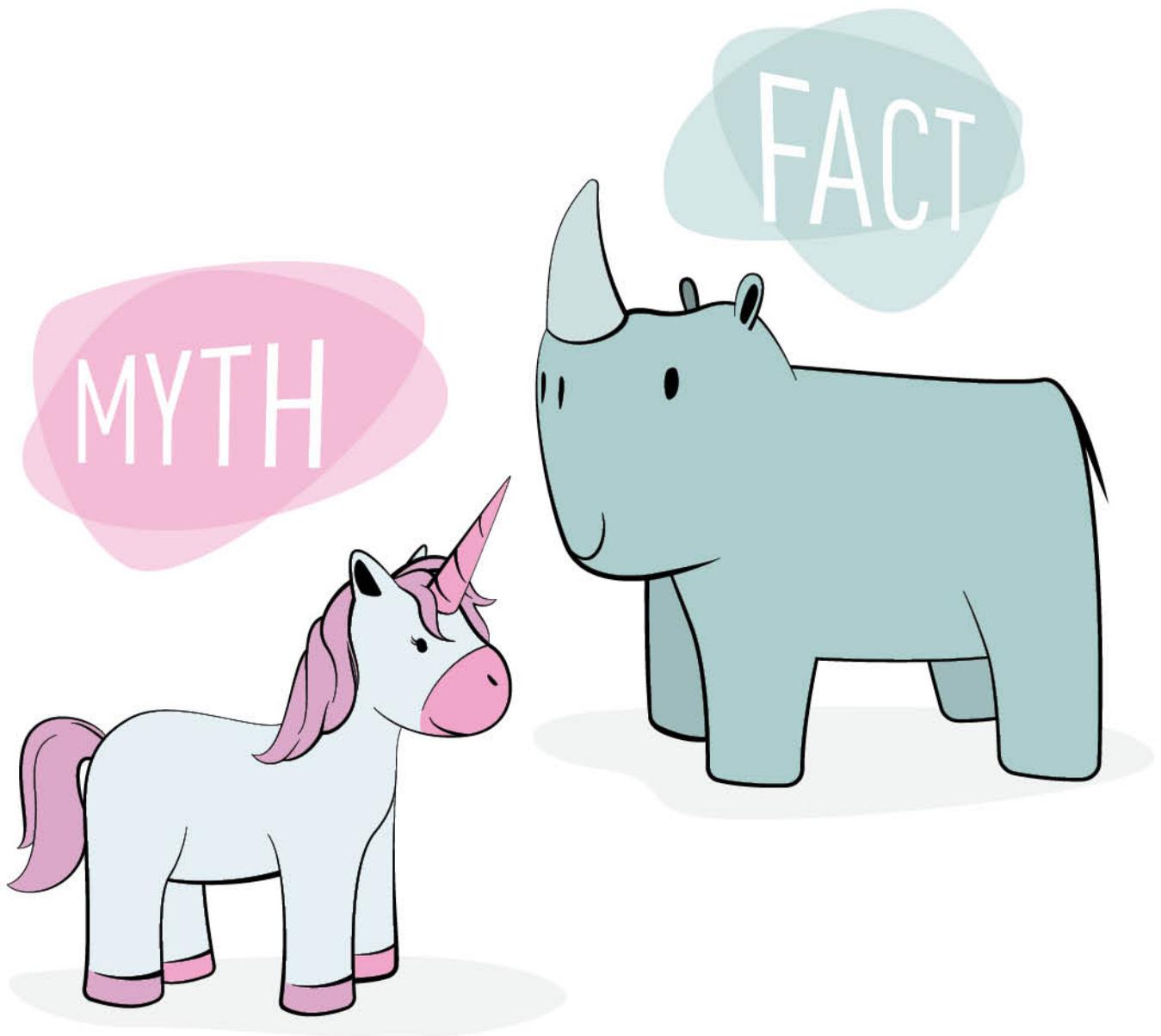


SCi planet

EYE ON SCIENCE

DUALITIES OF LIFE: Fact and Myth



FACT

vs

Myth

THE ULTIMATE BATTLE



IN THIS ISSUE...

- 3 Health Myths
- 4 Our Children vs. COVID-19 Myths
- 6 Sleep Misconceptions Interpreted
- 8 An Eye-Opening Journey Inside the Brain
- 10 Mind Your Mind
- 11 Facts and Myths of Pregnancy
- 12 Baby Myths
- 14 Art and Science Together Against the Infodemic
- 16 Cursed be those who disturb the rest of a Pharaoh!
- 18 Let Us Bust Some Animal Myths
- 20 Food Misconceptions
- 22 Greenhouses of Hope



By: Maissa Azab

In this last issue of our year-long theme, the “Dualities of Life”, having already tackled the eternal battle between Good vs. Evil, we now turn our attention to the ultimate battle of human life on Earth: the war of Fact vs. Myth. Indeed, this battle is the one that decides whether we prosper or dwindle; whether we survive or perish.

We are all well aware that myth has existed long before facts. Since the dawn of time, humans have used mythology to interpret and explain all kinds of phenomenal puzzles. Over millennia, myths have evolved, stretched, and intertwined to form an intricate web of fiction that, despite great scientific achievement and discovery, still holds humans back.

Indeed, the shroud of myth is almost impossible to shake; simply said, because myth is inherent in our nature and cultural conscious. Why? Because myths tend to be much more attractive and titillating than plain facts; we tend to favor exaggeration and drama. Ironically, if people are more keen in searching for the facts, they would find that they are actually far more fascinating than myths; they just need to be unraveled and pieced together. This is where science comes in and it is up to science communicators to convey the charm of the facts and help the public dispel the magic of myth and shrug off the cloak of fiction.

If there is to be a silver lining to the current COVID-19 pandemic crisis, it should be the revelation of the supreme cruciality of science. In the face of such a devastating calamity, myth, fiction, and fake news are the enemies of life and harbingers of death; only scientific facts and actions can save the day. Now more than ever, we need to be alert, aware, and active when it comes to sifting through the news and narratives to filter fact from fiction.

As always, we wish you an enlightening and entertaining reading experience of this new issue of *SCiplanet* Printed. We also remind you to follow *SCiplanet* Online and *SCiplanet* social media pages on Facebook, Instagram, and Twitter, and to subscribe to our e-newsletter via the website: www.bibalex.org/sciplanet.



AUTUMN 2020
Year 13, Issue 4

Cultural Outreach Sector
Educational and Promotional
Publications Unit (COPU)



Editor-in-Chief
Maissa Azab
Head of COPU

Resident Editors

Hend Fathy
Sara Khattab
Esraa Ali

Design Team

Maha Sherin
Faten Mahmoud

Freelance Editors

Naglaa Hassan
Inas Essa
Fatma Asiel
Mariam Elsayed

Special Thanks

Mohamed Khamis

Language Revision

Publishing Department



Contact Us:

✉ COPU.Editors@bibalex.org
🌐 www.bibalex.org/SCiplanet



SCiplanet



SCiplanet_COPU



sciplanet.magazine

HEALTH MYTHS



By: Naglaa Hassan

Popular heritage comprises myriads of myths and misconceptions that have been passed on and believed though faulty and unscientific. These misconceptions exist in all fields, including the health of the human body, organs, and cells. Let us investigate some of these misconceptions and see what science has to say about them.

Knuckle cracking causes arthritis



The popping sound of knuckle cracking can result from a negative pressure pulling nitrogen gas temporarily into the joint. Sometimes, this sound occurs due to tendons tearing from tissues as a result of a slight shift in the joint sliding field, all of which is normal. As such, it has not been proven that the habit of knuckle cracking could cause arthritis or any other joint-related illnesses. Although there are different explanations for that sound, it is agreed that knuckle cracking is not

a healthy habit; it may cause redness or swelling of the fingers or even inflammation of tendons or ligaments.

Going outside with wet hair in the Winter causes the flu



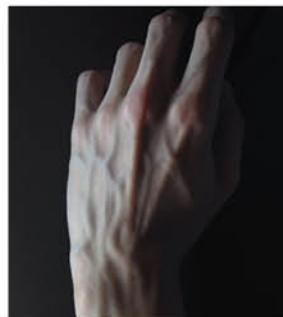
We catch the flu all year round, in winter and summer; however, the winter is more notorious for higher rates of infection. So, what is the relationship between low temperatures and flu virus infections? In fact, winter and cold weather have nothing to do with infection. Yes, common colds are more common during winters, but due to poor ventilation and gatherings of families and friends in warm indoor settings. As a result, infection rates increase. The belief that going out with wet hair causes a cold is also a misconception since the common cold is a viral infection that has nothing to do with hair, be it wet or dry.

Flu vaccine causes flu infection



Another myth about the flu is that the vaccine designed to prevent it causes infection! Of course, this is absolutely not true. There are different flu vaccines; some are in the form of injections and some are nasal sprays. Injection vaccines contain a deactivated virus or one of the virus proteins, whereas spray vaccines comprise weakened active viruses; in both cases, the infection cannot occur.

