Medi Times

MediTimes from the desk of Medical Services brings the latest trending healthcare news

Vol. 3 | Issue 29 | February, 2017

This issue focuses on Neuropathic Pain, medicinal value of Coconut Water and a Fun Corner with Dimag Ki Batti Jalao in addition to latest medical news.

Happy Reading!!!

Regular meal patterns protect against heart disease

Meal timing affects health due to its impact on the body's internal clock.

Breakfast is often described as the "most important meal of the day.

Skipping breakfast has been connected with a greater risk of cardiovascular disease, type 2 diabetes and chronic disease.

Research has shown that adult behavioral patterns of eating meals and snacks have changed over the past 40 years in the United States. For women, there has been a reduction in energy intake from meals, from 82 percent to 77 percent, and an increase in energy intake from snacks, from 18 percent to 23 percent. Similar trends have been reported in men.

The tendency to eat three standard meals per day has also declined in both men and women. People in the U.S. now have a habit of eating around the clock rather than sticking to certain meal times.

"Meal timing may affect health due to its impact on the body's internal clock," says Marie Pierre Stonge, Ph.D., an associate professor of nutritional medicine at Columbia University in New York City.

"In animal studies, it appears that when animals receive food while in an inactive phase, such as when they are sleeping, their internal clocks are reset in a way that can alter nutrient metabolism, resulting in greater weight gain, and inflammation.

Daily breakfast consumption may help prevent chronic disease

Breakfast is often described as the "most important meal of the day," yet research indicates that 20-30 Percent of U.S. adults skip breakfast. The decline in breakfast consumption has been associated

with an increase in obesity rates. Furthermore, skipping breakfast has been connected with a greater risk of cardiovascular disease, type 2 diabetes and chronic disease.

Meal timing and frequency have been linked to heart disease and stroke risk factors, which include high blood pressure, cholesterol, and blood glucose levels, as well as obesity, insulin resistance, and insulin sensitivity.

Focusing on meal timing and frequency may be a starting point for addressing the obesity epidemic.

Making dietary changes that promote regular energy intake with a majority of calories consumed earlier in the day has been shown to have positive effects on risk factors for heart disease, diabetes, and body weight.

Larger studies needed to confirm how meal timing impacts disease risk

The statement notes that while the research shows that there is a relationship between meal habits and cardiovascular health, there is currently not enough evidence to show that certain eating patterns cause better and lasting benefits. Further longterm studies of meal habits are needed before conclusions can be reached on the impact of meal frequency on heart disease and diabetes.

"We suggest eating mindfully, by paying attention to planning both what to eat meals and snacks, to combat emotional eating. Many people find that emotions can trigger eating episodes when they are not hungry, which often leads to eating too many calories from foods that have low nutritional value."

"Source: St-Onge M et al. Meal Timing and Frequency: Implications for Cardiovascular Disease Prevention: A Scientific Statement From the American Heart Association. American Heat Association, February 7, 2017, Volume 135, Issue 6.

Studies show why some people face life threatening dengue infections

For most people who contract it, dengue fever is a relatively mild mannered disease at least the first time around. For some, however, a subsequent infection by the virus unleashes a vicious and potentially deadly illness.

New research from a team based at The Rockefeller University has begun to reveal why certain people are more vulnerable to these dangerous secondary infections. Their latest findings, described in Science, could lead to better strategies to identify and better treat those most at risk.

"Patients with severe secondary disease have high levels of a particular type of antibody that triggers a forceful immune response. This distinctive signature did not show up in patients with more mild illness," says senior author Jeffrey V. Ravetch, Theresa and Eugene M. Lang Professor and head of the Leonard Wagner Laboratory of Molecular Genetics and Immunology.

