

# EMF RADIATION MENTAL AND PHYSICAL HEALTH IN THE WORKPLACE

By Glynn Hughes  
PHA EMF Ambassador

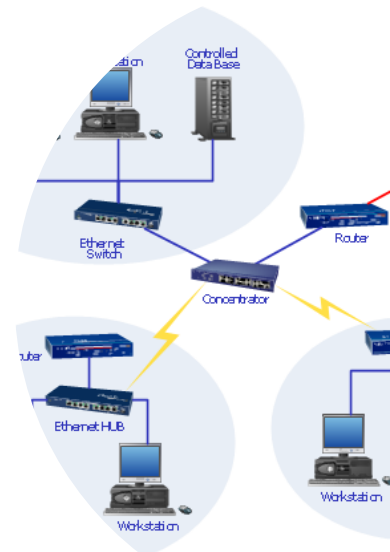
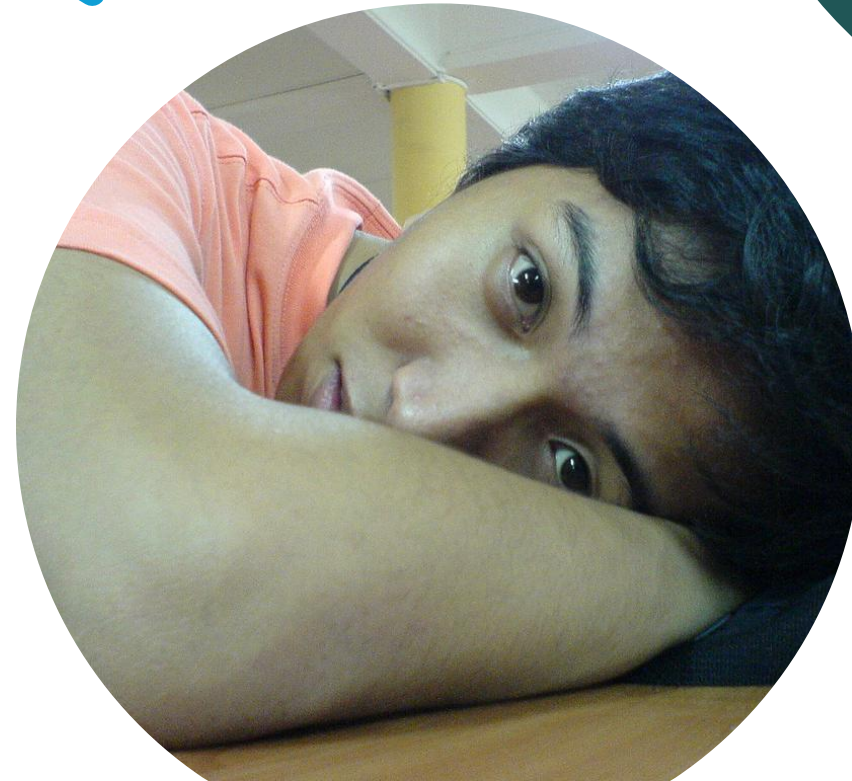


# Is EMF radiation connected to mental and physical health?

There is a mental health epidemic across the industrialised world right now and it seems to be growing as if there is some sort of contagion behind it.

In this presentation, I want to look at a possible link between both mental health and physical health and Electro Magnetic Fields (EMF). We are going to look at...

- at a link between EMF and several elements of mental and physical ill health
- how EMF may be affecting people's ability to perform well in the workplace and even the classroom.
- how we can provide preventative measures that will improve mood, behaviour, and work/school place performance





# A study of (ELF-EMF) in the workplace

Exposure to extremely low-frequency electromagnetic fields (ELF-EMF) is inevitable in some industries. There are concerns about the possible effects of this exposure. The present study aimed to investigate the effect of chronic exposure to extremely low-frequency electromagnetic fields on sleep quality, stress, depression and anxiety among power plant workers. In this cross-sectional study, 132 power plant workers were included as the exposed group and 143 other workers were included as the unexposed group. The intensity of ELF-EMF at workstations was measured by using the IEEE Std C95.3.1 standard and then the time weighted average was calculated. Sleep quality, stress, depression and anxiety were measured by using the Pittsburgh Sleep Quality Index Questionnaire; and the Depression, Anxiety and Stress Scale. The workers in the exposed group experienced significantly poorer sleep quality than the unexposed group. Depression was also more severe in the exposed group than the unexposed group ( $P = 0.039$ ). Increased exposure to ELF-EMF had a direct and significant relation with increased stress, depression, and anxiety. Sleep quality in technicians with the highest exposure was significantly lower than the other groups. This study suggests that long-term occupational exposure to ELF-EMF may lead to depression, stress, anxiety and poor sleep quality.