Blue veins indicate de-oxygenated blood



Moving to people with clear blue veins, it is thought that the color is due to de-oxygenated blood; the scientific fact is human blood is always red, whether oxygenated or not. The explanation for this blue hue of veins has to do with the reflection of light inside the skin layers, as well as the fact that veins, as opposed to deep arteries, are close to the skin's surface.

Sunscreens should not be applied at sunset

Personal care products have their share of misconceptions too. Most people think it is unnecessary to apply sunscreens when it is cloudy or rainy.



However, the problems posed by the Sun are not related to the heat, but to the ultraviolet rays, which can penetrate clouds and be more acute than on a warm summer day. According to the Skin Cancer Foundation, clouds prevent ultraviolet rays from penetrating the skin by less than 25%. Therefore, to protect the skin, one should apply a rich layer of sunscreen before going out, and reapply it every two hours if you are staying out for a long time.

Once you stop exercising, muscles turn into fat



A common misconception among some athletes that players with big muscles would lose their muscle mass to fats if they stop exercising due to an injury or a busy schedule. Muscle cells are different from fat cells and they never transform into one another. However, when people stop exercising, they gain weight, in the form of fats; yet, these are new fats, and not transformed muscles.

We are in the twenty-first century; blindly following myths should not be the case. Some of these myths could deprive us of much joy; or cause us health, social, or behavioral problems. It is always recommended to research and double-check strange ideas before adopting them.

References

cancersa.org.au piedmont.org
cdc.gov sitn.hms.harvard.edu
forbes.com webmd.com
medicalnewstoday.com



As the new coronavirus continues to spread all over the world, children need adults to communicate with them directly, calmly, and clearly, to discuss the changes occurring around them. What they have witnessed in a relatively short time is unprecedented. They have suddenly experienced the closure of schools, switching to an online learning system. Their daily lifestyle has changed as well; they can hardly go out for a walk, visit their relatives and friends, exercise, or practice their favorite hobbies outdoors.

Adults' anxiety to understand these changes is transmitted to children, who become more or less anxious based on how they communicate with them. Children pay close attention to what adults talk about, even if they seem not to; a piece of trending advice goes: "do not divulge a secret to anybody in a room where there is a quiet child sipping juice!" Children have the right to understand their world and its variables, and to learn how to adapt to them. Adults, thus, should talk to their children, reassure them as much as possible, and provide them with accurate facts that are appropriate for their age. Could this happen without adults' awareness of facts to put this situation in perspective?

From this standpoint and our belief in the role of science in society, *SCIplanet* launched a questionnaire on its social media pages, August–October 2020. It targeted children under the age of 15 years, to know the impact of the pandemic on their lives

and the extent of their awareness. In the questionnaire, 27 children, aged 3–13 years old, from three Egyptian Governorates—Alexandria, Cairo, and Ismailia—participated. Answers were received electronically and by direct meetings with some children.

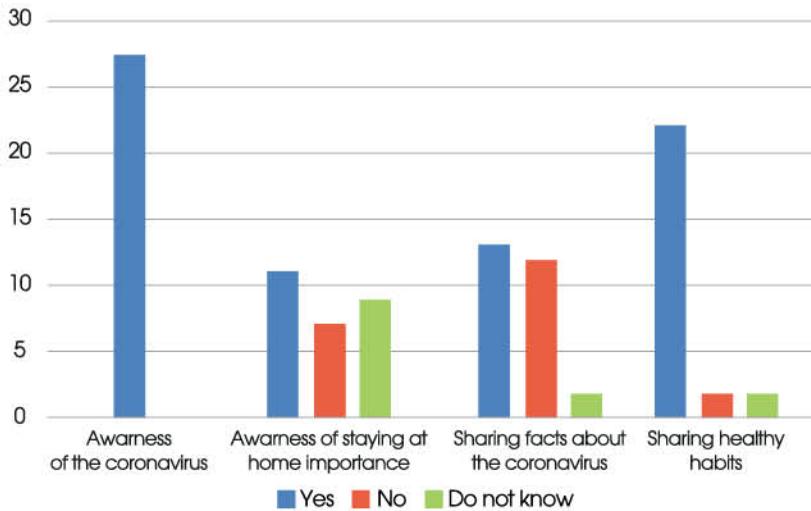
The questionnaire was conducted earlier than the publication of this article and the world has since witnessed tremendous developments, the most important of which is the gradual return of life to normal and the discovery of

an effective coronavirus vaccine; more research is needed to study these changes in the society. In this study, we investigated how children are coping in this tough time, their impressions, and their reflections on the future. The results showed that 100% are fully aware of the reason behind this change, while their opinions about how they felt about it differed. They were asked to share their information about the coronavirus, its causes, and the health and safety measures they know. In this article, we present the outputs of this study.

Eleven children were aware of the importance of home quarantine and even praised it. They added that these precautionary measures helped reduce the rapid spread of the virus among people and that they really enjoyed spending longer and enjoyable time with their families. On the other hand, seven children expressed their sadness and feelings of distress, boredom, and extreme fear and anxiety, because



Questionnaire Results



they can no longer play with their friends. The other nine children did not comment about the home quarantine, except that they became accustomed to the new lifestyle.

When the children were asked to share with us the information they know about the coronavirus, two did not comment and thirteen children stated correct and accurate information. They said that the new coronavirus (SARS-CoV-2) was first identified in the Chinese city, Wuhan. It originated in animals then it was transmitted to people through direct contact—bats and pangolins among the first animals suspected of being an intermediate. The virus was given its name, coronavirus, from its shape under a microscope because it resembles a “crown” or a ball that is full of thorns. They described the virus as a small unseen contagious beast; it travels in the air through contact and droplet transmission from one infected person to another. Immune response and chronic diseases affect the disease severity; that is why children and the elderly are at higher risk. The symptoms include sore throat, coughing, sneezing, and high temperature; they may even worsen to breathing difficulties or death, while other people infected with the virus do not show any symptoms at all.

On the other hand, twelve children presented some false or inaccurate information; we list them here and try to correct them. They presented different fantasies about the virus shape; some

described it as a huge beast that they would hit, or an alien that looks closer to a fan or a circle, the color of which is red and carries knives! In fact, this virus is unseen with the naked eye, and the common shape in the media is a representation; yet, I do agree with them, if I could see that enemy, I would have beaten him as well!

Likewise, some children said that the coronavirus is fatal, or that people can hardly be cured. This is inaccurate because our bodies’ responses to the virus differs from one person to another. Additionally, some of those infected did not have any symptoms, and there are several cases that are already cured. As for the symptoms, one child added that it could lead to difficulties in speaking, but adults have to explain that exhaustion may lead to that, and it is not one of the common symptoms. Another child said that the virus is found in food; do not rush to judge, because when you ask your child to wash his/her food before eating it, they may think so.

The feelings expressed by the children in the questionnaire are normal, but parents should communicate with them honestly. Whether their experience was good or bad, you must help them express themselves, listen to their opinions, and correct the incorrect ideas. You also have to get to know who they befriend or whom they talk to electronically. Do not get bored of setting certain times and locations for using electronic devices, and also encourage them to use them

in something useful, such as exercising and playing games that depend on physical movement.

Moreover, you should ensure the installation of anti-virus programs, review their privacy settings, and set up safe-search on their devices, whenever you have the opportunity. Much of the information presented by the children seemed close to facts or indicated that they had googled it; for example, some said that the coronavirus first appeared in 1986, or it appeared because of cutting off trees. You have to clarify that this crisis is not the first of its type; the world witnessed other disasters too, such as the explosion of the Chernobyl nuclear power plant in 1986, and Australia’s bush fires in 2020, so they will not repeat untrue information that turns one day into a myth.

At the end of the questionnaire, we asked the children about the future and their expectations; 86% of the results showed that they are prepared to face it without fear. This reminded me of my childhood and my relationship with the myths of our time—I mean the generations of the 1970s, 1980s, and 1990s. We have gone through other disasters as well and have made myths about them too. Perhaps the most famous is about the 1992 Earthquake, where we repeated our friends’ stories of moving beds from one room to another or the appearance of the legendary creature known as “*El-Sel’awa*”, and our feeling of fear whenever we hear a knock on the door! However, this generation—I mean those born in the first and second decades of the 2000s—really enjoy great minds and courage for which they deserve all appreciation. They still have an opportunity to refute myths and prevent their circulation using science.

The Ancient quote says: “Destroying a myth puts you on the beginning of the right path”. This cannot be achieved except by building healthy minds and nourishing them with knowledge and science, without which people will be unable to solve and succumb to myths.

Now, dear reader, I will leave you with a set of inspiring tips from the participating children:



SCPlanet thanks all the participants, listed below in alphabetical order:

Abdullah Mohamed (12 years) – Adam Gerald (6 years) – Adel Rafik (10 years) – Adham Fathy (11 years) – Asser Fathy (7 years) – Aysel Fathy (9 years) – Basma Rifaat (5 years) – Elaina Gerald (3 years) – Farida Islam (10 years) – Gamila (4 years) – Ghadir Ihab (9 years) – Hamza Aslam (8 years) – Haya Hany (12 years) – Haya Mohamed (13 years) – Layla Ahmed (5 years) – Lora Omar (8 years) – Mahmoud Islam (8 years) – Malak Abdelrahman (13 years) – Mariam Mathio (6 years) – Mariam Mohamed (8 years) – Murad Ehab (3 years) – Nezar Khaled (9 years) – Nour Alaa Eldin (12 years) – Omar Khaled (12 years) – Salma Aslam (5 years) – Talia Tamer (6 years) – Zaid Gerald (5 years).

