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# VEPACHEDU EDUCATIONAL FOUNDATION

**The Telangana Science Journal**

**Health and Nutrition**

[TIACS-subscribe@yahoogroups.com](mailto:TIACS-subscribe@yahoogroups.com) (The Indian American Chemical Society)

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### Fish Oil Causes Prostate Cancer

The latest findings published July 11 in the online edition of the *Journal of the National Cancer Institute*, indicate that high concentrations [fatty acids](#) derived from [fatty fish](#) and fish-oil supplements are associated with a 71 percent increased risk of high-grade prostate cancer. The study also found a 44 percent increase in the risk of low-grade prostate cancer and an overall 43 percent increase in risk for all prostate cancers.

The findings confirm a large European study and a 2011 study published by the same scientific team that reported a similar link between high blood concentrations of fish oil and a more than doubling of the risk for developing high-grade prostate cancer. <http://medicalxpress.com/news/2013-07-link-omega-fatty-acids-prostate.html>.

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### PUFAs

Fatty acids are important components of nerve cell membranes and are found naturally in breast milk. They are thought to play an important role in brain development, but are not included in many infant formulas. Breastfed kids score on average three to five points higher on IQ tests than formula babies, regardless of PUFAs they consume, in a new study. Infants in several European countries were randomly divided into three groups: one group was given formula containing the fatty acids docosahexaenoic acid (DHA) and arachidonic acid (ARA), one was given regular formula and a third was breastfed. The two formula groups had the same average IQ scores, but the PUFA group processed information faster in a picture-matching game.

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### Dental and Mental Hygiene

An elderly person having fewer teeth may be at greater risk for having memory problems later in life. As natural teeth send signals to the brain via a nerve that provides sensation in the face to help aid in

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motor functions, including biting and chewing, and it is possible that losing natural teeth can reduce those sensory signals between the teeth and the brain. This hurts function and possible memories and learning new ones. <http://www.scienceworldreport.com/articles/8390/20130725/brush-teeth-memory-will-thank.htm>

### Zonkey

Love is blind colors and stripes. When you are twitterpated, you cannot see the feuds, colors, tribes, and social hierarchy. When you cross the tribal boundaries, you create new tribes. A similar passion was seen between the zebra and donkey that were struck by cupid's arrow. Regardless of the difference between them they have produced their love child that is currently kept on display for the animal lovers to view it. It is neither donkey nor zebra, but a zonkey.

<http://www.scienceworldreport.com/articles/8380/20130725/rare-zebra-donkey-hybrid-zonkey-born-italy-video.htm>

### Artificial Sweeteners

Several human and animal studies have shown a relationship between a preference for highly sweet tastes and alcohol use disorders. Furthermore, the brain mechanisms of sweet-taste responses may share common neural pathways with responses to alcohol and other drugs. Consumption of sugar laden foods has been linked to metabolic syndrome related diseases such as obesity, type 2 diabetes, cardiovascular diseases etc. As a result, many have turned to artificial sweeteners, instead of turning to complex carbohydrates. An article published by Cell Press on July 10th in the journal *Trends in Endocrinology & Metabolism* reviews the negative impact of artificial sweeteners on health. The findings suggest that artificial sweeteners increase the risk for health problems similar to that of sugar.

<http://www.sciencedaily.com/releases/2013/07/130710122000.htm>

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Findings published online in the journal *Analytical and Bioanalytical Chemistry* demonstrate the presence of several artificial sweeteners in waste water. A range of artificial sweeteners are commonly used in food and drinks, as well as drugs and sanitary products. The researchers looked for and found seven different artificial sweeteners - cyclamate, acesulfame, saccharin, aspartame, neotame, neohesperidin dihydrochalcone and sucralose- present in German waste and surface water. <http://www.sciencedaily.com/releases/2009/06/090617123650.htm>

### Abdominal Fat

It is well known that risk associated with excess body weight can vary among individuals with similar BMI, and Individuals with excessive abdominal fat have a greater risk of heart disease and cancer than individuals with a similar body mass index (BMI) who carry their fat in other areas of the body. Ectopic fat, or fat located where it is not supposed to be, in this case being visible in the abdominal area. Another study in the *Journal of the American College of Cardiology* supports the hypothesis that abdominal fat may partially underlie the association of body fat and heart disease and cancer. <http://www.sciencedaily.com/releases/2013/07/130710182944.htm>

### Smokers Produce Impotent Sons

Several studies have shown that smoking during pregnancy not only affects the mother but exposes the unborn baby to an elevated risk of numerous health problems, birth defects and abnormalities. A latest research says that smoking during pregnancy may lead to impotent sons. Exposure to maternal smoking leads to low sperm production, and nearly one-sixth of the young men had sperm parameters that fell below the normal parameters defined by the World Health Organization, according to a study presented at the [European Society of Human Reproduction and Embryology \(ESHRE\)](http://www.eshre.eu) meeting. <http://www.eshre.eu>

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### Green Tea and Coffee

The flavonoid epigallocatechin-3-gallate (ECGC) in **green tea** could bind to the toxic protein beta-amyloid, which collects in patients with Alzheimer's, causing many of its symptoms. By doing this, the green tea component changed beta-amyloid's properties. ECGC bound to beta-amyloid best when calcium or zinc were present, and that upon binding, they were less likely to form into plaques that cause Alzheimer's by growing in the brain. When ECGC bound to beta-amyloid it forced the protein, which can normally turn take on any shape, to turn into a single shape. This change also resulted in a beta-amyloid that was less toxic, suggesting that the shape it turned into was less toxic than other forms of beta-amyloid.

