce more than one cell salt without a more solid understanding of whether the original theory had some merit. And third, it was important to remain open minded about the possibility that the participants who were not born between February 19th and March 20th (Pisces sun sign), may demonstrate a change in vitality after using Ferrum phosphate.

Volunteers were instructed to take three (3) undisclosed tablets twice a day for a total of five weeks, 15 minutes before or after meals or beverages (other than water) between the dates of March 1st and April 5th. Participants were further asked to report via email any week when they missed more than two (2) doses. The study allowed up to seven (7) missed doses per week (50%), but not more than 14 total missed doses (20%) throughout the duration of the study. For the purpose of this study, one dose was equivalent to three tablets. Any participant missing more than the minimum amount was not considered in the pre or post treatment study results. Missed dose information was collected not only during the study, but at its conclusion as part of the post-treatment health survey.

After the collection of the post-treatment SF-36® Health Survey, computations of the results were completed. Both pre and post treatment survey results followed the scoring guidelines outlined by QualityMetric in *How to Score Version 2 of the SF-36® Health Survey*. Scoring the SF-36® Health Survey consisted of eleven steps: 1) enter the data from each questionnaire; 2) recode any out-of range values as missing; 3) reverse the score for 10 items so that all items were represented by the 1 – 5 raw scale where 1 identifies poor health and 5 signifies excellent health; 4) recode any missing item responses with the mean substitution where more than one half (1/2) of the questions in the same scale have been answered; 5) sum the eight raw scale scores for respondents who answered at least 50% of the items in the multi-item scale; 6) transform the raw scores into a 100, or percentage, scale; 7) transform the 100 scale score into z-scores using the US population averages; 8) normalize the z-scores; 9) compute the aggregate scores for the summary measures using the z-scores; 10) normalize the aggregate scores for the summary measures; and 7) conduct a score check.

Results

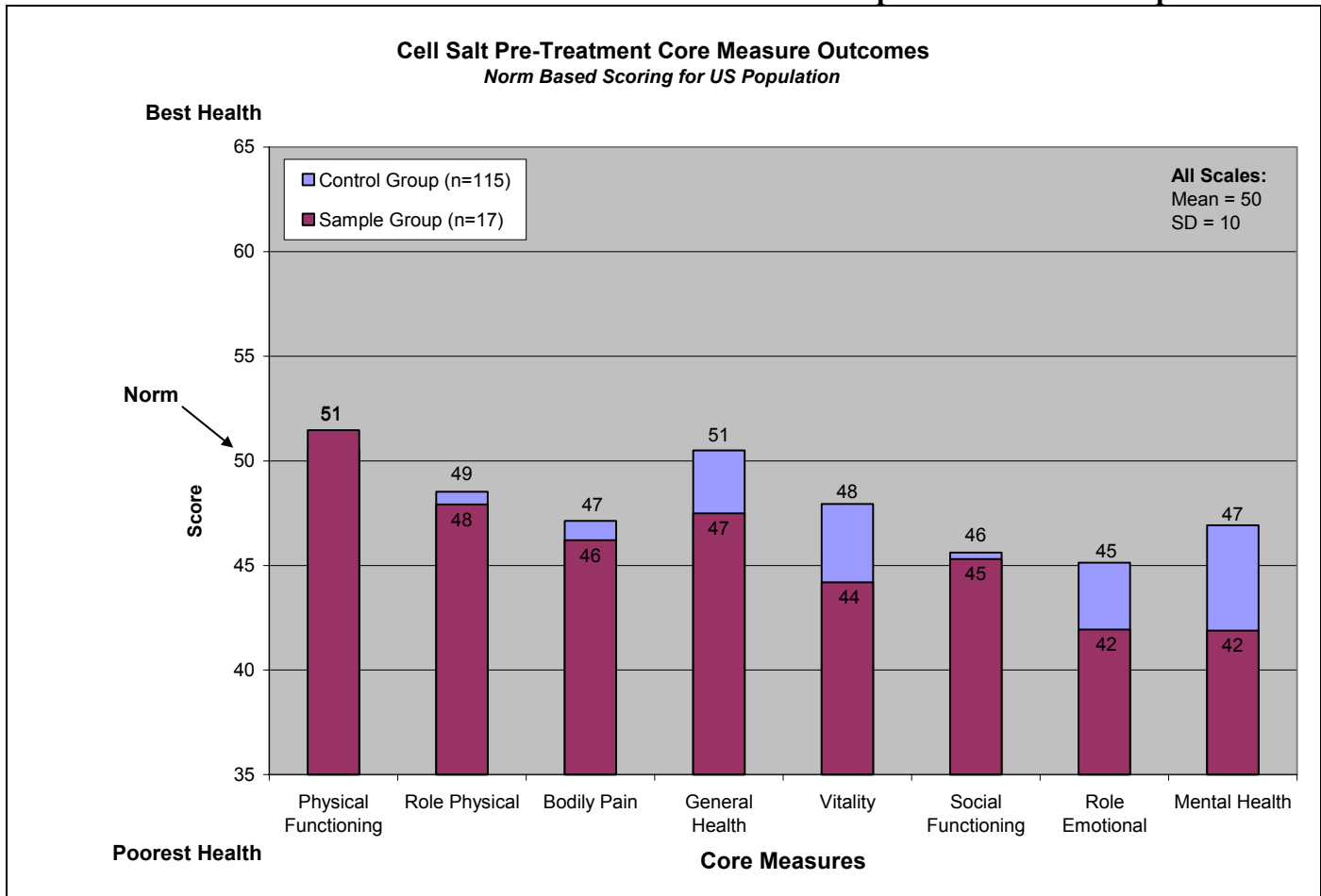
With only a limited number of documented cell salt case study analysis available, this pilot study was conducted using the more conservative two-tailed test methodology. The independent variable was Ferrum phosphate and the dependent variable was vitality and well-being as measured by the SF-36® Health Survey. Pre and post treatment levels of vitality and well-being for Pisces volunteers was compared against all other participants.