References

academic.oup.com
chla.org

the-scientist.com
thestar.com.my

unicef.org
usatoday.com

who.int

I still remember that hectic week crammed with endless tasks and tight deadlines, and less time for sleep. I thought it would be my most productive week after which I would be able to recharge and restore rest by sleep that I traded for work. Unfortunately, I was completely wrong; almost everything during that week gave me a pushback that made me realize how foolish I was to marginalize the unmatched benefits and role of sleeping well.

By searching for why all of this had happened, I came across some of the most common misconceptions and myths about sleep, and the facts that debunk them.

Myth 1: Everyone needs a cycle of eight hours of sleep per night

It may vary from one person to another; some people need only six hours of sleep and still function well without drowsiness, while others need ten hours to reach their peak in productivity and perform well. The most important factor to be highlighted here is what regulates sleep to be able to know what works best for us.

First, it is the circadian clock, which is influenced by light and dark. As our biological system is unique, there might be slight differences from one person to another. Every small variation can affect sleep–wake cycles; therefore, how much sleep our bodies need is estimated.

The other factor is the homeostatic sleep drive, which also by nature differs from one person to another, and grows the longer you have been awake; the thing that causes sleep pressure and pushes you to try to get some sleep.

Myth 2: Sleep deprivation can be refunded

A simple example for that is when you skip getting enough sleep one night, thinking that you would simply compensate for this the following night or during the weekend. The fact is that one night of sleeplessness cannot really be compensated for.

Scientists indicate that, when you do not get adequate sleep for





By: Inas Essa

several nights in a row, it may cause health problems; such as high blood pressure, mood swings, and decreased productivity. Furthermore, if you try to refund less hours of sleep during the week by sleeping extra hours during the weekend, this does not completely restore your cognitive function. This means that sleep can take its toll if you do not consider its role in your daily life seriously.

Myth 3: As we grow older, sleep needs decline

Well, although this may seem correct, it does not work this way. By growing older, the pattern and need for sleep changes, as it has already changed before during infancy, childhood, adolescence, and adulthood. What happens is not that our need for sleep lessens; what happens is that some sleep issues take the stage.

As we grow older, some common sleep problems, such as insomnia and sleep apnea, surface. Therefore, older people may experience trouble falling asleep, difficulty staying asleep, and the quality of sleep declines. All of this happens as a result of changes in the circadian rhythms, which gradually weaken by aging. As older people get less sleep at night because of sleep problems, they tend to sleep more

during the day. This means that their needs do not decline; just that the pattern of their sleep changes.

Myth 4: Falling asleep anytime, anywhere, indicates a healthy pattern of sleep

Actually, it is the opposite; getting micro-sleep or mini-sleep episodes are signs of body exhaustion that tries whenever possible to restore the rest that was neglected the other times of not sleeping well.

The scientific explanation for falling into micro-/mini-sleep is that it happens because of the accumulation of adenosine; a chemical that gets reduced when you sleep well, and its level gets high while not getting enough sleep, which causes sleep load.

Myth 5: Staying in bed with eyes shut forces sleep to come

If you cannot sleep and you still stay in bed, you would associate bed with insomnia, which counterworks falling asleep. Sleep experts suggest that fifteen minutes to fall asleep is a healthy period for people to fall asleep; if it takes you longer than that, you should get out of bed and do something mindless with keeping the environment ready for sleeping—low lights and sounds that help you stay in the mood for sleep.

Myth 6: Snoring is forever harmless

In fact, snoring can be in some cases a strong indicator of sleep apnea; a life-threatening sleep disorder, which means it should not be considered a trifle. This case of sleep apnea is characterized by pauses in breathing, preventing air from flowing into or out of the sleeper's airways, which results in waking frequently at night to catch a breath. This breathing pause can strain the heart and cardiovascular system by reducing blood oxygen levels; therefore, snoring is directly linked to hypertension.

Myth 7: Insomnia can be briefed in difficulty falling asleep

Difficulty falling asleep is only one indicator of others that characterize insomnia. Frequent awakening, waking up too early with the inability to fall back asleep, and waking up feeling unrefreshed are common characteristics as well. Also, insomnia is not only a sign of sleeping disorder, it may be a symptom of other medical or psychological, or psychiatric problems as well, and can be treated.

Myth 8: Brain suspends its functions during sleep

Although the body rests, the brain remains active during sleep controlling other functions, such as breathing; it also gets recharged during this period. The sleep cycle has four stages, ranging from drowsiness to deep sleep, during which the most positive and restoring effects take place, which means that the brain stays awake and working while other organs rest.

Who pays the debt?

In a nutshell, not all debts can be paid easily, especially when it is linked directly to our physical and mental health. It is better to listen to scientific facts and dismiss myths, which we may belittle its effect at the current time, even though it would have real harmful effects on us in the long-run.

References

edition.cnn.com
psychologytoday.com
SleepFoundation.org



AN EYE-OPENING
JOURNEY INSIDE

THE BRAIN

By: Inas Essa

It was not long ago since I became obsessed with researching myths that people have adopted for so long and considered them facts and an essential part of their identity. I felt it so hard for us humans—the most intellectual creatures on this planet and who are meant to populate it—to keep passing these myths from one generation to another without checking their origin or source.

For me, the journey started internally; I started researching more about the first thought that sparked in my mind. It was related to the master that controls all inside; the organ that is irreplaceable and most precious, yet, not totally explored: the human brain!

Ironically, our brains seem to be the last continent we—laymen—tend to explore. We just take what we read about them the way the information is presented to us, without much thinking. Some of this information is misleading, and sadly, has the ability to diminish our capabilities, since we become what we think. Now, let us welcome the master, and dive deeper into how it works, and process everything we experience daily.

The Brain in Action

The brain is complex; even though we have discovered several facts about it and its functions, it still hides more within. It represents 3% of the body's weight and uses 20% of the body's energy.

It is the main organ responsible for coordinating thoughts, emotions, behaviors, movements, and sensations through its billions of nerve cells.

This net of nerves connects the brain to the rest of the body, which interacts with the outside world, as such, actions and reactions can occur instantly. This process, of course, works perfectly for our benefit; by processing the information received from the senses of the body and sending messages back, we survive dangers and harmful situations, such as pulling our hand away from a hot stove, blinking when something flies toward our eyes, and many other reflexes.

Here is an important view to be noted: although parts of the brain work hand in hand, each part is responsible for a specific function. The brain hemispheres are divided into four lobes, and each one is responsible for a certain function, as follows:



1. The frontal lobe controls thinking, planning, organizing, problem solving, short-term memory, and movement.

2. The parietal lobe interprets sensory information, such as taste, temperature, and touch.

3. The occipital lobe processes images from your eyes, and links that information with images stored in memory.

4. The temporal lobe processes information from your senses of smell, taste, and sound, and plays a role in memory storage.

Is everything we think about our brains correct?

Back again to the main question that initiated this inspiring journey: the myths and the facts, and what is beyond them. Below are six of the most circulated myths about the brain and the facts represented by research outcomes.

1. We only use 10% of our brain

Although this assumption has been repeated over and over, it is not true! Research has shown that most of the brain's regions are active and work throughout the day; even if not all regions are working at the same time, as we rest. Even during sleep, areas such as the Prefrontal Cortex (PFC), which controls higher-level thinking and self-awareness, for example, or the somatosensory areas, which help people sense their surroundings, are active.

Another evidence that debunks this myth is that, if we only use 10% of our brain, why can small damage to a small area in the brain be such impactful to cognition and functioning? Why should we worry about damage to a small area in the brain if not all of it is actually used?

2. If damage occurs, there is no way back

As mentioned above, the brain masters all our behaviors, emotions, reactions, and so on; naturally, if it is damaged by an injury or a stroke, its functioning is affected. Yet, is that permanent or could it be healed?

Research indicates that the brain can repair itself in some cases, depending on the severity and location of the damage. For example, the brain can repair itself after a disruption caused by a concussion, which is a typically mild and common type of brain injury that results in a temporary disruption of brain functions, provided that there is adequate time for recovery and no repeated injury. Speaking of more serious cases, such as strokes, research shows that the brain may be capable of developing new connections and function through healthy areas, with the help of therapy.

3. Brain cells die permanently

Within the same context, let us view another widespread myth related to the belief that adults have a certain number of brain cells, and when we lose any of these cells, we lose them forever with no possibility of retrieving them back.

Recently, experts found through research that the human brain can form new cells through a process entitled the neurogenesis, which starts during early nervous system development and throughout the lifespan, and is responsible for the growth and production of the brain's neurons. They discovered that it can happen even during old age, and in different regions of the brain.

