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THE DRUNKEN HAIR: INTRODUCING IN VIVO DEMONSTRATION OF INCREASED BLOOD ALCOHOL CONCENTRATION TEMPORARY DISRUPTING HUMAN HAIR FOLLICLES EMISSION OF ELECTROMAGNETIC RADIATION

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ABSTRACT

The human hair consists of a follicle a.k.a root penetrating the skin and an outer skin structure commonly called the shaft. The hair follicle has been classified as a miniorgan having its own cells divisions; aging stages and also demonstrated to be an energy emitter in the form of electromagnetic radiation. The intent of this manuscript is to introduce documentation from in vivo experiments showing the deleterious effect of alcohol consumption on the previously documented hair follicle intrinsic and orderly emission of energy a.k.a. Electromagnetic Radiation (EMR). This was possible by a minor modification of a tabletop optical microscopy technique introduced in 2015 and designed to display plant and animals tissue EMR. In vitro control experiments had shown that a drop of white wine covering a human hair follicle placed on a glass slide caused what appeared to be a disruption on the hair follicle EMR emissions; the addition of chemicals to the wine during manufacturing could have caused that effect. The answer could lie in an in vivo alcohol drinking approach by increasing only the blood alcohol concentration (BAC). In this manuscript two in vitro and two in vivo experiment are presented where the author, a non-alcohol drinker, purposely and during fasting underwent two binge-drinking episodes aimed to increase his BAC and investigate its impact on hair follicles. Several black beard hair samples were plucked via tweezers as controls; additional samples were also plucked and processed at approximately peak alcohol physical symptoms such cheek numbness and dizziness which occurred between 35 and 45 minutes post two episodes of wine or wine and beer binges. Images and video-recordings are presented.

Definition of Terms

Absorption: The transfer of the energy of a wave to matter as the wave passes through it.... if all the energy is lost, the medium is said to be opaque, ie: Crystallization.

Anisotropy: As previously published "Potassium ferricyanide crystals have been classified as anisotropic, and as such fully absorbing incoming electromagnetic radiation. Our experiments show the hair follicle EMR triggered K_3Fe crystals as result of K_3Fe full absorption of electromagnetic radiation emitted by the hair follicles"

Binge drinking: Is categorized by drinking in excessive amounts in a very short period of time. For men, it is typically when they consume more than 5 drinks in two hours. For women, it is when they consume more than 4 drinks in two hours.

Drunk: Affected by alcohol to the extent of losing control of one's faculties or behavior.

EMR: Acronym for electromagnetic radiation. Defined as how matter (typically electrons bound in atoms) takes up a photon's energy — and so transforms electromagnetic energy into internal energy of the absorber. Example is the full absorption of electromagnetic radiation as internal energy by K_3Fe.

K_3Fe: Short version for Potassium Ferricyanide crystals with formula $K_3Fe(CN)_6$. CSA # 13746-66-2.

Mixing Wine and Beer: In comparison to wine and liquor, beer has the least amount of alcohol content with 5% in a single serving, but the serving size (12 ounces) is larger than a normal wine serving or a mixed drink, making the one-drink alcohol content roughly equivalent to wine and hard alcohol.

SSP: Acronym for Single Slide Preparation, where a plucked in toto (follicle and shaft) human hair is placed on a glass slide and covered by a solution of diluted K_3Fe crystals.

1. INTRODUCTION

It has been stated "After a drink is swallowed, the alcohol is rapidly absorbed into the blood (20% through the stomach and 80% through the small intestine), with effects felt within 5 to 10 minutes after drinking. It usually peaks in the blood after 30-90 minutes and is carried through all the organs of the body" [1], [2] one of them being a miniorgan or hair follicle [3]. Published reports also describe increased blood alcohol concentration (BAC) as being "distributed throughout the water in the body, so that most tissues—such as the heart, brain, and muscles—are exposed to the same concentration of alcohol as the blood" [4]. Additionally, the bridging field of Biophysics [5] had demonstrated a property of Potassium Ferricyanide (K_3Fe) of exhibiting paramagnetic anisotropy, in other words the property of full absorption of incoming EMR [6], [7].

