

# HIGH-TECH KILLER



**WHY WE DON'T  
SLEEP WELL  
ANYMORE**



**space age  
human  
performance  
enhancement**

# **Sleep - EMF & Radiofrequency (RF): why we don't sleep well anymore**

by Paul F. Becker, Esq. EarthPulse™ Developer ©2008-2015

Deteriorating sleep quality around the world is due to radio frequency (RF) & information carrying microwave that now permeate the living space of all but the most isolated peoples on Earth. The denser the blanket of these radiofrequency electromagnetic fields, more people will suffer with disturbed sleep as a percentage of the general population. Incidence of poor sleep is higher than ever in history. The problem developed in humans simultaneously with the proliferation of cellular telecommunication.

First let's enlighten you to the prime reason we need adequate deep Delta-rhythm sleep...and then provide evidence that EMF & radio frequency (radiofrequency or RF) / microwave information carrying signals disrupt the natural sleep process.

Only during the deepest state of sleep called Delta-rhythm (to be distinguished from REM or rapid-eye-movement) do brain, heart, respiration and organ systems slow to sufficient extent that there is excess ATP (body's universal energy) available to pool inside the cells. This pooled energy, upon reaching undetermined threshold, "triggers" physiological and neurological repair, hormone synthesis immune support and memory consolidation.

You won't find that in any textbook because PhD's are still studying fruit flies to determine why we need sleep in the first place.

The amount of sleep necessary varies from one person to the next. This is probably the reason, some people can perform well-enough on less sleep than others.

It was established long ago that proper immune function relies on sufficient quality and duration of sleep. If you don't sleep deeply, for long enough there is insufficient ATP pooling and this results in insufficient nighttime repair, hormone production, memory consolidation and immune function. Very simple

“When the solution is simple, God is answering.” ~ Albert Einstein ~

Not enough Delta, stage - 4 sleep (2 hours minimum, 3-4 hours optimum) and there is simply not enough pooled energy to perform sufficient restore & repair processes; or they shut down altogether and the body fails catastrophically.

The result of poor quality sleep is a body that breaks down quickly and ages prematurely both mentally and physically. Even during rapid-eye-movement / REM and other states of lighter sleep, body's energy requirement is still too high to allow for sufficient pooling of ATP to provide for adequate nighttime repair processes.

Cells' mitochondria create ATP (the fuel that fires ALL cellular process) 24 hours per day through a process called cellular respiration. The mitochondria never sleep. Except when sleeping deeply, body consumes nearly all its ATP to maintain consciousness, movement, digestion, heart-beat and other physiological processes.

EMF cripples mitochondria and promotes oxidative damage that cripples them even more, setting up a vicious cycle of less and less mitochondrial energy. In addition, it entrains brain up to and beyond alert state to more stressful-beta states, increasing stress hormone production resulting in even more stress on the mitochondria while making it nearly impossible to quiet brain effectively during the night to achieve adequate Delta-rhythm sleep.

Inadequate Delta-rhythm sleep impairs immune function and provides the chink in your armor that allows diseases of all etiologies to begin manifesting themselves. According to researcher Dr. Eve Van Cauter complete lack of Delta-rhythm for as little as 3 nights (in nearly all cases by night 5) caused healthy college students' glucose profiles to look pre-diabetic; and leptin (the satiation hormone) levels to drop significantly causing hunger and higher caloric intake due to junk-food cravings.

## **The primary reason you don't sleep well anymore.**

In a nutshell, there is an increasingly dense yet invisible soup of radiofrequency (RF) - microwave information carrying electromagnetic fields literally broadcast through our bodies by the government and telecommunications industry 24/7.

This short 10 minute video is concerned with genetic effects of information carrying microwave and the proliferation of RF in our living environment. For God's sake, don't let your kids 'sleep' with their phone under their pillow! George Carlo was paid a grant by the Telecom Industry to perform a long term study of the biological effects of RF. They didn't like what he found. If the video doesn't work go here.

It isn't stress of modern life, finances or evolution that's killing our sleep. It is propagating RF information carrying microwave pollution. The denser the field (either closer to a cell mast or in midst of more and more cell masts or WiFi computer networks or smart-meters) the worse your sleep and overall wellbeing. In most major cities, levels of RF have increased by 500,000 - 1MM times since the 1990's. No wonder we can't sleep 'normally'.

Studies fail to show immediate results on humans because they are poorly designed;

Studies testing reaction time or thought process due to EMF exposure fail to show detrimental effects because microwave signals are tuning you UP; neurological functions should be expected to be better than controls due to tuning to mid-Beta and stress hormones (toward fight / flight)

Studies testing sleep quality assume that an average person is sleeping well already when they are not. These people are already exposed to RF 24 hours 7 days per week adding one more layer of exposure might not be enough to affect sleep the studies therefore can only test if this added 'close field' exposure has negative impact.