Uncommon, but dangerous

Known as "breakbone fever" for the intense aches it causes, dengue is transmitted by mosquitos in the tropics and subtropics. In the more severe form of the disease, which typically occurs among people who have been infected before, patients can develop hemorrhagic (bleeding) fever, which causes them to leak fluid from their blood vessels and bleed abnormally, sometimes from the nose, gums, and under the skin. In extreme cases, people lose so much blood that they develop a critical condition known as shock.

Researchers have long thought this happens because, when it infects a second time, the virus somehow takes advantage of antibodies the immune system is still producing as a result of the first infection.

Previous work in Ravetch's lab suggested differences in antibodies might account for why only some develop severe secondary infections.

Dengue is transmitted by mosquitos in the tropics and subtropics.

People who have been infected before, can develop hemorrhagic fever, which causes them to leak fluid from their blood vessels and bleed abnormally, sometimes from the nose, gums, and under the skin.

These Y shaped proteins help the body defend itself against viruses and other intruders by latching onto infected cells with their arms.

An answer in architecture

For the current study, first author Taia Wang, and her collaborators took a close look at the Fc regions of antibodies in blood collected from patients with mild and severe secondary dengue infections at Siriraj Hospital in Bangkok, Thailand. These people's immune systems were still producing antibodies as a result of their first encounter with the virus, but the structure of these antibodies varied between individuals.

In experiments, the researchers showed that activating signals from these antibodies aggravated the disease by leading to the destruction of bloodclotting cells called platelets. When their platelet levels plummet, patients bleed abnormally a hallmark of hemorrhagic fever.

Dengue and beyond

The discovery of this antibody signature could help fight the disease in a number of ways.

"Because it is now known what to look for, it may become possible to identify patients at risk of severe illness, so they can receive intensive, supportive care early on," Ravetch says.

"It could also aid in the development of safe dengue vaccines that stimulate the immune system without triggering a secondary, potentially harmful response, and of new drugs designed to help patients recover by blocking the antibody signaling," he adds.

Since dengue belongs to the same family as Zika and other dangerous viruses, the implications go beyond this particular disease. "It will be important to consider the possibility that other, related viruses employ a similar strategy, and that infection with one may affect the subsequent response to another," he says.

"Source: Accessed from http://newswire.rockefeller.edu/2017/01/31/discovery-helps-explain-why-only-some-people-develop-life-threatening-dengue-infections/

Human heights affected by DNA changes

The Genetic Investigation of Anthropometric Traits (GIANT) Consortium an international collaboration that researches the genetics that modulate human body size and shape, including measures of height and obesity discovered the new genetic variations.

Previous studies have used genomewide association studies (GWAS) to locate genetic variants. This method rapidly scans across the genomes of large populations for markers that track with a particular trait.

GWAS is successful at finding common genetic variants. However, most of these only alter height by under 1 millimeter. GWAS unsuccessfully captures uncommon genetic variants that may have a larger affect on height.

Another problem is that common genetic variants that track with traits lie outside the proteincoding parts of genes. This positioning makes it harder to find out which genes they affect.

Some genetic variants identified have significant influence on height

In the new study, the investigators decided to use another technology called the ExomeChip in order to overcome some of the issues experienced with GWAS. ExomeChip tested for almost 200,000 known genetic variants that are less common in the 711,428 adults included in the study.

Out of the 83 uncommon variants identified that affect human height, 51 of them were "low frequency" variants that are found in less than 5 percent of people, and 32 of them were rare variants found in less than 0.5 percent.

Lettre co-led the study with professors Joel Hirschhorn of Boston's Children's Hospital, MA, and the Broad Institute of MIT and Harvard, and chair of the GIANT

GWAS- (Genomewide Association Studies).This method rapidly scans across the genomes of large populations for markers that track with a particular trait.

Consortium and Panos Deloukas of the Queen Mary University of London in the United Kingdom. Almost 280 other research groups were also involved.

The team notes that 27.4 percent of the heritability of height is now accounted for, with most heritability still explained by common genetic variants.

The study also found several genes that could potentially be targeted therapeutically for children with growth problems.

