

The Hormonal Store and Emotional Reviving Microchips with Human Integration

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Abstract

Human-embedded microchips are constantly transforming the world. With an increasing number of people adopting microchips, the excitement is growing by the day. Traditional, time-consuming brain-manipulating chemical approaches i.e., drugs, are now being replaced with electric methods. By configuring the chip to do so, chip implants can be useful in delivering specific medications or hormones. RFID chips are used to release synthetic feel-good hormones to calm an anxious mind. The emotions of a person determine when and in how much quantity the hormones should be released. These passive chips are used for a variety of things, including biohacking, which is the process of making substantial changes to the body to improve an individual's mental and physical characteristics. We are attempting to establish a link between a person's emotions and the regulation of synthetic hormones. Here, we discuss the potential applications of deploying human-embedded microchips to help lower stress levels, which could drastically alter how we live our daily lives.

1. Introduction

In the past period of ten years, there have been huge technological advancements that came into existence. A new age of inventions made its way into the 21st century with just mere ideas coming to reality, we have reached closer and closer to using technology for our ease and making our lives simpler. Humans have advanced from using wired earbuds to fully wireless earphones and from typing to voice assistants and now a human-embedded microchip has been introduced which goes directly into the skin and is connected to a particular external database. The database might include personal information, medical history, and allergies. Its main objective is to make daily life more convenient and faster.

A human microchip is encased in silicate glass and secured with an identification code that is linked to the system. It is a harmless implant, and a microchip is injected beneath the human skin. Microchips commonly used by humans are known as RFID - Radio Frequency Identification. An RFID is a wireless one-way communication chip used for transmission at various distances. It uses radio waves for conveying information to a remote reader. An RFID is divided into four main components: transistors, capacitors, resistors, and diodes. All these devices are fixed on a microchip which is then ready to be embedded in human skin. The microchips used these days are passive chips - which only send signals when connected to a reader otherwise it contains no power and hence cannot operate.

Microchip technologies have expanded rapidly and are now

used for various purposes, including drug detection, contactless payments, and tracking whereabouts and medical history.

There are also many freshly developed proposals to implant chips into specific glands or body parts to stimulate the release of required hormones. It can provide possible remedies for mental health problems, including recurring nightmares typical in post-traumatic stress disorder (PTSD). Those who are struggling with depression, stress, and anxiety will benefit most from it. A novel technique for releasing hormones utilizing RFID-based microchip implants has been laid on the table. In this system, the hormones needed to cure a particular condition are placed in reservoirs attached to the chip, and then the chip is stimulated to release the hormones at a specific site of action.

Hormone release by microchip is accomplished by electrothermally activating the microchip without injuring adjacent tissues, which provides a signal to release the hormone.

Through this paper, we wish to attain an environment where, by sensing a person's emotional state, secretive glands can be stimulated to release feel-good hormones and aid those who are ill by releasing synthetic hormones that can treat their condition. The globe is currently going through a phase where numerous tests and experiments are conducted every day. But the main question is if the world is ready yet to accept this transformative change and the risks involved.

