

## **EMF part II – Dr. Charles Héroux DC, DIBAK.**

### **Clinical observations linked to EMF exposure**

Manual muscle testing (MMT) to evaluate functional neurology is a great tool to assess different types of stressors that can affect the human body. The effects of man-made electromagnetic fields (EMF) from different sources, especially those produced by electricity or cell phones, can be evaluated by the same method. It is possible to test the separate impact of electric and magnetic fields with extremely low frequencies (ELF), such as those produced by electricity (50 Hz in Europe, 60 Hz in North America). With higher frequencies (measured in MHz or GHz), such as microwave and radio frequencies produced by cell phones, it becomes impossible to separate the electric and magnetic fields. In these cases, we can evaluate their combined effect. Testing patients using MMT for different EMF has brought about interesting observations. The purpose of this paper is to “plant a seed” in the observation and research on the impact of EMF using the tools we have in Applied Kinesiology. Most professionals using MMT have seen or probably shown their patients how a cell phone can be detrimental to them. The simple fact of testing a previously facilitated muscle that becomes inhibited while holding a cell phone next to the ear does not explain what is happening inside the body; it only shows some kind of aggression to the body. Combining MMT with other clinical measurements makes it possible to propose a hypothesis that could be further evaluated with research on the mechanisms involved with cell phone exposure. This subject should be a concern for all of us knowing that there are almost 5 billion cellular connections worldwide. We are all taking part in a global experiment and the results could be dramatic over the next ten or twenty years. As health care professionals we need to be aware of the impacts of these artificial EMF if we want to be able to properly assess and help our patients.

My personal experience with EMF really started in 2005 when I treated a patient with an adrenal burnout linked to overexposure of EMF radiation. This young man had been working in audiovisual design and presentation for many years. There was also a lot of traveling associated with his work and countless hours surrounded by computers. At a certain point, his body just crashed. When I first saw him, he was unable to sit in front of his computer for more than a few seconds before feeling his whole body going into flexion, like a fetal position. He had chest pains and also became gluten intolerant in the same period. We don't know if the intolerance was there before his burnout but he himself remarked a reaction to foods containing gluten during the same period that he “crashed”. While evaluating this patient with MMT, I found that exposing his body to a magnetic field generated by the VibraCussor® transformer induced a global muscle inhibition even with the transformer at a 3-feet distance from his body. Using Applied Kinesiology, I found what could negate this weakness. Treatment after treatment, we gradually improved his body resistance to EMF so he was able to sustain the presence of an important magnetic field close to his body without demonstrating any weaknesses. At the time of his burnout, he had to stop working for many months, but he was eventually able to return. We used supplements, prescribed rest, diet changes, and chiropractic adjustments in his recovery process. He does still have a reaction to gluten containing foods.

My curiosity for EMF was captured by this case and I gradually started to investigate different ways to test and treat patients that were EMF sensitive. As I said, in the office, I use the

VibraCussor® transformer to stress the body for a magnetic field generated by the extremely low frequencies of electricity. Electric fields can usually be tested pointing the Arthrostim®’s treatment end without activating the trigger. The exact field induced by these devices can vary but it runs about 15 mG at a distance of 20 cm (100 mG at 10 cm) for the transformer and 150 Volts/meter at a distance of 14 cm for the Arthrostim® (only 1.2 mG). Not all patients are weakened by these fields. If a patient is sensitive to one or the other or both, there will usually be a global inhibition or hyper facilitation. The next step is to find which system these stressors affect and to help the resistance of the affected organ. Magnetic fields have more affinity for the hormonal system (pineal, HPA axis, reproductive organs) and electric fields tend to stress the sympathetic system. The best follow up is to find where the patient can be exposed to EMF. Guidelines and basic theory on EMF can be found in part 1 of this paper. In this second part, the effects specifically associated with cell phone exposure are being evaluated.

