

## 1<sup>st</sup> School Semester 2010/2011

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## Know Thyself

By Maissa Azab, PSC Publications Coordinator

This issue of the PSC Newsletter, 1<sup>st</sup> School Semester 2010/11, not only marks the 1<sup>st</sup> of the New Year but also the 10<sup>th</sup> issue of the Newsletter. As we begin a new cycle, we once again begin a new phase in our main publication, in which we always seek innovation to meet our readers' needs and desires of edutainment.

We have added eight new pages that feature more diversified articles on the overarching theme, as well as a variety of new columns. More importantly, we have added a selection of edutaining activities that our readers of all ages are sure to enjoy.

We also present an opportunity for our talented youngsters who enjoy the written word through the "So You Think You Can Write" competition.

In the first issue of the last year we went back to the oldest of known sciences; Astronomy, which deals with the mysteries of the universe we inhabit. We then talked about Biodiversity, a rising global issue of interest that requires our immediate attention. Finally, we tackled the most dangerously alarming situation threatening our life on Earth; Climate Change.

In this new first issue, we turn our attention to one of, if not the most amazing creation that is, as far as we know, unique to the planet Earth. We take a look at ourselves; into our incredible Human Body and into its Health.

It is indeed an inevitable necessity that we think about, learn and understand as much as possible about this astounding creation. We need to know our bodies; what is good for their health and wellbeing and what is not; how to nourish and maintain them so that they stay healthy and fit for us to enjoy a lifetime of vibrant vitality.

I invite you to leaf through our new and improved PSC Newsletter; hoping that you enjoy our articles, have fun with our activities and write to us at [PSCeditors@bibalex.org](mailto:PSCeditors@bibalex.org).



## Human Health Today

By Dr. Yehia Halim Zaky,  
Head, Bibliotheca Alexandrina Academic and Cultural Affairs Sector

In 1948, life expectancy in Egypt was 38 years, and today, it is 70 years. This change occurred as a result of several factors. One of the main factors is antibiotics, which helped reduce neonatal mortality and infection in old age. Another main factor is the use of vaccination, which prevented many diseases like small pox, diphtheria and measles. We can be grateful that poliomyelitis, a nightmare condition that can cripple a child in 24 hours, has been eradicated from Egypt thanks to an efficient vaccine that is given to the child as 3 drops by mouth. Better sanitation and clean drinking water were also essential factors in the rise of life expectancy.

Moreover, new drugs to combat diseases that are particular to this region like bilharziasis are now available. There are, however, several diseases that are important to be detected, particularly in childhood, though their effects appear much later in life.

One of these diseases is streptococcal sore throat or tonsillitis. Repeated attacks of tonsillitis may lead to rheumatic fever known to produce on and off swelling of the joints that can appear for a couple of days then disappear, moving from one joint to another. The fact that it disappears after a while does not mean that the streptococcal infection has gone away. It can be dormant and may later appear in the heart valves causing serious damage. Another complication of untreated sore throat is inflammation of the kidneys (nephritis), which may cause renal failure 20-30 years later.

In the Mediterranean region in particular, there are diseases that are on the rise. One is obesity, which means increased weight over the accepted norms, and the other is hypertension, or elevated blood pressure sometimes referred to as the "silent killer", and both are among the most common of all current ailments.

Furthermore, diabetes, or increased blood sugar level—one type of which is hereditary—is a disease that manifests itself later in life at around the age of forty, particularly if the person is obese. Last but by no means least, is smoking. Though once deemed as a fashion, its devastating complications have now appeared not only in increased incidence of lung cancer, but in infection of all the vessels of the body.

Continued on page 7

# IPS 2010

## An Event to Remember!

By Maissa Azab, PSC Publications Coordinator



Group Photo

In our last issue, we wrote about what was then an upcoming highlight; the 20<sup>th</sup> International Planetarium Society conference (IPS 2010), which was the first to be hosted in Africa and the Middle East, and was organized by the BA Planetarium Science Center. The two-year long preparation finally reaped its rewarding fruit in the period from 27 to 30 June 2010; the duration of the high profile event that exceeded everyone's expectations.

The story began in 2008, at the Adler Planetarium in Chicago, the first American Planetarium and location of the 19<sup>th</sup> IPS conference. Then and there, our representative presented the bid of the BA to host the IPS 2010. The selling point was: "Back to Alexandria, the Cradle of Astronomy".

It was a difficult competition with France and China. However, in acknowledgement of the important role the ancient Library of Alexandria played in enriching all fields of science,

especially astronomy, the IPS Council Committee could not have found a better place to bring this unique event to Africa and the Middle East; home of the earliest civilizations ever known.

For two years, the Local Organizing Committee at the PSC worked on the so many details of the conference; Lectures, Sessions, Workshops, Meetings, the Exhibition, Planetarium Time, Tours and so much more that had to be taken care of. Our mission was to exceed expectations.

We knew that planetarians from all over the world would attend because after all it is "The Event" when it comes to the world of Planetariums; we also knew that Egypt is an irresistible temptation for tourists. Nevertheless, not only did we have the reputation of the BA at stake, we truly wanted participants to really enjoy and benefit from the conference.

As expected, 335 planetarians from 44 different countries spanning the six

continents of the world assembled at the BA for the IPS 2010. 27 Sponsors exhibited their latest products at the IPS 2010 Fair. Evans & Sutherland, the providers of the BA Planetarium's new Digistar4 full-dome System, and Sky-Skan were the largest exhibitors at the Fair. Other exhibitors included R.S.A. Cosmos, Konica Minolta, Spitz, Global Immersion, Uniview, Megastar, Zeiss and GOTO, to name a few.

It was truly a fascinating experience to plunge into the inflatable domes and to browse through the myriad of high-tech exhibits that bring the skies so unbelievably close and real to us.

As part of the IPS 2010, three plenary sessions were held featuring eminent lecturers. On the Opening Day, Dr. Ismail Serageldin, Director of the Library of Alexandria, gave a lecture entitled "Alexandria and the History of Astronomy". Next, Dr. Farouk El-Baz, Director of the Center for Remote Sensing, Boston University, delivered a

lecture entitled "the Role of Planetaria in Science Education". On the last day, Dr. Goerge Saliba, Professor of Arabic and Islamic Science in Columbia University, talked about "Arabic and Islamic Astronomy in an Intercultural and European Context".

Moreover, two unique events took place during the conference. For the first time, a special meeting was organized especially for Arab Speaking Planetariums. The meeting was initiated by Marc Rouleau, Planetarium Coordinator at Sharjah Higher Colleges. The reason for the meeting was to put forth the proposal to organize an "Arabic Language Planetarium Association" and to present it for recognition by the IPS.

The other significant event was the signing of an agreement between the Bibliotheca Alexandrina; represented by Dr. Ismail Serageldin; and the National Authority for Remote Sensing and Space Sciences; represented by its Chairman, Dr. Ayman El-Dessouky. The agreement includes a framework of cooperation in space and remote sensing applications; programs that engage the youth in both institutions, the launch of two educational satellites, academic and scientific exchange, in addition to cooperation in fields of research, development, and joint scientific research.

On the social front, the biggest hit of all activities by far was the Tours. Registered Participants were enchanted by the mystique of Alexandria, the splendor of Cairo, and even more by the majesty and magnificence of Luxor and Aswan.

The IPS 2010 was definitely a rewarding experience for all those who partook in its organization. Seeing the fascination and admiration reflected in the faces of our guests was more than we could ever ask for at the end of two years of hard work.

### Editor's Note:

Founded in 1970, the International Planetarium Society, known as the IPS, is the global association of planetarium professionals. Its nearly 700 members from around the world represent schools, colleges, universities, museums, and public facilities of all sizes including both fixed and portable planetariums. The primary goal of the Society is to encourage the sharing of ideas among its members through conferences, publications, and networking.





Inflatable Dome



Exhibition Fair



Planetarium Time



Prof. Tom Mason, IPS President



Conference Tour of Luxor & Aswan

# Planetarium Scoop

## Close to Home

By Maissa Azab,  
PSC Publications Coordinator

We have often written about the history of Planetariums and about so many fascinating inventions in Planetarium technology, usually those applied in big Planetariums for the benefit of large audiences. Full-dome projection, high resolution 3D digital images, immersive theaters; we have talked about it all. This time, I would like to focus on another kind of Planetarium technology, one that is brought anew to the attention of the industry but, more importantly, one that can bring the skies ever so closer to home.

Designed to be a true "digital planetarium", including real-time 3D sky simulation, full-dome shows and multimedia presentations, SciDome is a single projector video system for small to medium-sized Planetariums. The system produces a bright and uniform all-dome image, but most importantly, it is easy to use, flexible and user-friendly. Its star field quality, astronomical detail and teaching capabilities surpass any other digital planetarium system available. Powered by Starry Night, the world's most comprehensive astronomy software, SciDome is an affordable choice for educational planetariums.

***But, can there be a high performance planetarium projector that can be carried in a single hand to exist?***

MEGASTAR ZERO, the first of its kind, was created for this purpose. It is 27cm in diameter, the size of a basket ball, and weighs 11kg of weight. In spite of its portable size, it is able to project around 2.2 million stars. It has low power consumption with no need to change the lamp, and can be used in schools, mobile planetariums, etc.

A winner of numerous prizes, unprecedented hit, the first commercial optical Home Planetarium in the world is the HOMESTAR. It has been said that humans can see several thousand stars by the naked eye during a dark night; however, nowadays, especially in huge cities, it is difficult to observe the night sky. HOMESTAR, which can produce around 60 thousand stars, came into existence to satisfy the wish of those who want to have access to the night sky in the comfort of their homes.

Started in 2005, HOMESTAR delivers the night sky to your room. The high definition, color film, Highspec Model, HOMESTAR PRO, is a further improvement on the world's first optical home planetarium. HOMESTAR PURE is the series simplest model projecting the beautiful night sky using manual movements. On the other hand, the HOMESTAR SPA produces the night sky in the bathroom! It is waterproof and floats on the water.

Finally, the HOMESTAR EXTRA is the most advanced HOMESTAR Model. Producing 120 thousands stars, it uses a LED Lamp, includes 7 special lenses and is supported with a remote control. It shows the skies according to the time and date and can be used for educational purposes.

At the IPS 2010, we were introduced to this fabulous type of products; Planetariums of all sizes, down to fit into the palm of the hand. These Planetariums definitely bring the stars to our living rooms, and even to our bathrooms!

***What more can we ask for? We have no excuse; it is time to kick back, relax and enjoy gazing upon the night skies full of secrets and surprises.***



## AVAILABLE SHOWS

### The Zula Patrol

23 Min. Full-dome Show

### Stars of the Pharaohs

35 Min. Full-dome Show

### Seven Wonders

30 Min. Full-dome Show

### Ring of Fire

40 Min. IMAX Show

### Cosmic Voyage

35 Min. IMAX Show

### Oasis in Space

25 Min. Full-dome Show

## VISITORS INFO

- For the Planetarium daily schedule and fees, please consult the Center's official website: [www.bibalex.org/psc](http://www.bibalex.org/psc).
- Kindly note that, for technical reasons, the Planetarium maintains the right to cancel or change shows at any time without prior notification.



# Medicine

## ACROSS THE AGES



### Medicine In Egypt Of The Pharaohs, Hellenistic Alexandria, And The Arab Muslim World

By Reda Kandil, PSC Programs and Events Specialist

The History of Science Museum (HSM) is one of the three components of the Planetarium Science Center. The Museum presents the history of science in three major eras: **Egypt of the Pharaohs**, **Hellenistic Alexandria** and the **Arab Muslim World**; periods of greatness that illuminated humanity and played a crucial role in the involvement of all branches of science; one of which is medicine.

#### Egypt of the Pharaohs

*"In Egypt, men are more skilled in medicine than any of humankind"* were the words of Homer in the Odyssey.

Not only did ancient Egyptians excel as great architects; architecture being the most obvious aspects of their bewildering greatness, but also as surgeons and dentists. As a matter of fact, they performed surgeries with advanced surgical tools and many important drugs of today date back to ancient Egypt.

Since the dawn of time, ancient Egyptians recognized the importance of developing medicines and raising awareness of the effect of food on human health. As ancient Egyptians documented all their life details on the walls of tombs and on papyrus, today, we can find popular medical texts in the temple of Kom Ombo, as well as the Edwin Smith and Elbers Papyri.

From the etiological<sup>(1)</sup> point of view, disease could be caused by a god, by a shadow of a deceased person, through various pathogenic entities, by the patient's own blood, or by parasites and worms. On the other hand, from the clinical point of view, descriptions found in medical papyri revealed physical examination and diagnosis.

Several diseases had been reported from examination of mummified remains such as **tuberculosis**. Diseases of the eye were caused by the constant exposure to the Sun, sand and dust. Eye care of the workmen was demonstrated in several papyri and tomb inscriptions. **Cataract** (loss of eye lens transparency) was so named, as the Latins thought it was due to a liquid flowing from the brain into the eyes. Egyptians called it "rise of water", denoting the same false understanding of the Latins centuries later.

Due to the hard physical work endured by the majority of the population, the body got affected by many diseases that were common occurrences such as **arthritis** (joint disease), **osteo-arthritis** (chronic arthritis, degenerative due to trauma or age), **curvature of the spine**, **fractures** and **rickets** (softening of bones in children).

Moreover, skeletal remains of pyramid workers showed that fractured limbs were treated by applying modern techniques, where the limb would be set in either a wooden splint wrapped in bandages, or encased in a plaster cast made from cows' milk, mixed with barley or acacia leaves and bound together using gum and water.

Doctors also used the pharmacopoeia<sup>(2)</sup>; using animal products, such as marrow, bone, fat, meat; vegetable products, including leaves, fruits, seeds, roots, and their derivatives such as gum, oil, wine, beer, etc; and mineral products like copper, zinc, calcite, salt, alum and clay.

#### Hellenistic Alexandria

The most important figure in ancient Greek medicine is **Hippocrates**, known as the "Father of Medicine", who established his own medical school and whose students developed the Hippocratic Oath<sup>(3)</sup> for physicians, still in use today.

The Greek **Galen** was also one of the greatest surgeons of the ancient world and performed many audacious operations, including brain and eye surgeries that were not attempted again for almost two millennia.

When we talk about medicine in ancient Alexandria, we must introduce two significant physicians and anatomists; namely, **Herophilus** and **Erasistratus**, who studied the human anatomy based on dissection<sup>(4)</sup> or vivisection<sup>(5)</sup>.