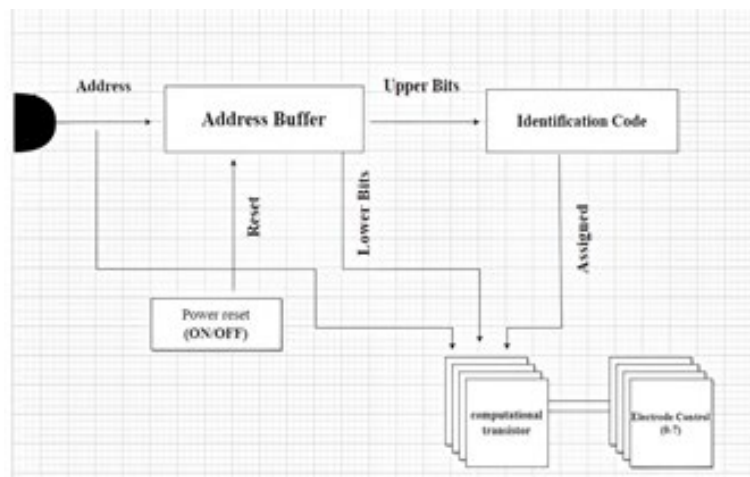


Figure: 1 Representing the inner circuit of a Human Microchip

1.1 Challenges

1. Many mental health diseases can influence emotions, thinking, and behaviors. These are collectively referred to as mental illnesses, often known as mental health disorders. Stress, depressive disorders, anxiety, eating disorders, and addictive behaviors are the outcomes of this. Today's hectic lifestyle causes many people to disregard their mental health, which hurts their conduct. Your life will only be terrible and wrought with difficulties if you have a mental disease. Emotions, beliefs, and behaviors can all be impacted by the symptoms of mental illness. Persistent stress can result in several symptoms and have an impact on your general health. depression can impact your heart, kidney, nervous system, and immune system as well. According to the WHO, 5% of adults worldwide are thought to experience depression.

2. Everyone cannot schedule an appointment with a doctor and visit him frequently in today's hectic society. Everyone is preoccupied with providing for their families. For many people, getting an appointment regularly may be difficult. Therefore, they do not believe prioritizing their mental health is crucial. They give it secondary importance. Being busy is frequently associated with success and seen as a badge of honor. Yet, overscheduling can harm your mental and physical well-being. Studies claim that a person's individual busy life is frequently linked with their high status and prosperous well-being. Being overly busy makes it difficult for someone to pay attention to anything that might upset them or make them uncomfortable. High productivity is strongly associated with being busy. Yet, that is untrue. Being busy doesn't always indicate that one is working on anything worthwhile. Poor work-life balance can cause persistent stress, mood swings, and irritable behavior. This immediately triggers and exacerbates your mental health, so you must regulate it. Persistent sorrow, a gloomy mood, a loss of interest in once pleasurable activities, and other symptoms that interfere with everyday functioning are characteristics of clinically severe depression. Stress, traumatic events, and disease are common causes of this disorder.

3. Although there are presently no medications designed specifically for treating stress, there are sufficient options for treating anxiety that should have a similar overall impact. However, even these should only be used very sparingly because

of the risks of unpleasant responses and both psychological and physiological dependency. Depression may result from a serotonin imbalance. All of these medications come with serious adverse effects, including nausea, an increase in appetite, weight gain, exhaustion, and sleeplessness. Everybody responds to these drugs differently. However, the adverse effects are more likely to have an impact on you. Talk therapy commonly referred to as psychotherapy is beneficial. Yet nobody has time to schedule it since everyone is too busy. Moreover, this procedure may take a while. We are looking for means to release hormones created artificially within humans with the fewest adverse effects to overcome all of these difficulties.

1.2 Objective

Humans are complex functional systems made up of a variety of organs, tissues, and cells. RFID chips offer solutions to several healthcare issues faced by people, such as human psychology emulation using standardized structures on public surfaces. Scientists' numerous investigations have revealed that these chips are safe to employ on healthy people and patients in either pathological or normal settings.

This paper's major goal is to illustrate how hormone release in humans can be connected to people's emotions and illnesses utilizing RFIDs. As per, recent scientific investigations, it is possible to create synthetic hormones in chemical laboratories. As they are generated in one organ and then circulate throughout the body to other organs and tissues via blood and other bodily fluids to alter and regulate biological functioning. The body's hormones are chemical compounds that are usually referred to as "messengers" as they control several bodily functions. Hormones regulate a variety of bodily processes, including metabolism, thirst, sex drive, sexual development, and sexual function. Generally speaking, they just facilitate our body's effective working. Those who are struggling with issues like stress, sadness, etc. might benefit from emotional acknowledgment in a variety of settings, including the care of the elderly. Over the years, you or someone you know has most likely uttered numerous times with some form. You often hear people say things like this when they are extremely satisfied with how their lives are turning out or when they are depressed and unable to control their emotions.