The total number of participants needed to show statistically significant results and adequate power was calculated on the degree of variability and standard deviation for Sun signs as well as the survey instrument. The study population size needed to be large enough to have a representative sample of all Sun signs. Two hundred and fifty (250) participants allowed for the minimum number of participants necessary in the sample group (18) while still accounting for an estimated .5% margin of error for manual calculation of the Sun sign and survey instrument as well as a 15% participant drop-out. As mentioned under Test Procedures, the study began with 135 total volunteers, 17 of which had a Pisces Sun. The drop out rate was 22%, more than the estimated rate, leaving the post-treatment total number of volunteers at 120, of which 15 had a Pisces Sun. Three (3) participants did not take the minimum doses per week and therefore were removed from the total number of participants for the calculation of results. The adjusted number was determined to be 132 for pre-treatment (115 control group and 17 sample group), and 107 for post-treatment results (92 control group and 15 sample group). Unfortunately, the small number of sample group participants resulted in the inability to provide adequate power to provide a statistically significant outcome when measuring results between pre and post treatment sample and control group scores.

Scores discussed below reflect normalized mean scores and are based on a 1998 U.S. population survey involving more than 2400 individuals. A score of 50 for any core or summary measure indicates that the mean volunteer score is equal to the mean of the U.S. population.

Pre-treatment scores of both the sample and control group display a lower than norm score for the majority of the core scales (Graph 1: Pre-Treatment Core Measure Scores for Sample and Control Groups). The only exception is Physical Functioning with both groups scoring 1 point above the national norm and the control group scoring 1 point above the general U.S. population for General Health. Without the benefit of U.S. population norms by Sun sign, it is difficult to make assumptions regarding why the pre-treatment scores are considerably lower than the U.S. population. Two possibilities do merit consideration. First, the nature of a volunteer study may more readily interest individuals with poorer health or with chronic health problems. It is human nature to seek a possible remedy to relieve discomfort or pain. However, only 33% of volunteers reported having a chronic condition that required ongoing medication or medical attention. A second possible factor in the study may be nutritional habits. However, the dietary survey indicated that all but one participant maintained average to excellent diet based on the USDA's (United States Department of Agriculture) health pyramid recommendations 1 week prior to the beginning of the cell salt study.

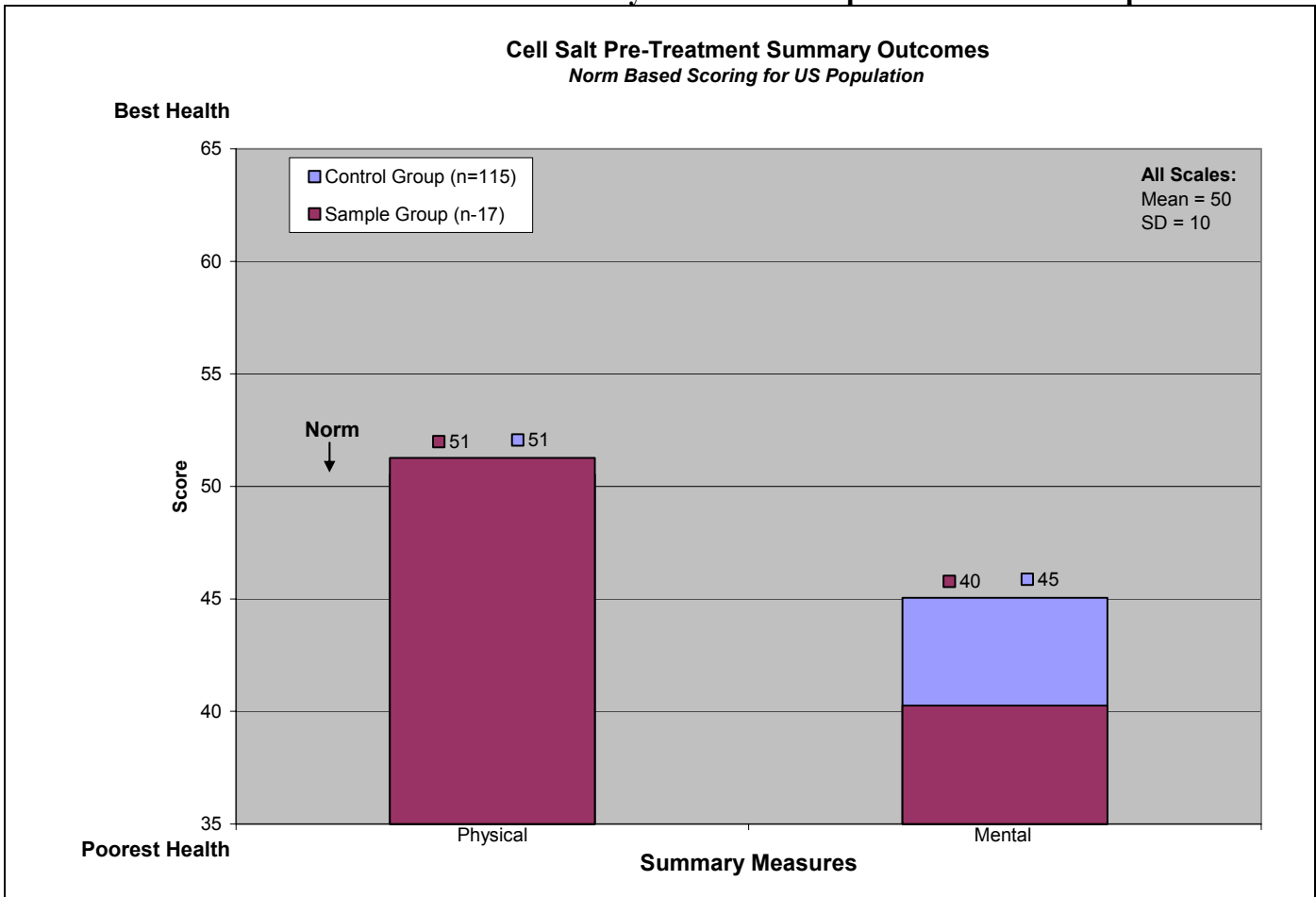
GRAPH 1: Pre-Treatment Core Measure Scores for Sample and Control Groups



68% Confidence Interval; Control group margin of error = 0.09, Sample group margin of error = 0.24. Physical Functioning (p=0.555); Role Physical (p=0.787); Bodily Pain (p=0.719); General Health (p=0.271); Vitality (p=0.144); Social Functioning (p=0.912); Role Emotional (p=0.317); Mental Health (p=0.156).