The point here, is that you can't expect "controlled" laboratory experiments on your average human being to show dramatic effect as the average person is already 'fried'. Particularly their sleep patterns.

Regardless, some studies do find Delta-stage negatively impacted like this study Bioelectromagnetics. [2011 Jan;32\(1\):4-14. doi: 10.1002/bem.20609 Sleep after mobile phone exposure in subjects with mobile phone-related symptoms.](#)

You'll notice by reading the abstract that participants averaged a paltry 78.6 minutes of stage 3 and 4 sleep; and total time in stage 3 and 4 was in fact down-regulated by 12%, though sleep onset was barely effected. Where there is a plethora of agreeing research; with DNA damage due to RF microwave exposure (we're going to skip brain cancer altogether) then we'll get back to sleep.

DNA damage due to telecommunication signals should be enough to convince you. This is an area where effects are ROUTINELY found.

So, it should make sense to you that other effects like cancer, autism and POOR SLEEP would occur eventually due to cumulative DNA damage regardless of ability to reliably measure it. Don't forget, you've got DNA in your pineal and thyroid glands too (and DNA inside the mitochondria of your pineal and thyroid glands). Mitochondrial DNA is called mtDNA. It is the mtDNA that are protected by anti-oxidants.

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[Efficacy of repetitive transcranial magnetic stimulation in the treatment of patients with chronic primary insomnia.](#)

Jiang CG1, Zhang T, Yue FG, Yi ML, Gao D.

Gen Physiol Biophys. 2010 Mar;29(1):59-66.

[The effect of radiofrequency radiation on DNA and lipid damage in non-pregnant and pregnant rabbits and their newborns.](#)

Cell Biochem Biophys. 2010;56(1):39-47.

The Influence of 1800 MHz GSM-like signals on hepatic oxidative [DNA and lipid damage in nonpregnant, pregnant, and newly born rabbits.](#)

Gazi Universitesi Tip Fakültesi Biyofizik AbD, Dekanlik Binası 5. Kat 06510 Besevler, Ankara 06500, Turkey.

Brain Res. 2010 Jan 22;1311:189-96. Epub 2009 Oct 30.

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Department of Occupational Health, Third Military Medical University, No 30 Gaotanyan Street, Shapingba District, Chongqing 400038, People's Republic of China.



Reprod Biol Endocrinol. 2009 Oct 22;7:114.

[Pathophysiology of cell phone radiation: oxidative stress and carcinogenesis with focus on male reproductive system.](#)

Desai NR, Kesari KK, Agarwal A. Center for Reproductive Medicine, Glickman Urological and Kidney Institute and Obstetrics and Gynecology and Women's Health Institute, Cleveland Clinic, Cleveland, Ohio, USA. in the introduction..."its well established in the literature that these effects occur" (emph.add)

Mutat Res. 2010 Jan;695(1-2):16-21. Epub 2009 Oct 13.

[Impact of 1.8-GHz radiofrequency radiation \(RFR\) on DNA damage and repair induced by doxorubicin in human B-cell lymphoblastoid cells.](#)

Zhijian C, Xiaoxue L, Yezhen L, Shijie C, Lifen J, Jianlin L, Deqiang L, Jiliang H.

Zhejiang University, Medical College, Institute of Environmental Medicine, Yu Hang Tang Road, 388, Hangzhou 310058, Zhejiang, People's Republic of China.

Pathophysiology. 2009 Aug;16(2-3):89-102. Epub 2009 Mar 13.

[Genotoxic effects of radiofrequency electromagnetic fields.](#)

Ruediger HW.

Division of Occupational Medicine, Medical University of Vienna, Waehringer Guertel 18-20, Berggasse 4/33, 1090 Vienna, Austria.

Pathophysiology. 2009 Aug;16(2-3):71-8. Epub 2009 Mar 5.

[Electromagnetic fields stress living cells.](#)

Blank M, Goodman R.

Department of Physiology, Columbia University, New York, NY, USA. This tests RF and extremely low frequency (ELF) => power frequency 60 Hz ELF fields

[Check the early RF research](#) (scroll down a bit) of early studies on DNA / chromosomal damage caused by harmful effects of RF microwave - prior to - the disinformation attack launched by the wireless

Telecommunications industry that killed unbiased research for 20 years. Now with people developing brain cancer at alarming rates, skyrocketing autism and cancer of all types and your warning bells should be going off regardless of how much you are placated by mainstream news.