[Majid Bagheri Hosseinabadi<sup>1</sup>](#), [Narges Khanjani<sup>2</sup>](#), [Mohammad Hossein Ebrahimi<sup>3</sup>](#), [Seyed Habib Mousavi<sup>1</sup>](#), [Fereshteh Nazarkhani<sup>4</sup>](#)



# A low field study in a power plant

This study was designed to investigate the possible effect of exposure to extremely low frequency electromagnetic fields (ELF-EMFs) on occupational burnout syndrome and the severity of depression experienced among thermal power plant workers and the role of oxidative stress.

- **Methods:** In this cross-sectional study, 115 power plant workers and 124 administrative personnel of a hospital were enrolled as exposed and unexposed groups, respectively, based on inclusion and exclusion criteria. Levels of oxidative stress biomarkers, including malondialdehyde (MDA), superoxide dismutase (SOD), catalase (Cat), and total antioxidant capacity were measured in serum samples. Exposure to electric and magnetic fields was measured using the IEEE Std C95.3.1 standard at each workstation. The burnout syndrome and the severity of depression were assessed using the Maslach Burnout and Beck Depression Inventory.
- **Results:** The levels of MDA and SOD were significantly lower in the exposed group than the unexposed group. The exposed group reported a higher prevalence of burnout syndrome and higher depression severity. Multiple linear regression showed that work experience, MDA level, and levels of exposure to magnetic fields are the most important predictor variables for burnout syndrome and severity of depression. In addition, a decrease in the level of Cat was significantly associated with increased burnout syndrome.
- **Conclusion:** The thermal power plant workers exposed to ELF-EMFs are at risk of burnout syndrome and depression. These effects may be caused directly by exposure to magnetic fields or indirectly due to increased oxidative stress indices.

# What are the most common mental health issues in the workplace?

- The most common mental health issues in the workplace are anxiety, depression, and stress. Employee wellbeing statistics revealed that 60% of working professionals experience at least mild symptoms of anxiety, and 1 in 4 meet the threshold for clinically relevant symptoms of anxiety.
- More than 1 in 7 UK adults say their mental health is currently either bad or the worst it's ever been.
- More women than men are currently struggling with poor mental health (18.5% of women vs 12.5% of men).
- In 2023, NHS England spent £217.5 million on medication to treat depression and anxiety.
- In the UK in 2024, the term 'How to reduce stress' is searched on Google once every 10 minutes, on average.
- Personal narratives are now more public than they have been in the past, which helps reduce stigma. Television shows, podcasts, social media, and open conversations, along with a wealth of clinical research, have helped to shift the conversation and awareness of mental health in a positive direction.



# Phone mast & mental health study.

There is a general concern about the possible hazardous health effects of exposure to radiofrequency electromagnetic radiations (RFR) emitted from mobile phone base station antennas on the human nervous system.