Through these studies, **Herophilus** described the eye and its four membranes; and identified the heart and its four chambers. His work on blood and its movements led him to study and analyze the brain as well. He proposed that the brain housed the intellect rather than the heart. This was a major breakthrough insofar as until then, the heart had always been regarded as the center of the nervous system.

As for **Erasistratus**, he is credited for his description of the valves of the heart and his essay on the vascular system, in which he identified the four principal valves of the heart and described their purpose. In particular, he realized that each one operated in one direction only and that the heart works like a pump.

Another physician of great contributions to medical history is **Discorides**, who wrote a pharmaceutical and herbal encyclopedia entitled "*De Materia Medica*" in five volumes containing the description of 600 plants; a record at that time which was only broken by Ibn al-Bītār many centuries later.

#### The Arab Muslim World

*"There is no disease that Allah has created, except that He also has created its treatment"*, says the hadith attributed to Prophet Mohamed (PBUH).

**Abū Bakr Muhammad ibn Zakariyyā al-Rāzī** (Al Rhazes), one of the most prominent Arab physicians, is sometimes referred to as the "Arab Galen". He was the chief physician of the hospital at Rayy (in Persia). He wrote great works such as "*Kitāb al-hāwī*", revealing a multitude of personal observations and quotations from ancient scholars in the clinical description of each disease; it was published after his death by his assistant from the notes he left.

In diagnosing illness, as well as in treating it, al-Rāzī sought to follow the dictates of practical common sense. His medical writings demonstrated considerable accuracy when observing patients and precision in describing their symptoms, his knowledge being based on thorough reading of his Greek and Arab predecessors.

A second physician whose contributions cannot pass unnoticed was **Abu Al Qasim Khalaf bin Abbas Al Zahrawī**, known as **Abulcasis**. He was the author of a vast encyclopedia in thirty treatises, entitled the Method of Medicine "*Kitāb Al Tasrīf iliman 'Ajiza 'an-Ta'alif*". This book influenced the progress of medicine and surgery in Europe after it was translated into Latin in the late 12<sup>th</sup> century and then afterwards into different European languages. The thirtieth volume was devoted to surgery and contained the earliest pictures of surgical instruments in history, about 200 of which were described and illustrated.





**Abū Alī al-husayn ibn Abd Allāh ibn Sīnā**, commonly known as **Avicenna**, was one of the most famous philosophers and doctors of the golden age of Islam. By the age of seventeen he turned his attention to Medicine. He composed the Book of Healing, "*Kitāb al-shifā*"; a vast philosophical and scientific encyclopedia; and The Canon of Medicine, "*Al-Qanun fi al-Tibb*", which is among the most famous books in the history of medicine.

The *Qanun* contains about one million words and, like most Arabic books, it is elaborately divided and subdivided. The main division is into five books: the first deals with general principles of medicine; the second with simple drugs arranged alphabetically; the third with diseases of particular organs and members of the body from the head to the foot; the fourth with diseases which though local in their inception spread to other parts of the body, such as fevers; and the fifth with compound medicines.

It points out the importance of dietetics<sup>(6)</sup>, the influence of the climate and the environment on health and the surgical use of oral anaesthetics. Ibn Sīnā advised surgeons to treat cancer in its earliest stages, ensuring the removal of all the diseased tissue. The *Qanun's* materia medica considers some 760 drugs, with comments on their application and effectiveness. He recommended the testing of a new drug on animals and humans prior to general use.

In his major commentary on Ibn Sīnā's "Canon of Medicine", **Ibn Al-Nafis** who studied medicine at the Great Nuri hospital in Damascus describes blood circulation in the lungs for the first time and gave a description of the bronchi and capillary circulation. He also elaborated on the function of the coronary arteries as suppliers of blood to the cardiac musculature<sup>(7)</sup>; constituting a first step prior to William Harvey's discovery in 1628 that the blood circulated in a closed loop.

A final example would be the physician **Ibn al-Bīṭār**, son of a veterinary surgeon, who studied botany for many years. Among his most famous published works, which were all devoted to botany, pharmacology and dietetics, was his Compilation of Drugs and Simple Foods, "*al-Jāmi' li-Mufradāt al-Adwiya wal-Aghdhiya*"; an impressive encyclopedia that contained approximately 1400 substances in 2330 articles.

These are just a handful of an incalculable number of scientists and scientific discoveries that have each led us one step at a time to the vast knowledge we have today of the Human Body, its functions, its ailments and its cures. A knowledge without which we would not be where we are today and without which no one knows how our lives would have turned out. It is only by looking back at how far we have come that we can look ahead to the future.

## Glossary

**(1) Etiology:** The study of causation, or origination. In medicine, it refers to the causes of diseases.

**(2) Pharmacopoeia:** A book containing directions for the identification of samples and the preparation of compound medicines.

**(3) Hippocratic Oath:** An oath historically taken by doctors swearing to practice medicine ethically. It is widely believed to have been written by Hippocrates.

**(4) Dissection:** (also called anatomization) The process of disassembling and observing something to determine its internal structure and as an aid to discerning the functions and relationships of its components.

**(5) Vivisection:** A surgery conducted for experimental purposes on a living organism, typically animals with a central nervous system, to view living internal structure.

**(6) Dietetics:** The science of applying nutritional principles to the planning and preparation of foods, and regulation of the diet in relation to both health and disease.

**(7) Musculature:** A term that refers to all the muscles in your body, or to a system of muscles that you use to perform a particular type of action.

## References

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**1**

I was an ancient Greek physician, pharmacologist and botanist.

I wrote an encyclopedia, where I described 600 plants.

My encyclopedia was translated later into many languages.

**2**

I devoted myself to the study of medicine.

I was born in Tehran but settled in Baghdad.

I was named "the Arab Galen".

I wrote a medical encyclopedia of 9 books where I gathered the ancient Greek knowledge and added new visions.

**3**

I was a great Muslim surgeon.

I wrote a medical encyclopedia of 30 volumes compiled from medical data that I accumulated throughout my whole medical career.

I invented several surgical instruments.

I described surgical instruments with illustrations in my book.

**4**

I was born in Malaga and died in Damascus.

My works are devoted to botany, pharmacology and dietetics.

I wrote an encyclopedia where I described 1,400 substances in 2,330 articles.

**5**

I am a well-known Muslim physician in the Arab World.

I discovered the pulmonary circulation.

I was the first to describe the constitution of the lungs and gave a description of the bronchi and the interaction between the human body's vessels for air and blood.

**Answers:**  
(1) Discordes - (2) Al Rhazes "al-Rāzī"  
(3) Al Zahrawi "Abulcasis"  
(4) Ibn al-Bīṭār - (5) Ibn Al-Nafis

# VISITORS INFO

## Opening Hours

Saturday to Thursday [from 09:00 to 16:00]

Friday [from 15:00 to 18:00]


## Guided Tours Schedule

Saturday to Thursday

[10:30 + 11:30 + 12:30 + 13:30 + 14:30]

Friday [16:45]

- Museum entry fees are included in all Planetarium show tickets.
- For non-audience of the Planetarium, Museum entry fees are 0.50 EGP.
- Museum Tours are free for ticket holders.

[illegible]

A Punnett square diagram for a monohybrid cross of Bb x Bb. The top row of the square contains Bb and bb. The left column contains Bb and bb. The four cells of the square contain Bb, Bb, Bb, and bb. The top and left cells are shaded light blue.

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Chromosome

**Note:** The results would be the same in diagram 2 if the mother had blue eyes and the father had brown eyes with a recessive blue gene or in diagram 3 if the father had the brown eyes and the mother had blue eyes.

### A Long Story with a Lot of Words!

For science, the sequencing of the human genome was a groundbreaking achievement; one that made a lot of news. But what does it actually mean? Will any of this information make a difference in our lives?

A **genome** is all of the genetic material that an individual, or a species, has. The human genome differs from the gorilla genome, which differs from the rice genome, and so on. And while every person has a "human genome", it is not exactly the same in all people. Sequence variations within your genes make your DNA different from that of your mother, your cousin, or a complete stranger.

Think of the human genome as a long story that contains roughly 25,000 words; the genes in our case. With few exceptions, each person has the same number of words, but certain words have slightly different spellings. In some cases, the spelling changes create words with new meanings; that is, genes that indicate different proteins. Other spelling changes appear to have no effect whatsoever.

Researchers are beginning to use knowledge learned from genome sequencing research to figure out how being healthy and being sick are different at the level of molecules. Moreover, doctors are starting to use genetic information to make treatment choices.

Research is proceeding quickly to develop other genetic tests that may help diagnose and treat a wide range of health problems beyond cancer.

### References

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# Trivia Answers

- 1. Why is DNA described as the "double helix of life"?**  
Double is from the two strands of DNA. A helix is anything spiral in shape or structure. The DNA is found in two spiral strands, without the DNA, there would be no life.
- 2. Where are chromosomes found within a living cell?**  
The chromosomes are found in the nucleus of each cell.



## Keyword

To find the keyword, fill in the blanks in the following words with the correct missing letters. Transfer those letters to the correspondingly numbered blanks.

- |                               |               |
|-------------------------------|---------------|
| 1 2 3 4 5 6 7 8 9 10 11 12 13 | 1 2 3 4 5 6 7 |
| 1. _ ABY                      | 1. _ ABIN     |
| 2. _ SLAND                    | 2. F _ Y      |
| 3. H _ ME                     | 3. H _ ME     |
| 4. EA _                       | 4. KI _ G     |
| 5. _ RASE                     | 5. F _ NGER   |
| 6. _ OMB                      | 6. RI _ G     |
| 7. TEAC _                     | 7. HU _       |
| 8. MELO _                     |               |
| 9. M _ VE                     |               |
| 10. _ AMB                     |               |
| 11. CL _ SE                   |               |
| 12. LE _                      |               |
| 13. FL _                      |               |

Answers:  
BIOTECHNOLOGY  
CLONING

## Human Health Today

### WHAT TO DO?

Hazards to our health today include environmental factors; increased surrounding pollution, petrol emissions with dioxins derivatives, by-products of hydrocarbons, and insecticides are certainly health risk factors. Increased sound pollution is also a danger factor as it leads to increased stress. Moreover, unseen waves and radiations caused by electromagnetic fields that surround us today have not been fully evaluated.

It is crucial that we study all these factors and their effects; but more importantly, we need to research methods to avoid and hopefully eliminate them.

Meanwhile, we should pay attention to our health, learn about and understand our bodies, have regular medical checks, which are all important measures to avoid poor health later in our lives.

Eat healthy food that does not contain excessive fat. Make sure vegetables and fruits are abundant in your diet. Lead a healthy life and enjoy sports as much as you can during childhood and youth. Exercise regularly during your adult life as this will prevent obesity and keep your circulation active. A balanced exercise and diet routine will keep you fit and healthy.

A regular check up on your weight, blood pressure and blood sugar levels, as well as staying away from smoking, are keys to a healthier life.

## DISCOVERY ZONE

### Opening Hours

Saturday, Sunday, Monday, Wednesday and Thursday:

[From 09:00 to 16:00]

Tuesday:

[From 08:30 to 12:30]

Friday:

[From 15:00 to 17:00]

### Guided Tours Schedule

Saturday to Thursday [10:00 + 11:00 + 12:00 + 13:00 + 14:00 + 15:00]

Friday [15:00 + 16:00]

### Entry Fees

Students 2 EGP

Non-students 4 EGP

## LISTEN AND DISCOVER

- For the list of shows available at the "Listen and Discover" and the schedule, please consult the Center's official website: [www.bibalex.org/psc](http://www.bibalex.org/psc).

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

### Show fees

|            |              |       |
|------------|--------------|-------|
| DVD shows: | Students     | 1 EGP |
|            | Non-students | 2 EGP |
| 3D shows:  | Students     | 2 EGP |
|            | Non-students | 4 EGP |



# The Workshop



Creativity is a talent we are born with; yet, it needs practice to blossom and stay vibrant. PSC workshops are meant to provide participants with tools of a lifetime. Through a unique diversity of exercises and hands-on activities, we aim to lead students to explore their creativity and find out how to use it in their life; all the while enriching their knowledge. In our workshops, students are able to interact with each other and with the world around them in an exciting and entertaining manner; they are guaranteed to have a blast!

This season, the PSC offers a variety of enjoyable workshops that tackle several themes and issues. To name a few, students will be introduced to some of the Wonders of Physics and the Secrets of Water. They will take a peak inside the Human Body, drill deep into the Earth, experience with Electronics and so much more.

- Registration opens on 1 October 2010. For group reservations, please contact the PSC Administrator at least one week in advance.
- Minimum number of participants per workshop: 15 students.
- Maximum number of participants per workshop: 30 students.
- Workshop fees are 2 EGP per student.

## Transformers (10–14 October 2010)

Energy is stored in different forms in different energy sources. Some are renewable; such as solar and wind energies; while others are nonrenewable, and these include fossil fuels: oil, natural gas, and coal. This workshop explains the different forms of

energy, how energy is transformed from one form to another, and how energy is used in daily life.

- Target age group: 11–12 years

## The Wonders of Physics (17–21 October 2010)

*"A pretty experiment is in itself often more valuable than twenty formulae extracted from our minds,"* Albert Einstein said. Inspired by that saying, this workshop aims at raising interest in physics through a selection of demonstrations and experiments on heat, electricity, and mechanics that are as entertaining as they are educational.

- Target age group: 12–16 years

## A Journey to the Center of the Earth (24–28 October 2010)

In this workshop, students use clues to correctly construct a "slice" that demonstrates the internal structure of the Earth. Students also make a model of rock layers in the Earth's crust to learn how natural forces shape them. Moreover, they get to learn how to classify rocks and identify their different properties.

- Target age group: 12–16 years

## How Heavy! (31 October – 4 November 2010)

Each element and compound has a unique density, making it an important physical property. Understanding density helps us find the answer to many questions; such as why some objects float on water while others sink in it. The workshop introduces children to the theory of density and floating bodies through fun experiments.

- Target age group: 11–12 years

## Mechanisms and Movement (7–11 November 2010)

Any machine can be looked on as a group of interconnected mechanisms that convert one type of motion to a variety of other motions. Motions are divided into six basic types; linear, rotary, intermittent, reciprocating, oscillation and irregular motion. In this workshop, students learn about mechanisms and movements, and how machines work.

- Target age group: 9–12 years

## How Much Space? (14–18 November 2010)

Volume is how much space a substance or shape occupies or contains. Volumes of some simple shapes can be easily calculated using mathematical formulas. During this workshop, students understand what volume is and learn how to measure the volume of different solid and liquid materials.