Precision medicine is an emerging approach that involves customizing treatments and prevention measures to an individual patient. Lettre and colleagues suggest that the findings of the study could help to identify genetic variations that increase a person's risk of developing diseases. If this were the case, pinpointing these variations would be valuable in precision medicine.

"This study has shown that rare protein altering variants can be helpful at finding some of the important genes, but also that even larger sample sizes will be needed to completely understand the genetic and biologic basis of human growth and other multifactorial diseases."

Source: Marouli E et al. Rare and low-frequency coding variants alter human adult height. Nature; 2017; Published online 01 February 2017.

Neuropathic Pain

Neuropathic pain is a severe pain that usually is accompanied by tissue injury. With neuropathic pain, the nerve fibers themselves may be damaged, dysfunctional, or injured. These damaged nerve fibers send incorrect signals to other pain centers in the brain. The impact of nerve fiber injury includes a change in nerve function both at the site of injury and areas around the injury.

Causes of Neuropathic Pain

Neuropathic pain often seems to have no obvious cause; but, some common causes of neuropathic pain include:

- Alcoholism
- Diabetes
- Amputation
- Spine injury
- Cancer
- HIV infection or AIDS
- Shingles (Herpes Zoster)

Symptoms of Neuropathic Pain

Neuropathic pain symptoms may include:

- Shooting
- Burning pain
- Tingling
- Numbness

Diagnosis:

- Clinical evaluation may reveal some evidence of loss of function, and can include assessment of light touch, the ability to distinguish sharp from dull, the ability to discern temperature, and assessment of vibration.
- The most common way to evaluate whether a nerve is injured is with **electrodiagnostic medicine**. Doctors use techniques of a nerve conduction studies with electromyelography (NCS/EMG).

Treatment:

- Various medications have been used to treat neuropathic pain.
- Common treatment of neuropathic pain includes antiseizure medications (carbamazepine, phenytoin, gabapentin).
- Tricyclicantidepressants (amitriptyline, nortriptyline, desipram ine) have been prescribed for control of neuropathic pain for many years. Some patients find that these can be quite effective in giving them relief.
- Medications applied directly to the skin can provide modest to pronounced benefit for some patients. Eg: Capsaicin ointment.

PHANTOM LIMB SYNDROME

This rare condition occurs when an arm or a leg has been removed because of illness or injury, but the brain still gets pain messages from the nerves that originally carried impulses from the missing limb. These nerves now misfire and cause pain.

MEDICINAL VALUE

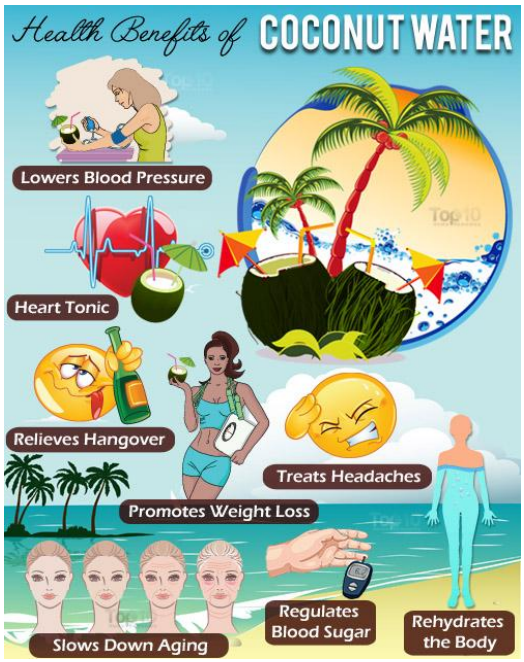
Coconut Water

For centuries, people from tropical regions have known about the amazing health benefits of tender coconut water, which comes from young green coconuts. Each nut contains about 200 to 1,000 milliliters (approximately 1 to 4 cups) of coconut water. It is a delicious and refreshing low-calorie natural beverage. Tender coconut water contains more nutrients than mature coconut water.