According to research included in the publication, RFID may identify a person's emotions. This is accomplished by keeping an eye on physiological indicators such as breathing and heartbeat. To further this, an experimental investigation was undertaken to employ RFID commercial products to identify user moods. All of this is accomplished by developing Free-EQ, which is an emotion detection framework that initially draws out respiration- and heartbeat-formed characteristics from RFID signals before training a classifier to identify various user moods. Moreover, it is possible to implant a chip containing a medicament inside a person. These medications are engineered to only release for a set period when they are needed. This allows doctors to conveniently preserve a patient's medical history and diagnose them more quickly and precisely, perhaps reducing the chance of mortality. The RFID chip can be helpful in urgent situations where rapid access to the right medical information might be the difference between life and death.

Hence, hormones combine with blood and aid in a person's full physical and mental development. A person's numerous unpleasant feelings, such as stress and despair, are also brought on by hormones. In this study, we attempt to directly link hormones produced artificially to the human body through microchipping so that they may easily mingle with blood and track emotion, thereby reducing negative emotions.

2. History of Microchips

1. Jack Kilby and Robert Noyce weaved their name into the history of microchips in the year 1958. Kilby served as an electronics engineer at Texas Instruments whereas Noyce Semiconductor in 1957 and Intel Corporation in 1968
2. Regarding this invention Kilby won Noble Prize in Physics in 2000
3. These microchips were utilized by the Air Force in the 1960s to construct Minuteman II missiles.
4. Eventually, for the Apollo project, NASA bought around 60% of all microchips produced in the United States. The plan ensured that the microchip would find a market. Later Today, numerous other devices utilize these essential inventions in addition to the computer.
5. The microchips underwent extensive visual and electrical inspections, as well as testing in extremely hot and windy conditions.

3. Evolution

Microchips are an appealing technology nowadays and are a unit of packaged computer circuitry, also known as integrated circuits. The technological development of human civilization during the 1960s has been astounding throughout many field and disciplines. The smart modern cell phone is the clearest example of this. It can be extremely challenging for some age groups to live in a world where landlines were the only means of communication. Of course, this is provided that you're willing to wait one to two years for a connection. Changing times, indeed. Your smartphone is a truly amazing illustration of how integrated circuitry, popularly described as a microchip, is all over. The following is an overview of how microchips developed from earlier electronic breakthroughs and how they came to dominate

contemporary electronic design and production, serving as the foundation for the current new industrial revolution. In space, the equivalent of a human fingernail, a contemporary chip may contain several billion transistors. Since their invention in the 1960s, chip size, efficiency, and volume have increased significantly due to technical developments that have made it possible to place an increasing number of transistors on a chip of the same size. Technological advancements in semiconductor device fabrication enabled very large-scale integration feasible. Computer chips today have many times the memory and numerous times the efficiency that they had in the earlier 1970s as a result of these improvements roughly in line with Moore's law. Since the invention of integrated circuits (ICs), some chip designers have secretly inserted non-functional images or inscriptions into the silicon surface. They are however known as silicon art, silicon graffiti, chip art, and silicon doodling.

4. Application of Microchip

The Internet of Things is built around RFID, which may be the basis of an effective asset management system. In recent years, positioning has gradually begun to utilize RFID technology due to its advantages, such as its high reader reading rate, cheap cost of contactless reading and writing, and inexpensive tag cost. The research outcomes are impressive for absolute location, which was developed earlier in the RFID positioning technology research. This implant can hold all the data that we regularly save in our wallets. This makes the prospective uses for human microchipping in the future quite exciting. The world of humans is gradually relying more and more on technology to improve their quality of life.