- Target age group: 10–11 years

## Flowing Electrons (21–25 November 2010)

Electronics is a very interesting branch of science and technology that deals with electric devices and the flow of electrons. Through the "Flowing Electrons" workshop, students will learn what an electric current is; learn how to build it, in addition to many other intriguing and challenging activities.

- Target age group: 11–12 years

## Exploring the Five Senses (28 November – 2 December 2010)

How do we identify the world? What are the five senses? And what is sensory development? In this workshop, students will be involved in activities and

experiments on sensory experiences to explore the human five senses. They will be able to identify, compare, classify and investigate the world around them.

- Target age group: 6–9 years

## Get Soaked! (5–9 December 2010)

Water is a chemical substance; its molecule consists of one oxygen atom and two hydrogen atoms connected together by strong links called covalent bonds. In this workshop, students will experiment with water properties and learn about the water cycle, how water is formed, surface tension, and several other water properties.

- Target age group: 6–12 years

## Investigating the Nervous System (12–16 December 2010)

Humans can recognize each other instantly, distinguish different forms and colors, differentiate between many different smells and feel even a feather brushing their skin. All this seems to be effortless; yet, is it really that simple? What the Central Nervous System is and how it functions is what students are to investigate during this workshop.

- Target age group: 9–12 years

## What is the Matter? (19–23 December 2010)

"Matter" is defined as anything that has both mass and volume. Matter can exist in several different forms, known as phases, which include three familiar ones; solid, liquid, and gas; among other less familiar ones. In this workshop, students will get to examine and learn about the phases of Matter.

- Target age group: 9–12 years





# Programs & Events

## New Programs

### Alex.EduSat-1

Space technology is one of the 21<sup>st</sup> century's main interests of the scientific, governmental and business sectors because its applications are highly diverse and can be extremely beneficial to many aspects of life. Alex.EduSat-1; a two-year project coordinated by the PSC, is an attempt to build an educational satellite to take large area shoots within Egyptian territories to help in remote sensing studies concerning the geology of Egyptian deserts, water resources and crops. The aim of the project is to go through all the phases of building and launching the satellite, as well as teaching students its system engineering.

- For additional information and registration, please contact the PSC Administrator.

### Sustainability

Generally speaking, sustainability is the concept of living within our limits, understanding interconnections among economies, societies, and the environment, as well as providing equitable distribution of resources and opportunities. This program teaches students to calculate their footprints, recycle, make paper and compost, plant gardens, clean beaches, and learn environment-friendly crafts.

- Target age group: 9-12 years
- For additional information and registration, please contact the PSC Administrator.

## Ongoing Programs

### Super Science Show

Introducing a new form of science learning that is pure entertainment, this is a dynamic and highly motivational activity that gets children involved in a variety of amusing and exciting hands-on scientific experiments that stimulate enthusiasm.

- Target age group: 6-12 years
- Show duration: 60 min.
- Maximum number of participants: 50
- Fees inside the BA are EGP 100 per group.
- Fees outside the BA are EGP 300 per group.
- For reservations, please contact the PSC Administrator at least one week before the desired date.

### Fun with Science

In collaboration with the Young People's and Children's Libraries, this program applies a series of fables containing valuable messages to provide children with a scientific basis and enable them to make use of scientific facts as a creative tool. A major theme of this program is "systems thinking" as children learn how everything is

interconnected. The first part of the program is based on storytelling, while the second part focuses on hands-on scientific activities.

- Target age group: 9-12 years
- Number of sessions/week: Twice
- Session duration: 2 hrs
- Maximum number of participants: 25
- PSC workshop fees are EGP 2 per student per session.
- Young People's and Children's Libraries fees are EGP 0.50 per student per visit.
- For additional information and registration, please contact the PSC Administrator.

### Chess Club

In cooperation with the Egyptian Chess Federation, this program aims to develop and sharpen children skills. Chess is an exercise for the mind; it develops valuable mental abilities such as concentration, critical thinking, pattern recognition, strategic planning, creativity, analysis, synthesis, and evaluation, to name a few. Chess is a highly effective tool for teaching problem-solving and abstract reasoning through analyzing situations by focusing on important factors and eliminating distractions.

- Target age group: 6-16 years
- Program duration: 3 months
- Number of sessions/week: Twice
- Session duration: 2 hrs
- Maximum number of participants: 25
- Fees (following interview): EGP 150
- For additional information and registration, please contact the PSC Administrator.

### ALEXploratorium Contests

This contest provides students with an opportunity to practice teamwork while testing their knowledge and mental abilities. Students get to participate in science communication and share their knowledge as they look for answers among the exhibits of the Discovery Zone.

- Target age group: 12-16 years
- Contest duration: 1 hr
- Maximum number of participants: 25
- Fees: EGP 2 per student
- For reservations, please contact the PSC Administrator at least one week before the desired date.

### HSM Contests

The History of Science Museum transcends the traditional museum concept of a static display. In its

quest to simplify national and regional scientific heritage, it offers its visitors this interactive contest that is based on games and quizzes about the information found within the Museum.

- Target age group: 8-16 years
- Contest duration: 1 hr
- Maximum number of participants: 25
- Fees: EGP 2 per student
- For reservations, please contact the PSC Administrator at least one week before the desired date.

### Discover Your Environment Camps

The PSC organizes a variety of camps to a diversity of locations, with the aim of introducing young students to the Egyptian environment and allowing them to interact with it. The program helps students identify wildlife patterns and regional biodiversity, as well as astronomical phenomena.

- Target age group: 10-16 years
- For additional information and registration, please contact the PSC Administrator.

## Outreach

### Science Club

An ambitious outreach project, the Science Club program has been adopted by the PSC to bring the hands-on concept to science learning within the formal education framework. It aims to establish scientific corners in different schools and train teachers to apply innovative communication methods. The program aspires to stimulate curiosity, interest and enjoyment in

science, in addition to enhancing experimental abilities and developing investigative skills.

- Target age group: 6-13 years
- Free of charge
- Participation is for schools only.
- For additional information and registration, please contact the PSC Administrator.

## Exhibitions

### Biodiversity Exhibition (6–22 November 2010)

Within the framework of the activities organized by the PSC to celebrate the International Year of Biodiversity (IYB 2010), the Center is creating the "Biodiversity in the World" exhibition. Through fascinating interactive exhibits, hands-on activities and movies, the exhibition will offer visitors the opportunity to discover different aspects of biodiversity in Egypt and around the world.



# Alex.EduSat-1

## a satellite made by Egyptian students! *A Dream? A Challenge? Or A Possibility?*

By Ingy Hafez, PSC Publications Specialist



Space technology is one of the 21<sup>st</sup> century's main interests of the scientific, governmental and business sectors, not just to enhance the design and implementation of satellites but because its applications are highly diverse and can be extremely beneficial to many aspects of life.

The knowledge-based economy encourages the use of technological innovations and outcomes for better performance and improved practices. One of such innovations is remote sensing. Satellite images can be used in studying various phenomena related to the Earth's surface, and the range of its applications varies from agriculture, geology, coast and marine studies to urban development and environmental affairs.

### Remote Sensing

Remote Sensing (RS) refers to the science of identification of the Earth's surface features and estimation of their geo-biophysical properties, using electromagnetic radiation as a medium of interaction. Earth surface data are seen by the sensors in different wavelengths (reflected, scattered and/or emitted), where they get corrected before extraction of spectral information.

### Alex.EduSat-1

Nowadays, many universities, organizations and some countries around the world are actively developing small sized satellites that achieve high capabilities for the purposes of remote sensing studies. It is only natural then that, within its main goal of rising to excellence in producing and disseminating knowledge, the Bibliotheca Alexandrina (BA) is collaborating with the National Authority for Remote Sensing and Space Sciences (NARSS) to build educational satellites in Egypt within the framework of a five-year agreement.

The agreement was signed on 26 June 2010, during the 20<sup>th</sup> International Planetarium Society conference (IPS 2010) that was hosted for the first time in Africa and the Middle East by the BA and organized by the PSC. Dr. Ismail Serageldin, Director of the BA and Dr. Ayman Eldesouki, President of the Commission, signed the agreement during a press conference that was honored by the presence of Dr. Farouk Elbaz, Director of the Center for Remote Sensing at Boston University, who strongly supports and encourages the project. Dr. Elbaz has expressed enthusiasm and faith in the Egyptian youth, reaffirming that they alone hold the keys to a brilliant future for Egypt.

Cube Sat is a series of projects concerned with designing, implementing, testing, launching and maintaining small satellites called Pico Satellites, with a shorter development time and lower complexity than other types of satellites. Alex.EduSat-1, a two-year project, is one of these attempts to take large area shoots within the Egyptian territories to help in remote sensing studies concerning the geology of Egyptian deserts, water resources and crops.

### The Mission

Alex.EduSat-1 will provide valuable information through the captured images, which will be available on the Internet in order to broaden the scope of users and beneficiaries. Besides its main scientific mission, it also has a cultural mission, which is to send a message of peace directed from Egypt through space to all radio amateurs all over the world; a message that would emphasize the role of science as a means to peace and a better world.

### The Stakeholders

Alex.EduSat-1 construction experience could have a great impact on promoting space technology in Egypt, and strengthen future cooperation among Egyptian universities. It will also strengthen and sustain Egyptian engineers' knowledge base and allow them to have better opportunities with local and worldwide organizations of advanced technology.

Hence, the scope and number of people who could benefit from this huge project is indeed significant. Examples include Egyptian engineering graduates and demonstrators who will be able to promote their ability to implement what they have already learned; the industrial sector, which will participate in the phases of assembly, integration and testing; the agricultural sector, which will be able to use available captured images for planning and analyzing purposes for large areas cultivated by specific crops; the environmental sector, which will be able to study the various environmental phenomena; the scientific society, which will be involved through the contribution of universities; and high school students who are involved through the Space Technology program at the BA.

### References

NASA: <http://rst.gsfc.nasa.gov/Homepage>, NARSS: <http://www.narss.sci.eg>



**Dr. Farouk El-Baz**; a warm and kind person with great love for his mother country; is Egypt's outstanding representative in the United States of America. During the past 20 years, in his research at Boston University, Dr. El-Baz studied and used satellite images to better understand the origin and evolution of desert landforms. He is credited with providing evidence that the desert is not man-made, but the result of major climatic variations. Based on the interpretation of radar images, his research uncovered numerous sand-buried rivers and streams in the Sahara.

It is our great honor to have had the opportunity to ask Dr. El-Baz a few questions to which he graciously responded:

**1. How can we explain Remote Sensing in a nutshell for young students? How is it useful for us?**

Remote sensing is photographing the Earth from space using different types of cameras and other instruments to display the nature and characteristics of the land and sea. It is useful in planning cities, roads and factories. It is also essential for mapping the changes happening to the Earth from time to another. These changes can be natural or man-made. The latest is the use of radar that penetrates the sand in the desert to reveal ancient topography. We use this to identify the courses of former rivers to locate ground-water resources.

**2. What motivated you to become a scientist? And why this field?**

I was interested in biology and wanted to be a doctor. When my high school grades were not good enough for medicine, I was offered dentistry or science so I chose the latter. I was a "boy scout" and enjoyed field trips to Gebel Mukattam near Cairo. So, it was natural to select "geology" as a field of specialization.

**3. What obstacles have you encountered and how have you overcome them?**

I encountered more than my share of setbacks. In every case, I got through them by determination to do the right thing and insisting on proving my case through the acquisition of knowledge. The more information I gained, the more respect I received from others. To me, knowledge is the key to a happy and successful life.

**4. In your opinion, how can we motivate our youth to study science?**

Motivation is best by providing an example. Show them how scientists are useful to society, and prove their ability to contribute to the good of the nation. Happiness that derives from professional success is the best motivator. The young wish to see a role model to think: "Some day, I would like to be like her or him".

# The Right Path to a Bright Future!

## Intel Bibliotheca Alexandrina Science and Engineering Fair (Intel-BASEF)

By Dina Nashaat, El-Nasr Girls College (EGC)

**Thursday, 25 February 2009...**

a date that will always be carved in my memory. It is the day I recognized that I was setting the first block in building my future. As I stood there next to my project; calm and fully confident, presenting my ideas and assumptions and listening carefully to the judges, audience and other students' opinions, I knew for sure that I was on the right track. Achievement to me was not only to have concluded a research of a potential scientific addition to the community that could help resolve environmental issues, but it was also an introduction to stepping into the real world. It was the day of the Alexandria Science and Engineering Fair (ASEF).

**Alexandria Science and Engineering Fair (ASEF)**, hosted by the Bibliotheca Alexandrina and later becoming the **Bibliotheca Alexandrina Science and Engineering Fair (BASEF)**, offered me and my colleagues the opportunity to recognize problems around us, making us work our heads into trying to resolve them scientifically. It also enlightened us as to how enormous the mission of world safety and development is; a mission that was in our hands. Most importantly, it was our gateway to **Intel ISEF**; the largest annual international science and engineering competition for school students, and one of my dreams.

My two-year journey of science fairs began with simple regular meetings with professors, mentors, and other fellow students when we all discussed our ideas and projects. We took notes, started debating in every project, and although we were competitors in the same science fair, we had the sense of cooperation,

because it was in the favor of science. Step by step, we started presenting our projects, which was really helpful in developing our presentation skills. When the fair deadline approached, we started attending lectures about how to write a research paper, how to develop our presentation and interpersonal skills.

My project title was **"Seawater, an Alternative Fuel for Marine Transportation"**. This project looks into the ability to improve a complete system in a ship, where it can produce its own fuel. As ships diesel engines have a negative impact on the environment, a new technology of fuel cells and hydrogen is now used but with limitation. This hydrogen production system depends on a way of dissociation of seawater to its constituents (hydrogen and oxygen) using radio waves, so that this system feeds itself with hydrogen without the need to refuel again from hydrogen fueling stations and the system revolves in a complete circle.

The pre-science fair preparation was the most exciting, yet tiring, experience that all of us, science fair students, went through. It went from display board preparation, to research paper and data book final revision, to carefully studying small project details. It was all to ensure winning the science fair, fair and square.

The Science Fair was a completely different experience. Setting up the project at the beginning was really fun. That is when you start building friendships with other future scientists who share the same interest as you. Some would help in the setting up of your project, others would ask you for help; a selfless sense of team work.