Specifically speaking about Sleep, you must recognize that you have genetic material in your pineal gland where melatonin is synthesized, and over the course of 2 decades of propagating RF fields and subsequent RF exposure, there is no doubt in the author's mind that poor sleep and RF exposure is intimately connected; so are the connections between RF microwave exposure and increased incidence of Parkinson's and other neurological disorders and autism (particularly when adding the MMR vaccination).

Indeed, in India where rooftop cellular masts are everywhere the hot news in health is currently "Why are diseases of old-age, particularly Parkinson's and Alzheimer's, being diagnosed in the young?"

## **Radio frequency (RF) information carrying microwave is the biggest threat to sleep and overall health.**

For years, power frequency 50 / 60 Hz (Hz = cycles per second) alternating current electric fields have had only a slightly detrimental impact on our sleep (as in most cases these electric fields hug the walls and ceilings of our dwelling spaces). Today however, the minor threat from our electrical wiring has been FAR overshadowed by radio frequency (RF) / information carrying microwave electromagnetic fields (EMF) that are having PROFOUNDLY deleterious impact on sleep quality and sleep duration, as well as body's power generation and communication systems.



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This RF comes to us via the cellular telephone networks, wireless Internet, home wireless phones (how many readers have cordless phones beside the bed?) and now not so "smart" electrical meters. Poor sleep, and the disappearance of bee's & sparrows are the proverbial canaries-in-the-coal-mine. Nature has reached the tipping point. Skyrocketing cancer rates can't all be due to poor food and air-pollution. Besides, the Soviets proved microwaves caused cancer and weaponized it first, demonstrating it on the US Embassy [in a well publicized story](#) back in the 1970's.

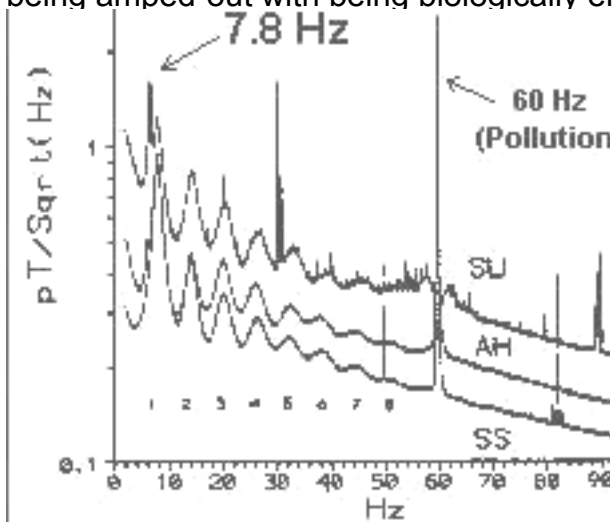
In this interview former Royal Navy expert in weaponized [RF Barrie Trower](#) speaking about the risks of RF and WiFi in Schools. His is the scariest interview I've ever heard as he explains we're cutting off the reproductive life-cycle. Irradiating eggs carried by babies starting while they're still a fetus. [Written transcript](#) here.

Very simply, no matter where you live in the world, RF microwave pollution has drowned-out the NATURALLY occurring electromagnetic fields such as the Schumann resonance that helped "tune" mind (and body) to maintain physiological repair mechanisms and psychological

well being relied upon for eons to live long, healthy and stress-free lives. RF microwave de-tunes and robs body of energy at the mitochondrial level and subsequently reduces healthy cell homeostasis.

You see, natural electromagnetic fields are for the most part, very-very low frequency. Infrasonic or less-than 20 Hz. To call them extremely low frequency (ELF) is really not very accurate as it's a fairly wide frequency band. When we talk of "natural" electromagnetic fields we're talking about the very bottom-end of the ELF spectrum. Technically ELF is 3 Hz - 300 Hz.

15 Hz is documented in [dozens of animal studies](#) to cause negative behavioral modification (stress) and above 20 Hz to result in stress hormone production. Stress hormone production like cortisol is bad when it's occurring most of the day. Our Sleep on Command™ is limited to 14.1 Hz and below, (the second "recognized" peak of Schumann resonance). In the early-days of that device we testing 20.3 Hz and 33 Hz and quite frankly, I knew instinctively they were bad. Every other PEMF system in existence uses frequencies of 20 Hz and higher. Their revive / revitalize programs are at 20 Hz and users confuse being amped-out with being biologically energetic.



In the graph at left notice the spectrum of frequencies lower than 7.8 Hz that correspond with deep sleep - notice also the amplitude of 60 Hz being more than that of 7.8 Hz.

Provided you read the links above regarding ATP and the mitochondria please take a minute to read the

Conclusions (last few lines) of the two studies below linking cell phone exposure to oxidative damage to the mitochondrial DNA (mtDNA). Keep in mind oxidative damage is main contributing factor to cellular mitosis & appoptosis and that it is my belief that mitochondrial dysfunction is the root of nearly all disease, including aging.