4. You are either right-brained or left-brained

If you are logical and detail-oriented, then you are left-brained; on the other hand, if you are creative and intuitive, then you are right-brained. This myth is so widespread and has been affecting people's choices in several aspects of their lives, such as picking a profession, hobby, etc. In reality, it is only a myth!

Yes, we have asymmetrical brains that allow each of us to be unique and excel in some tasks more than others, but it does not mean that a person is either right- or left-brained. Although each hemisphere handles or is responsible for certain functions, their duties are not strictly divided and no one is fully right-brained or left-brained.

5. Brains have a preferred learning style

Watch, listen, read, or just do it; perhaps you have noticed that you learn new things and skills, through one of these ways. For example, you prefer to read about the evolution of vaccines to watching a documentary, or listen to a podcast about it.

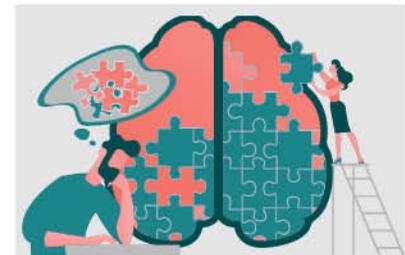
Well, although preferring a learning style is an appealing concept and has been developed into models, such as the VARK model that refers to visual, auditory, reading, writing, and kinesthetic styles for learning, the scientific evidence beyond these learning styles is not adequate.

Moreover, this concept has been extensively criticized and some researchers suggested that it can lead to bad consequences and a hindrance to learning if applied to the learning system without further research.

6. Learning more than one language at the same time is impossible

Some people believe that learning more than one language simultaneously is impossible, as the brain will not be able to process the acquired information. The truth is that it is possible to learn two languages at the same time. Our brains are accustomed to that as they also can adjust themselves to new tasks when needed.

The challenge here is how to divide time and energy to learn both of them, as learning a new language requires high activity from the brain and the ways you use to memorize vocabulary, grammar, and structure. Perhaps it would be confusing for some who cannot handle this extra effort, but it is not impossible!



Conclusion

The human brain is a realm of wonders that makes humans the masters of this planet. It holds our experiences and emotions, and helps us survive. It is our turn to value it and make the most of it, by exploring more and more facts, and not to follow misconceptions and myths about it. They may not be harmful now, but may lead to further problems and hinder us from achieving what we can.

The brain is priceless, and its abilities are limitless! We should cherish these facts and work accordingly.

References

- brainfacts.org
- news-medical.net
- journals.sagepub.com
- psychologytoday.com
- mayoclinic.org
- scientificamerican.com
- ncbi.nlm.nih.gov
- verywellmind.com

MIND YOUR MIND

By: Inas Essa

Over the years, mental health disorders have been surrounded by a net of misconceptions and myths. They have been represented to us in extreme shapes; someone who is completely insane, a psychopath who coldly kills people and never feels guilt, or an isolated and deeply depressed person who does not communicate with anyone and even fears the light and sound. These examples show extremes of mental disorders, often exaggerated, but the vast majority of mental cases are far from these depictions.

This conception has planted in many people the fear of being discriminated against and stigmatized if medically diagnosed with mental disorders; driving some to confine their symptoms to themselves, and never open up about their condition to anyone nor visit a doctor. This worsens the case and may result in more serious outcomes because, simply, such symptoms will not go away on their own and need real treatment.

What is mental disorder?

According to the World Health Organization (WHO), mental disorders include depression, bipolar disorder, schizophrenia and other psychoses, dementia, and developmental disorders including autism. These disorders are

characterized by a combination of abnormal thoughts, perceptions, emotions, behaviors, and relationships with others; if not well-treated or neglected, these can cast a shadow on daily activities, such as work, study, and communicating with others.

Mental disorders are not confined to only being completely "insane" or severely depressed. To peel away the heavy crust of illusions surrounding mental health issues, below are six of the most common myths and the facts beyond them.

1. Mental health issues are a rare bird

According to WHO, an estimated number of around 264 million people are affected by depression worldwide, 45 million for bipolar disorder, 20 million for schizophrenia and other psychoses cases, and 50 million for dementia, which means that they are by all means not rare.

2. People with mental health issues cannot be productive

Although mental health issues affect the person's productivity and ability to work under pressure, it does not mean that they will not be able to work or be productive in some way. It depends on many factors; one of them is the severity of the case and also the support they get from the work environment.

3. Mental health problems are a sign of poor character

Actually, mental health has nothing to do with the character. Many factors contribute to these disorders, such as genetics, the environment, and life experiences. Also, it is important to highlight that a person who fights to get over a mental health condition and tries to cope with study/work

requirements should have enough strength and determination to succeed in that, which are elements of a strong personality.

4. Mental health problems last forever

All fingers are not the same; mental health issues are different in symptoms, causes, and the time of recovery. According to WHO, there are real treatments for many of these mental disorders and ways to alleviate their effects and the suffering caused by them.

5. Mental illness affects adults only

The fact is that many mental health issues go back to childhood and adolescence. They can impact the way one learns, and can be really challenging if not addressed by proper treatment or given the required care. The tricky thing here is that adults are more able to identify and talk about what they really feel, and what is wrong, while children might not be able to identify or express what they go through.

6. Eating disorders have to do with lifestyle and only affect females

Eating disorders like bulimia, anorexia, and binge eating are serious problems caused by many factors; including biological, environmental, and social ones. They need real treatment and sometimes therapy as well, which means that they are not a matter of choice.

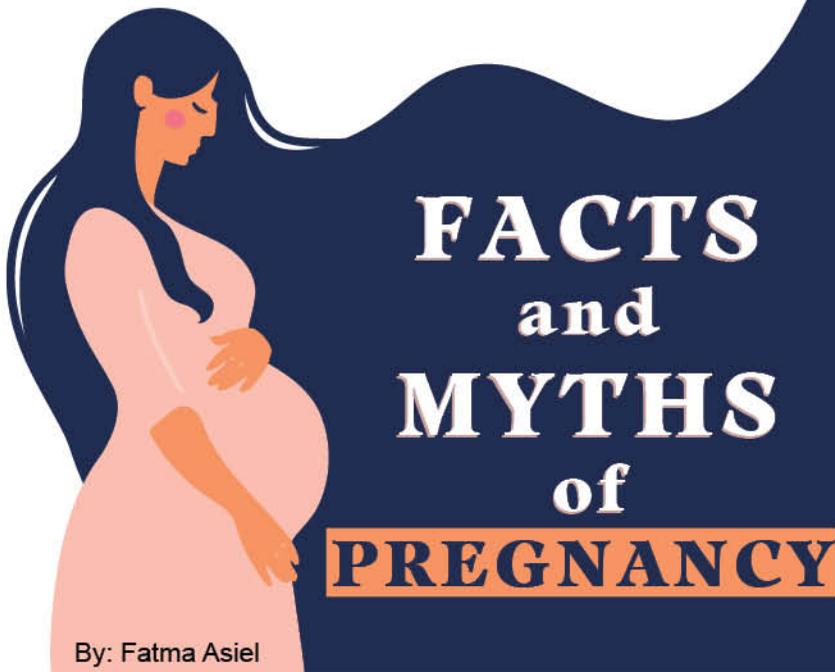
Unlike the popular misconception, studies show that men also suffer from these disorders. According to a research conducted to study the prevalence of eating disorders in men in the UK, it turned out that they represent 10–25% of eating disorder cases.

More awareness required

In order to be able to treat mental disorders, we first need to understand the truth beyond them, their causes and symptoms, and how to get over or manage them. There is no reason to feel ashamed of having a mental health disorder; the real problem emerges from ignorance about them, and not being aware of how important it is to talk about it with your family or a doctor and take the first step towards a safe shore.

References

cmha.ca
health.gov.au
healthpartners.com
medicalnewstoday.com
who.int



Every woman is thrilled when she learns that she is pregnant; however, this happiness is mixed with some anxiety, especially if this is her first pregnancy. Her little experience with pregnancy, and what she hears from the people around her, in addition to the information she reads on the Internet, all together can help anxiety sneak into her, and it may develop into fear.

Sometimes, this anxiety is due to common misconceptions that have spread and are wrongfully considered facts though they are nothing but a myth. In this article, we will list some of the most famous myths and important facts to know about pregnancy.

Facts of Pregnancy

- A pregnant woman's blood pressure rises at a rate ranging 40%–50%, which is normal so that the oxygen sufficiently reaches all parts of the body including the fetus. It is important to monitor the blood pressure regularly so that it does not reach a level that may lead to pre-eclampsia.
- A pregnant woman's voice may change, or there might be some slight changes in the features of her face, which are due to the change in hormone levels in her body; however, these changes disappear after giving birth.
- The chances of getting pregnant in the thirties can reach up to 20%, while it is only

5% in the forties, which means it is possible to get pregnant in the fifth decade of life, but at a low rate. Moreover, pregnancy can occur in the sixth decade of age, but this is very rare.

- The fetus can feel whether the mother is happy or sad; some studies have also proven that the fetus may cry in the mother's womb. Even after birth, the baby's behavior is also affected by the mother's behavior during pregnancy; most women who are extremely irritable and nervous during pregnancy tend to give birth to babies with the same temper.
- The fetus can recognize the mother's voice during the last trimester of pregnancy, and can also interact with the distinct sounds around the mother.