**Aim:** To identify the possible neurobehavioral deficits among inhabitants living near mobile phone base stations.

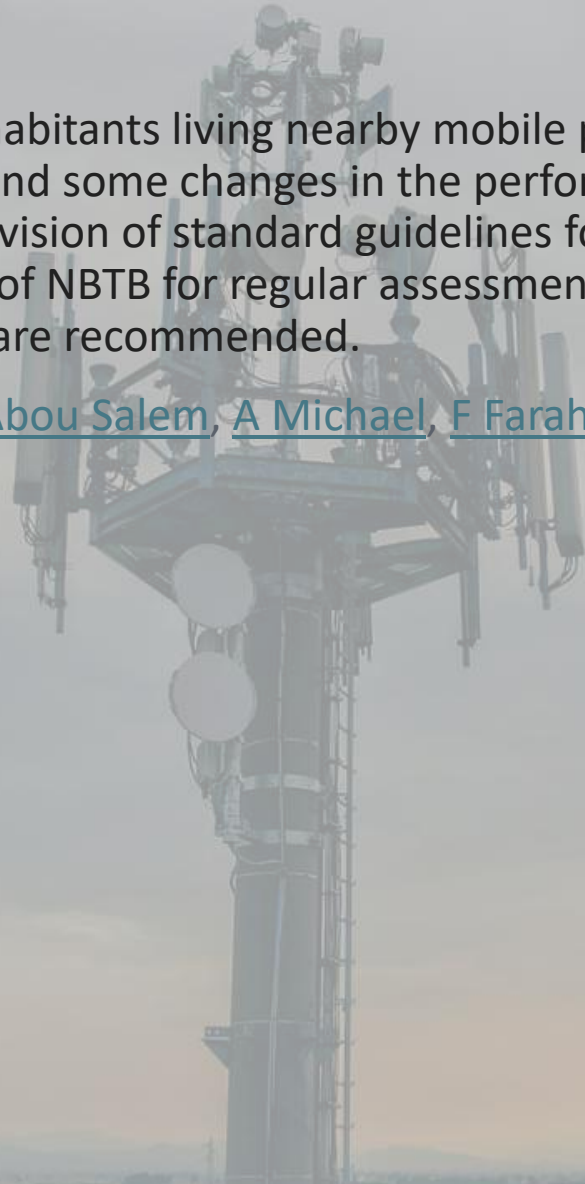
**Methods:** A cross-sectional study was conducted on (85) inhabitants living near the first mobile phone station antenna in Menoufia Governorate, Egypt, 37 are living in a building under the station antenna while 48 are opposite the station. A control group (80) of participants were matched with the exposed for age, sex, occupation, and educational level. All participants completed a structured questionnaire containing: personal, educational, and medical histories; general and neurological examinations; neurobehavioral test battery (NBTB) [involving tests for visuomotor speed, problem-solving, attention, and memory]; in addition to the Eysenck personality questionnaire (EPQ).

**Results:** The prevalence of neuropsychiatric complaints as headache (23.5%), memory changes (28.2%), dizziness (18.8%), tremors (9.4%), depressive symptoms (21.7%), and sleep disturbance (23.5%) were significantly higher among exposed inhabitants than controls: (10%), (5%), (5%), (0%), (8.8%) and (10%), respectively ( $P < 0.05$ ). The NBTB indicated that the exposed inhabitants exhibited a significantly lower performance than controls in one of the tests of attention and short-term auditory memory [Paced Auditory Serial Addition Test (PASAT)]. Also, the inhabitants opposite the station exhibited a lower performance in the problem solving test (block design) than those under the station. All inhabitants exhibited a better performance in the two tests of visuomotor speed (Digit symbol and Trailmaking B) and one test of attention (Trailmaking A) than controls. The last available measures of RFR emitted from the first mobile phone base station antennas in Menoufiya governorate were less than the allowable standard level.

# Phone mast & mental health study.

**Conclusions and recommendations:** Inhabitants living nearby mobile phone base stations are at risk for developing neuropsychiatric problems and some changes in the performance of neurobehavioral functions either by facilitation or inhibition. So, revision of standard guidelines for public exposure to RER from mobile phone base station antennas and using of NBTB for regular assessment and early detection of biological effects among inhabitants around the stations are recommended.

[G Abdel-Rassoul<sup>1</sup>](#), [O Abou El-Fateh](#), [M Abou Salem](#), [A Michael](#), [F Farahat](#), [M El-Batanouny](#), [E Salem](#)



# Is your home & office really your safe place?

- Our health is directly affected by a variety of things that we cannot see but know to be true. We do not see the air, but we are sensitive to air quality on a smoggy day. We cannot see UV rays, but we can certainly feel their effects while baking at the beach. And while we cannot see electromagnetic radiation (EMF), a growing number of people are reporting symptoms that directly correlate to electrical hypersensitivity (EHS) and radiofrequency radiation (RF).
- Over the last 20 years, physicians with the American Academy of Environmental Medicine have been seeing patients whose symptoms appeared to be triggered by “dirty electricity” – which is when high frequencies travel along electrical wires between the power source and the electric grid. This includes power lines, televisions, computers, and other electrical devices. Those suffering from EHS might experience varying symptoms including headaches, dizziness, chronic fatigue, depression, memory loss and confusion.
- Now, more than ever, we are living in a world of convenient luxuries that depend heavily on electrical pollutants. We have phones in our pockets, microwaves in our homes, and satellite systems in our cars. As science attempts to catch pace with the exponential race of technology, we are only beginning to comprehend the effects RF waves have on our health.