But, we have reached a point where we are unable to fully rely on all these revolutionary technologies since they compromise people's security. Scientists asserted that numerous benefits of human microchipping are incontrovertible despite all these problems.

5. Microchips as Drug Delivery System in Healthcare

Drug delivery is a tried-and-true method for treating illnesses because it delivers stable drug concentrations to the precise site of action. However, because conventional drug delivery techniques like oral capsules and intravenous infusions struggle to maintain a proper drug concentration, it is difficult to keep the right balance and prevent patients from becoming toxic from the drug. The old methods have been replaced by human-embedded microchips.

Microchips are controlled devices that can release medications in intricate patterns with increased accuracy and constancy. These microchips have several reservoirs that are lined with anode membranes and filled with aseptic solid, liquid, or gel fillings that contain drugs. When electrothermally activated, the reservoir contents are released.

6. Biohacking

Lepht Anonym, a Berlin-based biohacker who has grafted various microchips, magnets, and antennae to remodel the regular human body to become a transhumanist. His goal is to

push the boundaries of what it means to be a normal human and transform into a cyborg. A movement known as "transhumanism" seeks to improve mental and intellectual capacities through the application of cutting-edge technologies that enhance longevity and cognition.

Many people use microchips to simplify their life. They can handle routine activities like unlocking doors and turning on the lights, but it is crucial to make sure your surroundings are compatible with the technology needed for microchips to operate well.

7. Controlling the Human Mind

In a new series of events Elon Musk's neurotechnology company, Neuralink last year implanted a chip into a pig's brain with the aim of treating several autoimmune diseases such as dementia and Alzheimer's.

Your consciousness will be controlled by a chip that Neuralink will implant in your brain. It has the power to direct and capture your thoughts, perceptions, fantasies, and even dreams. It fuels your consciousness and eventually transforms into your brain, making your brain merely a servile slave. It is purported to be a wireless device that functions very similarly to a computer inside your head.

8. Recent Discoveries

In the article of MIT NEWS, it has written that Researchers stimulate the mouse adrenal gland with magnetic nanoparticles to limit the release of stress-related chemicals. A number of psychiatric diseases, such as depression and post-traumatic stress disorder, have been related to abnormal amounts of stress hormones like cortisol and adrenaline (PTSD). The discharge of these hormones from the adrenal glands can now be remotely controlled by MIT researchers using magnetic nanoparticles. According to Polina Anikeeva, professor of materials science and engineering at MIT, "We are looking at approaches to research and ultimately cure stress illnesses by controlling peripheral organ function rather than doing something more invasive to the central nervous system." Anikeeva has created a number of unique magnetic nanomaterials in the past, including particles that may release medications at specified times and locations within the body. If we can learn to manipulate these local circuits without returning to the complete structure of the fundamental nervous system, we may be able to treat some problems that we currently see as neurologically.

Ion channels that regulate calcium influx to the adrenal glands were chosen by researchers as potential targets for enhancing hormone release. Heat is one of the many stimuli that can open these ion channels. The adrenal gland's cells start to produce hormones when calcium arrives through the open channels. According to Rosenfeld, being able to significantly manage the inflow of calcium into the adrenal cells is necessary to regulate the discharge of these hormones. This analysis used magnetothermal inducement to regulate cell processes without artificially inserting genes, in contrast to other experiments by Anikeeva's group.

Researchers have created nanoparticles comprised of magnetite, a sort of iron oxide that creates small magnetic crystals approximately 1/5000 the width of a human hair, to trigger these heat-sensing channels naturally present in adrenal cells. These particles can be directly injected into the adrenal glands of mice and last there for at least six months, the researchers discovered. They focused on the heat-sensing channel TRPV1, which is present in a variety of sensory neurons all through the body, together with pain receptors.