Another study found it could boost memory as well. When the participants were tested, those who had the drink with green tea showed more activity in the dorsolateral prefrontal cortex, a part of the brain responsible for processing working memory. What's more, the researchers also found a dose-response in which higher doses of green tea lead to more activity in the brain.

<http://www.medicaldaily.com/articles/17042/20130701/green-tea-alzheimers-disease-dementia-antioxidants-memory.htm>

Acetylcholine is released when we are awake, but not in deep sleep. These receptors allow prefrontal circuits to come online when we awaken, allowing us to perform complex mental tasks. This process is enhanced by caffeine in coffee, which increases acetylcholine release. As their name suggests, nicotinic alpha-7 receptors are also activated by nicotine, which may help to focus attention and calm behavior, functions of the prefrontal cortex.

The fundamental building block of human cognition arises from the firing of highly evolved neuronal circuits. Working memory depends upon the proper functioning of a network of pyramid-shaped brain cells in the prefrontal cortex, the seat of higher order thinking in humans. To keep information in the conscious mind, these pyramidal cells must stimulate each other through a special group of receptors. This stimulation requires the neurotransmitter acetylcholine to activate a specific protein in the nicotinic family of receptors, the alpha7 nicotinic receptor. Alpha7 nicotinic receptors are genetically

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altered in schizophrenia, a disease marked by disorganized thinking.

<http://www.sciencedaily.com/releases/2013/07/130701151558.htm>

#### Malaria

An estimated 220 million people are infected each year by malaria-causing Plasmodium parasites, which are transmitted by the bite of an infected mosquito. This enormous infection burden leads to some 660,000 lives lost to malaria each year, the majority of these young children in sub-Saharan Africa. While a vaccine to prevent malaria remains elusive, we depend on antimalarial compounds both to treat infections and prevent disease.

Torins inhibit a key human protein involved in cell growth, mTOR, and have been shown to be effective anticancer agents in rodent models. Torins appear to have a novel activity against the Plasmodium parasites, distinct from currently used malaria therapeutics, according to work published in the journal *PNAS*. Torins are capable of killing the cultured blood stages of the human parasite, *Plasmodium falciparum*, the species which causes most malaria deaths and severe disease, and are equally potent against the liver stages of a model rodent parasite. A single dose of the compound Torin2 delivered at the beginning of the *P. berghei* liver stage is sufficient to eliminate infection in mice before any Plasmodium parasites reach the blood.

<http://www.sciencedaily.com/releases/2013/07/130709143351.htm>

#### Homosapiens

Two million years ago, the time at which the archaeological record suggests, our hominin ancestors began to hunt more intensely. We are unique among all animals, including our closest living relative, the chimpanzee, in our ability to throw projectiles at high speeds and with incredible accuracy. This trait was critical to the survival and success of our ancestors, aiding their hunting and protective skills, according to research featured on the cover of journal *Nature*. The ability to store energy in the shoulder is made possible by three critical changes in our upper bodies that occurred during human evolution. The expansion of the waist, a lower positioning of the shoulders on the torso, and the twisting of the

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humerus (the bone in the upper arm) are the key morphological changes that first appeared together nearly two million years ago in the species Homo erectus. The cocking of the arm stretches the tendons, ligaments and muscles crossing the shoulder and stores elastic energy, like a slingshot. When this energy is then released, it powers the very rapid rotation of the upper arm, which is the fastest motion the human body produces. This rapid rotation also causes the elbow to quickly straighten and the projectile to be released at very high speeds. <http://scienceblog.com/64257/what-is-the-fastest-articulated-motion-a-human-can-execute/#cKRvk5eEt7FwBsJj.99>

### Exercise

Mature neurons normally have a very complex morphology, allowing them to create networks in the brain which are important for processing information. DNA is wound around bead-like nucleosomes consisting of histone proteins and twisted into chromatin. CHD7 encodes a chromatin remodeler, an important class of epigenetic regulators. Neurons with the mutant form of CHD7 is incapable of forming networks and CHD7 has been identified as a high-risk gene in human autism. A mutation in a gene coding for a chromatin remodeler may lead to a wide pattern of misregulated genes. The CHD7 deficiency in a cell can be bypassed via an unknown mechanism provoked by exercise involving running. <http://www.sciencedaily.com/releases/2013/07/130705101739.htm>