# Understanding EMF

- The electromagnetic wave spectrum is composed of two parts: ionizing radiation and nonionizing radiation. Ionization radiation includes X-rays and ultraviolet rays, whereas non-ionizing radiation includes radiofrequency (RF). For years we have focused on the negative impact of ionizing radiation, but now we are starting to understand the impact of non-ionizing radiation or radiofrequency.
- RF is what allows you to borrow your neighbour's WiFi while you're waiting for the service guy to come. Without the need for wires, RF has the power to pass through walls and go just about anywhere it pleases – and that includes inside our body. In this digital age, almost anything we can imagine can be a source of radiofrequency radiation. Our cell phones might seem obvious, but what about our Smart Meters, our children's gaming systems, the baby monitor? They all use wireless communication, surrounding us in a constant invisible fog of electrosmog.
- Our society encourages us to keep up or fall behind. Have you ever passed the Apple store the day a new iPhone hits the market? So many of us are willing to stand in lengthy lines, just to be early adopters of the latest technology. Our priorities are placed on technology as a way to make our lives better. And no doubt, it does. However, most of us never consider how our addiction to technology also impacts our health by inundating our bodies with a constant barrage of radio frequencies.

# Could wireless be the greatest threat to health yet?

- While EMF and RF radiation are considered biologically safe according to safety data provided by Health Canada and other organisations, the reality is that the level of our constant low-grade exposure is not reflected in their guidelines.
- Some scientists have been researching the impacts of electromog on our bodies long before our world became so highly digitised. In 1987, one study proved that exposure to electromog at levels considerably lower than those observed in urban areas created changes in our lives, so what are the long-term effects for our children raised in a world choked by electromog? In human brain waves and behaviour?
- Furthermore, EMF may also affect the mitochondria — our cellular energy factories, which are fundamental to every energy-dependent process in our body, most notably our nervous system. As a result, EMF-induced disruption of our mitochondria may effectively bolster neurodegenerative diseases like Alzheimer's and Parkinson's, as well as play a part in other diseases and health issues where mitochondrial dysfunction is implicated. These include psychiatric disorders, autoimmune diseases, headaches and migraines, chronic fatigue syndrome, fibromyalgia, stroke, diabetes, heart disease, reproductive disorders, cancers... the list goes on and on!
- So, the question needs to be asked: If EMF and RF are already impacting, only time will tell.



# Sanctify your offices with the magnificent seven!

1. Hard-wire your office, school, and factory computer networks.
2. Turn off the wireless on your routers and computers.
3. Get rid of your cordless phones and replace them with wired VOIP phones connected to your hard-wired computer network. Equip all employees and/or students with ethernet cables connected to the wired network and mobile and tablet internet adapters. All phones are to be on airplane mode. Voice and video calls can be made on any internet platform. Zoom, Facebook Messenger, WhatsApp etc.
4. Fit dirty electricity filters throughout the buildings
5. Fit earthing mats at all workstations or desks
6. Have any smart meters replaced with non-wireless broadcasting meters.
7. Finally, there is one other thing you can do to neutralize the toxic effects of EMF and RF exposure, and that is to GET OUTSIDE!

# Conclusions in the way of proven facts

1. It costs the UK state £100 billion per year to look after people who feel unfit to work.
2. EMF if left unmitigated causes physical and mental illness.
3. The UK government relies on irrelevant safety guidelines and refuses to investigate EMF & health connections or irrelevant accepted science such as that referenced in this presentation.
4. The % of people ill and responsible for at least some of the £100 billion state burden through both physical and mental illness caused by exposure (that could be mitigated) to EMF remains uninvestigated by the state.
5. The cost to industry & commerce incurred via physical and mental illness is totally ignored and remains uninvestigated.
6. The effects of Electro Hyper-Sensitivity (insomnia, brain fog, anxiety, depression, poor concentration and more) will cause absence and very poor performance in the work-place. This cost to industry & commerce incurred via physical and mental illness from avoidable exposure to EMF is totally unknown and could one day turn out to be far greater than anyone presently imagines
7. The cost to industry & commerce incurred via physical and mental illness from avoidable exposure to EMF in the UK alone is certainly in the billions, most likely hundreds of millions and internationally trillions!