Then came the judging session, which was intimidating at the beginning; the judges started touring, stopped at each project, listened carefully to what the students had to say and discussed it with them. After a while, I gained confidence in my project because it is what I believe in and what I have lived with for about four months.

At the awards session, everybody was a winner. Whether you were qualified to ISEF or not, it did not matter. That year, I had been chosen among the top 10 projects qualified for participation in the Egypt Science and Engineering Fair (ESEF2009). I won the second place at the MSA Science and Engineering Fair 2009 in the "Environment" category and participated in the International Sustainable World, Energy, Environmental and Engineering Projects Fair (ISWEEEP2009). In 2010, I was granted an honorable mention award in the category of "Energy" at the ISWEEEP2010. For me, contributing to science, gaining experience and building a promising career were the biggest reward I could ever reach. **But the story does not end here! It will continue next year in Intel-BASEF2011.**

And now I recognize that if it were not for the Science Fair and the awareness that has risen in me through this experience, I would not have cared about the community or the world, and I would not have tried to find the right path to a bright future.

## So You Think You Can Write!

**Do you like writing? Are you creative?**

Why don't you explore and share your talent with us? Here at the Planetarium Science Center, we welcome and encourage creativity; in the PSC newsletter, we present a forum for you to shine.

Our next issue will be about "Scientists; Discoveries and Inventions". Try your hand at writing and send us an article on the subject. We will be selecting the most interesting and best written pieces to publish them in the upcoming issue of the PSC newsletter. If you are interested, please send your work to [PSCeditors@bibalex.org](mailto:PSCeditors@bibalex.org) no later than 30 November 2010.



# Influenza; season

Adapted from the official website of the World Health Organization (WHO)

<http://www.who.int/topics/influenza/en/>

By Maissa Azab, PSC Publications Coordinator

Very soon, it will be winter; the school year is about to begin and this brings back memories of chaos and panic, which was the state at this same time last year. It is then crucial that we take a closer look at what happened, but more importantly, at what caused it. We need to really understand what Influenza, commonly known as the flu, really is; how it spreads, who is endangered by it and how we can protect ourselves from it without panicking or losing control.

## What exactly is the flu?

Influenza is a viral infection that mainly affects the nose, throat, bronchi and, occasionally, lungs. Infection is characterized by **sudden onset of high fever, aching muscles, headache and severe malaise, dry cough, sore throat and runny nose.**

The virus is transmitted easily from person to person mainly through sneezing or coughing. The time from infection to illness, known as the incubation period, is about two days. Influenza can affect anybody in any age group and tends to spread rapidly in seasonal epidemics that peak during winter in temperate regions.

Most infected people recover within one to two weeks without requiring medical treatment. Risk of complications is highest among children younger than age two, adults age sixty five and above, and people of any age with certain medical conditions, such as chronic heart, lung, kidney, liver, blood or metabolic diseases, or weakened immune systems.

## Seasonal flu

There are three types of seasonal influenza: A, B and C. Type A influenza viruses are further typed into subtypes according to different kinds and combinations of virus surface proteins. Type C influenza cases occur much less frequently than A and B; that is why only influenza A and B viruses are included in seasonal influenza vaccines.

Influenza viruses circulate in every part of the world; vaccination is the most effective way to prevent infection or severe outcomes from the illness. Vaccination is especially important for people at higher risk of serious influenza complications, and for people who live with or care for high-risk individuals. Furthermore, there are several antiviral drugs that effectively prevent and treat influenza.

As seasonal flu is easily spread through sneezing, coughing and touching, to prevent transmission, people should cover their mouth and nose with a tissue when coughing, and wash their hands regularly.

Worldwide, annual epidemics result in about three to five million cases of severe illness, and about 250,000 to 500,000 deaths. Most deaths associated with influenza in industrialized countries occur among people age sixty five or older.

## What is a pandemic?

A pandemic is the worldwide spread of a new disease. An influenza pandemic occurs when a new influenza virus emerges and spreads around the world, and most people do not have immunity. Viruses that have caused past pandemics typically originated from animal influenza viruses.

Some aspects of influenza pandemics appear similar to seasonal influenza while others may be quite different. However, the impact or severity tends to be higher in pandemics in part because of the much larger number of people in the population who lack pre-existing immunity to the new virus. The severity of pandemics can change over time and differ by location or population.

## Avian flu

Avian influenza is an infectious viral disease of birds. **Avian flu viruses do not normally infect humans.** However, there have been instances of certain highly

pathogenic strains causing severe respiratory disease in humans. **Most infected people had been in close contact with infected poultry or with objects contaminated by their feces.** Nevertheless, there is concern that the virus could mutate to become more easily transmissible between humans, raising the possibility of an influenza pandemic.

## What's going on?

Influenza viruses are normally highly species-specific, meaning that viruses that infect an individual species stay "true" to that species, and only rarely spill over to cause infection in other species. Of the hundreds of strains of avian influenza A viruses, only four are known to have caused human infections. **In general, human infection with these viruses has resulted in mild symptoms and very little severe illness, with one notable exception: the highly pathogenic H5N1 virus.**

## How does it spread?

At present, H5N1 avian influenza remains largely a disease of birds; the species barrier is significant. All evidence to date indicates that close contact with dead or sick birds is the principal source of human infection. Especially risky behaviors identified include plucking, slaughtering and preparation for consumption of infected birds. Swimming in waters that may have been contaminated by live or dead infected birds might be another source of exposure.

Research is urgently needed to better define the exposure circumstances, behaviors, and possible genetic or immunological factors that might enhance the likelihood of human infection.

## What are the symptoms?

Current data for H5N1 infection indicate an incubation period ranging from two to eight days and possibly as long as 17 days; however, the possibility of multiple exposures to the virus makes it difficult to define the incubation period precisely.

Initial symptoms include high fever and influenza-like symptoms. Diarrhea, vomiting, abdominal pain, chest pain, and bleeding from the nose and gums have also been reported as early symptoms in some patients. On present evidence, difficulty in breathing develops around five days following the first symptoms. Respiratory distress, a hoarse voice, and a crackling sound when inhaling are commonly seen. Almost all patients develop pneumonia.

## What is the cure?

Limited evidence suggests that some antiviral drugs; notably *oseltamivir*, commercially known as *Tamiflu*, can reduce the duration of viral replication and improve prospects of survival, provided they are administered within 48 hours following symptom onset. However, such antiviral drugs were developed for the treatment and prevention of seasonal influenza, which is a less severe disease associated with less prolonged viral replication.





# Human, avian, swine...what is it really?

## What are the risks?

H5N1 avian influenza in humans is still a rare disease, but a severe one that must be closely watched and studied, particularly because of the potential of this virus to evolve in ways that could start a pandemic.

Of all influenza viruses that circulate in birds, H5N1 is of greatest present concern for human health for two main reasons. First, it has crossed the species barrier to infect humans on at least three occasions in recent years. A second implication for human health, of far greater concern, is the risk that, if given enough opportunities, the virus will develop the characteristics it needs to start a pandemic. The virus has met all prerequisites for the start of a pandemic save the ability to spread efficiently and sustainably among humans.

The virus can improve its transmissibility among humans via two principal mechanisms. The first is a "re-assortment" event, in which genetic material is exchanged between human and avian viruses during co-infection of a human or pig. Re-assortment could result in a fully transmissible pandemic virus, announced by a sudden surge of cases with explosive spread.

The second mechanism is a more gradual process of adaptive mutation, whereby the capability of the virus to bind to human cells increases during subsequent infections of humans. Adaptive mutation, expressed initially as small clusters of human cases with some evidence of human-to-human transmission, would probably give the world some time to take defensive action, if detected sufficiently early.

## Swine flu

This is an influenza virus that had never been identified as a cause of infections in people before the current H1N1 pandemic. Genetic analyses of this virus have shown that it originated from animal influenza viruses and is unrelated to the human seasonal H1N1 viruses that have been in general circulation among people since 1977.

After early outbreaks in North America in April 2009, the new influenza virus spread rapidly around the world. By the time WHO declared it a pandemic in June 2009, a total of 74 countries and territories had reported laboratory confirmed infections. To date, most countries in the world have confirmed infections from the new virus.

Unlike typical seasonal flu patterns, the new virus caused high levels of summer infections in the northern hemisphere, and then even higher levels of activity during cooler months in this part of the world.

## How do people become infected with the virus?

The pandemic H1N1 virus is transmitted as easily as the normal seasonal flu. Some groups of people appear to be at higher risk of more complicated or severe illness, including pregnant women; infants and young children particularly under age two; people of any age with certain chronic health conditions such as including asthma or lung disease, heart disease, diabetes, kidney disease or some neurological conditions; and people with severely compromised immune systems.

## What are the signs and symptoms of typical infection?

Signs of the pandemic influenza are flu-like; malaise, fever, cough, headache, muscle and joint pain, sore throat and runny nose, and sometimes vomiting and diarrhea. **The majority of people with pandemic influenza experience mild illness and recover fully without treatment.**

## When should someone seek medical care?

People should seek medical care if they experience shortness of breath or difficulty breathing, or if fever, and especially high fever, continues more than three days. For parents with a young child who is ill, seek medical care if a child has fast or labored breathing, continuing fever or seizures.

Resting, drinking plenty of fluids and using a pain reliever for aches and pains, is adequate for recovery in most cases. A non-aspirin pain reliever should be used for children or adolescents under age eighteen.

## So, why did WHO raise the alarm?

Seasonal influenza occurs every year and the viruses change each year; however, many people have some immunity to the circulating virus that helps limit infections. By contrast, the pandemic H1N1 was a new virus when it emerged and most people had no or little immunity to it. In addition, one of the lessons from history is that influenza pandemics can kill millions.

## Safety Measures

The pandemic influenza is a new virus, and virtually everyone is susceptible to infection from it. Vaccines will boost immunity against the new influenza, and help ensure public health as the pandemic evolves.

Growing international experience in the treatment of pandemic H1N1 virus infections shows the importance of early treatment with antiviral drugs. For people who have had exposure to an infected person and/or are at a higher risk of developing severe or complicated illness, an alternative option is close monitoring for symptoms followed by prompt early antiviral treatment should symptoms develop.

**Influenza A(H1N1)**

**How to Protect Yourself and Others**



Cover your nose and mouth with a disposable tissue when coughing and sneezing



Dispose of used tissues properly immediately after use



Regularly wash hands with soap and water



If you have flu-like symptoms, seek medical advice immediately



If you have flu-like symptoms, keep a distance of at least 1 meter from other people



If you have flu-like symptoms, stay home from work, school or crowded places



Avoid hugging, kissing and shaking hands when greeting



Avoid touching eyes, nose or mouth with unwashed hands

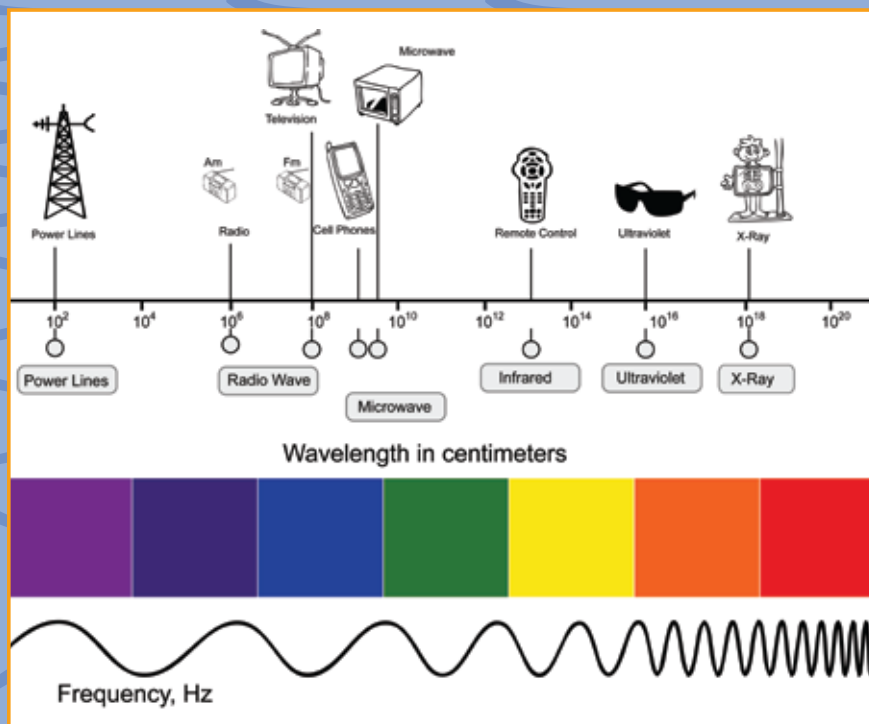
**For more information:**  
<http://www.who.int/mediacentre/factsheets/fs274/en/>  
<http://www.pandemicflu.net/>



World Health Organization  
Regional Office for the Eastern Mediterranean

# Suspicious Waves in a Sea of Radiations!

By Ingy Hafez, PSC Publications Specialist



**Can you imagine your life without a Cell Phone? But, what if it posed a danger to your health?!**

Today, cell phones are an indispensable part of our lives. In many countries, over half the population uses cell phones. By the end of 2009, there were an estimated 4.6 billion subscriptions globally. In fact, in some parts of the world, cell phones are the most reliable, if not the only, phones available.

However, the truth remains that cell phones do emit radiation; and although they do so in small doses, the huge, and increasing, number of cell phone users makes it crucial to investigate, understand and monitor any potential impact on public health.

Nevertheless, cell phone technology is advancing at a far quicker pace than that of required research into the potential harm they can cause. It is only logical then to take precaution when using them.

## What are the chances?

Like televisions, alarm systems, computers and other electrical devices, cell phones are radio devices that operate using radiofrequency (Rf) energy<sup>(1)</sup>. They communicate by transmitting radio waves through a network of fixed antennas called base stations. Radiofrequency waves are electromagnetic fields<sup>(2)</sup>, but unlike ionizing radiation<sup>(3)</sup> such as X-rays or gamma rays, they cannot break chemical bonds nor cause ionization in the human body.

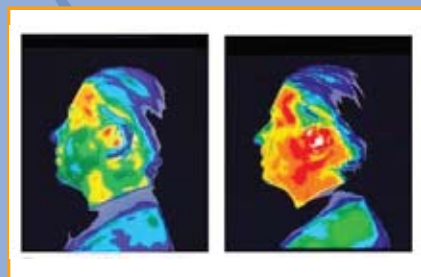
Electromagnetic fields (EMFs) are inescapable. We are constantly exposed to them, mostly in the form of either extremely low-frequency radiation from things like domestic appliances and power lines or radiofrequency

(Rf) radiation from things like cellular and cordless phones, telecom antennas, as well as TV and radio transmission towers.