### **Procedures used to evaluate impact of cell phone exposure**

It has been observed by the author that MMT is more sensitive than many regular devices to demonstrate the impact of cell phone exposure on the human organism. In clinical experiments, measurements were taken on a subject before, during and after 10 minutes of exposure to cell phone emissions. Measurements included oral pH, oxygen saturation, pulse rate, calf compression test using a sphygmomanometer, and range of motion at the hip using abduction. Digital pain on the bone at the area of the cell phone position (temporal, mandible, iliac bone and anterior portion of the femur head) was also recorded. MMT previous to exposure included individual testing but bilateral evaluation of lower extremity muscles: psoas, rectus femoris, vastes, gluteus medius, and anterior tibialis. Upper extremity muscle tests were deltoids, biceps, triceps, wrist flexors, and opponents of thumb and little finger tested as a group. All muscles were rated as neurologically inhibited or facilitated. All neurologically facilitated muscles were then screened for repeated muscles testing. The tests were done with the cell phone in active connection to another phone. The cell phone was positioned directly on the body over the inguinal area (both sides were evaluated), over the axillary artery on one side and over the ear on one side (usual cell phone position). Each area of evaluation was submitted to a 10 minutes exposure.

**Table 1: Measurement results after 10 minutes of cell phone exposure (iPhone 4):**

<b>Oral pH</b>	No change
<b>Oxygen saturation</b>	No change
<b>Pulse rate</b>	No change
<b>Range of motion</b>	Reduction of 22% on the left side (60 to 47 degree of leg abduction) and 24% on the right side (45 to 34 degree of leg abduction)
<b>Pain palpation</b>	Significant increase in pain palpation on the bone where the cell phone is placed
<b>Calf compression test</b>	Reduction of 30 mmHg in the ipsilateral leg where the cell phone was positioned over the inguinal area

## **MMT results during and after 10 minutes of cell phone radiation exposure**

At the moment the cell phone (with active connection) was positioned over the inguinal area, all muscles of the involved extremity became neurologically inhibited on MMT. All other muscles remained neurologically facilitated. The MMT results remained for the whole period that the cell phone communication was active. The moment the cell phone was removed, all previously inhibited muscles returned to a facilitated state, but they all demonstrated a weakness on repeated muscle testing. The only muscle that did not show a weakness on repeated testing was the rectus femoris on both right and left evaluation of the exposure. When the cell phone was positioned over the axillary artery, the same MMT results were observed for the involved extremity. The exposure over the ear also revealed the same pattern but affecting all ipsilateral muscles.

## **Interpretations of results for oral pH, oxygen saturation and pulse rate**

While the oral pH is not an official test used in Western medicine, alternative medicine practitioners have used saliva pH and urine pH to address the acid-base equilibrium in the body. The idea here was to observe if cell phone radiation could create a measurable change in saliva pH. Our results showed absolutely no change after 10 minutes exposure to cell phone radiation.

When it comes to oxygen saturation and pulse rate are measurements of the cardiovascular system, several research studies<sup>12345</sup> have tried to demonstrate the effect of cell phone exposure on blood pressure and pulse, but only one showed a measureable impact from cell phones on these markers<sup>6</sup>. In our cases there was no measurable impact on pulse rate or oxygen saturation after a 10-minute exposure to cell phone radiation.

Actually, since we exposed each of four areas for ten minutes, we can conclude that there was no impact on these markers following 40 minutes of exposure.

## **Interpretation of results correlated with Applied Kinesiology procedures**

### **Reduction in range of motion (ROM) and increase in pain palpation**

In the 1980's, Goodheart discovered the concept of hologramic (holographic) subluxation. He observed that bones, because of their crystalline structure, had a piezoelectric effect (the ability of some crystalline material to generate an electrical charge from bending or pressure). In Leaf's manual it is mentioned that Goodheart found that a magnet over a bone would inhibit an indicator muscle when a hologramic subluxation is present. Previous to Goodheart's clinical observations, Drs Becker and Bassett, in 1964, had been able to measure and prove the presence of the piezoelectric effect in bones (Iwao Yasuda, a Japanese orthopedist in 1954 was probably the first to report this phenomena). Becker mentioned that bones have three types of growth<sup>7</sup>: the increase in length and thickness during childhood, the healing of fractures and the response to mechanical stress. This last property is what Goodheart linked to the hologramic subluxation and it consisted of remodeling the shape of the bone so it can better resist mechanical stress. The piezoelectric effect tells the bone how much stress is being applied and in what direction.<sup>8</sup> The