- [Appoptosis induced by radiofrequency fields](#)
- [Exposure to 1800 MHz radiofrequency radiation induces oxidative damage to mitochondrial DNA.](#)

The body trying to “hear” the beneficial NATURAL Schumann and Earth-based electromagnetic fields within propagating RF is analogous to attempting to hear a flute solo surrounded by a platoon of air horns (especially while laying in bed at night trying to quiet the mind for sleep). Sleep on Command™ gives you a close source of very-very low ELF infrasonic fields that substitute more than adequately for the Schumann resonance that is lost in the fog of EMF to literally “tune” user to sleep.

## **The relationship between the earth’s geomagnetic fields and sleep, maintenance and repair mechanisms.**

W.O. Schumann a German physicist, discovered in 1952 that there is a resonant cavity between the earth’s surface and the ionosphere containing a frequency modulated electromagnetic field in the spectrum from below 1 Hz to more than 100 Hz. Notice in the graph below that the amplitude of the dominant frequencies of these “Schumann Waves” is below 14 Hz. Notice also the distinct peaks in the Delta range heretofore mistakenly not “recognized” Schumann frequencies.

The Russian Space Agency discovered that Schumann- wave generators in space craft (formerly void of fluctuating magnetic fields) improved the health and well being of astronauts on extended

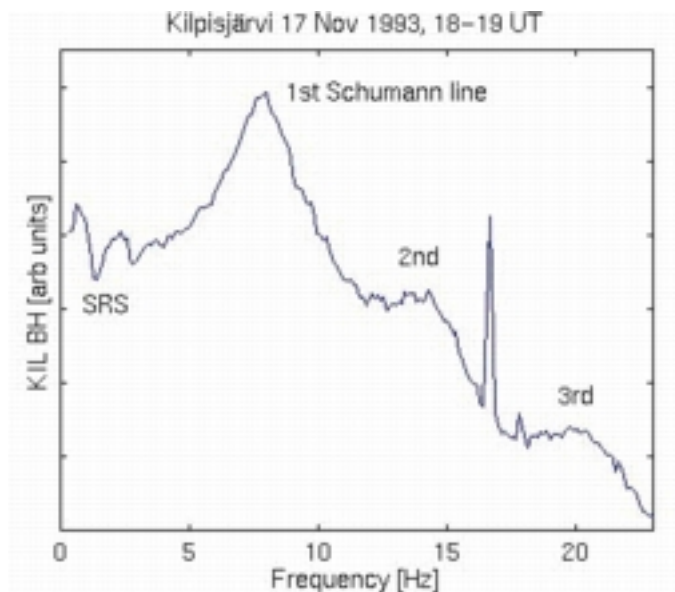
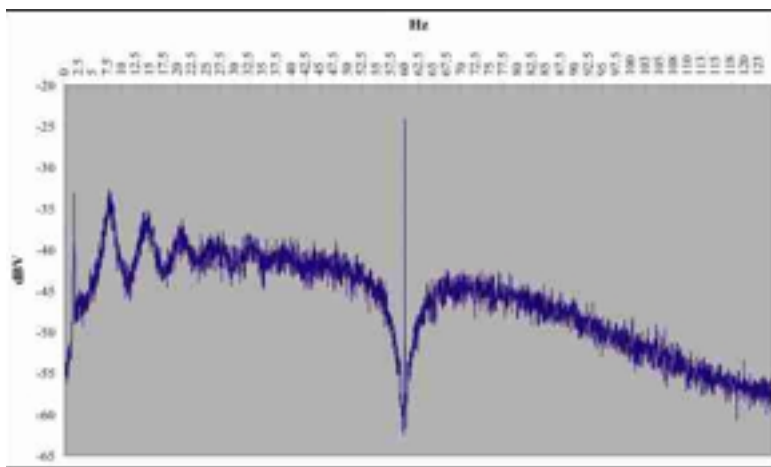
space voyages; especially effects upon bone density. NASA included them in the design of the Space Station to fend off osteoporosis, muscle wasting and other effects of zero gravity during extended Station missions because it works. Studies show astounding anti-osteoporosis/bone wasting effects, yet the technology is sidelined for this purpose by the FDA.

We are describing a very narrow healthy frequency band (mid to low-infrasonic) where frequencies above 15 Hz have been shown in dozens of frequency specific animal studies to cause negative behavioral modification; above 20 Hz to cause stress hormone production.