A large number of studies have been performed over the last two decades to assess whether cell phones pose a potential health risk. To date, no adverse health effects have been established for cell phone use.

What is sure is that the interaction between radiofrequency energy resulting from cell phones and the human body causes tissue heating, where most of the energy is absorbed by the skin and other superficial tissues, resulting in minimal temperature rise in the brain or other organs of the body.

In addition to using "hands-free" devices, which keep mobile phones away from the head and body during phone calls, exposure can be reduced by limiting the number and length of calls. Using the phone in areas of good reception also decreases exposure as it allows the phone to transmit at reduced power.



A number of studies have investigated the effects of radiofrequency fields on brain electrical activity, cognitive functions, sleep, heart rate and blood pressure in volunteers. Research did not find any consistent evidence of negative effects from exposure to radiofrequency fields at low levels, and it has not been able to provide support for a causal relationship between exposure to electromagnetic fields and self-reported symptoms, or what is called "electromagnetic hypersensitivity".

## Why the fuss then?

A lot of epidemiological<sup>(4)</sup> research and studies have been searching for a relation between brain tumors and the use of cell phones; yet, these studies still have many limitations. As many cancers are not detectable until many years after the interactions leading to the tumor, and since cell phones were not widely used until the 1990s, these studies at present can only assess specific types of cancers that become evident within shorter time periods. However, results of animal studies consistently show no increased cancer risk for long-term exposure to radiofrequency fields up till now.

In response to public and governmental concern, the World Health Organization (WHO) established the **International Electromagnetic Fields (EMF) Project** in 1996 to assess the scientific evidence of possible adverse health effects from electromagnetic fields. By 2012, the WHO will conduct a formal health risk assessment of radiofrequency field exposure. Meanwhile, the **International Agency for Research on Cancer (IARC)**, a WHO specialized agency, is expected to review the carcinogenic potential of mobile phones in 2011.

"The **INTERPHONE** study was initiated by the IARC to determine whether the use of mobile phones is associated with head or neck cancers... It is not possible to make any conclusions at present about the risks of mobile phones for more than 10 years", said David Carpenter, director of the Institute for Health and the Environment and founding dean of the School of Public Health at the State University of New York.

With the recent popularity of cell phone use among younger people, and therefore a potentially longer lifetime of exposure, the WHO has promoted further research on this group. Several studies investigating potential health effects in children and adolescents are underway. WHO also identifies and promotes research priorities for radiofrequency fields and health to fill gaps in knowledge through its Research Agendas.

Moreover, they develop public information materials and promote dialogue among scientists, governments, industry and the public to raise the level of understanding concerning the potential health risks of cell phones.

**But, while researchers do their thing, what should we do?**







# MARINE MEDICAL MIRACLES

By Dr. Reem Sassy, PSC Programs and Events Specialist

## Cell Phone Habits of the Experts

**Michael Repacholi**, former coordinator of the WHO's Radiation and Environmental Health Unit, owns two cell phones and says he has no concerns about using them. He recommends using a hands-free kit, which can reduce exposure levels by a factor of between 10 and 100.

**Elisabeth Cardis**, Center for Research in Environmental Epidemiology and head of Interphone, says, "If consumers are worried about a possible risk, the use of hands-free kits or earpieces is a very good way to reduce exposure".

**Christopher Woollams**, founder and CEO of CANCERactive, a Holistic Cancer Information Charity in Great Britain, uses his cell carefully and puts it on speakerphone. "My kids are encouraged to only text at most. I don't want them to carry the phones on their bodies when they are on".

**Ulrika Aberg**, electro-hypersensitivity specialist, removes her phone's battery when she visits patients. She advises against wireless phones or computer connections at home because, she says, "you are exposed to EMFs all day and all night".

**Michael Kundi**, Institute of Environmental Health, Medical University of Vienna, dials on a landline whenever available and suggests not using cell phones where reception is weak, because they boost their signal to maintain connectivity, thus increasing EMF exposure.

*So, the story varies between pros and cons. Up till now, there has been no real evidence on the danger of the electromagnetic waves we are exposed to in the sea of radiation that surrounds us. All we can do now is take our precautions and wait for technology to give its say!*

## Glossary

**(1) Radiofrequency Energy:** is a form of electromagnetic radiation. Electromagnetic radiation can be divided into ionizing (high-frequency) and non-ionizing (low-frequency). RF energy is a type of non-ionizing electromagnetic radiation.

**(2) Electromagnetic Fields:** is a physical field produced by electrically charged objects; it extends through space and describes the electromagnetic interaction.

**(3) Ionizing Radiation:** is radiation with enough energy so that during an interaction with an atom, it can remove tightly bound electrons from the orbit of an atom, causing the atom to become charged or ionized.

**(4) Epidemiology:** is the study of the factors affecting the health and illness of populations.

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Plato stated **"The sea cures all ailments of man"**. To the ancient Greeks, the image of Aphrodite rising from the sea was beautiful because of the nutrients that the sea plants provided her. Today, sea plants still provide beauty to people and to the world.

Biodiversity provides the natural foundation for the production of diverse chemical compounds used to treat human diseases. Over recent years, marine organisms have attracted much attention as potential sources for medicine. The discovery, development and production of medicine from marine bacteria, fungi, microalgae and sponges have become important, that is why programs have begun to evolve around linking academic marine scientists with biomedical researchers in the pharmaceutical industries.

Here, we shed some light on a few examples of existing miraculous cures found in underwater treasure troves.

**Cod fish livers** are processed to make cod liver oil, a nutritional supplement with high levels of omega-3 fatty acids<sup>(1)</sup>, vitamin A and vitamin D. Omega-3 helps prevent and fights heart disease, cancer, depression, ulcers, diabetes, hyperactivity and other diseases; and increases the ability to concentrate, as well as the energy level of the body. Cod liver oil is widely taken to ease the symptoms of arthritis<sup>(2)</sup>. It was commonly given to children, because the high levels of vitamin D proved to prevent rickets<sup>(3)</sup>.

**Chitosan**, derived from chitin; the key component of the shells of crabs, lobsters and shrimp; is used for making creams because of its ability to retain moisture. Its properties allow it to rapidly clot blood; that is why it has recently been used in bandages.

**Calcitonin-salmon**, a man-made version of the hormone calcitonin found in salmon, is used as a substitute to human calcitonin produced by the thyroid gland<sup>(4)</sup>. Bone is in a constant state of remodeling, whereby old bone is removed and new bone is laid down. Calcitonin inhibits bone and promotes bone formation. Calcitonin-salmon hormone is used for treating osteoporosis (a disease of bones that leads to an increased risk of fracture) and hypercalcemia (high blood calcium levels).

The venom of some **cone snails** shows much promise for providing a non-addictive pain reliever 1000 times as powerful as, and possibly a replacement for, morphine. The first painkiller Ziconotide<sup>(5)</sup> derived from cone snail toxins was approved by the US Food and Drug Administration in December 2004 under the name *Prialt*. Other drugs are in clinical and preclinical trials, such as compounds of the toxin that may be used in the treatment of Alzheimer's<sup>(6)</sup>, Parkinson's<sup>(7)</sup>, and epilepsy.

**Alginate**, present in the cell walls of brown algae as calcium, magnesium and sodium salts of alginic acid, is widely used for pharmaceutical purposes. Calcium alginate is used in the production of burn dressings that help healing. In addition, seaweed provides other health benefits, such as iodine supply, necessary to maintain good thyroid function and prevent goiter<sup>(8)</sup>.

The use of **natural coral graft substitutes**<sup>(9)</sup> derived from the exoskeleton of marine corals has become widespread. The structure of some commonly used corals is similar to that of cancellous bone<sup>(10)</sup> and its initial mechanical properties resemble those of bone. Coral grafts act as an adequate carrier for growth factors and allow cell attachment, growth, spreading and differentiation. When applied appropriately and when selected to match the resorption rate<sup>(11)</sup> with the bone formation rate of the

implantation site, natural coral exoskeletons have been found to be impressive bone graft substitutes.

The medical miracles of the sea are also found in certain properties of the sea water itself. The **Dead Sea**, a landlocked lake, is an ancient wonder that has healed and inspired mankind for thousands of years. It has provided humanity with rich minerals, building materials, healing salts and mud. The concentration of salt and minerals in the Dead Sea is greater than that of any ocean; that is why no creature can live in it; yet, this extremely high mineral concentration makes the Dead Sea a major center for health research and treatment.

The Dead Sea contains over 21 minerals, 12 of which are found in no other sea or ocean. It has the highest concentrations of bromide, magnesium, calcium, silica, sodium and potassium of any natural body of salt water in the world. The most famous natural health product of the Dead Sea and its region is the Dead Sea Black Mud loaded with minerals and skin-healing properties. It is highly effective in the treatment of many diseases such as psoriasis<sup>(12)</sup>, eczema and arthritis. It is shipped around the world for people to enjoy its benefits in their own homes.

At present, there are some 11,000 marine-derived natural products compared with more than 155,000 natural, terrestrial products. The marine world offers an extremely rich resource for novel compounds and represents a great challenge that requires inputs from various scientific areas to raise the marine chemical diversity up to its therapeutic potential.

## Glossary

**(1) Omega-3 fatty acids** are essential fatty acids, that the body cannot produce. They are supplied through food such as fish, salmon, tuna, halibut, some plants and nut oils.

**(2) Arthritis** is the inflammation of joints.

**(3) Rickets** is a deficiency disease that affects the young during the period of skeletal growth. It is characterized by soft and deformed bones, caused by failure to assimilate and make use of calcium and phosphorus normally due to inadequate exposure to sunlight or Vitamin D deficiency.

**(4) Thyroid gland** is a small gland, shaped like a butterfly, located in the lower part of the neck. Thyroid hormones released by this gland deliver energy to cells of the body.

**(5) Ziconotide** is an analgesic agent used for the amelioration of severe and chronic pain.

**(6) Alzheimer's** is a degenerative brain disease that results in progressive memory loss, impaired thinking, disorientation, and changes in personality and mood.

**(7) Parkinson's** is a chronic progressive neurological disease mainly occurring in later life and is characterized by tremor of resting muscles, rigidity, slowness of movement and impaired balance.

**(8) Goiter** is the swelling of the thyroid gland that occurs when the gland is not functioning properly.

**(9) Graft substitutes** are substances used to replace missing or defective natural bone.

**(10) Cancellous bone** is one of the two types of osseous tissue that form bones. It typically occurs at the ends of long bones, close to joints and within the interior of vertebrae.

**(11) Resorption rate** is the rate at which the bone-breaking cells known as osteoclasts break down bone and release the minerals, resulting in a transfer of calcium from bone fluid to the blood.

**(12) Psoriasis** is a chronic skin disease characterized by circumscribed red patches covered with white scales.

# You are



By Marwa Gaber, PSC Programs and Events Specialist

# What you

# Eat!

## Young Skin; No Cosmetics!



People spend loads of money on expensive cosmetics to treat skin problems; such as acne, wrinkles and dryness, while they overlook the cheapest, safest and most effective remedies: healing foods. A host of healthy, natural foods offer potent healing and preventative powers to remedy a wide range of skin troubles. These foods can dramatically improve skin for a fraction of the price of costly cosmetics or dermatologist visits:

**1) Water;** drinking plenty of it helps keep skin young and healthy-looking. Water in caffeinated or sugary beverages does not count; water intake must be from pure, clean water, which rejuvenates skin cells. Water both hydrates cells and helps them move toxins out and nutrients in. Nutrition experts confirm that when the body is properly hydrated, it sweats more efficiently, which helps keep the skin clean and clear.

**2) Green Tea** is rich in antioxidants that reduce inflammation and protect cell membranes. It has been proven to reduce the damage of sunburns and overexposure to ultraviolet light, which in turn reduces the risk of skin cancer. Recent research shows that the polyphenol most abundant in green tea acts as a "fountain of youth" of sorts for skin by reactivating dying skin cells.

**3) Almonds** are rich in vitamin E, which helps moisturize skin from within and protects it from damage and premature aging. Eating almonds can help facial tissue stay in its best shape for years.

**4) Carrots** are an excellent source of vitamin A, which is a required nutrient for healthy skin. They also contain high levels of antioxidants, which prevent free radical damage of skin cells. Vitamin A is required for developing and maintaining skin cells; its deficiency causes dry skin. Carrots are also a superior source of fiber, biotin, vitamins K, C and B6, potassium and thiamine.

**5) Blueberries** are considered by many experts to be the highest food source of antioxidants, which target free radicals that can wreak havoc on skin cells. The antioxidants and phytochemicals (plant sources of nutrition) in blueberries neutralize DNA-damaging free radicals, reducing cell damage. When skin cells are protected from damage and disintegration, the skin looks younger for longer. Blueberries are also an excellent source of soluble and insoluble fiber, vitamin C, manganese, vitamin E and riboflavin.

**6) Salmon;** along with other fatty fish, walnuts and flaxseed, is high in healthy fatty acids that are key for achieving healthy skin. Essential fatty acids such as omega3s help keep cell membranes healthy by keeping out harmful substances as well as allowing nutrients to enter cells and exit with waste products. Omega-3s also reduce the body's production of inflammatory agents that can damage the skin.

In addition to consuming therapeutic quantities of green tea, salmon, blueberries, carrots and water, consumers should avoid certain foods that trigger bad skin reactions. Such ingredients include sugar, white flour, saturated fats and fried foods, which are especially bad for the skin, since they can trap oil and bacteria beneath the skin, causing acne and other skin ailments.

## Your Hair...Your Health!

Not only does your hair form one of the important aspects of your personality, it also reflects your general health. It is very much vulnerable to the stresses and strains of your everyday life and also gets affected by the type and quality of food that you eat. If you are not taking care of yourself and you are following an unhealthy diet, your hair will tend to lose its shine and bounce, becoming extremely dull and brittle. You should consume a healthy diet and indulge in regular exercise to ensure that your hair follicles get enough blood and your hair remains healthy.

Hair is part of the integumentary system, which is a bodily system; such as the nervous system; it contains hair, skin and nails. No matter how much time and money is spent on perfecting hair's health with products, hair health begins from the inside to the outside.

**1) Water;** eight glasses of water per day is absolutely needed for healthy hair. Water cleans out your system keeping your body hydrated and your hair moist.