### Sound and Fear

Sound can affect our emotions. Loud sounds are more frightening than soft sounds, and sudden loud sounds are the most frightening of all. If a woman alone in a house on a stormy night and terrified, one way to show the terror in a movie is thunder. When old radio mystery shows wanted to suggest someone alone in a dark house with a killer on the loose, what did they use? Sounds with eerie attack. The ticking clock, the thunder and rain beating against the window, the howling wind, the shutters banging against the side of the house, and creepiest of all is the sound of steps coming slowly up the

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creaking stairs. These are still very popular in films today, not because we need the audio clues, but because they are such familiar shorthand for this clichéd but still exciting situation. However, when certain types of sounds become associated in our brains with strong emotions, hearing similar sounds can evoke those same feelings, even far removed from their original context. It's a phenomenon commonly seen in combat veterans suffering from post-traumatic stress disorder (PTSD), in whom harrowing memories of the battlefield can be triggered by something as common as the sound of thunder. <http://www.sciencedaily.com/releases/2013/06/130630145002.htm>

#### **Sleep, Weight Gain and Ageing**

A new study suggests that healthy adults with late bedtimes and chronic sleep restriction may be more susceptible to weight gain due to the increased consumption of calories during late-night hours. In the largest, most diverse healthy sample studied to date under controlled laboratory conditions, results show that sleep-restricted subjects who spent only four hours in bed from 4 a.m. to 8 a.m. for five consecutive nights gained more weight than control subjects who were in bed for 10 hours each night from 10 p.m. to 8 a.m. <http://www.sciencedaily.com/releases/2013/06/130628160840.htm>

Skin functions as an important barrier from external stressors such as environmental toxins and sun-induced DNA damage. A recently completed study, commissioned by Estée Lauder, demonstrated that poor sleepers had increased signs of skin aging and slower recovery from a variety of environmental stressors, such as disruption of the skin barrier or ultraviolet (UV) radiation. Poor sleepers also had worse assessment of their own skin and facial appearance.

<http://www.sciencedaily.com/releases/2013/07/130723155002.htm>

#### **Unhealthy Sugary Snack Breakfast Linked to Heart Disease**

According to the British Heart Foundation, resisting sugary snacks before lunch is key to your health. A study found skipping breakfast were at a greater risk of heart problems due to sugary snacks before lunch. People, who skip a healthy meal in the morning for cookies and candy snacks before lunch, were at a greater risk of heart problems, according to a study published in *Circulation*. Try a healthy

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and filling meal comprising whole grains, fruits and nuts in the morning, instead of snacking on sugary cookies and candy. <http://www.bbc.co.uk/news/health-23403744>

### Brain

Teenagers are famously self-conscious, acutely aware and concerned about what their peers think of them. A new study reveals that this self-consciousness is linked with specific physiological and brain responses that seem to emerge and peak in adolescence. The study identifies adolescence as a unique period of the lifespan in which self-conscious emotion, physiological reactivity, and activity in specific brain areas converge and peak in response to being evaluated by others.

<http://medicalxpress.com/news/2013-07-teens-self-consciousness-linked-specific-brain.html>

A key brain structure that regulates emotions works differently in preschoolers with depression compared with their healthy peers, according to new research. The differences, measured using functional magnetic resonance imaging (fMRI), provide the earliest evidence yet of changes in brain function in young children with depression. The researchers say the findings could lead to ways to identify and treat depressed children earlier in the course of the illness, potentially preventing problems later in life. <http://www.sciencedaily.com/releases/2013/07/130701172022.htm>

New research published in the American Psychological Association's Health Psychology shows that the stress hormone cortisol tends to be more stable in those with more positive personalities. Pessimists had a higher stress baseline than optimists, and had trouble regulating their system when they go through particularly stressful situations. <http://www.sciencedaily.com/releases/2013/07/130723134538.htm>

### Almonds

If the goal is to eat food that is enjoyable and nutritious contributing protein, carbohydrates and fatty acids, a whole almond is the way. In a study, people chewed almonds 10 times, 25 times or 40 times

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and it was found that with fewer chews, the larger particles were eliminated by the body. With more chews, the smaller particles were more readily absorbed into the system, maximizing Vitamin E intake.  
<http://www.sciencedaily.com/releases/2013/07/130715134643.htm>

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**Source:** The primary sources cited above, New York Times (NYT), Washington Post (WP), Mercury News, Bayarea.com, Chicago Tribune, USA Today, Intellihealthnews, Deccan Chronicle (DC), the Hindu, Hindustan Times, Times of India, AP, Reuters, AFP, womenfitness.net, about.com etc.

Om! Asatoma Sadgamaya, Tamasoma Jyotirgamaya, Mrityorma Amritamgamaya, Om Shantih,  
Shantih, Shantih!

(Aum! Lead the world from wrong path to the right path, from ignorance to knowledge, from mortality to immortality, and peace!)

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