1.1. INCREASED BLOOD ALCOHOL CONCENTRATION DISRUPTING EMR

By using a tabletop optical microscopy technique introduced in 2016 designed to display plant and animals tissue EMR [8] we were able to demonstrate the deleterious effect of increased BAC on a human miniorgan demonstrated by K_3Fe property of full absorption of EMR.

2. MATERIALS AND METHODS

2.1. MATERIALS

1) One 750 ml white wine bottle 12.5% alcohol
2) One 12 FL.OZ. Traditional Lager Beer.
3) Potassium FerrIcyanide Crystal. $K_3Fe(CN)_6$.
   CSA # 13746-66-
4) Black Hair Follicles plucked via tweezers from author's facial hair
5) Microscope glass slides: 25x75x1mm thickness. Pearl Cat. No. 7101
6) Digital Video Microscope Celestron II model # 44341, California, USA.
7) Images downloaded to an Apple Computer MacBook Pro Photo Application.

2.2. Methods

Two I*n Vivo* experiments were done, both entail for the author (78 y/o Male) to undergo two episodes of binge drinking.

Binge Drinking 1. Only White Wine
Episode 1 600 ml of wine bottle consumed within 15 minutes.
Binge Drinking 2. Mixing Wine and Beer
Episode 2 250 ml of white wine, plus one 12 OZ Lager beer consumed within 15 minutes.

Preparing the diluted Potassium Ferricyanide crystals

A solution was prepared by diluting ≅ 2 grams of Potassium Ferricyanide (K_3Fe) in 2 ml of bottled spring water. The solution placed inside a 6-inch 4 mm OD glass tube and withdrawn as needed via pipette.

The Single Side Preparation (SSP)

The SSP is an open-air technique where freshly plucked *in toto* scalp hairs were placed on a clean 25x75x1mm glass slide, each hair tested had the excess shaft end cut via razor blade. Care should be taken to gently secure the hair on the slide, since when cutting the excess shaft end the whole hair tends to drift from position. After secured, then covered by a drop of K_3Fe in solution. Prior to evaporation, the drop was then touched by a wooden toothpick and scattered as to cover the follicle and shaft (Fig 1). After the hair sample in SSP is stabilized, meaning the hair sample can be moved and stay in place. A wooden toothpick used to gently find an optimal position of the samples such as away from the drops edges.

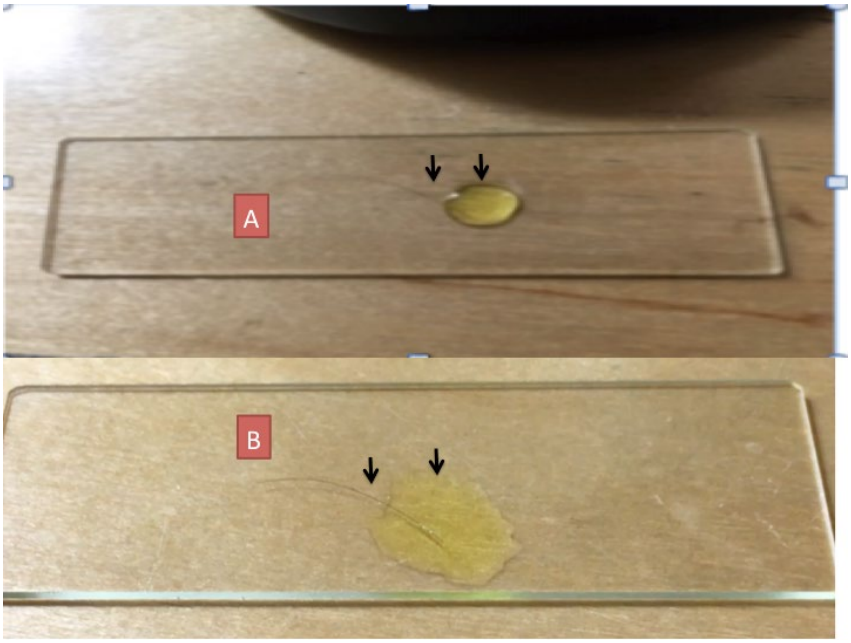

Figure 1: A: Scalp hair on glass slide covered by drop of K_3Fe (Potassium Ferricyanide) covering mainly the hair follicle.