**2) Vegetables** are rich in silica and iron, which help prevent hair loss and support growth of healthy hair. Your diet should contain beets, broccoli, green leafy vegetables, carrots, mint, radish and basil.

**3) Fruits** act as essential nutrient providers; berries, melons, citrus fruits, grapes and raisins help in healthy hair growth. Coconuts also help in avoiding premature graying and hair fall.

**4) Spices** like turmeric and cumin are very helpful for healthy hair growth.

**5) Protein-rich foods** are essential as hair is ninety-eight percent proteins. Protein-rich foods include meats, seeds, and nuts; fish is also a good source of protein, and tuna is also rich with essential fatty acids.

## What are your nails telling you?

Nails are often a reflection of our overall health or nutritional deficiencies:

- Poor nail growth = zinc deficiency
- Dryness and brittleness = lack of vitamin A, D and calcium
- Brittle, concave, ridged, white half moons = iron/protein/calcium deficiency
- Bluish discoloration = respiratory difficulties
- Yellowish discoloration = bronchial difficulties
- Peeling nails = vitamin A deficiency
- External fibrous growths = too much salt
- Separation of the nail bed = nervousness/hyper thyroid

## How does healthy eating help?

- Nails that break easy (chip, peel, or crack) may indicate a poor nutrition, insufficient hydrochloric acid and protein in the diet, as well as a deficiency in minerals. Increase your vitamin A by drinking carrot juice. Eat three servings of fish each week and/or consider taking a fish oil supplement.
- Iron-deficiency anemia may cause the nails to appear pale and become thin, brittle, ridged, and easily cracked or broken. Eat more iron rich foods, eat more iron-rich foods such as eggs, liver, green-leafy vegetables, blackstrap molasses, almonds, poultry, whole grain breads and cereals, avocados, beets, dates, lima beans, pumpkins, peaches, pears, prunes, watercress, soybeans and raisins.
- For fungal or bacterial nail infections, boost immunity by eating garlic and onions, foods rich in zinc (nuts, root vegetables and shellfish), vitamin C and flavonoids (fruits and vegetables), and omega-3 (nuts, seeds and dark green leafy vegetables).





## Strong to the Bones

Did you know that 99% of your body's calcium is stored in your bones and teeth? This calcium makes up your bone bank. Calcium is "deposited" and "withdrawn" from your bone bank daily, based on your body's need for calcium. If your daily diet is low in calcium, calcium is "withdrawn" from your bone bank. Bone is broken down to keep your blood calcium level normal. This happens because calcium plays a critical role in supporting your body's vital functions; such as controlling your blood pressure and maintaining your heart beat.

**Milk** is the most common source of calcium. A single cup of milk; whether skimmed, low-fat, or whole; equals up to 300 milligrams of calcium. Yogurt is another great source of calcium. A cup of yogurt has as much calcium as a glass of milk. Sardines are another great source of calcium for your bones; eating 85 grams of canned sardines will give you more calcium than a cup of milk.

**Vegetables** provide tons of nutrients to your bones. One cup of turnip greens will give you 200 milligrams of calcium, and a half cup of cabbage provides calcium equal to 226-grams glass of milk.

**Nuts and seeds** also can help your bones stay healthy. Peanuts and almonds contain potassium, which protects against loss of calcium. Nuts also contain protein and other nutrients that help build strong bones.

**Fish** such as salmon and other fatty fish contain various bone-boosting nutrients. These fish contain calcium as well as vitamin D. Fish oil has been known to reduce bone loss in elderly women and may even prevent osteoporosis.

If you plan to add more fish to your diet, make sure the fish has a low amount of mercury. Mercury exposure at high levels can harm the brain, heart, kidneys, lungs and immune system of people of all ages. Although research shows that most people's fish consumption does not cause a health concern, it has been demonstrated that high levels of methyl mercury in the bloodstream of unborn babies and young children may harm the developing nervous system, making the child less able to think and learn.

- **Do not** eat Shark, Swordfish, King Mackerel or Tilefish because they contain high levels of mercury.
- **Do** eat up to 2 average meals a week of a variety of fish and shellfish that are lower in mercury. Five of the most commonly eaten seafood that are low in mercury are shrimp, canned light tuna, salmon, pollock and catfish.

## Maintain Your Body

Everything you put in your mouth is processed through the digestive system. Digestion is the process by which food and other ingested material are broken down into nutrients and waste products. Each component of the digestive system has a specific role in digestion and together these organs help extract the nutrients and discard waste products.

Foods and liquids need to be broken down mechanically and chemically into very small particles. These nutrient molecules are absorbed through the wall of the small intestine and transferred around the body via blood to nourish cells and organs, and to provide a source of energy.

The collection and elimination of waste products also is an important part of digestion. Undigestible parts of foods (fiber), older cells that line the digestive tract, and some water, are eliminated from the body. Thus, maintaining a healthy digestive system is extremely important for your general health and well-being.

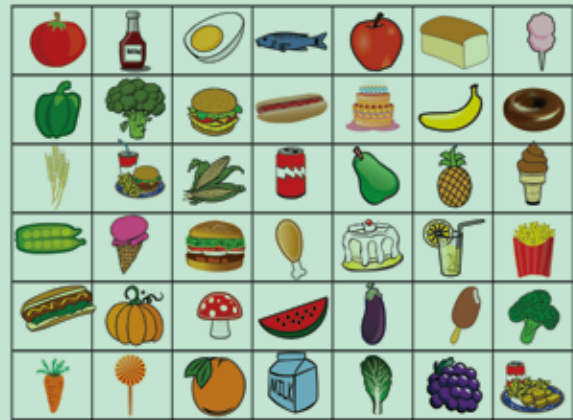
Good (healthy) digestion is a 'silent' process; digestion in some form takes place while we rest, eat, sleep or work. We generally only become aware of digestion when something goes wrong.

Although the digestive system can withstand a lot of stress, from the foods you eat to emotional stresses, it can only do so for a limited period. Over time, the negative effects will accumulate and create health problems in the long-term. So irrespective of your lifestyle in the past, you can take some positive steps today to rejuvenate and maintain the health of your digestive system.

- 1) **Eat foods rich in fiber**; such as vegetables, fruits and wholegrains/cereals. Fiber encourages passage of material through the digestive system. Ideally, you should consume at least 30 gm of fiber per day.
- 2) **Reduce the intake of processed foods**. These generally have little nutrition or fiber and often contain large amounts of saturated fats, salt and preservatives that can be harmful to the body.
- 3) **Be careful with your fat intake**. Eat moderate amounts of 'good' fats (omega-3 and omega-6) and reduce your intake of saturated fats, such as animal fat. A diet high in fat can slow the digestive system and may cause or aggravate diseases of the digestive system, as well as heart diseases.

## CONNECT FOUR!

Connect five groups of healthy foods horizontally, vertically or diagonally, such that each group consists of four different types of food.



4) **Drink plenty of fluids**, especially water. Water helps dissolve nutrients and encourage passage of waste through the digestive system.

5) **Take medications as directed**. Some medicines (and herbs) can have harmful effects on the digestive system. Make sure that your doctor is aware of all substances you are taking and use medications only as directed.

6) **Eat moderately**, slowly and regularly to avoid putting too much stress on the digestive system.

**Try not to eat in a rush**. The process of digestion starts in your mouth. Take time and eat slowly, chewing each mouthful well. Relaxing while you eat helps the nerves of the digestive system, and food that is well chewed is easier to digest than larger pieces.

**Try not to skip meals**; this will prevent overeating due to hunger and prepares the digestive system for regular meals.

7) **Exercise regularly**. This helps strengthen the muscles of the abdomen and reduces sluggishness by stimulating the intestinal muscles to push digestive contents through your system.

8) **Reduce/manage stress levels**. You may have noticed a feeling of unease in the abdomen during times of stress. Stress affects the nerves of the digestive system and can upset the intricate balance of digestion. In some people stress slows the process of digestion, causing bloating, pain and constipation. Stress can worsen some conditions such as peptic ulcers or irritable bowel syndrome.

## Manage Your Nerves



Although the nervous system comprises about three per cent of your total body weight, it is a part of every other system in your body and guides every action, whether voluntary like picking up a dish or involuntary like breathing.

It is a complex system consisting of nerve cells or neurons and the chemicals between the neurons known as neurotransmitters. Keeping this vital system healthy is important but difficult in this modern world. The nervous system can be affected by everything from pesticides and processed foods, to electromagnetic radiation, the presence of heavy metals like mercury or lead in the body, and even stress. A healthy nervous system begins with a healthy intake of nutrients.

Many of the nerves are wrapped in sheaths called myelin sheaths; Omega-3 fatty acids, are particularly important in the sheath structures surrounding many nerves. Wild-caught cold-water fish (like salmon), seeds (like pumpkin seeds or flaxseeds), nuts (like walnuts), and some oils (like canola oils) are important food sources of omega-3 fatty acids.

Activity in the nerves is often carried out with special messaging molecules (neurotransmitters). In some cases, these molecules are simple amino acids or derivatives of amino acids. Amino acids are the basic building blocks of protein; for this reason, optimal protein intake and balanced intake of the amino acids within protein can be very helpful in support of the nervous system.

In order for the nervous system to synthesize and circulate neurotransmitters, B complex vitamins are particularly important. Vitamins B6, B12, and folic acid could also be singled out as especially important in nerve metabolism. Green leafy vegetables are especially rich sources of many B vitamins.

Processed foods, fatty meats, and excessive sugar consumption destroy Choline, also a B complex nutrient, needed for the production of the neurotransmitter acetylcholine. This neurotransmitter is essential to the brain's ability to retain memories and control muscle movements.

B vitamins are present in most whole grains like brown rice. A whole foods diet of fresh vegetables and fruits and little or no processed food is essential to nervous system health. Because B vitamins are so easily destroyed, a low dosage B complex supplement is probably necessary.

The minerals calcium and magnesium, as well as manganese, iodine, potassium, silicon, sodium and sulphur are all important for nervous system health. Calcium, magnesium and the other minerals essential for nerve impulse conduction were once found in the soil and hence in the food grown in it. Sadly, modern agricultural practices like mono-cropping and pesticide use have led to the destruction of most of the minerals once found in the soil.

Other nutrients important to the nervous system are the pectin found in apples, the vitamin E found in dark green leafy vegetables and whole grains, and the Essential Fatty Acids (EFAs) found in flax, hemp as well as in cold water fish like salmon and halibut. Pectin helps to rid the body of many of the heavy metals that may be interfering with your nervous system. EFAs provide nutrients and healthy fats necessary to the myelin sheaths that cover our neurons, allowing impulses to travel along them quickly and efficiently. EFAs also control hyperactivity in children.

Stress has an extremely negative impact on the nervous system. To begin with, watch less television; the body cannot tell the difference between real stress and pretend stress. Next, have your health care provider test you for adrenal exhaustion. The adrenal glands are responsible for your response to stress. A good diet and adrenal supporting herbs could go a long way in preventing 'burn out' and restoring nervous system health. Also, be aware that caffeine aggravates stress. Even de-caffeinated coffee has a small percentage of caffeine in it. It is probably best that you drink non-caffeinated herbal tea And don't forget to avoid chocolate because it usually contains caffeine.



## CRACK THE SECRET CODE

Fuel up on some healthy foods and drinks, and get ready to crack the secret code to complete the following sentences:

- Milk has nine essential \_\_\_\_\_.
- Eat more low-fat dairy foods, \_\_\_\_\_ and whole grains.
- Get \_\_\_\_\_ of physical activity a day.
- Get your \_\_\_\_\_ rich \_\_\_\_\_.
- Daily exercise can improve your \_\_\_\_\_.
- \_\_\_\_\_ is good for your eyesight.
- \_\_\_\_\_ keep pesky free \_\_\_\_\_ from damaging your cells.
- Being physically active helps improve \_\_\_\_\_ and \_\_\_\_\_.
- Whole grains help keep your \_\_\_\_\_ your heart and your body healthy.
- For a healthy snack in seconds, fuel up with some pre-cut \_\_\_\_\_ chunks.

### Code

|    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|
| A: | D: | H: | L: | P: | T: | X: |
| B: | E: | I: | M: | Q: | U: | Y: |
| C: | F: | J: | N: | R: | V: | Z: |
|    | G: | K: | O: | S: | W: |    |



# Five keys to safer food



## Keep clean

- ✓ Wash your hands before handling food and often during food preparation
- ✓ Wash your hands after going to the toilet
- ✓ Wash and sanitize all surfaces and equipment used for food preparation
- ✓ Protect kitchen areas and food from insects, pests and other animals

### Why?

While most microorganisms do not cause disease, dangerous microorganisms are widely found in soil, water, animals and people. These microorganisms are carried on hands, wiping cloths and utensils, especially cutting boards and the slightest contact can transfer them to food and cause foodborne diseases.



## Separate raw and cooked

- ✓ Separate raw meat, poultry and seafood from other foods
- ✓ Use separate equipment and utensils such as knives and cutting boards for handling raw foods
- ✓ Store food in containers to avoid contact between raw and prepared foods

### Why?

Raw food, especially meat, poultry and seafood, and their juices, can contain dangerous microorganisms which may be transferred onto other foods during food preparation and storage.

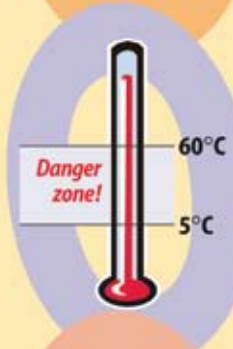


## Cook thoroughly

- ✓ Cook food thoroughly, especially meat, poultry, eggs and seafood
- ✓ Bring foods like soups and stews to boiling to make sure that they have reached 70°C. For meat and poultry, make sure that juices are clear, not pink. Ideally, use a thermometer
- ✓ Reheat cooked food thoroughly

### Why?

Proper cooking kills almost all dangerous microorganisms. Studies have shown that cooking food to a temperature of 70°C can help ensure it is safe for consumption. Foods that require special attention include minced meats, rolled roasts, large joints of meat and whole poultry.



## Keep food at safe temperatures

- ✓ Do not leave cooked food at room temperature for more than 2 hours
- ✓ Refrigerate promptly all cooked and perishable food (preferably below 5°C)
- ✓ Keep cooked food piping hot (more than 60°C) prior to serving
- ✓ Do not store food too long even in the refrigerator
- ✓ Do not thaw frozen food at room temperature

### Why?

Microorganisms can multiply very quickly if food is stored at room temperature. By holding at temperatures below 5°C or above 60°C, the growth of microorganisms is slowed down or stopped. Some dangerous microorganisms still grow below 5°C.