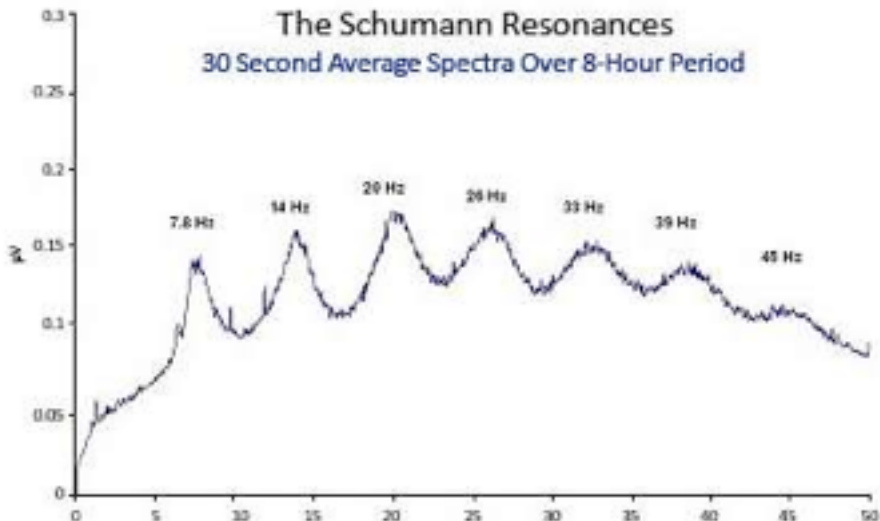
You'll notice that the highest amplitude peak in the graph is 7.8 Hz and is what most people mistakenly believe is "THE" Schumann resonance. In reality Schumann resonance is a SPECTRUM of frequencies with the majority of its amplitude below 15 Hz, and with peaks at around 1 Hz, 2.5 Hz, 7.8 Hz, 14.1 Hz, 20.3 Hz, and higher. Well, that's what Schumann used to look like.

What is remarkable is these fields overlay the stress-free human EEG almost perfectly. Notice again the peaks at about 1.5 Hz and 2.5 Hz within the Delta rhythm band (these are included in Sleep on Command™ sleep-mode programs). These low frequencies are what used to naturally help provide a fairly strong signal to "entrain" to during the nighttime to help us to achieve Delta rhythm sleep. [Schumann Waves and Human Psychobiology](#) is a well written piece to hammer home the importance.

More troubling still is that instead of charts looking like the ones on the opposite page, we're now seeing charts that look more like the one on page immediately below. Houston, we've got a problem. Notice that most of the output is no longer concentrated below 14.1 Hz. The high spike in low-Delta is gone, the highest peak is no longer 7.8 Hz but 20 Hz. Geopolitical and financial issues aside, is it any wonder people are



feeling more stressed out and sleeping worse because of it? Everyone is being tuned to high beta! We used to kid that everyone needed an EarthPulse™ just to survive. Now we're not joking at all when we say it.



## How To Protect Your Sleep and Your Mitochondria

Damage can be avoided when a very small “electronic noise” signal is placed beneath the same RF signals...[Electromagnetic noise inhibits radiofrequency radiation-induced DNA damage and reactive oxygen species.](#)

This doesn't explain how Sleep on Command™ entrains - “tunes” - your brain toward sleep, but does go a long way toward showing that extremely small amplitude electromagnetic signals have extremely profound affect upon body and does explain how lying in our Sleep on Command™ field helps protect you from RF while you sleep.

The mitochondria (cell power plants) respond particularly well to frequencies falling within this narrow frequency band (especially 10 Hz) and are debilitated (or worse by [RF and stress induced cortisol production](#)). We've used 9.6 Hz since inception in 2001 and



is our primary use frequency for sleep, [recovery and longevity](#). See [Why 9.6 Hz?](#) to find out how we came to learn of it.

Research during 5 decades (much of it in the former Soviet Union) conclusively showed that a 10 Hz field produced the most exceptional healing and tissue regenerating effects in several dozen peer reviewed publications.

This author learned on day-one (2 hours after two mugs of brewed espresso) that it happened to be an excellent inducer of sleep. Within 3 days I noticed my old sports injuries hurt less, by 3 weeks my destroyed rotator cuff was greatly improved. By three months of sleeping in that 10 Hz field the rotator cuff healed itself.

Then in 2005 I ran across this [2003 NASA study](#) and discovered why my body had healed so remarkably well. NASA discovered a 10 Hz field for 17 - 21 days turned gene sequences for maturation -OFF- and gene sequences for developmental -ON-. Further, it found a four fold increase in rate of neural tissue regeneration. See our complete [10 Hz Mitochondrial database](#).