As described under Test Instruments, the summary measures summarize the core measures into two parts: Physical and Mental. The pre-treatment Physical summary shows that both the sample and control groups scored only 1 point above the average U.S. population for physical health (Graph 2: Pre-Treatment Summary Scores for Sample and Control Groups). The Mental summary, however, told a different story with a score of 40 for the sample group and 45 for the control group. This suggested significantly lower levels of mental and emotional well-being and vitality compared to the general population prior to the consumption of the Ferrum phosphate cell salt.

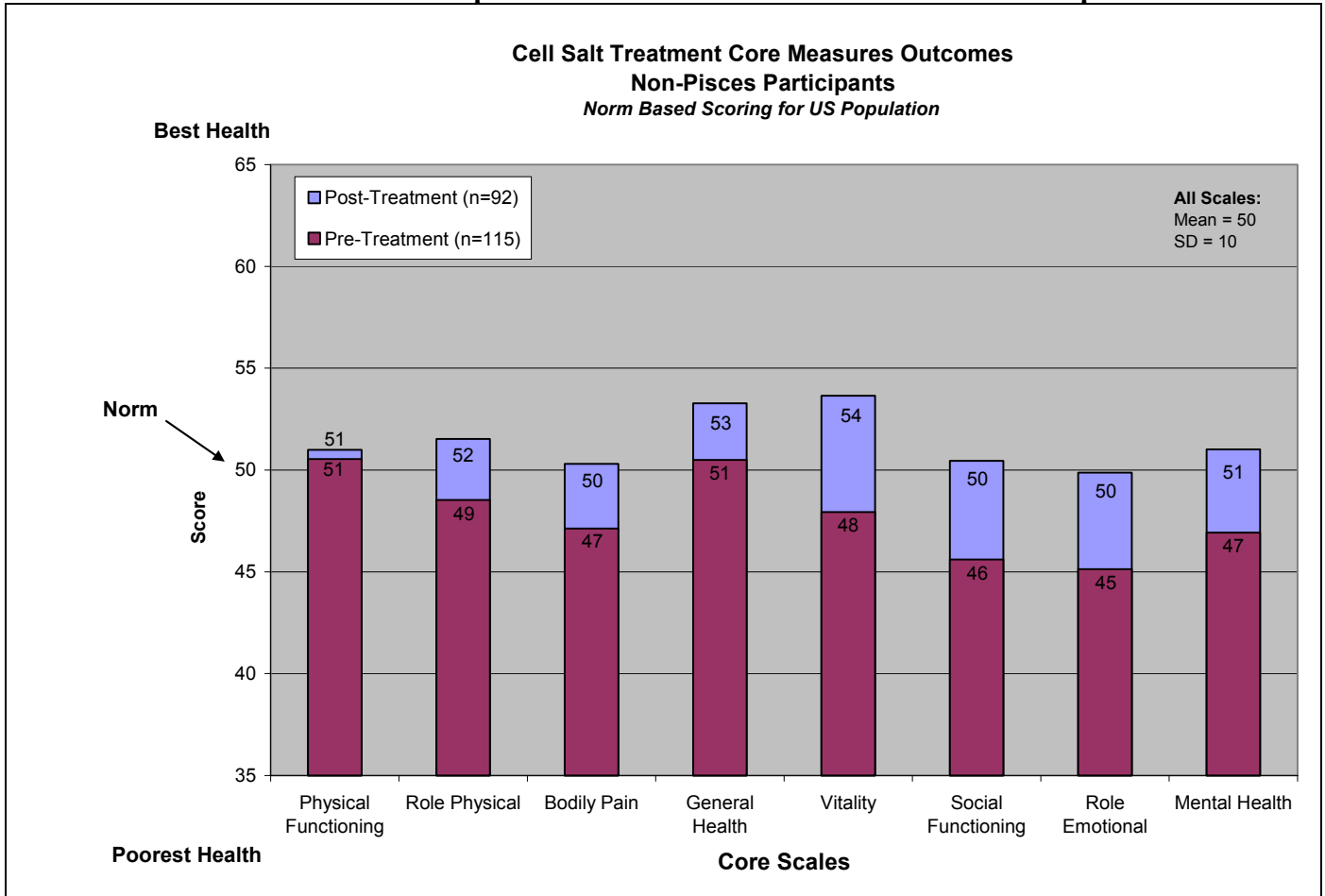
GRAPH 2: Pre-Treatment Summary Scores for Sample and Control Groups



68% Confidence Interval; Control group margin of error = 0.09, Sample group margin of error = 0.24. Physical Summary (p=0.689); Mental Summary (p=0.171).

The control group experienced an overall increase in all but one core measure during the 5 week treatment period (Graph 3: Control Group Pre and Post Treatment Core Measures Comparison). The only core measure not impacted was Physical Functioning. On average, the mean increase compared to the average U.S. population was around a 30%²⁷, above pre-treatment scores. Vitality and Role Emotional were the two measures that saw the largest increase during the study period, suggesting a greater improvement in mental and emotional well-being than physical health. Seven of the eight core measures showed adequate power²⁸ to be considered statistically significant between the pre and post treatment results for the control group. The only exclusion was Role Physical. In this case, statistical significance simply means that the relationship between the pre and post treatment core measures scores would rarely occur by chance.