side the bone is compressed on becomes negatively charged and the stretched side becomes positively charged<sup>9</sup>. Bone is mainly made of collagen and apatite crystals (calcium phosphate). Becker believed that the piezoelectric effect came from the apatite crystals but his research demonstrated the opposite; collagen was responsible for the effect. He later found that copper is a key mineral holding the collagen and apatite portions together. In Applied Kinesiology, Brea has proposed that pressure to bend a long bone creating an inhibition of a previously facilitated muscle could be correlated to a copper deficiency<sup>10</sup>.

Becker has shown that there is a natural negative direct current (DC) produced at the site of a bone fracture. This enables a differentiation in cells of human bone marrow to start the healing process. When this DC returns to zero, cellular stimulation ceases and healing stops.<sup>11</sup> When this normal response is not happening, the result is called a non-union. Becker demonstrated how the external application of negative DC helps to heal those non-union fractures. Other researchers (Bassett and his co-workers) decided to use pulsed electromagnetic fields (PEMF) instead of DC. The effect on fracture healing also demonstrated good results. The problem that Becker observed from these PEMF was that it activated cell mitosis instead of turning on the normal DC growth control system.<sup>12</sup>

Goodheart's concept of hologramic (holographic) subluxation, also called "bent bone" or intraosseous subluxation, presents the clinical signs of diminished range of motion (ROM) and pain over the affected bone<sup>13</sup>. Goodheart and Leaf have reported this type of subluxation when chronic muscle imbalances are present. Observations mentioned in this paper demonstrate that a hologramic subluxation could also be caused by microwave radiation from cell phone exposure. Evaluation with therapy localization over two areas of the same bone<sup>14</sup> is another way Goodheart found to reveal a hologramic subluxation. In our clinical case, it showed positive for all areas tested on our subject. When the exposure was over the inguinal area, the iliac bone and femur showed a hologramic subluxation. Same observations were made with the temporal bone and mandible after positioning the cell phone over the ear area. The humerus and clavicle were not evaluated for this condition after exposing the axillary artery area.

Goodheart's evaluation and correction of a hologramic subluxation consisted in "bending" two portions of a bone that create an inhibition of an indicator muscle. The correction is done on the phase of respiration that negates the challenge until a great reduction over the involved bone is recorded. Dr Eugene Charles later demonstrated that a hologramic subluxation could be "diagnosed" using a 128 Hz tuning fork<sup>15</sup>. He also found that correction could be obtained with a precise frequency using the VibraCussor®. The optimal frequency correction is the one that weakens an indicator muscle with the VibraCussor® positioned over the affected bone. These observations made by Charles demonstrate the vibrational component of the hologramic subluxation.

Most Applied Kinesiologists receive patients with some pains and "structural dysfunction". The observation made here can have a great impact in accelerating the treatment response and also in preventing recurrent problems. In clinical practice, the area where the patient holds his cell phone should always be evaluated and corrected. The hologramic subluxation will change the symmetry and ROM creating distortions in muscle chains contributing to various structural clinical patterns. Leaf reported that the correction of a hologramic subluxation could also have a

profound visceral effect. According to research mentioned in part 1 of this paper, wearing the cell phone over the pelvis area could contribute to infertility, lower sperm count, spermatozoid malformation and even increase the incidence of cancer of the reproductive organs. The question now is: could the holographic subluxation be an external (structural) manifestation of a visceral problem?

### **Calf compression test**

The calf compression test using a sphygmomanometer is not commonly used in general practice, but according to Goodheart it can give some important clinical information with the right interpretations. Leaf's clinical guidelines are as follows. Patients under 65 years of age should be able to tolerate pressure up to 220 mmHg. After 65, 180 mmHg can be considered normal. If both legs demonstrate a pressure below 60 mmHg, it can be an indication to supplement with phosphorus. If there is only one leg with a reading as low as 60 mmHg, this should alert the doctor for a possible phlebitis. Finally, when the reading is around 140 mmHg in both legs, vitamin E should be evaluated. When an asymmetry is present, one should consider evaluating for what Goodheart has called PrePost Cordial Tap<sup>16</sup>.