Myths about Pregnancy

Some of the common myths about pregnancy have some validity, among which is that having heartburn during pregnancy indicates the density of the child's hair at birth. Researchers attributed the matter to the fact that the increase in the hormone levels in pregnant women affects both the density of the child's hair and the relaxation of the esophageal muscles, which leads to heartburn.

However, there are completely pure myths and erroneous information, including:

- "A pregnant woman should eat for two". This wrong advice, which spreads among women, most often leads to an increase

in the weight of pregnant women, which can hinder their movement and make the process of giving birth more difficult. In fact, adhering to a balanced diet without excessive carbohydrate intake avoids weight gain and any related problems. It is possible to increase the mother's daily calorie intake to 340 calories in the second trimester, and 450 calories in the last trimester.

- "A pregnant woman should refrain from moving and exercising". This is a false piece of information too; exercising, especially in the last months of pregnancy, facilitates the delivery process, but it must be carried out under the supervision of a professional trainer. The pregnant mother should never refrain from moving completely unless she suffers from health problems that force her to rest upon the doctor's instructions.

- "Eating certain foods during pregnancy can cause an allergic reaction to the baby in the future". In fact, a pregnant woman can eat any type of food as long as it does not cause her any allergy, and that does not make the child allergic to certain foods. However, at the same time, you should avoid eating undercooked foods, certain types of cheese, and salted fish because they are not safe during pregnancy.

- "It is impossible for a mother to give birth naturally if she had a previous C-section delivery". This is also a common misconception that spreads among pregnant women, but it is incorrect, as the reason that had prevented the mother from natural delivery in the first pregnancy—such as weak labor, or the wrong positioning of the fetus that may hinder the natural delivery—may not be the case again.

Conclusion

Not all that we hear or read is true, and we should not deal with it as a fact, even if everyone around us is convinced about it. We must verify every information and refer to specialized doctors, especially in the case of pregnancy.

References

healthline.com
medicalnewstoday.com

Baby Myths

By: Sara Khattab

When people meet new parents, or parents to be, they shower them with advice and information about what to expect from their babies or how to raise and deal with them. Usually, this advice is based on their own experience, or from what they have heard from their friends or families. I remember being overwhelmed with so much advice after the giving birth to my first child; some was helpful, while others turned out to be pure myth, at least in my case. Most of these myths are just common beliefs or old stories that have been passed down from one generation to another, and have since been believed to be true.

Out of Sight



"He cannot see yet!" I heard this sentence a lot when my baby was still a few days old. The fact is newborns can see; their vision is just blurry. Babies are born nearsighted; the farthest your baby can see is nearly 20–30 cm away, which is the distance from your arms to your face. Anything farther than that will be seen as blurry objects.

Another common myth related to newborn vision is that they are attracted to colorful toys and shapes. Actually, bright colors can distract and overwhelm them; looking at black and white patterns instead will help them focus and process what they are seeing.

No Kneecaps

"Take care in handling your baby, specially his legs; babies are born with no kneecaps." In fact, babies are born with soft kneecaps made of cartilage, which will start turning into bone between the ages of two and six years, and will fully develop into hard bone at the age of ten or twelve. The flexible cartilage tolerates the pressure better while the baby is learning to crawl then walk.

In spite of this boneless kneecap, babies have 96 more bones than adults; they have 300 bones. As they grow up, most of these bones fuse together; such as the soft space between the bones of your baby's skull, which is called fontanelles and gives space for the baby's brain to grow. This part will eventually close as the bones fuse together; that is why this part of the head should be handled carefully.

Strawberry Birthmarks

"Your baby has a birthmark that looks like a strawberry; it seems that you were craving strawberries when

you were pregnant". There are so many myths and superstitions about birthmarks according to different cultures; for example, in Japan, it is forbidden for a pregnant woman to look at fire, so that her baby will not have a "burn mark". Another belief is that a baby having a certain birthmark means that s/he has a special personality trait; others think that it is a kind of trauma that happened to the baby's skin during birth.

Birthmarks are common in babies; some are born with them, while some birthmarks appear a few weeks or months after birth. They differ in size, shape, and color, and may last for lifetime, while some fade away gradually. Birthmarks usually are under two categories: vascular or pigmented



birthmarks. Vascular marks develop due to some abnormalities in the blood vessels inside or under the skin. They are usually pink, red, or bluish in color depending on the depth of the blood vessels. They are mainly seen on the face, neck, or the head. On the other hand, pigmented birthmarks are caused by an overgrowth of the cells that create pigments, forming brown or black patches on the skin.

Lazy Walker



When my baby started to sit on his own, I was advised a lot to buy a baby walker to help him walk and that this will also give me some time to do my work as he roams around. No doubt that baby walkers look fun and babies will really enjoy them; however, the American Academy of Pediatrics (AAP) has declared them hazardous baby toys.

Actually, in 2004, Canada banned the sale of baby walkers all over the country because they can lead to accidents and injuries, such as hitting the head and falling off the baby walker or off the stairs. Other than being dangerous, it has also been proven that baby walkers can delay the development of some motor skills; surprisingly, they may actually delay walking.

Babies are usually expected to walk anytime between nine and eighteen months old. For a baby to have their first steps, it is important to develop many other skills; restricted movement and spending a lot of time in baby walkers will hinder them from performing some activities, such as tummy time, or trying to sit up alone, crawling, or pulling up. All these activities will help babies build muscles in their neck, back, and legs, in order to prepare them to take their first steps.

According to the AAP, baby walkers can strengthen the lower legs but not the upper legs and hips, which are essential for walking. Also, hanging legs for a long period of time can put extra strain on their hips and spine,

which can affect their walking without walkers later on.

Early Walkers

A common misconception related to walking causes some parents to fear when their babies start to walk at an early stage, thinking that this will lead them to be bowlegged. The truth is that most babies are born with bowlegs because some of the bones had to rotate slightly to fit into the narrow space inside the womb. This is called physiologic bowlegs, which is considered a normal part of the child's growth. When the baby tends to stand and walk, the bowing may increase a bit and then get better by time. In most kids, bowlegs are corrected by the age three or four years.

Nevertheless, bowlegs in babies could be caused by some serious health conditions, such as rickets, which is a bone growth problem related to Vitamin D or calcium deficiency. Another disease is Blount disease, which is a growth disorder that affects the bones of the legs. If health problems that may cause the bowing of your babies' legs are ruled out, you should not stop your child from trying to stand and walk.

Babies Vocabulary Storage



"Why are you showing your 6-month-old baby pictures of animals? He is too young to remember or learn anything". Babies are assumed to have poor memories, which is absolutely not true. Once the baby is born, they start learning; all the stimulations surrounding the babies affect their brain development. The baby depends on their parents to expand their curious minds. Although a child might not utter their first word before twelve to eighteen months, they start learning words since they are in their mothers' womb; they are actually able to hear voices and sounds starting from 23 weeks of pregnancy.

Parental engagement in an early stage—such as, reading to babies,

having conversations with them, and having a walk with them in their strollers—is essential to help develop children's social, cognitive, and emotional skills. This was proven to be more effective than giving the baby complicated educational toys that may leave the parents frustrated if the baby does not show any interest in them. Children tend to learn by observing and imitating people around them. Parents can also boost their children's brain development through the food they offer, as studies have proven that 75% of the food they consume goes directly to their brain.

The Kohl Myth



Some cultures believe that applying *kajal* or *kohl* to babies' eyes will ward off evil eyes, and some believe that *kohl* protects eyes from intense sunrays and eye diseases. Actually, it is not safe to apply *kohl*, as most of *kohl* products contain lead, which is toxic. Since babies digestive and nervous systems are still developing, they are at a higher risk of lead poisoning. Even if they are exposed to low levels of lead, whether through inhalation, or through skin, or through oral digestion, it can still damage the kidneys and affect the brain development. High levels of lead in the blood can lead to coma, convulsions, and even death.

Now you know that the birthmark you have is not because your mom did not eat a specific type of food she craved but was out of season when she was pregnant. If you receive any piece of advice that confuses you, the best thing is to consult a doctor to make sure if this advice is a fact or just a myth.

References

healthline.com
kidshealth.org
parents.com
webmd.com

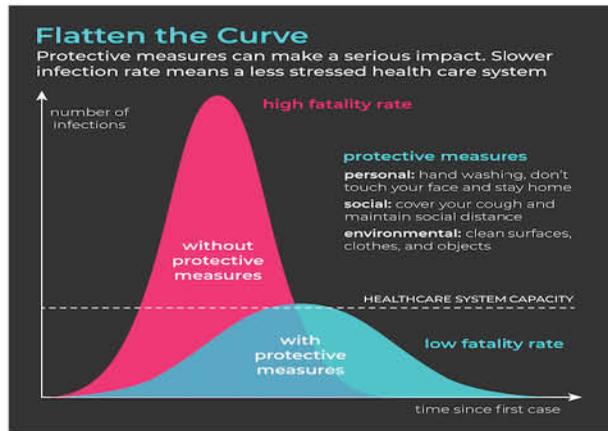


presentation. In Nigeria, the Proshare Foundation turned to animated stories to highlight modes of virus transmission.