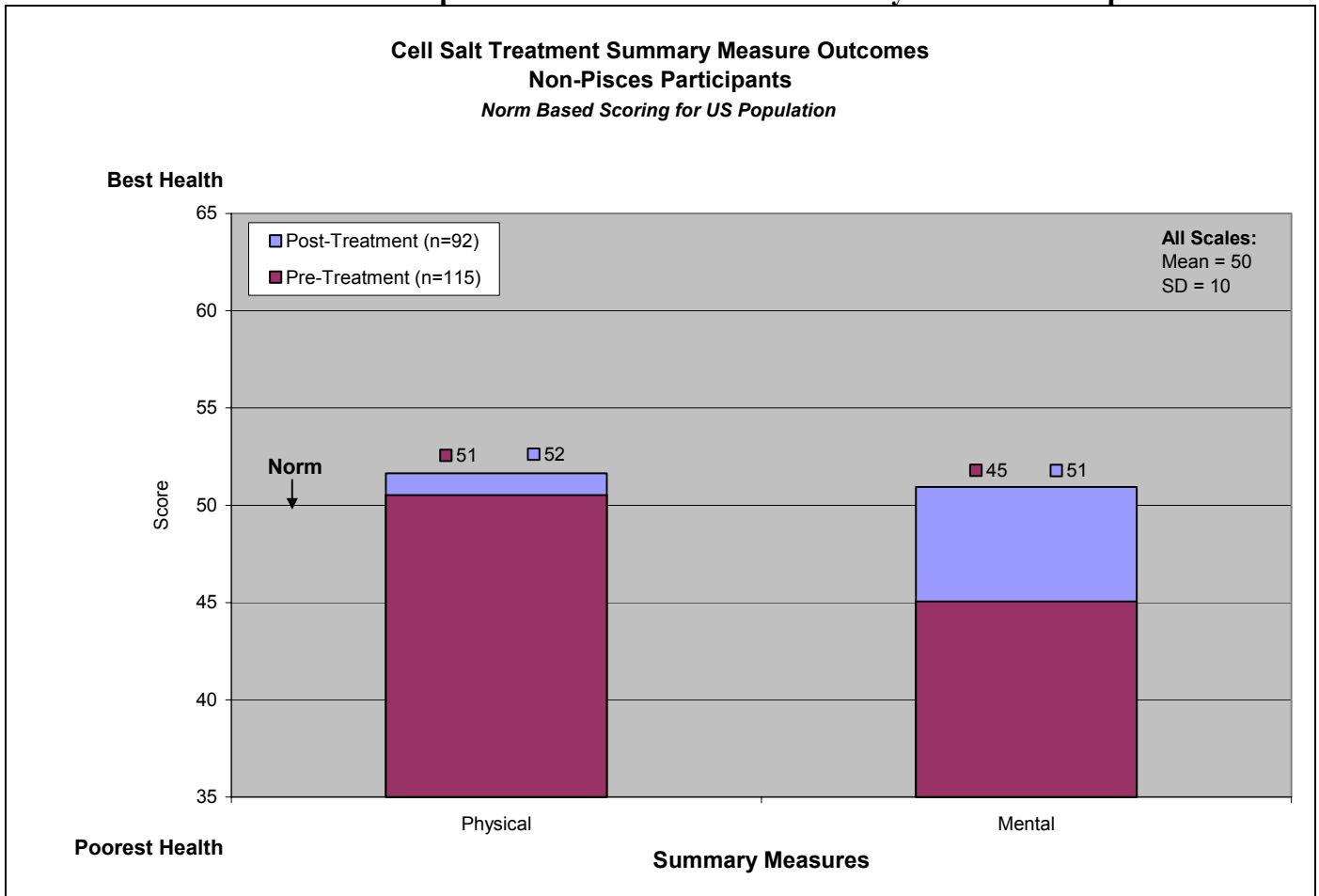
GRAPH 3: Control Group Pre and Post Treatment Core Measures Comparison



95% Confidence Interval; Margin of error ≥ 0.10 . Physical Functioning ($p=0.689$); Role Physical ($p=0.006$); Bodily Pain ($p=0.016$); General Health ($p=0.033$); Vitality ($p=0.0001$); Social Functioning ($p=0.0003$); Role Emotional ($p=0.0003$); Mental Health ($p=0.002$).

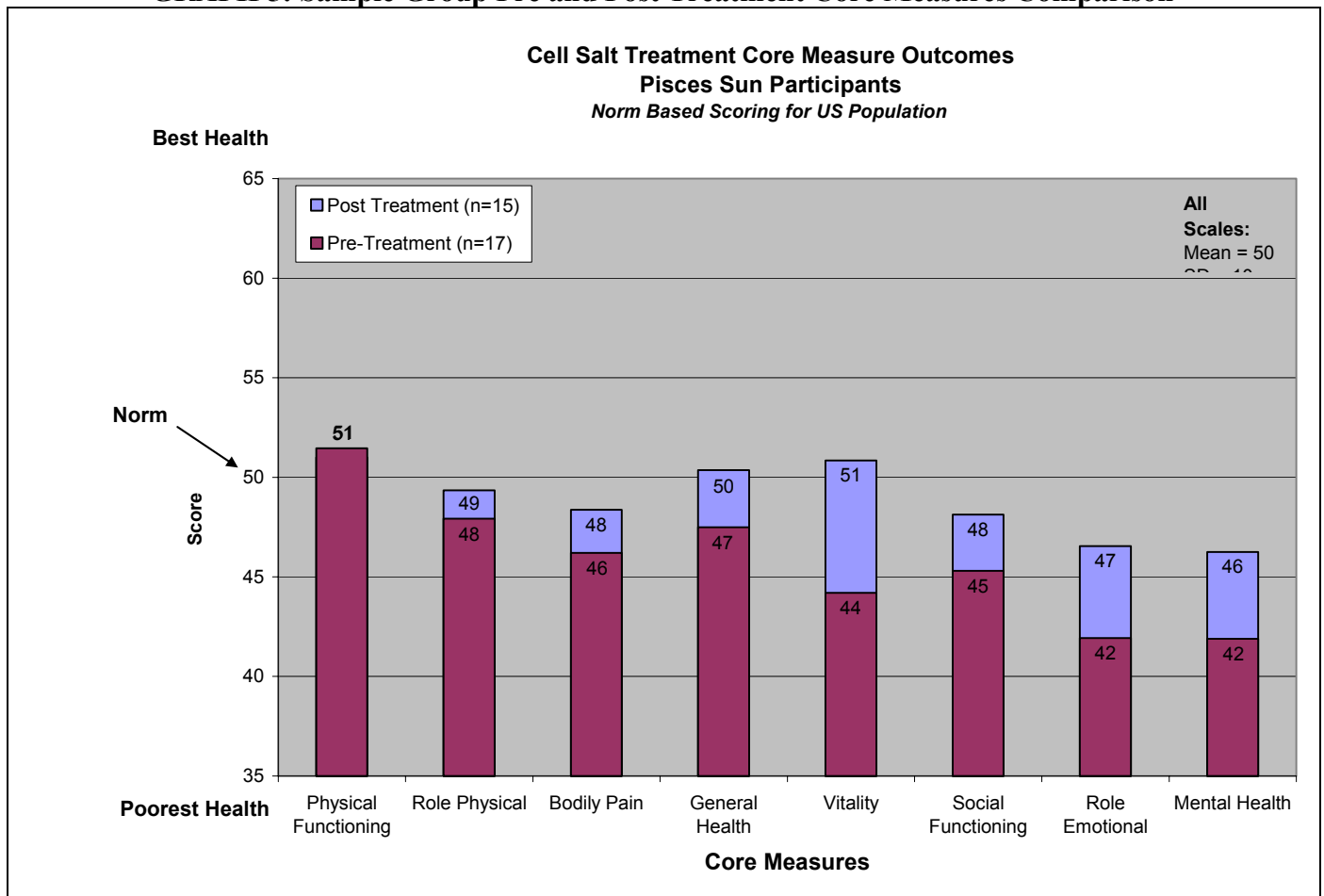
The summary measures in Graph 4 clearly identified a significant increase in vitality and well-being among the control group with a 60% (6 point) increase in the Mental summary measure. Furthermore, the Mental summary was highly statistically significant. What is further of interest is that during the study period, the increase of mental well-being was raised just above that of the U.S. population mean. The Physical summary measure showed an increase of 10% but lacked power to assure that the probability of observing the same result in the general population would not occur just by chance.