In the blood, red blood cells are supposed to repulse each other because of their membranes' negative ionic charge. In some instances, this natural process is disrupted and it brings about a condition known as "Rouleau" (an agglomeration of multiple red blood cells together). It is possible to observe this condition using dark field microscopy. In blood tests, this will frequently show an elevated eSR (Erythrocyte sedimentation rate)<sup>17</sup>, which indicates non-specific inflammation or tissue damage. When there is a "Rouleau" formation, the red blood cells are not able to travel down the smaller capillaries and arterioles to deliver their oxygen load. Goodheart found that Standard Process' products called E-Poise (electron poisoning factor) is helpful in improving this condition. The observation reported in this paper concurs with the presence of this "Rouleau" formation after an exposure to microwave emissions from a cell phone. Howard Fischer and Igor Smirnov have related similar observations using Dark Field Microscopy<sup>18</sup>.

### **Interpretation of MMT results**

In the late 70's, Goodheart described the "Vascular Insufficiency Syndrome" as a condition where there is not enough blood flow going to an extremity. Patients will often report cramps or discomfort in this extremity. The clinical presentation is that all muscles are inhibited when using MMT on an extremity. The confirmation and treatment of this condition is to position the blood cuff on the same side but on the opposite extremity and pump it to 140 mmHg or to what your patient can tolerate. Maintain the blood cuff at 140 mmHg for 1 minute and retest all previously inhibited muscles. Most of them should now be facilitated if the problem was due to "Vascular Insufficiency Syndrome". In the clinical evaluation of the present case, inflating the blood cuff on the same side but opposite extremity negated the inhibition created by cell phone exposure over an extremity. This observation supports the observation done with magnetic resonance angiography conducted by Tex Chu Technology Corporation located in Taiwan.<sup>19</sup> They showed a reduction in blood flow after 5 minutes of exposure to cell phone radiation. Aalto et al. had similar results in 2006<sup>20</sup>, but other researchers have shown opposite results

demonstrating an increase in cerebral blood flow. Is there a change after a certain exposure time that switches the response? More research is needed to fully understand the mechanism behind these observations.

Nordenstrom of the Karolinska Institute in Stockholm discovered the concept he named Biologically Closed Electrical Currents (BCEC). He has shown that blood vessels, one type of BCEC, function like electricity-conducting cables. Arteries and veins form a loop for ions, and a magnetic field can affect this system. This system enables the transmission of peripheral information to the brain. According to his observations, acupuncture meridians could be pathways for the ionic current in the vascular interstitial circuits system.<sup>21</sup> He also showed how blocking the flow of blood inhibits muscle contraction even if the nerve supply was working properly. He was even able to record the impact of energetic treatments on these BCEC.

Goodheart became aware of Nordenstrom's work and found a clinical way to evaluate if these BCEC were affected. When they are, it will manifest as muscle inhibition on repeated testing. All muscles distally from the "blockage" will demonstrate the same response. The difference with aerobic / anaerobic type of weaknesses is that, in the case of a BCEC problem, the weakness on repeated muscle testing will not be negated by a neurolymphatic and/or neurovascular reflex. The Applied Kinesiology treatment that Goodheart developed for BCEC was to contact the artery where the blockage started with the most distal artery on the same extremity and to synchronize the pulse between the two points.

In my clinical observation, the exposure to cell phone radiation seems to create a disruption in the ionic equilibrium of these BCEC. This could then negatively impact the energetic flow in the meridian system and in the long run contribute to the development of disease.

## **Reproducibility of results**

The measurements mentioned in this paper have been performed on a single patient, but more than 15 patients have demonstrated the same clinical observations (without measuring the range of motion with goniometry). In all cases, a hologramic subluxation was present without exposing the patients to a fresh cell phone communication; it reflected the area where the patients placed their cell phones when talking or when holding the cell phones on their person. The simple fact of placing a cell phone (in reception mode) in a pocket also creates the problem. This is because the cell phone must connect with the tower to register its position. This type of positional connection happens almost every 5 minutes and lasts several seconds at each connection. The BCEC was not always present in these other cases when looking for it at the beginning of a treatment, meaning that the body might be able to "reset" its BCEC circuits some time after cell phone exposure. The time that it can take for a body to "reset" the BCEC was not measured in any of these 15 cases.