This stimulation led to the release of chemicals that boosted norepinephrine by around 25% and doubled cortisol production. The animal's heart rate noticeably rose as a result. By using this technology to modify pain receptors, we may be able to study pain, manage pain, and perhaps even use it clinically in the future as an alternative to medications or implants for the treatment of chronic pain. I hope." Says Anikeeva. This approach may be applied to other peripheral organs, like the digestive system and pancreas, by further investigating the existence of TRPV1 in additional organs.

The ElectRx Program of the Defence Advanced Research Projects Agency, a Bose Research Award, the BRAIN Initiative of the National Institutes of Health, and the MIT-Technion Fellowship all provided funding for this study.

9. Idea & Innovation

In the late 90s Robert Langer – a professor at Koch Institute along with Michael Chima- a chip-making expert, laid the foundation for inventing microchips that could release calculated drugs in the human body and supplant injections and pills. Taking this idea further, we introduce a concept where microchips can be exploited to release synthetic hormones that could ameliorate in variety of mental illness conditions and release feel-good hormones (dopamine, endorphins, serotonin, and oxytocin) that could lower stress levels and help people fighting depression recover faster. Before microchips, people would supplement these hormones, which was not essential and, in addition, had unfavorable side effects that could result in undesirable conditions.

These microchips comprise numerous reservoirs secreting synthetic hormones that are contained within a thin titanium and platinum barrier that prevents interaction with the external environment and protects it from contamination. A remote is used to control the microchip wirelessly which sends the signal. When required an electric signal is passed through an internal battery melting the membrane temporarily and then tiny doses of the hormone are released. It can release hormones in modest doses that can endure for up to 16 years.

It consists of capacitors, resistors, and transistors all are separated by each other using glass insulators. Capacitors store the electric charge, the resistor is responsible for controlling the electric current, and all the electric signals passing through is amplified by transistors. Transistors improve the computational powers of a microchip and hence more the transistors more information will be shared.

Synthetic hormones are encased inside microchip reservoirs, which are periodically released as needed. The development of synthetic hormones is a tedious task and without the availability of the right technology it is an expensive process but with time scientists have found ways to create safe and effective hormones. The production of synthetic hormones from animal sources requires a sophisticated technique; therefore, employing plant material is another option.

The most common synthetic hormone consists of conjugated equine estrogens (CEE) and progestin used to develop a synthetic version of progesterone.

We live in a generation where people are paying more attention to mental health and the major focus is on staying psychologically happy and well, so this technique will be a benefit for people suffering from mental illness. As everyday lives are becoming more occupied and people hardly get any time for themselves it is an initiative to create to make microchips that act as an artificial gland that helps people lead a less pressured life.

10. Limitations

It makes sense that many individuals find the thought of technology fusing with human biology to be far less comfortable. The hazards and detrimental effects that might be connected to microchips are difficult to predict given their recent development and adoption.

- Failure of an electronic scanner
- Failure of an inserter
- Failure of implanted transponder
- Electromagnetic transponder
- Electrical dangers

11. Hackability

Privacy concerns related to people using microchips take many forms, the main one being hacking. A hacker could steal personal information on the owner's microchip. Financial information used for contactless payments or medical records stored on chips may be subject to new forms of hacking.

Obsessive surveillance close to Orwellian may be another disturbing result of human microchips. Users implanted with microchips can potentially be tracked wherever they go. Information from RFID chips is easy to obtain, which means it can be used to track citizens' daily movements for nefarious purposes.

Undoubtedly, RFID implants can improve the efficiency of our lives, but we must consider who would gain from having a human microchip. By doing this, Big Brother will be made aware of our whereabouts, as well as what we are executing, how we are performing, and who we are working with as well. Governments and huge corporations may find this information to be highly useful. With chip readers positioned in public spaces or places like roadways and pedestrian zones, RFID enables governments, security firms, or the police to digitally "search" persons. Anyone with a reader can scan an RFID from a distance of a few feet. This is a valid worry that necessitates

strict security and privacy restrictions.