GRAPH 4: Control Group Pre and Post Treatment Summary Measures Comparison



The sample group also experienced an overall increase in all but one core measure during the 5 week study period (Graph 5: Sample Group Pre and Post Treatment Core Measures Comparison). Again, the only core measure not impacted was Physical Functioning. Similar to the control group, the mean increase was around a 32%, or a 3 point increase above pre-treatment scores. Vitality and Role Emotional were once again the two measures that saw the largest increase during the study period. Due to the small number of volunteers comprising the sample group, it is not possible to determine that any of the results were not due to chance alone.

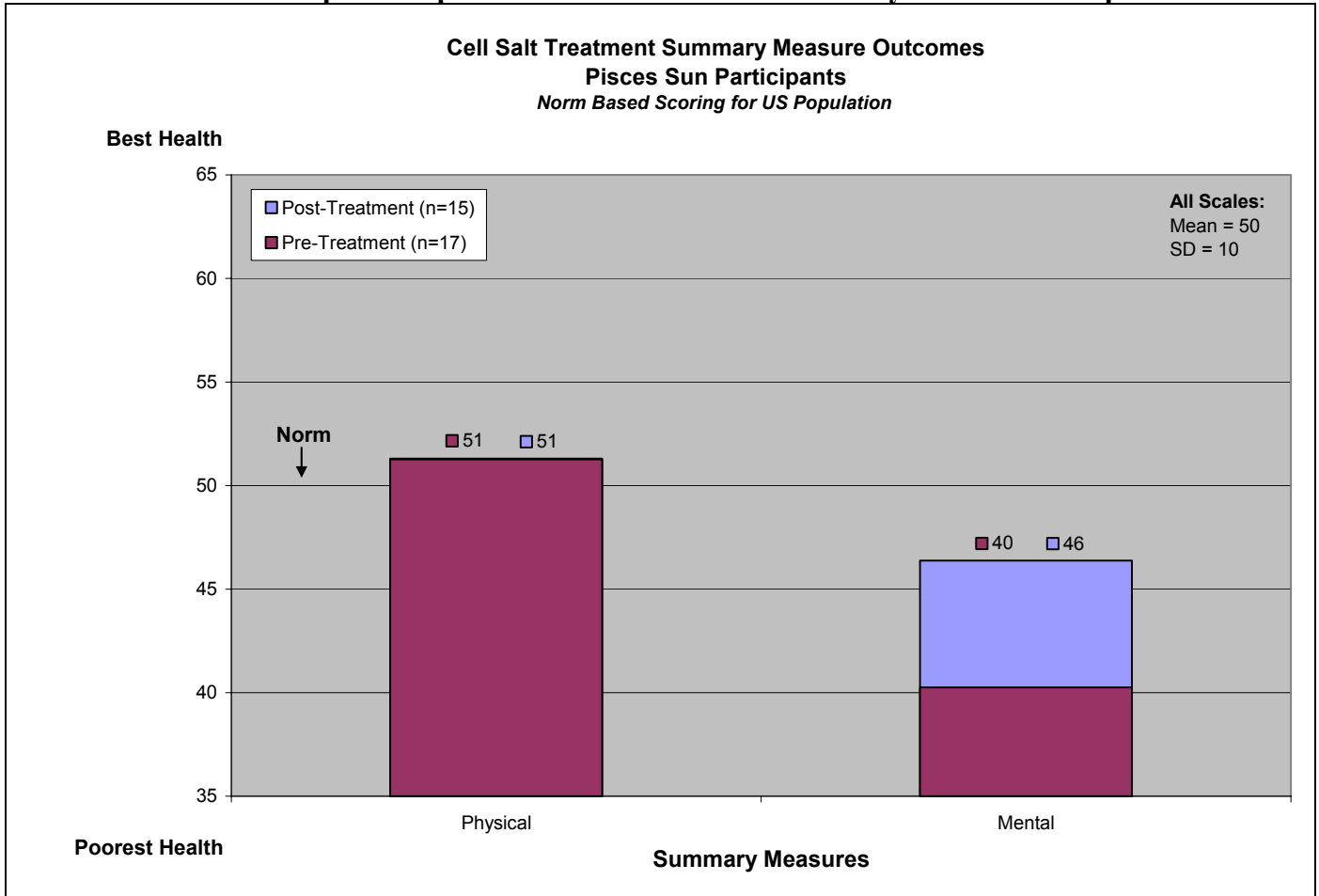
GRAPH 5: Sample Group Pre and Post Treatment Core Measures Comparison



68% Confidence Interval; Margin of error ≥ 0.26 . Physical Functioning ($p=0.834$); Role Physical ($p=0.596$); Bodily Pain ($p=0.478$); General Health ($p=0.453$); Vitality ($p=0.052$); Social Functioning ($p=0.447$); Role Emotional ($p=0.254$); Mental Health ($p=0.303$).