## Use safe water and raw materials

- ✓ Use safe water or treat it to make it safe
- ✓ Select fresh and wholesome foods
- ✓ Choose foods processed for safety, such as pasteurized milk
- ✓ Wash fruits and vegetables, especially if eaten raw
- ✓ Do not use food beyond its expiry date

### Why?

Raw materials, including water and ice, may be contaminated with dangerous microorganisms and chemicals. Toxic chemicals may be formed in damaged and mouldy foods. Care in selection of raw materials and simple measures such as washing and peeling may reduce the risk.

# Plant Power, the Universal Medicament

By Dr. Rasha Hassan, PSC Programs and Events Specialist



For centuries, plants, herbs, fruits, roots and other plant parts have been used for curing diseases. Nowadays, and despite the enormous progress in the medical field, home remedies invented from natural ingredients are catching more and more attention. It might be because they are natural, easy to get, simple to prepare and contain no chemicals that many people assume they have no side effects.

This is not true; a number of herbs are thought to cause adverse effects. Furthermore, adulterations, herb drug interactions and inappropriate formulation could lead to side effects as in the case with conventional medication. However, while conventional medications are being tested in terms of drug components, interactions, usage in pregnancy, nursing and childhood, and dosage limits; unconventional treatments such as herbs have little or no actual standardized references regarding proper usage or potential toxicity. That is why one should be cautious and should consult a physician or pharmacist when using herbs as a remedy.

On the other hand, many of the pharmaceutical drugs currently available have a long history of use as herbal remedies. The World Health Organization (WHO) estimates that 80% of the world's population presently uses herbal medicine for some aspect of primary health care. In fact, according to the WHO, approximately 25% of modern drugs used in the United States are derived from plants.

## Medical Plants

**Garlic** has long been considered a herbal "wonder drug", with a reputation in folklore for preventing everything from the common cold and flu to the Plague! It is believed to have an antibacterial, antiviral, and antifungal activity. Furthermore, garlic provides nourishment for the circulatory, immune and urinary systems. It aids in supporting normal circulation, nourishing stomach tissues, maintaining normal blood pressure and enhancing the body's natural ability to resist disease. Moreover, it has an antioxidant effect; some use it to treat the symptoms of acne, in managing high cholesterol levels, and as a natural mosquito repellent.

**Thyme** is known to be a powerful antiseptic and, before the advent of modern antibiotics, it was used to medicate bandages. Its infusion is used in treating cough and bronchitis. It is also said to be used in cases of anemia, and bronchial and intestinal disturbances.

Commonly used to reduce irritable bowel syndrome, as well as colicky abdominal pain, **peppermint** comforts the stomach and nourishes the salivary glands to help with digestion; it also soothes the nervous system.

**German Chamomile** is used medicinally to treat sore stomach, irritable bowel syndrome, and as a gentle sleep aid. It is also used as a mild laxative and is anti-inflammatory and bactericidal<sup>(1)</sup>.

Historically, **Aloe Vera** has always been used for its properties of soothing, facilitating digestion, and aiding blood and lymphatic circulation, as well as kidney, liver and gall bladder functions. That is because it contains anti-inflammatory fatty acids; and it naturally alkalizes digestive juices to prevent over acidity.

Studies have shown that just half a teaspoon of **Cinnamon** per day can lower LDL cholesterol<sup>(2)</sup>. Several studies also suggest that it may have a regulatory effect on

blood sugar, making it especially beneficial for people with Type 2 diabetes. It also has an anti-clotting effect on the blood, and when added to food, it inhibits bacterial growth and food spoilage, making it a natural food preservative.

**Ginger** root is nourishing to the gastrointestinal system. It has also been historically used to treat inflammation, to avoid heat cramps<sup>(3)</sup> and as a common home remedy for coughing and nausea.

**Ginseng** is nutritionally beneficial for the immune system; it nourishes the circulatory system and enhances mental alertness and stamina. Although generally well-tolerated, caution is advised when consuming ginseng along with over-the-counter or prescription drugs.

**Lavender** is used extensively in herbalism and aromatherapy. Essential oils are used in balms, salves, perfumes, cosmetics, and other topical applications. Furthermore, it has antiseptic properties and was used in hospitals to disinfect floors and walls. It also treats skin burns, inflammatory conditions and acne.

**Sennas** have, for millennia, played a major role in herbalism and folk medicine. They have always been used as a purgative, and in modern medicine as a laxative. Senna assists in expelling waste from the intestines and killing worms. The stimulant action of sennosides should be taken into account for those who suffer from any conditions where stimulants are contraindicated.

In the past decades, **Green Tea** has been subjected to many scientific and medical studies to determine its health benefits, following the observation that regular green tea drinkers have lower chances of heart disease and of developing certain types of cancer.

## Good Foods

- **Red beets and beet greens** should be a regular part of your diet; they both contain significant amounts of fiber that can help keep waste materials moving through your small and large intestines at a healthy pace.

Red beets contain large amounts of potassium and magnesium, while beet greens are an excellent source of beta-carotene, iron, and calcium. All of these nutrients are directly or indirectly essential to maintaining the health of your digestive tract lining and the smooth muscle fibers that create the waves of contractions that produce bowel movements.

- **Yukon gold potatoes and sweet potatoes**, if prepared and eaten with their skins, are an excellent source of dietary fiber. They also provide complex carbohydrates, vitamin B6, vitamin C, and manganese.

Yukon gold potatoes and sweet potatoes are considered critical in the treatment of peptic ulcers<sup>(4)</sup>, duodenal ulcers<sup>(5)</sup>, and some stages of inflammatory bowel disease.

- **Avocados** contain a whopping 15 grams of fiber each, making it one of the most fiber-rich fruits around. Avocados are extremely easy to digest and contain plenty of healthy, raw fat, most of it monounsaturated.

Healthy, raw fats are important for the health of your digestive tract for several reasons, the most important of which are to stimulate healthy functioning of your pancreas, gall bladder, and liver, and to provide an environment in which beta-carotene<sup>(6)</sup> can be converted efficiently into vitamin A.

- **Oats** not only contain plenty of soluble-fiber, they also provide significant amounts of selenium, thiamine, phosphorus, and manganese, and smaller amounts of copper, folate, vitamin E, and zinc.

## Glossary

**1) A bactericide** is a substance that kills bacteria and, ideally, nothing else. Bactericides are disinfectants, antiseptics or antibiotics.

**2) LDL cholesterol** is "bad" cholesterol; its high level in the blood is thought to be related to various pathogenic conditions.

**3) Heat Cramps** are muscle spasms that result from the loss of large amounts of salt and water through exercise. Heat cramps are associated with cramping in the abdomen, arms and calves, which is caused by inadequate consumption of fluids or electrolytes.

**4) Peptic Ulcer** is an ulcer, defined as mucosal erosions equal to or greater than 0.5 cm, of an area of the gastrointestinal tract that is usually acidic and thus extremely painful.

**5) Duodenal Ulcer** is a raw area in the lining in the upper part of the small intestine (duodenum) where it connects to the stomach.

**6) Beta-Carotene** is a strongly-colored organic compound (red-orange pigment) that is abundant in plants and fruits.

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## Medical Unscrambler

Unscramble the words to discover the uses of the following plants/herbs:

1. Green Tea treats **REATH SADEIESE**.
2. Cinnamon has an **IATN TXOCI** effect.
3. Chamomile is considered a gentle **LPESE IAD**.
4. Aloe Vera helps the **LBODO ICRUCLAITON**.
5. Thyme treats **OUCHG and AMINAE**.
6. Peppermint heals **BDOAMNILA IPAN** and helps in **DGIETSOIN**.
7. Ginger is taken to treat **UANSAE** and **CUGOHIGN**.
8. Garlic is considered an **ATINOIXDNAT**.
9. Ginseng helps the **INUMEM SYTMES**.
10. Lavender is an **AITNSPECIT**.

### The Answers

- (1) heart disease.
- (2) anti-toxic.
- (3) sleep aid.
- (4) blood circulation.
- (5) cough, anemia.
- (6) abdominal pain, digestion.
- (7) nausea, coughing.
- (8) antioxidant.
- (9) immune system.
- (10) antiseptic.

# The Eye Talk!

By Magui Elshirawi, PSC Programs and Events Specialist



**"Prevention is better than cure";** a famous saying that applies to health in general—your eyes included.

Your eyes are at work from the moment you wake up to the moment you go to sleep. They take in tons of information about the world around you; shapes, colors, movements, and more.

Healthy vision is one of our most treasured senses; yet, many of us take it for granted until it begins to fail. As with your overall physical health, vision health depends on proper nutrition, regular exercise, and vitamin supplements. Whether you suffer from weak eyes, dry eyes, macular degeneration<sup>(1)</sup>, glaucoma<sup>(2)</sup>, or vision problems, there are a lot of natural techniques you can use to help keep your eyes healthy. Here are simple steps that can help you maintain healthy eyes well into your golden years:

**Have a comprehensive dilated eye exam<sup>(3)</sup>.** You might think your vision is fine or that your eyes are healthy, but visiting your eye care professional for an eye exam is the only way to be sure. When it comes to common vision problems, some people do not realize they could see better with glasses or contact lenses. In addition, many common eye diseases such as glaucoma, diabetic eye disease and age-related macular degeneration often have no warning signs. A dilated eye exam is the best way to detect these diseases in their early stages.

**Know your family's eye health history.** Talk to your family members about their eye health history. It is important to know if anyone has been diagnosed with a condition, since many eye diseases are in fact hereditary. This will help you determine if you are at higher risk for developing an eye disease or condition.

**Eat right to protect your sight.** Good nutrition is very important for both your general and eye health. It helps our body to grow, repair wear and tear, protects against infection and helps the body to function properly. Eating the right foods that contain the right vitamins helps keep the eyes healthy. Many eye diseases result

from bad nutrition; eating the proper foods can lower the risk of these diseases.

You most definitely have heard that carrots are good for your eyes. As a matter of fact, eating a diet rich in fruits and vegetables, particularly dark leafy greens; such as spinach, kale and collard greens<sup>(4)</sup>, is important for keeping your eyes healthy, too. Research has also shown there are eye health benefits from eating fish high in omega-3 fatty acids; such as salmon, tuna, and halibut.

**Maintain a healthy weight.** Being overweight increases your risk of developing diabetes and other systemic conditions that can lead to vision loss, such as diabetic eye disease or glaucoma. If you are having trouble maintaining a healthy weight, you are well advised to consult with a doctor.

**Do exercises for your eyes.** The fact that your eyes health depends on the strength of their muscles always passes unnoticed. Like all the muscles in your body, doing exercises for your eyes can result in rapid and profound positive changes. Taking an energetic walk for at least a half hour can temporarily reduce discomfort and pressure in the eyes.

**Clean your hands and your contact lenses properly.** To avoid the risk of infection, always wash your hands thoroughly before putting in or taking out your contact lenses. Make sure to cleanse contact lenses as instructed and replace them as appropriate.

**Give your eyes a rest.** If you spend a lot of time at the computer or focusing on one thing for a long period of time, your eyes can get tired. Try the 20-20-20 rule: every 20 minutes, look away about 20 feet in front of you for 20 seconds; this can help reduce eyestrain.

**Wear protective eyewear.** Protective eyewear includes safety glasses and goggles, safety shields, and eye guards specially designed to provide the correct protection for a certain activity.

**Be cool and wear your shades!** Sunglasses are a great fashion accessory, but their most important job is to protect your eyes from the sun's ultraviolet rays.

When you purchase sunglasses, look for ones that block out 99% to 100% of both UV-A<sup>(5)</sup> and UV-B radiation<sup>(6)</sup>.

### Glossary

**(1) Macular Degeneration** is an age-related medical condition that affects older adults and results in a loss of vision in the center of the visual field (the macula) because of damage in the retina. It occurs in "dry" and "wet" forms.

**(2) Glaucoma** is a disease in which the optic nerve is damaged, leading to progressive, irreversible loss of vision. It is often, but not always, associated with increased pressure of the fluid in the eye.

**(3) A comprehensive dilated eye exam** is a painless procedure in which an eye care professional examines your eyes to look for common vision problems and eye diseases, many of which have no early warning signs.

**(4) Collard Greens** are various loose-leafed cultivars, such as cabbage and broccoli.

**(5) UV-A rays** are longer than the UV-B and reach the inner strata of the skin. They are responsible for causing the skin to lose its elasticity and wrinkling, leading to premature aging of the skin. They also can burn the skin, but at a deeper level. The UV-A rays are not at all absorbed by the atmosphere and completely reach Earth.

**(6) UV-B rays** are mostly responsible for most cases of sunburn, as they are shorter than UV-A rays and only reach the surface of the skin. The UV-B radiation is absorbed by the dead cells layer called stratum corneum.

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# Complementary and Alternative Therapies, Truth or Myth?

By Dr. Rasha Hassan, PSC Programs and Events Specialist

The interest in alternative medicine all over the world is growing year by year as large numbers of people choose to seek it and tend to use it in parallel with conventional medicine. Yet, the debate about the effectiveness, practical evidence and safety of complementary and alternative medicine (CAM) is still underway.

While research shows that more people are using alternative forms of medicine, CAM faces fierce opposition and resistance. The main questions are whether there is actual scientific evidence that CAMs work; whether practitioners receive adequate training; whether their research methods could be standardized as is the case with traditional medicine.

*So, what are CAMs? Why have they become so popular? And do they really present a new hope for curing diseases that conventional medicine has failed to treat? Are they a truth or a myth?*

Complementary and alternative medicine is defined as "a group of diverse medical and health care systems, practices, and products that are not presently considered part of conventional medicine", as per the National Center for Complementary and Alternative Medicine, NCCAM.

**Complementary Medicine** is a group of diagnostic and therapeutic disciplines that are used together with conventional medicine. An example of a complementary therapy is using aromatherapy<sup>(1)</sup> to help lessen a patient's discomfort following surgery.

Whereas complementary medicine is used together with conventional medicine, **Alternative Medicine** practices are used instead of standard medical treatments.

NCCAM has developed one of the most widely used classification systems for the branches of complementary and alternative medicine; it classifies CAM therapies into five major groups that somehow overlap.

**1) Alternative Medical Systems** cut across more than one of the other groups and are built upon complete systems of

theory and practice. Examples of this group that have developed in western cultures include homeopathic and naturopathic medicine<sup>(2)</sup>, while therapies such as Ayurveda have developed in non-western cultures.