12. Healthcare

In the middle of the 1990s, a number of toxicology and veterinary research revealed that chip implantation in some lab mice and rats "caused" malignant tumors. Keith Johnson, a renowned toxicologic pathologist, said that the transponders were to blame for the tumors. We are aware that it is technically feasible to implant a microchip into a person, but infectious diseases and other medical issues could emerge as unanticipated side effects. According to a 2007 study, approximately 1% to 10% of animal studies who received microchip implants also developed cancer. Despite the fact that these cases are too few to be separated from the various cancer risk associated with implanted (medical) devices, it is nevertheless true that some potential health problems associated with RFID chips are still not fully understood.

The following are the primary health issues brought on by microchips:

- Negative tissue reaction
- Implanted transponder migration
- Electromagnetic interference
- Cancer risk

Research has shown that rare microchipped animals are more likely to develop tumors. There have been questions raised about a potential connection between RFID transponder implantation and the development of tumors. Microchips may limit our ability to make free decisions.

With RFID implantation, we constantly aim for perfection. We must stop using the bus for free, driving a little too quickly, and making excuses for arriving late to work. Service providers must have greater access to information in order to deliver better services to the public, which severely restricts our freedom.

For instance, are we going to use cash or a credit card to make purchases or will we only be able to do so using our RFID implants? What if you have to be chipped in order to enroll in school, acquire insurance, or apply for a job? How will the implant be taken out?

13. Methodology

13.1. Research Method

This research tells us the importance of microchips in human life. This is descriptive research that explains the characteristics, importance, and effects of microchips on humans. Since the problem on which the research has been conducted has not been completely defined, therefore, out the research being exploratory research is based on recent discoveries as well as new ideas.

13.2. Data Gathering Method

Data were gathered for this study based on current technologies and projections of future developments.

In order to gather the necessary facts and figures that would provide all the data for the research, a basic investigation of significant domains was conducted to begin this project.

In addition, all evolutionary possibilities and sectors were considered in order to generate fresh concepts for upcoming technological generations.

Through our surveys, we got to know what people think about the idea of microchips taking control over their life. As the majority are not in favor we conclude that people are still afraid to depend completely on electronic gadgets.

13.3. Process of Data Analysis

First, we gathered information through surveys and Google searches. The collected data were then classified into different domains as per the requirements. The two main concepts of our research are:

Concept-1: Production of synthetic hormones is now possible in chemical laboratories under specific conditions.

Concept-2: It is possible to trigger any drug stored in RFID in the human body through programming. The process of examination was done thoroughly by our mentors and others who are well-experienced in the field of electrical and technology.

13.4. The Purpose of The Study

In spite of being based on already existing ideas our study shows the advance and more efficient methods to remove limitations in the field of medical sciences too by carrying out treatments electrically to ensure the cure for a longer period as compared to drugs. Our research also highlights how the efficiency of humans can be increased by microchips. Not only the positive effects, but we have also highlighted the harmful effects of these

chips on humans to achieve more advancement in the field of microchips by removing these existing flaws.

14. Conclusion

Humans are curious animals, and constant efforts are being put into exploring new technologies that would make our lives more convenient. Surely, technological advancements have given us comfortable lives, but they have also made our lives more occupied than ever, which leads to mental stress. Mental stress can have a variety of effects on people, including decreased efficiency, difficulty concentrating, and memory loss. Microchips have proved to be a lifesaver here with their tremendous capabilities to regulate the drugs and hormones inside the human body. Although oral pills, injections, and supplements are still used as traditional modes of treatment, microchips are more efficient than these methods. These microchips are incredibly convenient and time-saving because we do not need to visit the doctor frequently, and there is no worry about running out of prescriptions. These chips can release hormones in a controlled manner for up to 16 years without the need for human involvement and are remotely controlled. When artificial