When the physical core measures were summarized into one score, the sample group showed no apparent increase in overall physical health. On the other hand, this group did appear to have a large increase in mental and emotional well-being. The graph below shows a 60% increase in the Mental summary measure. However, the mean is still well below the general U.S. population. See Graph 6 below for additional detail.

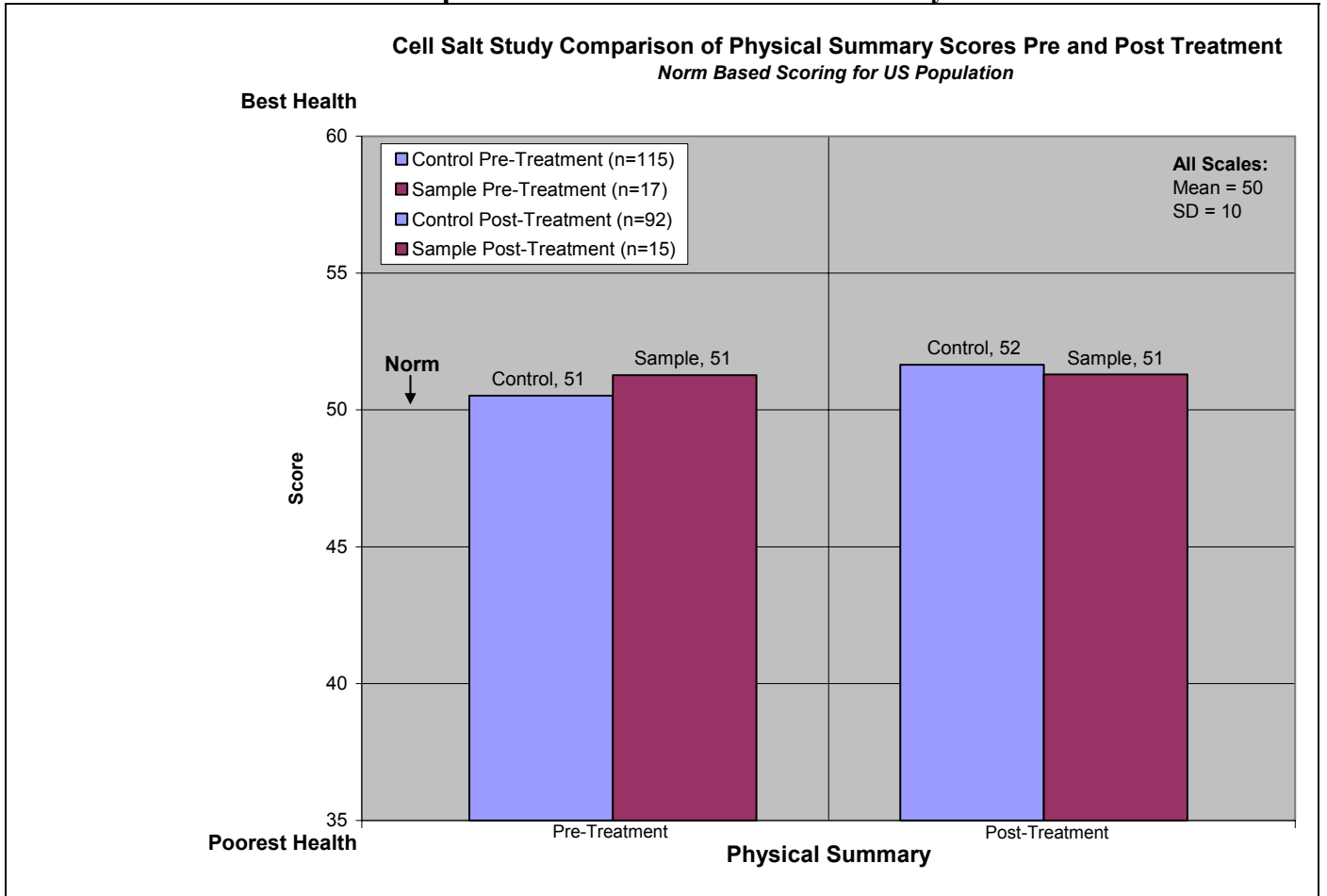
GRAPH 6: Sample Group Pre and Post Treatment Summary Measures Comparison



68% Confidence Interval; Margin of error ≥ 0.26 . Physical Summary ($p=0.992$; Mental Summary ($p=0.171$).