Only one patient did not show the presence of hologramic subluxation over the temporal bone and mandible, where he positioned his phone for talking. This person is a heavy cell phone user and is a real estate agent, so it is surprising. This person had a "chip protection" over his phone. I always had doubts with these types of protection but that particular one seems to have protected

him to some extent. The protection he had on his phone was the MRET (Magnetic Resonance Effect Technology) chip technology developed by a Russian scientist, Dr Igor Smirnov.

## **Prevention and “damage control”**

How can we protect our bodies from the negative impact of cell phone radiation? First, it's always better to avoid the stressor then trying to find a way to adapt or minimize the consequences on our bodies. So minimizing the exposure to cell phones or avoiding cell phone use would be the first choice. In part 1 of this paper, you can find various recommendations to minimize your exposure to cell phone radiation. At this point in time, with the speed at which technology is changing, we need other options for our patients and ourselves. If you search the Internet, you can find dozens of different devices and companies stating that they minimize or neutralize the negative effects of cell phone use. I propose that you test these different devices with MMT and the observations that are explained in this paper. In this way, we can “prove muscle testing without muscle testing”. I have no financial implication or “sponsorship” from any of these companies. The MRET technology previously mentioned and used by different companies demonstrated good response. When exposing a patient to a “protected” cell phone, it prevented the appearance of a hologramic subluxation. On MMT, there was no inhibition or hyper facilitation, no disruption in the BCEC. Other types of protection could be as effective, but more investigation needs to be done to determine which ones work and which ones are not effective. The MRET-Shield has also been tested with different modalities like EEG, live blood cell analysis, magnetic resonance angiography, thermography and SAR (Specific Absorption Rate). In all tests as well as the ones mentioned in this paper, positive results were always demonstrated. Here's how Dr. Howard Fischer in his book, *Molecular Resonance Effect Technology*, describes the effect of this MRET-Shield technology:

*« External high frequency electromagnetic fields generate an excitatory response in the crystalline piezoelectric structures of the MRET-Shield polymer compound. Subsequently, the MRET-Shield polymer generates biologically active subtle electromagnetic waves which are superimposed onto the initial high frequency electromagnetic radiation and can interact with biological systems, shielding the receptors from detection of RF radiation and transmitting the information that supports and improves cellular functions in the body. In other words, the potentially damaging radiation becomes just another vibration that is meaningless and unable to harm the body. »*

## **Conclusion**

The intent of this paper was to demonstrate that there could be a measurable and observable impact from cell phones emissions on the human body with parameters other than MMT. The results obtained with the calf compression test are suggesting a possible vascular influence. It seems that range of motion and pain palpation can be useful to illustrate cell phone radiation impacts on bones. MMT with Applied Kinesiology procedure correlation such as vascular insufficiency technique and BCEC (adapted from Nordenstrom), made it possible to correlate the vascular component. Evaluation and treatment of hologramic subluxation in cell phone exposed

patients could be a useful addition to help recurrent structural problems or to accelerate clinical results.

The prevention of developing a hologramic subluxation and maybe more serious effects from microwave exposure seems to be possible using the MRET-Shield developed by Smirnov. The hologramic subluxation might be the tip of the iceberg concerning the negative impact of what microwaves might be creating in our bodies. If there can be an impact on bones and vascular systems, as we have demonstrated, I think we need to be vigilant of new technologies, devices and frequencies generated by them.

Other clinical observations have been made by this author and might open new fields of research. It has been observed that EMF exposure might increase sensitivity to gluten. The mechanism involved could be the opening effect of the BBB from microwave radiations (see part 1 of this paper). The other observation concerns metals and their possible antenna effect with EMF. External metals such as jewelry and piercings as well as internal metals such as amalgams and heavy metals seem to increase the sensitivity of the human body to EMF's.

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