3. RESULTS

In Vitro Experiments

Drop of Wine Covering Black Beard Human Hair Disturbing Hair Intrinsic EMR

A SSP preparation similar as shown in Figure 1 above, was done with now white wine drops covering plucked black beard hair. Panel 2 below demonstrates: A: Control image of hair follicle in SSP K_3Fe post fluid evaporation. Showing semicircular concentric K_3Fe crystals triggered by the follicle's orderly EMR being fully absorbed by K_3Fe.

Panel B: = Same hair now dipped in white wine drops showing alcohol deleterious effect exhibited by disrupted emitted EMR.

First In Vitro Experiment (Figure 2 Panel B)

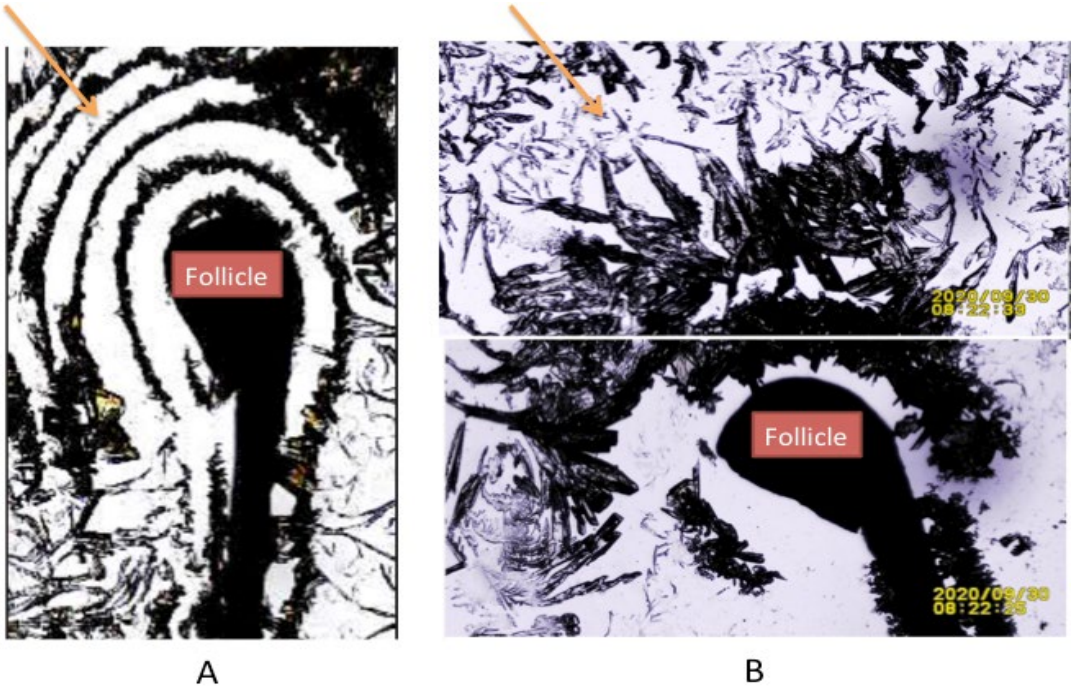

Figure 2: n=1 Panel showing**: A=** Control image of hair follicle in SSP K_3Fe post fluid evaporation, (orange arrow top left of image) displaying orderly semicircular crystallization pattern of hair follicle emitted Electromagnetic Radiation (EMR) being fully absorbed by Potassium Ferricyanide (K_3Fe). **B**= SSP K_3Fe of hair now dipped in white wine drops showing (orange arrow top left of image) alcohol deleterious effect exhibited by disrupting emitted EMR.

Second In Vitro Experiment (Figure 3)