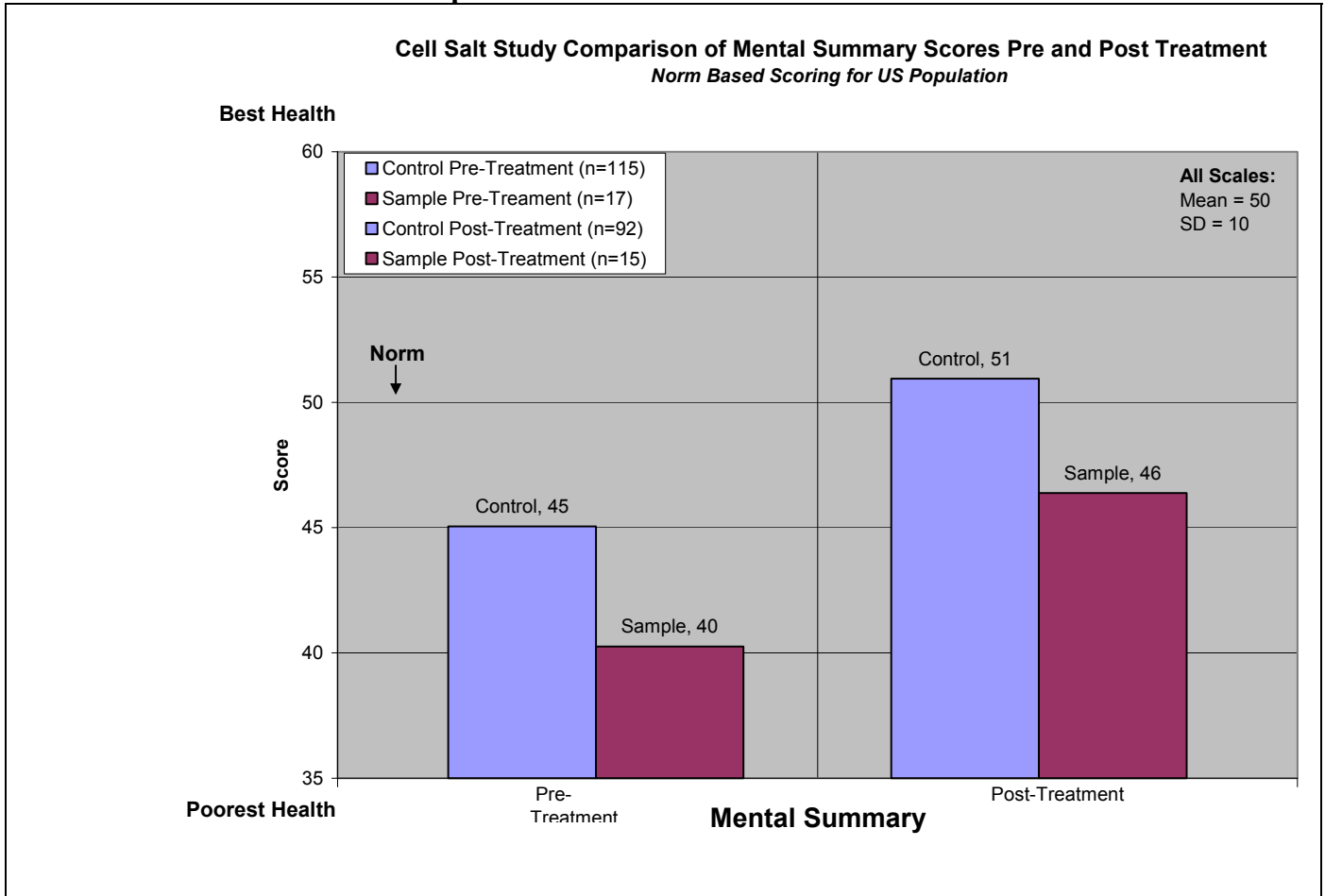
Graph 7 on the next page displays the pre and post treatment Physical summary measure for both the control and sample groups. As reiterated elsewhere, there was zero to minimal change in mean score for physical health from the time before the study until its conclusion five (5) weeks later. The most significant changes for both the control and sample were obviously on a psychological level (Graph 8). Still, it is obvious that the change from pre to post treatment between the sample and control group are the same – a six (6) point difference.

GRAPH 7: Comparison of Pre and Post Treatment Physical Health



68% Confidence Interval; Physical Summary Pre-Treatment (p=.689); Physical Summary Post-Treatment (p=.857)

GRAPH 8: Comparison of Pre and Post Treatment Mental Health



68% Confidence Interval; Mental Summary Pre-Treatment (p=.171); Mental Summary Post-Treatment (p=.144)

Outliers were also an important consideration in the study. After review of the data, it was determined that any individual normalized score under 25 or above 75 was considered an outlier for all core and summary measures. The results were reviewed without the outliers in order to consider their possible impact on the study results. Without the outliers there was a one point average increase in the mean norm-based scores for half of the core and summary measures for the control group. While the standardized score and power does shift slightly as a result of these changes, it does not alter the statistical significance reported earlier.

The sample group saw a greater shift in the mean norm-base score, with a 4 point increase for the Vitality, Role Emotional, and Mental Health pre-treatment core measures, yet only a 2 point increase for Social Functioning and Mental Health for post-treatment. The Physical summary measure was constant with a 4 point increase in the Mental summary for the pre-treatment sample group and a 2 point increase for post-treatment. The obvious influence to the sample group increases is a lower standardized score and reduced power.

Table 1 below provides a slightly different viewpoint of the data by listing the percent of volunteers who either maintained or recorded an increase in health at the conclusion of the study.

Table 1: Percentage of Participants who maintained or saw an improvement in health by Score Measure (adjusted for outliers)

SF-36® Measure	Sample Group	Control Group
Physical Function	67 %	55 %
Role Physical	60 %	70 %
Bodily Pain	80 %	77 %
General Health	73 %	73 %
Vitality	80 %	78 %
Social Function	79 %	84 %
Role Emotional	71 %	85 %
Mental Health	79 %	76 %
Physical Summary Measure	33 %	54 %
Mental Summary Measure	71 %	70 %

At the beginning of the study, I noted the study hypotheses. It is evident from the results outlined above that it is not possible to rule out the null hypothesis. For this reason, it **cannot** be said conclusively that individuals with a Pisces Sun will display a greater change in vitality and well-being than individuals born with another Sun sign. However, there are some promising results that could be researched further, given the availability of funding.