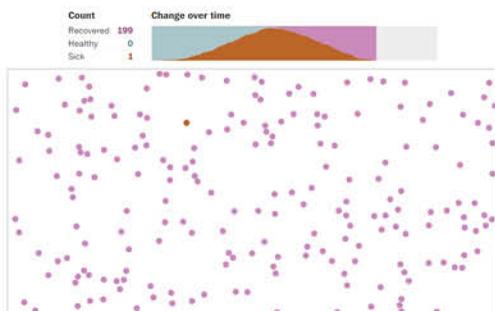
Visualizing Science

The pandemic has given prominence to an emerging field of data storytelling, says Dr. Cameron Edmond from UNSW Art & Design, Australia; narrative visualization—data visualization that uses storytelling techniques—can make complex narratives as COVID-19 more accessible. “Visualizations [that] are augmented by the use of narrative ... create a kind of hybrid data storytelling”, the expert in digital media and communication technology says.

“By drawing on the disciplines of creative writing and journalism, we can more effectively walk readers through visualizations. Data visualizations, such as graphs, charts and maps, can be abstract and difficult to interpret; [they] still represent uncertainty and ‘data’ to some users, who will struggle to engage with them. Incorporating narrative elements helps make them more accessible; in order to explain things, we are going to put them into narrative context.”

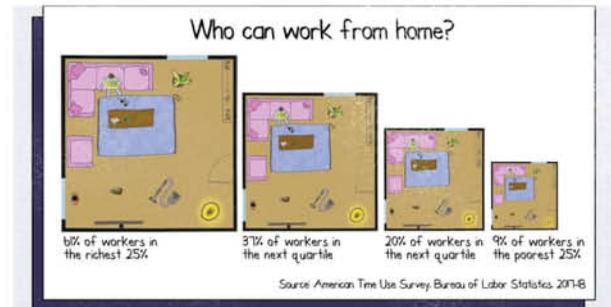


“To use the Flatten the Curve Infographic as an example; although the graphic is interesting and useful, it can be difficult for people to interpret,” Dr. Edmond says. It went viral early in the pandemic, showing the difference in the number of active cases with and without mitigation strategies, like social distancing. It also gave rise to many explainer pieces unpacking the data presented, he says.

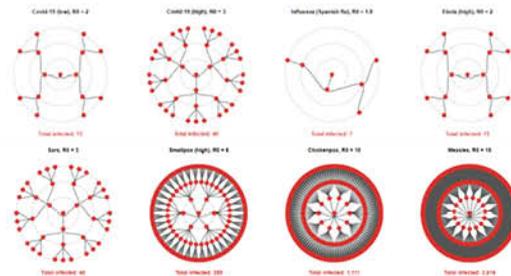


In March 2020, *The Washington Post* used a narrative visualization to illustrate and explain the exponential spread of COVID-19. Using a sample population, it uses sequential animations to illustrate the effect of a free-for-all, an attempted quarantine, moderate social distancing, and extensive social distancing. While the simulations simplify the spread of the disease, they effectively demonstrate how the degree of uptake affects the success of

mitigation. “By presenting the data in the form of both visualization and a coherent narrative, the authors take the audience through the idea of ‘flattening the curve’. A single image becomes a story about a community helping one another—is there anyone who doesn't like that story?” says Dr. Edmond.



The Guardian shared an infographic by Mona Chalabi that illustrates the unspoken privilege around working from home. Through the diminishing size of the living space depicted, the narrative visualization evokes an emotional response and a strong message. “We are in the midst of a very interesting media narrative about the wonders of working from home”, Dr. Edmond says. “The narrative that is forming is overly optimistic, and risks erasing the voices and stories of those who cannot.” This brief narrative visualization “not only presents the data on the inequity of working from home, but also creates empathy by personifying what are otherwise merely statistics”.



The Guardian compared COVID-19 with a series of infectious diseases throughout history, including the Spanish flu, Ebola, and measles in a recent narrative visualization. To do this, it observes the basic reproduction number, how many new cases one infected person generates. It uses a series of simple annotated diagrams that alter as you scroll down to illustrate how isolating one person significantly reduces the spread. “It is attractive, right? It is nice to look at, and you engage with it, and then it is slowly building up [your understanding]”, Dr. Edmond says.

In all its forms, art is not just a pleasing medium of individual expression; it is also a potent vehicle for the dissemination of thoughts, ideas, as well as facts. Using visuals helps communicate scientific facts effectively, as well as raise awareness and incite conversation and critical thinking, which helps individuals filter truths from myths.

References
 conversation.com
 newsroom.unsw.edu.au
 theguardian.com
 un.org
 washingtonpost.com



CURSED BE THOSE WHO DISTURB THE REST OF A PHARAOH!

By: Hend Fathy

Being a proud Egyptian—and wife of an antiquities museum guide who is an Egyptology geek—I eagerly followed the Ministry of Tourism and Antiquities press conference, held in November 2020, on the huge archaeological discovery in Saqqara antiquities area. The excavations of the Egyptian mission have unearthed dozens of intact sarcophagi with well-preserved mummies of priests and Statesmen, in addition to other artifacts, that have been buried in the Saqqara necropolis for about 2500 years.



A few days later, news of a mysterious insect invasion in Luxor was all over the social media networks, with some relating it to the recent discoveries and the infamous curse of the pharaohs. A widely-shared post referred to statements by an official in an agricultural research facility saying that the insects were a species of ground beetle known as *Calosoma olivieri*. As these are very similar to scarab beetles, the popular ancient Egyptian amulet widely depicted in tombs, the invasion was related to disturbing the dead in Saqqara.

Tracing the official statement back, I found out that they are related to an earlier incident that took place in May 2019 and did not receive similar media attention. As for the recent incident, an official in a Government veterinary medical facility has provided explanation on a national TV channel, saying that those insects were ticks. He added that they raised fears due to their huge number and the failure to control them using non-specialized insecticides at the beginning, which made them appear supernatural to non-specialists. However, when treated with the appropriate chemicals, they were successfully eradicated. It is worth mentioning that the ticks invaded a very limited area, most probably due to a nearby body of a dead animal that was not buried, posing a threat to public health.

Now that this case has been solved, let us investigate the origins of this appealing, yet terrifying, myth that was mistakenly blamed for many unfortunate events including—to my surprise—the sinking of the Titanic!

Ancient Security System

Before blaming those who would let a myth scare them, it would be fair to say that the concept of the curse of the pharaohs did exist in the ancient Egyptian culture, and was actually meant to be “scary”. However, inscribed curses are not common, and are mainly found in private,

rather than royal, tombs that date back to the Old Kingdom. These inscriptions were couched in the form of threats, rather than curses, and their main purpose was to preserve the sanctity of the place and function as a primitive security system against tomb thieves.

In a statement to the *Business Insider*, Salima Ikram, an Egyptologist at the American University in Cairo, quotes a Saqqara curse found in a 4000-year old tomb that belonged to a Sixth Dynasty official, vizier Ankhmahor. It warns “impure” intruders that those who “might do against this, [his] tomb, the same shall be done to [their] property”. It also threatens secret spells that would plague them with fear of seeing ghosts. Other writings on the tomb welcome those of pure intentions, and promise them protection in the Court of Osiris, Lord of the Egyptian Underworld.

Another famous Old Kingdom official tomb is that of Harkhuf, a governor of Upper Egypt who also served during the Sixth Dynasty. Along with his significant autobiographical inscriptions, the tomb, located at Qubbet el-Hawa on the west bank of the Nile at Aswan, carries a warning that says “as for any man who shall enter into [this] tomb, ... [I will seize] him like a wild fowl, he shall be judged by the great god”.

A third example exists on an artifact that is now part of the National Museums

LET US BUST SOME ANIMAL MYTHS

By: Mariam Elsayed



The animal world is full of myths and facts just like ours. You have definitely heard numerous stories and legends that have been transmitted from one generation to another. These result in misunderstanding of animal behavior and lifestyle. The following are some myths that science has found answers for.

Bulls are provoked by the color red



In the normal healthy human, the retina of the eye contains three different color receptors called cones. Each cone is responsible for receiving a certain color; one

detects red color, the other detects green, and the third detects the color blue. For bulls, the cone that detects red color is not present, and they use the other two to see different colors in a certain manner, so the red cape will only appear yellowish grey. As a result, it is not the color of the bullfighter's cape that charges the bull; it is the threatening motion of it.

Parent birds do not recognize their babies if touched by strangers.



If you were walking near a tree and you saw a baby bird that has just fallen from its nest after its first attempt to fly, would you help it? Many people believe that carrying or just

touching a baby bird may change its smell, causing its parents to reject it. It might be surprising that the smelling sensation is not well developed in birds; parent birds, thus, do not recognize their babies by smell like many other animals do. They know their babies through their sound and appearance, so do not hesitate to carry the bird back to its nest away from danger.

Scared ostriches bury their heads in the sand

Ostriches do not need to bury their heads when they are afraid; they are unique in their shape and character, and are considered the fastest animals on two legs. An ostrich can run

48–64 kilometers per hour; its kick is so powerful that it can kill any predator even if it was a lion.