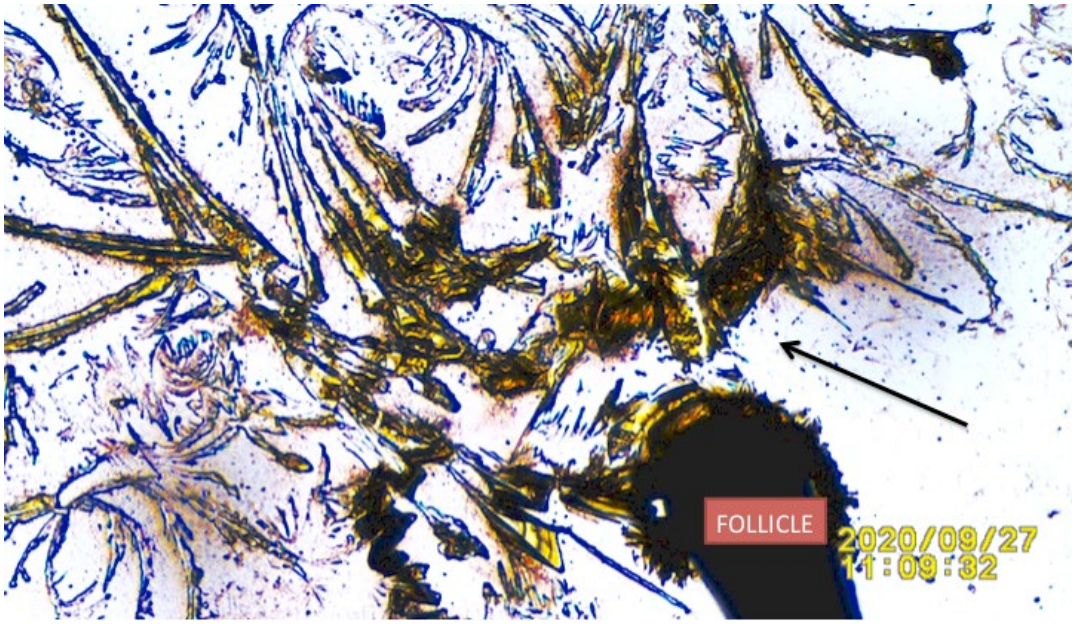

Figure 3: n=2 Black beard hair follicle post wine drop- and allowed to evaporate- Black Arrow pointing at disrupted Potassium Ferricyanide crystals (compare to control A in Figure 2)

In Vivo Experiments

Effect of Blood Alcohol Concentration (BAC) on Plucked Hair Follicles EMR

This manuscript also presents two cases n=2 where the author, a non-alcohol drinker, purposely and during fasting underwent two binge-drinking episodes aimed to increase his blood alcohol level. Several black beard hair samples were plucked via tweezers prior and at approximately 45 minutes post binge in each episode. The end point in both experiments was decided by physical symptoms such cheek numbness and dizziness which occurred between 35 and 45 minutes post end of drinking.

Control Black Beard Hair in SSP K_3Fe

Figure below of typical display structured orderly crystals semicircles of K_3Fe triggered by the Follicle's EMR.

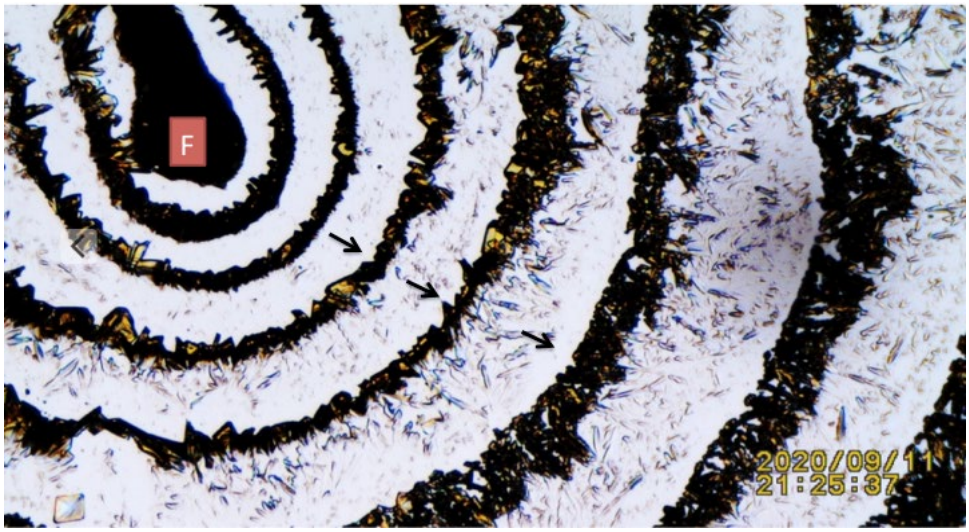

Figure 4: Human hair in SSP K_3Fe after evaporation, showing: F= Follicle. Black Arrows: Pointing at organized concentric K_3Fe crystallization due full absorption of the follicle's EMR.