Conclusion

Ferrum phosphate helps the blood carry oxygen through the body as well as strengthens the blood vessels. What is especially important to note here is that when cells do not receive sufficient oxygen to generate energy, all chemical processes slow down. As a result, an individual may “tire more easily.”²⁹ Dr. George Carey indicates that “without a proper balance of iron in the blood, health can not be sustained.”³⁰ He goes on to state, “Lack of iron ... causes depression, discouragement, and a feeling as if one were absolutely crushed, since the air pressure ON the body is much greater than that *within*.”³¹ A possible deficiency in Ferrum phosphate is also noted by an “indifference to ordinary matters, loss of courage and hope,”³² “sluggishness, nervousness or anxiety, anemia, sleeplessness, restlessness, and an increased sensitivity.”³³ The heightened sensitivity could also cause mood swings.³⁴

On a physical level Ferrum phosphate fights infections and combats low grade fevers when ingested. It is also used to heal bruises, excessive nose bleeds, bleeding ulcers,

irregular menses, toothaches, cold congestion, heart palpitations, high blood pressure, and general inflammation.³⁵

It is not difficult to understand why the mental summary scale showed a substantial increase after all participants had been consumed Ferrum phosphate for five weeks. Nor is it a wide jump in logic to determine why the physical summary scale showed minimal change when not treating specific physical ailments.

The future research possibilities for cell salts and their association with astrology signs or planets is a fertile area. Although the results of this pilot study did not strongly identify a relationship that could occur outside of chance, there is still promise. While the numbers between the control and sample pre and post treatment scores were not statistically significant, it appears possible that if the mean norm based scores remained within the same range, a greater sample group may have provided the necessary results to prove that the null hypothesis has some merit. The reason for this is that the test results closely followed the SF-36® descriptive statistics.

Other points of consideration for future research relate to the whether or not the correct cell salts were even selected to comprise the basic twelve now used and associated with astrology. This underlying question was presented by Lee Lehman, Ph.D. in her Learning With Lee series CD, #26. Given this underlying question, it is possible that in some cases there may be a chance there may be no significant effect in vitality under any comparative method. Investigation into salts outside the Schuessler biochemics would, then, be beneficial. Once this initial question has been addressed, further research is needed to determine if cell salts taken based on the opposing Sun sign brings significant results; whether or not the twelve cell salts were correctly identified; and whether zodiacal signs in general are really the best way to correlate astrology with the cell salts. It is possible that plants or planetary rulerships may be better suited to cell salt association. While cell salts certainly appear to be beneficial and have the ability to assist many people, further research is still needed to more fully test their connection and integration with astrological symbolism.

Endnotes:

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<<http://www.alchemylab.com/paracelsus.htm>>.
- ² Gay, Marcus. *Paracelsus*. Occultopedia. May 20, 2004.
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- ³ Lehman, Lee. *The Astrology of Homeopathy*. Learning with Lee, CD 26. Malabar, FL: Lee Lehman, Ph.D., 2002.
- ⁴ Ibid.
- ⁵ Ibid.
- ⁶ Sawtell, Vanda. *Astrology & Biochemistry*. London, England: Redwood Press Limited, 1947, 1970: 10.
- ⁷ Lehman, Lee.
- ⁸ Lehman, Lee.
- ⁹ Personal conversation with Lehman, Lee.
- ¹⁰ Ware, John. *SF-36® Health Survey Update*. QualityMetric Incorporated. May 20 2004.
<<http://www.sf-36.org/tools/SF36.shtml>>. This is a public, information site on the use and breadth of the SF-36® Health Survey as well as the research community's experience with this specific test instrument.
- ¹¹ Ibid.
- ¹² Ibid.
- ¹³ Ware, J.E., Mark Kosinski, and Barbara Gandek, M.S. *SF-36® Health Survey: Manual & Interpretation Guide*. Lincoln, RI: QualityMetric Incorporated, 1993, 2000.
- ¹⁴ Ware, John. *SF-36® Health Survey Update*. QualityMetric Incorporated. May 20 2004.
<<http://www.sf-36.org/tools/SF36.shtml>>.
- ¹⁵ Ibid.
- ¹⁶ Ibid.
- ¹⁷ Ibid.
- ¹⁸ Ibid.
- ¹⁹ Ibid.
- ²⁰ Ware, J.E., Mark Kosinski, and Barbara Gandek, M.S. *SF-36® Health Survey: Manual & Interpretation Guide*. Lincoln, RI: QualityMetric Incorporated, 1993, 2000: 5:1.
- ²¹ Ibid. 5:3-4.
- ²² Ware, John. *SF-36® Health Survey Update*. QualityMetric Incorporated. May 20 2004.
<<http://www.sf-36.org/tools/SF36.shtml>>.
- ²³ Ware, John. *How to Score Version 2 of the SF-36® Health Survey*. Lincoln, RI: Quality Metric Incorporated, 2000: 16.
- ²⁴ Ware, J.E., Mark Kosinski, and Barbara Gandek, M.S. *SF-36® Health Survey: Manual & Interpretation Guide*. Lincoln, RI: QualityMetric Incorporated, 1993, 2000: 6:1.
- ²⁵ Ware, John. *How to Score Version 2 of the SF-36® Health Survey*. Lincoln, RI: Quality Metric Incorporated, 2000: 26.
- ²⁶ Sun signs were determined using the calendar except where birthdays fell within 24 hours of a sign change. In these cases, the birth time was collected and calculated using Solar Fire 5 to determine the Sun sign.
- ²⁷ With a standard deviation of 10, a one point fluctuation above or below the mean of 50 is equivalent to 1/10th, therefore a 3 point increase would signify a change of 3/10ths or 30%.
- ²⁸ Adequate power is considered to be 5%
- ²⁹ Jansky, Robert C. *How to use the Cell Salts*. Van Nuys, CA: Astro-Analysics Publications, 1977: 21.
- ³⁰ Carey, George W. and Inez E. Perry. *The Zodiac and the Salts of Salvation*. New York: Samuel Weiser, Inc., 1932, 1971, 1980: 328.
- ³¹ Ibid, 330.
- ³² Beoricke, William and Willis Dewey. *The Twelve Tissue Remedies of Schüssler*. Sixth Edition. Philadelphia: Beoricke & Tafel, Inc., 1925: 63.
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³⁵ Beoricke, William. *Homoepathic Materia Medica*. Ninth Edition. Santa Rosa, CA: Beoricke & Tafel, Inc., 1927: 230-31.

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