Being the largest and heaviest bird makes them unable to fly like other birds, so they are not able to build nests on trees or even reach them.

As a result, they dig holes in the ground; each is about 2 meters to 2.5 meters wide and one meter deep. Parents bury their eggs in the ground and switch sitting on them. Like other birds, ostriches need to turn their eggs around many times a day using their beaks to ensure that all nutrients reach their embryos. This posture, with having a very small head compared to the neck and body, appears as if they are burying their head in the sand; in fact, if an ostrich did so, it will not be able to breathe and will die!

Owls can spin their heads 360 degrees



Unlike eagles, falcons, and other predatory birds, owls have totally different hunting skills. Owls' fixed eye sockets and eye balls make them unable to rotate their eyes; in

order to look around, they need to rotate their whole head. They prefer to stand still on a tree listening well to every single sound around; when it is the right moment, they look back quickly to watch their prey without making any other body movement or sound.

It is true that owls can rotate their heads for a wide range, but it is just for 270 degrees. Scientists studied how this rotatory movement occurs without any cut in a blood vessel or fracture in a bone. They found out that blood vessel holes in owls'

vertebrae is 10 times larger than the vessel passing through them, allowing the vessel to move in any direction while the head turns. There is also a network of blood vessels connecting major neck arteries—carotid and vertebral arteries—to ensure the continuity of blood flow; in other animals and humans, these arteries are more fragile. Finally, there are blood vessels at the base of the owl's neck that expand while turning, making a pool of blood at this area supplying more blood to the brain.

Blind as a bat!



It is an expression used to describe a person with poor vision; the truth is bats are not blind and big bats can see three times better than humans! Bats have excellent hearing and very

good vision; they have a great echolocation system that helps them see better at night using their ears. They send ultrasound waves that human ears cannot recognize; once these waves hit something, they return back to the bat translating how far and big an object is. They use this system to find food at night, while in the morning they can find food easily using their eyes.

Another myth about bats is that they would get stuck in your hair, but it is not true. They may just fly around you when they are searching for food, but their echolocation system will help them just pass by you.

Turtles do not feel pain through their shells



Turtles are one of the oldest creatures on Earth; they have been around for about 220 million years. They are the only vertebrae with a shell on its

back; this shell is made of 59 bones to 61 bones covered by plates made of keratin called scutes.

Turtles cannot get out of their shells as their bodies are attached to the shell by the spine and ribcage. Like our finger nails, a turtle's shell is supplied by many nerves that allow them to feel pain and pressure through it. Some turtles can pull their heads and legs inside the shell by exhaling the air in their lung to make some space inside. As a result, they will need to know if it is safe outside or not, so their shell will allow them to feel any touch or pressure applied.

Goldfish memories do not exceed 5 seconds



Like all other animal myths, there was a belief that goldfish remember things for just 3 seconds, but scientists have another opinion. An experiment was made by giving

some goldfish food while playing certain music every day; the fish connected the act of feeding to playing music and kept swimming towards the sound and wait for food. Scientists stopped playing music for about 6 months then played it again; the fish reacted the same way towards the music and waited for food. This means that goldfish memory span can reach 6 months, not just few seconds.

Sharks can smell a drop of blood 1.6 kilometers away

We smell when the scent molecules dissolve in the wet lining of our noses. The same thing happens under the sea, but



the scent is already dissolved in seawater. Sharks' smelling sensation is hundreds times stronger than humans; they can detect scents of one part in million or one part in 10 billion

depending on the type of chemical and the shark species. A shark cannot, however, smell a blood drop more than 0.4 kilometers away from it, which means a drop in a small swimming pool; it also depends mainly on the water current and direction.

Moreover, sharks are not interested in human flesh or blood. An experiment was conducted by putting a shark in a pool with two drops of blood, the first one was human and the other was fish blood. The shark was not attracted to the human blood and preferred the fish blood.

This means that, in order to attack, a shark needs to be less than 0.4 kilometers away, the water current that will transmit the scent needs to be faster, and finally, the shark needs to be interested in that blood or it will not get any closer.

Cut an earthworm into two and each half will grow into two new worms



Earthworm bodies are composed of a distinctive head and tail. There is a swollen part near the head, called clitellum, which is responsible for the cylindrical shape of the worm. If

you cut the worm in half, it will not grow into two new worms, but there is a chance for the head to generate a new tail if the cut was not before the clitellum. However, there is another type of worm, called planarian flatworms, which can do what earthworms cannot do. If they are cut into many tiny pieces, each one is one to 300 of its body size, whole new worms will grow from each tiny part.

All bees will die after their first sting



Not all bees die after stinging; only honeybees die. Honeybees have barbed stingers; if a bee lodges them in the skin, it will not be able to pull them back out. So, it flies

away leaving the stingers with parts of its digestive tract, some nerves, and muscles; this honeybee will end up with a ruptured abdomen and die immediately. Other bees and wasps, however, have another type of stingers, which are smoother and can be pulled out easily from the skin.

There are still many animal myths that are mistaken for facts until someday science busts those myths.

References

allaboutbirds.org
animals.howstuffworks.com
animals.mom.com
businessinsider.com
earthsky.org

economictimes.indiatimes.com
livescience.com
nationalgeographic.com
wtamu.edu



By: Naglaa Hassan

People share and pass on many misconceptions about various eating habits from one generation to another. Most of us have been warned by our mothers or grandmothers not to swallow chewing gum because it would stick to our stomach; we were also warned not to eat eggs, fish, or lentils when we have a cold. We all share weight loss tips; some recommend drinking skimmed milk, or advocate the use of brown sugar instead of white sugar, while some accuse late meals of being the main reason behind weight gain and obesity, in addition to many other myths. Let us view together through some of these misconceptions that we have passed on as we grew up without thinking, and discuss them in search for the truth.



Diet

The world of weight loss diets is full of myths and misconceptions. Some people think that **starving themselves is the best way to lose weight**, but this is totally untrue. First of all, starving the body will likely fail at the beginning due to its difficulty and extreme risk to health, which may lead to craving different types of high-calorie foods; thus, causing weight gain instead of weight loss.

Another common misconception is **avoiding carbohydrates because they cause weight gain**; the truth is carbohydrates are not the reason. Eating complex carbohydrates, such as whole grains, potatoes, and rice—without adding any fatty sauces or frying—is essential for a balanced meal. Not having a balanced meal that contains all the necessary nutrients weakens the body so it becomes vulnerable to diseases. The healthiest option is, thus, to eat a variety of low-calorie meals containing different ingredients, in order to lose weight slowly and over a long period of time.

Another famous misconception nowadays is that **increasing the number of meals increases the rate of burning calories**. The thermal effect of food—which is the calories needed

by the body for the digesting process—consumes about 10% of the total calories you eat, which is not related to the number of meals, but rather to the total calories intake daily. On the other hand, low-calorie snacks prevent hunger between meals, which may help people control their appetite, not to increase the burning rate.

Last but not least, **do late night meals increase weight?** Yes; if you were a mouse that is! This idea was based on experiments conducted on mice. It was found that the mice that violate their biological clock system—which is based on the fact that night is for resting not eating—gain more weight than others; however, this was not proven in humans. What is more important than the time of eating is the quality of food and the calories it contains. Those who are used to eating high-calorie foods at night inevitably gain weight, not because of the time of eating the meal, but rather the high number of calories it contains.

Milk

Many people warn of **drinking milk after eating eggs**, although they form together a rich source of protein for breakfast; eggs are rich in protein, amino acids, and healthy fats, while milk supplies the body with calcium and

protein. There is nothing that prohibits combining both of them except in the case of eating raw eggs, where the protein in the eggs combines with the biotin "vitamin B7", which prevents its absorption, in addition to the possibility of food poisoning due to bacterial infection after eating raw eggs.



Another myth is the belief that **skimmed milk is healthier than full fat milk**, as it has not been proven that people who consume full fat milk are at a higher risk of having heart attacks or suffering from diabetes compared to those who prefer skimmed milk; moreover, both groups are prone to obesity at the same rate. This is all about the increase in the absorption of vitamin D and vitamin A in case of drinking semi-skimmed or skimmed milk, so there is a lot of exaggeration. The third myth calls for **boycotting dairy products—even eggs and fish—if you are suffering from a cold or flu**. On the contrary, the body needs a good diet rich in protein at the time of illness, so there is no harm in eating these types of food after crossing out being allergic to any of them.

The fourth myth about milk is that it causes acne and pimples that affect the skin of the face and neck, but the American Academy of Dermatology and the Australian College of Dermatologists confirm that the only cause of acne is hormonal problems, skin type, genes, or even exposure to pollutants from the surrounding environment. Thus, there is no relation between diet, in general, and dairy products, in particular, and the appearance or spread of pimples and acne on the skin. For a healthy and strong skin that can resist environmental factors and pollutants, it is recommended to follow a balanced and integrated diet which contains all the needed nutrients on a daily basis.