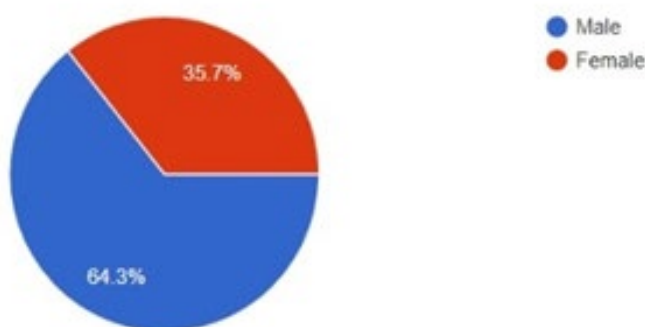
hormones held in reservoirs are aroused externally, they immediately release feel-good hormones to calm the anxious mind. It is a well-fabricated integrated circuit with a clean architecture that causes no harm to the human body and only works at the specific site of action. But nothing is free, and every benefit is always accompanied by a disadvantage. Despite Microchips being a one-stop shop for all mental health difficulties, there are concerns about the most

Appendices

Appendices: A

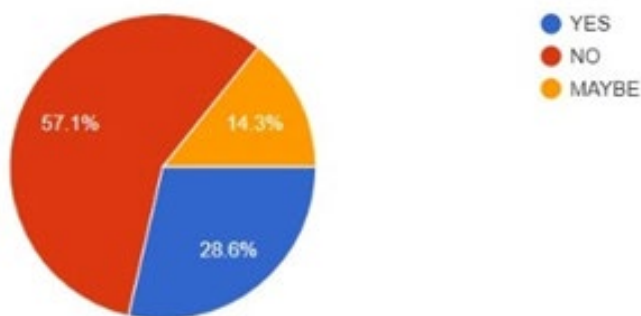
Appendix A Gender proportion

This appendix represents the ratio of responses received by males and females. Blue covering 64.3% gives the idea of responses from males and the rest 35.7% from females.



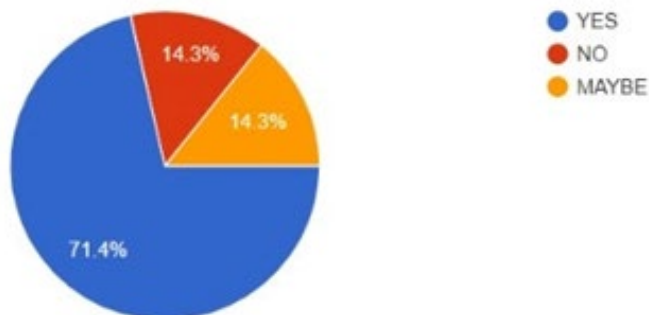
Appendix B

Implantation of microchips in humans According to this graph, major responses were against i.e. NO(57.1%), 28.6% were not sure(MAYBE) and only 28.6% were in favor.



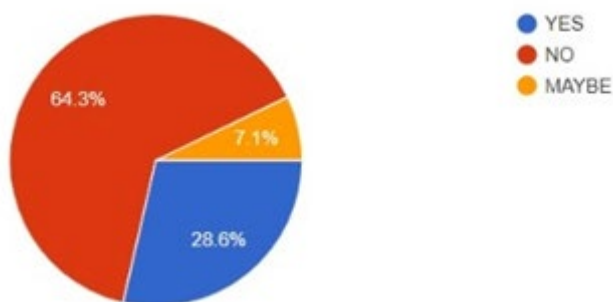
Appendix C

Microchips VS Right to Privacy When asked do microchips infringe upon a person's rights? Most of the people agreed (YES-71.4%). This shows that people are aware of the negative impacts of microchips. The remaining responses were in equal proportion.



Appendix D

Volunteers for a Microchip implant As the data show if given a chance to implant microchips inside the body, most people will not want to take risks (i.e. NO-64.3%). Others were excited about the new technologies and opted for YES (28.6%) and the remaining were not sure about the decision(MAYBE-7.1%).



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