Figures Showing Increased Blood Alcohol Concentration Deleterious Effect on Hair Follicle EMR 45 Minutes Post Mix Drink of Wine and Beer

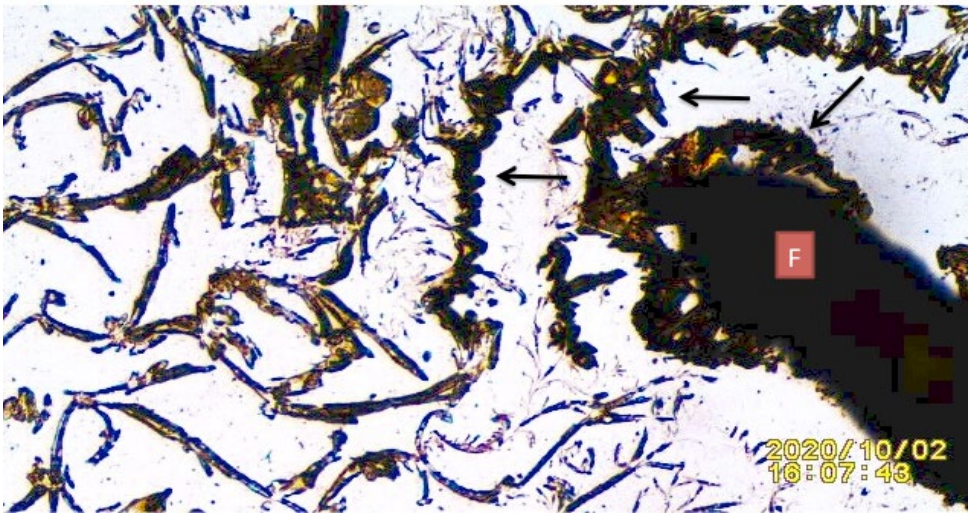

Figure 5: n=1 Showing 45 minutes post binge episode of ingesting 250 ml of white wine, plus one 12 OZ Lager beer consumed within 15 minutes. Black Arrows: Altered organized crystals semicircles- Indicative of electromagnetic radiation emission disruption by BAC. F: Follicle. Black Arrows: K_3Fe crystals full absorption of Follicle EMRs.

45 Minutes Post Drinking 650 ml of White Wine

Figure 6: n=1. Showing effect 45 minutes post binge 650 ml of wine during a 10 minute period. Image showing post drinking binge effect 45 minutes post binge (at peak effect of dizziness). X and Y are increased concentration of Potassium Ferricyanide mixed with attracted hair follicle's molecules. The figure shows a wide area of lack of disseminated EMR full absorption by K_3Fe. Compare with Figure 4 where semicircular periodic crystallization lines are observed.