**2) Mind-Body Interventions** uses a variety of techniques designed to enhance the mind's capacity to affect bodily function and symptoms; examples include meditation, dance and art.

**3) Biologically-Based Practices** use substances found in nature such as herbs, foods, vitamins, etc. Examples include dietary supplements and herbal products.

**4) Manipulative and Body-Based Practices** are based on manipulation and/or movement of one or more parts of the body, such as is in chiropractic<sup>(3)</sup> and osteopathic manipulation<sup>(4)</sup>.

**5) Energy Medicine** involves the use of energy fields. **Biofield** therapies are intended to influence energy fields that supposedly surround and penetrate the body; no experimental evidence has been found to support the existence of these alleged energy fields. On the other hand, **Bioelectromagnetic-based** therapies use verifiable electromagnetic fields; such as pulsed fields, alternating or direct current fields; in an unconventional manner.

## Famous CAM techniques

Some of the more mainstream CAMs are hypnotherapy, homeopathy, aromatherapy, herbalism, acupuncture, massage therapy, Reiki<sup>(5)</sup>, Reflexology<sup>(6)</sup> Ayurveda and Yoga.

**Ayurvedic medicine** originated in India about five thousand years ago; Robert Svoboda explains: "Because every embodied individual is composed of a body, a mind and a spirit, the ancient Rishis of India who developed the science of Life organized their wisdom into three bodies of knowledge: Ayurveda, which deals mainly with the physical body; Yoga, which deals mainly with spirit; and Tantra, which is mainly concerned with the mind. Ayurveda

is most concerned with the physical basis of life, concentrating on its harmony of mind and spirit, while Yoga controls body and mind to enable them to harmonize with spirit, and Tantra seeks to use the mind to balance the demands of body and spirit".

**Acupuncture practice** originated in Asia over five thousand years ago. It is based on the idea that energy forces run through the body in established channels, or meridians. Properly flowing energy stimulates self-healing and self-care, while blocked energy creates health complications. Whereas sharp stones, bamboo sticks and fish bones were once used to stimulate the points along the energy meridians of the body, fine needles are now used for this purpose.

**Homeopathy** was created by a German doctor, Samuel Hahnemann, who practiced medicine in the 1780s. One of its basic principles is that an ailment can be cured by small quantities of substances that produce the same symptoms; substances that cause specific symptoms.

As with any medical treatment, there can be risks with CAM therapies. According to NCCAM these general precautions can help to minimize risks:

1. Select CAM practitioners with care; find out about the practitioner's training and experience;
2. Be aware that some dietary supplements may interact with medications or other supplements; may have side effects of their own; or may contain potentially harmful ingredients not listed on the label;
3. Tell all your health care providers about any complementary or alternative practices you use.

## Glossary

**1) Aromatherapy** uses volatile plant materials, known as essential oils, and other aromatic compounds for the purpose of altering a person's mood, cognitive function or health.

**2) Naturopathic Medicine** focuses on natural remedies and the body's vital ability

to heal and maintain itself. Naturopathic philosophy favors a holistic approach and minimal use of surgery and drugs.

**3) Chiropractic** is a health care discipline and profession emphasizing diagnosis, treatment and prevention of mechanical disorders of the musculoskeletal system, especially the spine, under the hypothesis that these disorders affect general health through the nervous system.

**4) Osteopathic Manipulation** is a whole system of evaluation and treatment designed to achieve and maintain health by restoring normal function to the body. Manipulation means the therapeutic application of manual pressure or force. While Chiropractors focus exclusively on the realignment of joints, Osteopathic doctors believe that structural problems in the spinal column can affect the nerves that radiate out to the various organs, thus causing disease.

**5) Reiki** is a spiritual practice that uses a technique commonly called palm healing and is sometimes classified as oriental medicine by some professional bodies.

**6) Reflexology** (zone therapy) is an alternative medicine, complementary, or integrated medicine method of treatment involving the physical act of applying pressure to the feet and hand with specific thumb, finger and hand techniques without the use of oil or lotion. It is based on a system of zones and reflex areas that reflect an image of the body on the feet and hands with a premise that such work effects a physical change to the body.

## Read more on CAMs

**The Encyclopedia of Alternative Medicine:**

[http://www.findarticles.com/p/articles/mi\\_g2603/](http://www.findarticles.com/p/articles/mi_g2603/)

**BMC Complementary and Alternative Medicine:**

<http://www.biomedcentral.com/bmccomplementaltermmed/>

<http://www.nlm.nih.gov/medlineplus/complementaryandalternativemedicine.html>

**National Center for Complementary and Alternative Medicine:**

<http://nccam.nih.gov>



# zoom Tech!

## The Pocket Printer

By Ingy Hafez, PSC Publications Specialist

**"Everyone loves digital cameras, and we all love the spontaneity of instant prints,"** said Scott W. Hardy; President of PLR IP Holdings, LLC.

Unlike huge printers that sit on desks, plugged into computers and mains with wires, now pocket-size printers sit in your hand with no wires, no chaos and no fuss! It is slightly bigger than a mobile phone, but do not get fooled by its size; it can print 5×7 cm borderless photos in just 60 seconds, anywhere, anytime. It gives full-color prints through cell phones and digital cameras via Bluetooth or USB having PictBridge Compatibility (a standardized technology that allows printing images from a memory card in a digital camera directly to a printer, regardless of brand).

### Inkless Paper

Zero Ink (ZINK) technology simply means NO INK. Gone are the days of replacing expensive cartridges, ribbons or print heads. ZINK Paper is an advanced composite material with cyan, yellow and magenta dye crystals embedded inside and a protective polymer overcoat layer outside. When heat is applied in the right way, full-color images appear on the paper.

### Bluetooth printing from your mobile phone

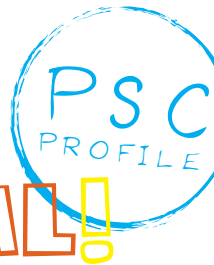
Here is the really clever part, how about printing wirelessly using Bluetooth from your mobile phone? Take a snap on your camera mobile phone, connect your phone with the Instant Mobile Printer using Bluetooth and wirelessly print your photos.

### Price to Value

In spite of its attractive price, not all camera phones or digital cameras are compatible with the Photo Printer. So before buying, you might want to check it out first if what you have is compatible with this gadget. Another thing is that the quality of the photos produced by the Instant Mobile Printer depends on the quality of your camera.



# BEYOND CONVENTIONAL!



**Name:** Reda Kandil

**Education:** Faculty of Arts, French Department, Language and Literature Section

**Graduation Year:** 2004

**Current Occupation:** History of science Museum, Program and Events Specialist

Like many fellow Alexandrians, I watched the New Library of Alexandria being built when I was just a little girl. For me, that building represented a place of culture and learning that was an extension of its famous ancient predecessor, where eminent Greek scientists dwelled over various scientific, philosophical and cultural matters.

Then, I graduated from college and fate had me become a part of the Library's team. It was then that I recognized this is no traditional library created only for students and researchers. It is actually much more than that! It is a cultural organization that encompasses a variety of specialized and unique libraries and centers, one of which is the Planetarium Science Center, which comprises a Planetarium, an ALEXploratorium and the History of Science Museum, where I have been working for more than three years now.

The History of Science Museum is not a traditional museum either. As a member of the Museum team, I have participated in developing an innovative and sustainable plan to provide information to our diverse visitors, adults and youngsters, in an entertaining and exciting manner.

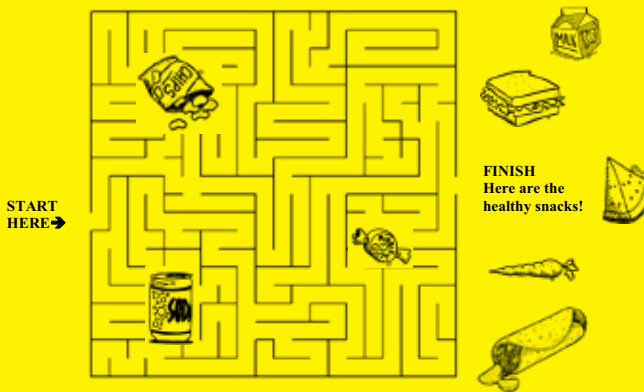
For visitors, history is nothing but a rigid field of study that is full of complex names and dates of events that are difficult to fully comprehend or relate to, and this has been the main challenge for our team. That is why we are always searching and working on finding new interactive ways to spread knowledge and attract visitors of all ages and hence fulfilling the Center's message: "Science for all!"

The Museum team has, in fact, succeeded in offering workshops related to the topics covered in the museum: mathematics, measurement tools, energy and astronomy, among others; and connecting them to our present life. The team also organizes various competitions and research programs, in addition to annual interactive festivities; the most prominent of which is the "Eratosthenes" festivity, the eighth consecutive edition of which has just been conducted to measure the Earth's circumference as usual on the day of the summer solstice; 21 June. Furthermore, the History of Science Museum participates in celebrating International festivities such as the International Year of Astronomy 2009.

Working at the Planetarium Science Center is definitely not a routine job; on the contrary, it has helped me discover and develop my creative skills. It also made me more flexible and more capable of coping with difficult situations and of solving problems. Moreover, it has increased my determination to work in a team that believes in the goal of this majestic and revolutionary organization; the beacon of knowledge and culture in Egypt.

## Snack Attack! Snack Attack

Can you reach the snacks that are good to eat?

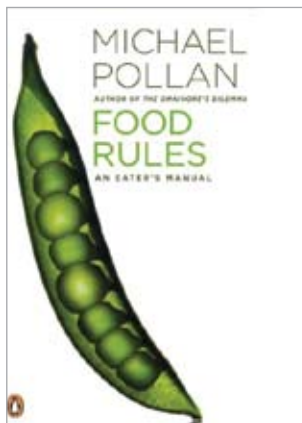


# Check This Out!

By Ingy Hafez, PSC Publications Specialist



## "Food Rules": An Eater's Manual By Michael Pollan



Eating does not have to be so complicated. *Food Rules: An Eater's Manual* makes your daily decisions about food simpler. This handbook lays out a set of straightforward, memorable rules for eating wisely, one per page accompanied by a concise explanation.

An easy-to-use guide that highlights a variety of traditions, it suggests how different cultures through the ages have arrived at the same enduring wisdom about food.

The book is divided into three parts and has 64 chapters or rules. Part I, *What should I eat?*, includes such chapters as "Don't eat anything your great-grandmother would not recognize as food" and "Avoid food products that contain more than five ingredients". Part II, *What kind of food should I eat?*, includes "Eat mostly plants, especially leaves" and "The whiter the bread, the sooner you will be dead." Part III, *How should I eat?*, includes "Pay more, eat less" and "Limit your snacks to unprocessed plant food".

For those of you who desire a healthier diet, *Food Rules* is a guide about what to put into your body.

### Sneak a Peak: "Food Rules" Tips

- If it came from a plant, eat it; if it was made in a plant, don't.
- Eat all the junk food you want as long as you cook it yourself.
- Treat meat as special occasion food.
- Eat when you are hungry, not when you are bored.
- Do all your eating at a table.

### Book Reviews

**"Rules worth following, for everyone's sake"**The New York Times

In the more than four decades that I have been reading and writing about the findings of nutritional science, I have come across nothing more intelligent, sensible and simple to follow than the 64 principles outlined in a slender, easy-to-digest new book called "Food Rules: An Eater's Manual," by Michael Pollan.

**"64 Rules for Eating Right from Michael Pollan"**The Los Angeles Times

Meant to be a simple guide to eating, something anyone can use without reading through a lot of science and nutrition research.

### About the Author

Michael Pollan is an American author, journalist, activist, and professor of journalism at the University of California. He was born in 1955 and received his education at Bennington College, Oxford University, and Columbia University, from which he received a Master's in English.

For the past twenty-five years, Michael Pollan has been writing books and articles about the places where nature and culture intersect. In addition to teaching, he lectures widely on food, agriculture, health and the environment. Pollan was named to the *2010 TIME 100*, the magazine's annual list of the world's 100 most influential people. In 2009, he was named by *Newsweek* as one of the top 10 "New Thought Leaders".

He is the author of four *New York Times* bestsellers: *Food Rules: An Eater's Manual* (2010); *In Defense of Food: An Eater's Manifesto* (2008); *The Omnivore's Dilemma: A Natural History of Four Meals* (2006) and *The Botany of Desire: A Plant's-Eye View of the World* (2001).

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[http://www.huffingtonpost.com/michael-pollan/food-rules-a-completely-d\\_b\\_410173.html](http://www.huffingtonpost.com/michael-pollan/food-rules-a-completely-d_b_410173.html)  
<http://www.asiaing.com/food-rules-an-eaters-manual-by-michael-pollan.html>

## PSC Review

Personally, I find "Food Rules", a book small in size but huge in value, to be simple, clear and to the point. It gives us the secret recipe to leading a healthy life clearly highlighting what is good and what is not.

The book starts with a very logical tip: *Eat Food!* The author focuses on how to recognize what is considered as food and what is not. Then we move to another level, which is the kinds of food that should be eaten. Here I quote one of the tips that has captured my attention: "You're better off eating the real thing in moderation than bingeing on "lite" food products packed with sugars and salt".

Finally, the focus turns on eating manners and habits. So, if you are going to eat, you should eat with an attitude. The aim of this is to foster a healthier relationship to food, whatever you are eating.

## The Editor's Review

After so many years struggling to find the magic formula to eat well, for the sake of my health and figure, I have become weary and skeptical with advice books that deal with the subject. However, having been intrigued by my colleague's recommendation of this charming little book, and seeing how small it is, I was encouraged to give it a try and I practically inhaled it!

It is so witty and smart, it took me merely an hour to get through it all. Nevertheless, I think that what I got out of it will last for years to come, simply because it is all so ridiculously

obvious, it makes you wonder why you have not figured it out yourself already.

Among my favorite tips are "Avoid food products that make health claims", "Eat sweet foods as you find them in nature", "Breakfast like a king, lunch like a prince, dinner like a pauper" and "Treat treats as treats".

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Edited by:

Maissa Azab  
PSC Publications Coordinator

Ingy Hafez  
PSC Publications Specialist

For more information and  
reservation, please contact  
the PSC Administrator at  
[Planetarium@bibalex.org](mailto:Planetarium@bibalex.org)

[ALEXploratorium@bibalex.org](mailto:ALEXploratorium@bibalex.org)

TEL: +203 4839999

EXT: 2350, 2351

FAX: +203 4820464



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