While Schumann waves encircle the earth horizontal to the ground in a spectrum resembling the graphs above (the later graph), 9.6 Hz resonates from the Earth's molten core perpendicular to the ground (Bob Beck's interview that included disclosure of his experimental discovery of the 9.6 Hz resonance has been lost). Recent study into the workings of cells' mitochondria find that 10 Hz stimulation greatly enhances mitochondrial adaptation to both physical and neurological demands.

It is no coincidence that pulsed magnetic fields at or around 10 Hz have produced BY FAR the best effects in dozens and dozens of published, peer reviewed studies; particularly those published by the

Eastern Europeans circa 1970-1990. It is now self evident that the phenomenal healing effects of 10 Hz are attributable to mitochondrial response to that very particular frequency. In other peer-reviewed studies 10 Hz found to promote mitochondrial replication and trafficking within the cell. We have found 10 Hz to have [the most profound ergogenic effects](#), surpassing even those of banned and illegal performance enhancing drugs.

It is this Earth's - pulse that is the primary reason you sleep so well on camping trips. It's not the fresh air and exercise; it's sleeping in touch with Mother-Earth and receiving Her vital frequency of 9.6 Hz. Until recently most camping was done outside of the wireless telecommunications "grid". Now even camping, unless you've got no signal on your phone, you are well within the matrix.

Sleeping close to or in contact with the ground is far better than sleeping at home several feet (or more) above it, surrounded by 50/60 Hz electric fields, and within line of site -full strength radio frequency from the telecommunications grid, smart meter grids, and in-range wireless networks that permeate your living and working spaces as well as your bedroom at night. Pretty bleak picture overall; and why you can expect your sleep to deteriorate even more with time, especially if HD TV broadcasting and large scale WI-MAX is rolled out in your area. That being said, from our customers it appears as if smart-meters are going to be the death of many.

## **How Bad Are People Sleep Going to Suffer Due To RF?**

Earthing or Earth-tethering systems attempt to address this problem and it is admittedly better than nothing. However Earthing can't protect you from being irradiated. It's gotten to the point, where in urban areas, a Faraday cage is nearly a requirement if you don't own an Earth-Pulse™ EMP is foreign to the body and up until the 1980's, AC power frequency (50-60 Hz depending upon your geographic location) and

weak TV and radio station broadcasts was all that broadly existed; the body tolerated it fairly well. However, EMP broke the tolerance threshold and detrimentally arrived on the scene with the arrival of home wireless telephones during the 80's, then cellular phone networks arrived in the 90's and cellular now propagates within every urban area in the world with denser and denser layers of information.

Now they're adding smart-meters on top of it. As stated above, since the cellular telephone roll-out, sleep quality has suffered. Each year as cellular becomes more dense, sleep quality will diminish along with it. Smart-meters are the last nail in the coffin and will end up the death of many.

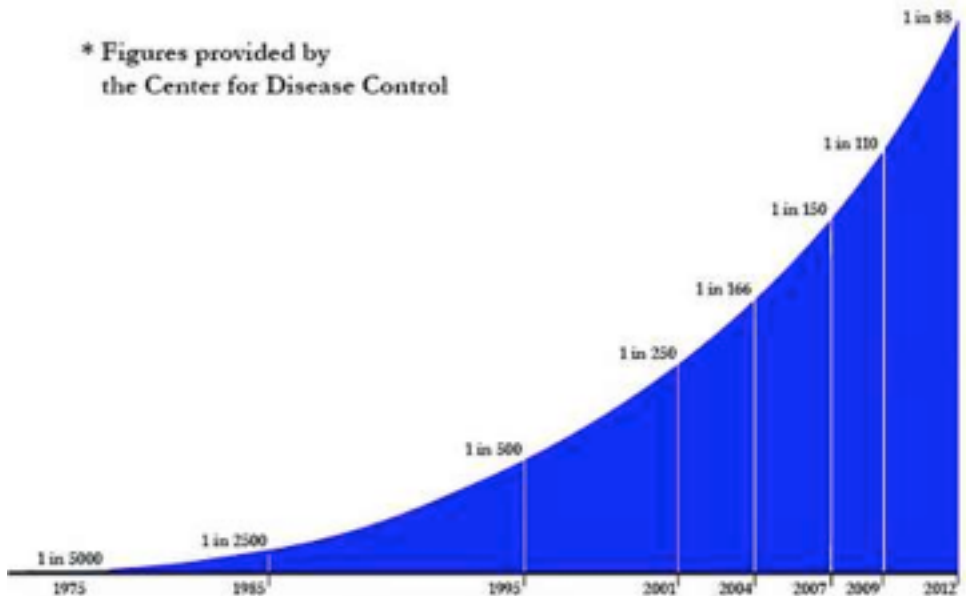
Wireless computer networks permeate our work and school (and in many cases our bedrooms) and with the combination of cellular and wireless networks, our species has reached the tipping point. We are now finding it difficult or impossible to quiet our mind at night and get a good nights sleep. Health is going to catastrophically fail in many.