Five (5) Hours Post Binges Possible Return to Normality

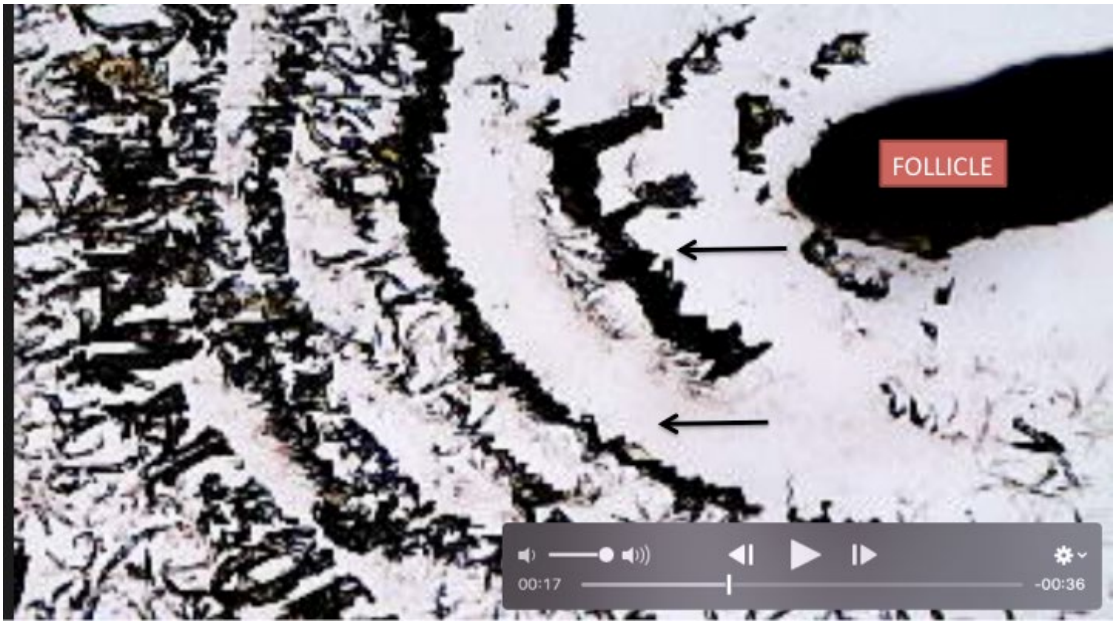

Figure 7: Five hours post binge. Plucked beard follicle from same facial area. Selected video frame showing black beard follicle in SSP five hours post alcohol intake- Black Arrows: Notice returning presence of crystallized K_3Fe triggered by the return of hair follicle's inherent electromagnetic radiation.

4. DISCUSSION

Ever since the introduction in 2016 of a simplified method for the detection of electromagnetic energy in plants and animal tissue; the intrinsic EMR in human hair follicles have been extensively documented [9], [10], [11]. The methodology used to detect the human hair follicles EMR emissions utilizes drops of diluted Potassium Ferricyanide (K_3Fe) crystals in water covering the hair placed on a glass slide.

EMR Full Absorption by K_3Fe

Important to note that the crystallography paramagnetic anisotropy of K_3Fe was introduced in 1969 [12] and later demonstrated to have full absorption of EMR [13]. In other words, in control experiments, the intrinsic EMR waves of the follicle are fully absorbed and displayed as orderly semicircular crystallization lines (See Figure 4 above); conversely as the EMR are disturbed by alcohol drops covering the follicle as ***in vitro*** (Figs 2 panel B & Fig 3); or an ***in vivo*** increase in blood alcohol concentration (BAC) (Figs 5 & 6) there is chaotic display in crystallization (read emitted EMRs). A last hair sample was obtained and processed 5 hours post binge, notably showing an apparent return to normality by returning orderly concentric K_3Fe crystallization pattern (Fig 7).

Physicist Definition of EMR Interaction

"Attraction of magnetic substance to a body part must be based upon electromagnetic interaction. Different body parts would exhibit different magnetic profiles, circadian rhythmicity, and polarity to attract substance susceptible to said interaction. The basis is always piezoelectricity or electromechanical transduction secondary to photon/phonon conversion. This effect was discovered by Pierre Curie. Proving it to skeptics might require specific measurements with atomic magnetometer" [14].

5. SUMMARY AND CONCLUSSIONS

A methodology is herein introduced using the human hair follicle as sentinel. The bridging field of Biophysics has allowed for the first time *in vivo* demonstrations of the negative or disruptive temporary impact of increasing BAC on the EMR emission in a human miniorgan. The significance of EMR emissions changes by a change in BAC needs further elucidation. Regardless of the small cohort herein presented, there are changes that could only be attributed to alcohol as a common denominator of changes in BAC. In both binges episodes there were definite temporary alcohol related symptoms such as numbness of facial cheeks and dizziness. Also demonstrated is the apparent return to normality evident by orderly concentric EMRs approximately 5 hours post drinking. As a final curious observation, being affected by alcohol triggers a temporary losing control of one's body faculties. Increasing one's BAC also triggers a body part (hair follicle) to temporarily lose its orderly EMR emissions. Further research measuring BAC in a larger cohort and measured BAC is warranted.

Limitations

Only two experiments are presented, both showing *in vivo* similar effects of an increase in BAC on a human miniorgan. The discrepancy seen between Figures 5 and 6 could be attributed either to a difference in total ethanol consumption or the mixing of wine and beer. The apparent return to normality seen five (5) hours post binges is in need of further validation in a larger cohort.

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CONFLICT OF INTEREST

The author have declared that no competing interests exist.

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[14] Statement by Dr. Jerry Jacobson, Physicist and Chief Science Officer at Pico-Tesla Magnetic Therapies, Jupiter. Florida USA.