It's packed with antioxidants, amino acids, enzymes, B-complex vitamins, vitamin C and minerals like iron, calcium, potassium, magnesium, manganese and zinc.

The water collected after opening a tender, green, healthy, and undamaged coconut. Inside, the clear liquid is sweet, and sterile and composed of unique chemicals such as sugars, vitamins, minerals, electrolytes, enzymes, amino acids, cytokine, and phyto-hormones. In general, young and slightly immature coconuts gathered from the coconut tree after they reach about 5-7 months of age for the purpose of reaping its drink.

Health benefits of coconut water:



- Coconut water is a very refreshing drink to beat the torching tropical summer thirst. Its liquid is packed with simple sugars, electrolytes, and minerals to replenish dehydration conditions inside the human body.
- Research studies suggest that cytokinins (e.g., kinetin and trans-zeatin) in coconut water found to have significant anti-ageing, anti-carcinogenic, and anti-thrombotic (anti-clot formation) effects.
- Coconut water is offered to patients with diarrhea in many tropic regions to replace the fluid loss from the gastrointestinal tract and to reduce the need for hospitalisation.
- Coconut water is composed of many naturally occurring bioactive enzymes such as acid phosphatase, catalase, dehydrogenase, diastase, peroxidase, RNA-polymerases. These enzymes help in the digestion and metabolism.
- Coconut water works in a variety of ways to soothe the stomach lining. Coconut water contains tannins, which are known to reduce inflammation.
- Coconut Water Promotes Regularity of Bowel Movements
- Coconut water is a good drink for weight loss. It is low in calories and easy on the stomach. In fact, this light and refreshing drink contains various bioactive enzymes that aid digestion and boost fat metabolism.
- Coconut water carries a good amount of electrolyte potassium. 100 ml of water has 250 mg of potassium and 105 mg of sodium. Together, these electrolytes help replenish electrolyte deficiency in the body due to diarrhea (loose stools).
- Further, fresh coconut water has a small amount of vitamin-C (Ascorbic acid); It provides about 2.4 mg or

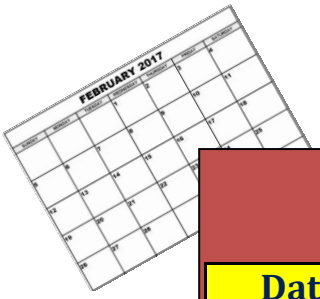
4% of RDA. Vitamin-C is a water-soluble antoxidant.

- Most headaches, even migraines, are triggered by dehydration. In such cases, coconut water can be of great help in supplying electrolytes to the body and boosting hydration.

Safety profile

Coconut water is universally appealing drink. There are no known reactions of any sort notified so far drinking it. It is not only cherished in healthy but considered safe in pregnancy, infants as well as in illness conditions.

1. *Accessed from* http://www.nutrition-and-you.com/coconut-water.html
2. *Accessed from* *http://www.naturallivingideas.com/coconut-water-benefits/*



IMPORTANT HEALTH DAYS IN FEBRUARY

Date	Observed as
30	World Leprosy Eradication Day
6 -12	Glaucoma week
8	International Women's Day
11	No Smoking Day
12	World Kidney Day
15	World Disabled Day / World Consumer Rights Day
16	Measles Immunisation Day
22	World Day for Water
24	World TB Day

JUST FOR LAUGH GAGS CORNER

Teacher : *whoever answers my next question, can go home.*
One boy throws his bag out the window
Teacher *: who just threw that?!*
Boy : *Me! I'm going home now.*

DIMAG KI BATTI JALAO...

1. What is the other name for Dengue Infection?
2. Name the syndrome in which the arm or a leg has been removed because of illness or injury, but the brain still gets pain messages from the nerves?
3. I am a number. My spelling is in A-Z consecutive sequence. What number I am?