Forget about what RF microwave does to your sleep for the moment and lets consider species survival. **Bee colony collapse disorder and sparrow population decrease is the proverbial canary in the coal mine** so far as RF is concerned.

So is the marked deterioration of sleep quality in adolescent and infantile sleep quality (National Sleep Foundation / Pampers® survey completed in November '05 found that even babies and toddlers under 5 y.o. weren't sleeping nearly as well as they did 2 decades prior).

Factor in the increased rate of ADHD and the STEEP increase in autism seen in the chart below. Notice after a relatively stable 1-4 cases per 10,000 throughout history until 1980, the incidence curve turns just about when the first cellular phone networks opened for business.

\* Figures provided by  
the Center for Disease Control



The “official” incidence of autism is 1:88 as of 2012. I have client that is deeply involved with Autistic kids. His estimate 4 or 5 years ago was it seemed like 1:50. Don’t worry, everything is fine.

It wouldn’t surprise us the CDC is “cooking” the official numbers and that it is actually quite a bit higher than 1:75 and perhaps as bad or worse than as reported by our client. The only study done on RF and Autism (back in 2003 when autism was 1 in 500) we could locate follows on the next page. All one has to do is glance at the chart above and it becomes evident the situation is accelerating exponentially.

[A possible association between fetal/neonatal exposure to radio-frequency electromagnetic radiation and the increased incidence of autism spectrum disorders \(ASD\)](#)

Just as there's a 10-20 year lag time with cancer, Parkinson's, Alzheimer's and the myriad of modern neurological maladies, means we're only starting to see the tip of the iceberg in cancer rates today. It would surprise us if autism doesn't become like cancer, where it takes a small miracle to have a normal-healthy baby. Which brings me back to Bernie Trower, who's interview linked above should scare the hell out of everyone.

A reasonable person could argue steeply increased cancer incidence from 1:100 in the 1960's to 1:3 males and 1:4 females at the time of this writing that it coincides well with the technological "advancements" in telecommunications. Add the pesticide, fluoride and other environmental toxins and we're surprised it isn't higher too.

If you don't take steps to protect yourself you simply are not sane. EarthPulse Sleep on Command™ is the most potent form of EMF protection you can buy, because avoidance now is simply impossible. The EP helps your cells become more resilient, so body can cope during the day with naturally produced, higher levels of healthy energy. Even if you sleep great (doubtful) and aren't interested in enhancing physical or mental performance levels, protecting yourself at the sub-cellular level from RF should be right at the top of your list.

## **There are very simply, NO safe levels of radiofrequency (RF) microwave**

There are NO safe levels of exposure to electromagnetic fields above the frequency of 15 Hz due to their negative effect upon the neurological system. Once nearing power frequency

transmission at 50/60 Hz the mitochondria become severely debilitated. RF is far worse due to nearly immediate genotoxic effects.

The neurological system is the most sensitive antenna ever devised, and the mitochondria inside every cell of the body including the neurological system are more sensitive than that, the mtDNA more sensitive than that. Professor Photios Anninos discovered he could beneficially affect Epilepsy and Parkinson's patients with fields in the PicoTesla range. One picoTesla = .00000010 Gauss. The Earth's natural magnetic signal is somewhere around 1/3 Gauss these days. The key here is that Anninos uses a frequency in the 7 Hz - 10 Hz range. Dr. Reuven Sandyk re-proved Anninos discovery through 90+ peer-reviewed studies using 8 Hz frequency in the same PicoTesla range.

RF not only impairs the cells' mitochondria destroying your power generation system, it acutely impairs brain's ability to reach deep, Delta-rhythm sleep where cellular repair occurs most efficiently. It upsets the natural resonation (think of it as de-tuning an engine) of the mitochondria, debilitating the cellular energy pool so even when you do finally get to sleep, the energy "pooling" is minimized.

Under this condition the body lacks sufficient energy required for repair, regeneration, immune function and hormone synthesis. So, you are not only sleeping poorly and suffering from lack of sleep, you are also de-tuning the cellular power-plants and your body deteriorates faster allowing any number of disease states to take over the cells. A vicious cycle if there ever was one.

I propose that all disease is related to mitochondria dysfunction due to insufficient daily repair which over time accelerates out of control. Trauma repair is directly related to mitochondrial energy production and over nearly 6 decades in dozens of studies, the 10 Hz clinically applied stimulation studies provided the very-best results in all.