This myth does not end here; there are some people who have taken it further, advocating that **people should stop drinking cow milk** in the first place, because it is intended and only suitable for calves. They argue that it

is rich with large amounts of fats and protein, which calves need to gain extra weight; they claim that cow milk may make humans ill. In fact, some people may face problems with the lactose present in cow milk; where they suffer from allergies, indigestion, and stomach disorders, but most people consume it without facing any problems. It is a rich source of protein, calcium, iodine, and other important elements.



Sugar

You may have heard the myth that **brown sugar is healthier than white sugar**; in reality, the body deals with both in the same way. Both types contain the same calories; some types of brown sugar contain even more calories than white sugar does. The dark color of brown sugar is attributed to less refining processes, in addition to being mixed with unrefined molasses—the sugar refining process is carried out in order to get rid of impurities, purify the sugar, in addition to selling the molasses as a separate product—which is why the two types of sugar must be consumed carefully.

Sugar is also accused of **causing hyperactivity in children**; however, in 2017, a study published in the *International Journal of Food and Nutritional Sciences* (IJFANS) proved this wrong. This study was performed on 287 children, whose age ranged 8–12 years, to study the effect of sugar intake on the children's behavior. Scientists observed the behavioral results, sleep habits, and food intake, which proved that more than 81% of the children consumed large amounts of sugar, and despite that, eating all this amount of sweets did not affect their behavior or sleep patterns.

This study proves that there is no direct relationship between children's consumption of sweets and sugar and hyperactivity, except a small percentage of children whose bodies may react

differently to sugar intake, where it increases their activity rate or causes them sleep problems. Nevertheless, there is no doubt that excessive intake of sugar may lead to obesity due to the high amount of calories it contains; hence, a risk of developing type 2 diabetes, tooth decay, and other diseases.

Vitamin C

During wintertime, the rate of influenza and cold infections increases, so many resort to receiving nutritional supplements that contain vitamin C, thinking that it contributes to the elimination of viruses, but this is not true. The role of vitamin C is limited to strengthening the body's immunity to resist diseases. It is useful, if you continue to eat healthy meals and fruits on an ongoing basis, not taking nutritional supplements when you have colds only.

Currently, the new coronavirus is the best evidence of the ineffectiveness of intensive doses of vitamin C in eliminating viral infections. A study at the University of Oregon, USA, was conducted on the effect of vitamin C in combating COVID-19 through a clinical experiment on a patient in China, who received intense doses of vitamin C through intravenous injection; the experiment ended in September 2020 without any positive results.

Myths and misconceptions may prevent us from enjoying life, limit our benefit from resources around us, and even harm us and our health badly. We must, therefore, always research and verify any inherited information before adopting or sharing it. As for the answer to the first question posed in this article, about digesting chewing gum: the stomach cannot actually digest it, but it certainly does not remain in the stomach or intestines for 7 years, but rather moves through the digestive system naturally until it comes out with stool.

References

food.ndtv.com
health.harvard.edu
healthline.com
mayoclinic.org
medicalnewstoday.com
parents.com
thebitingtruth.com
today.com

GREENHOUSES OF hope

By: Fatma Asiel

Who has not heard the phrase "these are greenhouse-grown vegetables"? Certainly, most of us know what greenhouses are; they allow us to grow vegetables and fruits out of their season. Greenhouses are by no means a new invention, as they have been used by farmers since the 17th century; but, how have greenhouses developed over the years? What are their advantages and disadvantages?

Greenhouses are enclosed spaces that provide a warm climate for some plants that are affected by temperature; they protect these plants from excess heat or cold. The structure of greenhouses has evolved over time; the first greenhouses were made of bricks or wood with traditional means of heating. Then, in the 19th century, they developed and were made of glass, with more advanced means of heating. Nowadays, greenhouses are made of glass or plastic, with an integrated system to monitor the temperature and light, the amount of water in the soil, in addition to the stages of plant growth inside the greenhouse.

Greenhouses are widely used to grow seasonal crops; using certain techniques, crops can be produced all year round, especially crops that are highly consumed for food. They are not only used to grow essential crops, but they are also used to grow ornamental plants and rare flowers, which makes them economically important.

The Technique

The main idea of greenhouses is to maintain heat and redistribute it inside the greenhouse so that it does not change at high rates; moreover, this heat helps the plants grow faster. When warm sunlight enters a greenhouse through its surface, whether it is made of glass or plastic, the greenhouse maintains the heat and does not disperse it easily, even if the weather is cold. Industrial thermal generators can also be used inside the greenhouse without relying entirely on sunlight.

The Advantages

Greenhouses have many advantages, the most important of which are:

- The economic benefit mentioned earlier, which is to grow consumable crops out of their season, such as cucumber, tomatoes, zucchini, oranges, etc.
- Saving irrigation water, and using the dripping irrigation system, because greenhouses help maintain water in the soil to a large extent.
- Protecting plants from insects and agricultural pests, which may cause damage; thus, reducing the use of pesticides in growing the plants.

- Raising agricultural productivity, where the same area of soil can produce more crops if we use greenhouses.
- The possibility of cultivation in relatively poor soils.
- The need for a smaller labor force.

The Disadvantages

Despite the advantages presented earlier, greenhouses have some defects and problems, including:

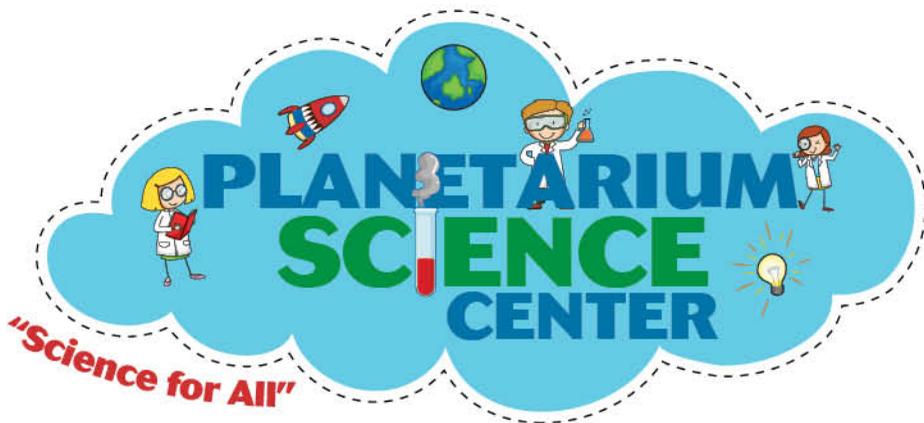
- High cost: Even though the cost of glass and plastic is relatively low, the generators, thermostats, in addition to other machines and equipment are expensive.
- Some of the machines and generators used in greenhouses run using fossil fuels; thus, contributing to environmental pollution.
- Any minor deficiency in the design, structure, or operation of the greenhouse may affect the production negatively; hence, putting the crops at high risk.
- Even though it is rare to find agricultural diseases or pests within the greenhouses, the loss can be significant if any of them appears, because the heat inside the greenhouse will help the disease spread ten times faster than normal.
- Although greenhouses do not need a large number of workers, these workers must be highly trained, competent, and skilled; therefore, they are highly paid, which may increase the overall cost.

Greenhouses are an economic endeavor in the first place; they can provide numerous crops if implemented correctly, but there are challenges that owners may face to obtain the required production.

References

britannica.com
 grtrailers.com
 home.howstuffworks.com
 sciencing.com





Available Planetarium Shows

Seven Wonders; 30 min.

Kaluoka'hina: The Enchanted Reef; 33 min.

Oasis in Space; 25 min.

The Great Barrier Reef; 42 min.

The Secrets of Gravity; 45 min.

Space Flight (Live Show); 45 min.

The Future by Airbus; 27 min.

Enlightened Mind; 19 min.

The Planetarium operates from Sunday to Thursday (except Tuesday), and offers two shows per day. For schedule and fees, please visit the PSC website.



ALEXploratorium

Discovery Zone

Opening Hours and Guided Tours Schedule

Sunday to Thursday (except Tuesday):
10:30, 12:30, and 14:30
Tuesday: 10:30

Entry Fees: EGP 10.- (EGP 5.- for students)

For reservation, please contact the PSC Administrator at least one week before the desired date.

The Bibliotheca Alexandrina Planetarium Science Center (PSC) invites its visitors to spend a day of fun learning, where they can enjoy amazing scientific shows that cover a diverse variety of scientific fields and are suitable for a wide range of groups at the **Planetarium Theater**.

Visitors can also enjoy tours of the **History of Science Museum**, which highlights scientific discoveries throughout three eras: Pharaonic Egypt, Hellenistic Alexandria, and the Golden Age of Islam.

Moreover, visitors can enjoy a collection of interactive exhibits that targets children and adults, workshops, DVD and 3D shows at the **ALEXploratorium** as well as shows at the **12D Theater**.

+ (203) 4839999; Exts.: 2350, 2351

WhatsApp: +(2) 01012307772

+ (203) 4820464

psc@bibalex.org

www.bibalex.org/psc

BAPSC



TURTLE TROUBLE



If you believe that turtles do not feel pain through their shells, read "Let Us Bust Some Animal Myths" article on page 18.

Illustrated by: Mohamed Khamis