## **EMF - Sleep and Natural EEG rhythms.**

Beta frequencies lie above 12 Hz and when you are in active thought process with no stress you're brain-wave signature is predominated by 12 - 14 Hz low-Beta-rhythm. Beta frequencies, 12 to 14 Hz, are "normal" predominant rhythms that occur during concentration. Frequencies above lower-mid-Beta occur when agitated or fearful. If you are in fight-or-flight, then you are in the mid to high-Beta-rhythm brain state.

The mid to high Beta-rhythm brain state is required for human survival and has some physiological benefits, but excessive exposure to these higher brain frequencies (at the expense of frequencies at 14 Hz and below) is not healthy, and cumulatively cause stress related health effects including poor sleep and increased production of stress hormones.

If you are stuck in a mid to high-Beta brain state then you cannot sleep well (if at all) and you cannot heal or maintain hormonal homeostasis (cortisol levels soar). To maintain robust health, quality of life, bolster immunity and have a positive outlook on life, then deep sleep and avoidance of mid-high Beta-rhythm states are mandatory.

Alpha frequencies lie between 8 and 12 Hz and predominate when you are relaxed, calm, and in a meditative or semi-meditative state. Theta frequencies lie between 4 and 8 Hz and predominate during REM (rapid eye movement) sleep. Theta can predominate when in awakened states under certain circumstances. Some say one experiences dream-like mental imagery and creativity during Theta-rhythm predominance.

States of deep sleep are called Delta-rhythm and lie below 4 Hz. There are strong relationships between hormonal response, healing, and immunity when Delta-rhythm predominates during deep sleep.

This is also when energy demand for supporting the body is at its lowest. Heartbeat slows, breathing slows, brain activity is minimal; therefore Delta-rhythm sleep is the only time body can concentrate most of its energy production on its physiological and neurological recovery and maintenance activities.

Notice in the older Schumann graphs above that the most dominant Schumann amplitudes used to lie under 14 Hz which correlate with low-Beta, Alpha, Theta and Delta brain states -or- active thought process, calm, relaxed, light and then deep sleep respectively. Notice too that amplitude (signal strength) in Delta-Theta used to be greater than Alpha-Beta. This is not coincidental correlation; it is the way nature kept us psychologically and physiologically in balance and able to shut our brains down at night, while remaining relatively stress free and focused during the day. The operative word here is “kept”. All you have to do is look around you at all the manic people. Society is truly falling apart.

Entrainment occurs when our mind-body state locks into the rhythm of an external oscillator. The external oscillator is either undesirable EMP (causing stress and poor sleep) or the beneficial Schumann and geomagnetic field frequencies (which are simply too weak now for the body/brain to “hear” through the EMP). The only solution to this is EarthPulse™. Normally the brain structure called the thalamus controls our brain waves. Either Schumann resonances and geomagnetic fields or EMP are ‘picked up’ by magnetite-bearing brain tissues in the thalamus and particularly the pineal gland (responsible for melatonin production our most important anti-oxidant due to its ability to pass the blood-brain barrier - its ability to protect DNA in and mtDNA inside brain - and its affect on the circadian-rhythm). During these intervals ENTRAINMENT occurs, the brain’s pacemaker is external: either the beneficial Schumann resonances & geomagnetic field or detrimental RF and power frequency electric fields. Unless outside the grid, the later is the rule.

# Pulsed Electromagnetic Fields Proven to Enhance Sleep and Improve Memory Consolidation

In November 2006 researchers at the [U of Wisconsin](#) described a method of using 1 Hz (Delta rhythm) transcranial magnetic stimulation to trigger slow wave sleep. Earlier the same month the [University of Lubeck, Germany](#) reported that 1 Hz transcranial electric stimulation resulted in deeper sleep and improved memory consolidation. Likewise, nighttime EEG recording of subjects exposed to [EarthPulse Delta rhythm signals](#) show enhanced slow wave sleep throughout the night.

In contrast to our somnogram, the U of WI tested effects of magnetic fields hundreds, if not thousands of times more powerful than ours. Their study had to be shut down because of overheating of the magnetic coil due to the prolonged activation of it.

In several thousand clients we've proven EarthPulse™ promotes sleep with a very weak, near earth-amplitude signal typically generated from under their mattress during the nighttime which overshadows nearly if not all of the RF and power frequency fields.

"I highly recommend this product. It has solved my problem of waking several times per night."

Dr. Steven Sinatra, Cardiologist-Editor Heart, Health & Nutrition

"One formerly sleep-deprived editor has now stopped counting sheep and is eternally grateful for the Z's."

Alternative Medicine Magazine Sept, 2005

"You have certainly come up with something that helps me sleep."

Dr. Robert O. Becker, the Father of Electromedicine