



DAILY NEWS BULLETIN

LEADING HEALTH, POPULATION AND FAMILY WELFARE STORIES OF THE DAY
Friday 20190503

Walnuts

Eating walnuts daily may lower heart disease risk: Study (The Tribune: 20190503)

<https://www.tribuneindia.com/news/health/eating-walnuts-daily-may-lower-heart-disease-risk-study/767117.html>

Eating walnuts daily may lower heart disease risk: Study

Eating whole walnuts daily may help lower blood pressure in people at the risk of developing cardiovascular disease (CVD), according to a study.

The research, published in the Journal of the American Heart Association, examined the effects of replacing some of the saturated fats in participants' diets with walnuts.

Researchers from Pennsylvania State University (Penn State) in the US found that when participants ate whole walnuts daily in combination with lower overall amounts of saturated fat, they had lower central blood pressure.

According to the researchers, central pressure is the pressure that is exerted on organs like the heart.

This measure, like blood pressure measured in the arm the traditional way, provides information about a person's risk of developing CVD.

The study suggests that because walnuts lowered central pressure, their risk of CVD may have also decreased, said Penny Kris-Etherton, Distinguished Professor of Nutrition at Penn State.

"When participants ate whole walnuts, they saw greater benefits than when they consumed a diet with a similar fatty acid profile as walnuts without eating the nut itself," Kris-Etherton said in a statement.

"So it seems like there's a little something extra in walnuts that are beneficial—maybe their bioactive compounds, maybe the fibre, maybe something else—that you don't get in the fatty acids alone," she said.

Alyssa Tindall, a PhD graduate at Penn State, said the study was one of the first to try to uncover which parts of the walnuts help support heart health.

"Walnuts contain alpha-linolenic acid—ALA—a plant-based omega-3 that may positively affect blood pressure," Tindall said.

"We wanted to see if ALA was the major contributor to these heart-healthy benefits, or if it was other bioactive component of walnuts, like polyphenols. We designed the study to test if these components had additive benefits," she said.

The researchers recruited 45 participants—overweight or obese—who were between the ages of 30 and 65. Before the study began, participants were placed on a "run-in" diet for two weeks.

"Putting everyone on the same diet for two weeks prior to the start of the study helped put everyone on the same starting plane," Tindall said.

"The run-in diet included 12 per cent of their calories from saturated fat, which mimics an average American diet. This way, when the participants started on the study diets, we knew for sure that the walnuts or other oils replaced saturated fats," she said.

After the run-in diet, the participants were randomly assigned to one of three study diets, all of which included less saturated fat than the run-in diet.

The diets included one that incorporated whole walnuts, one that included the same amount of ALA and polyunsaturated fatty acids without walnuts, and one that partially substituted oleic acid (another fatty acid) for the same amount of ALA found in walnuts, without any walnuts.

All three diets substituted walnuts or vegetable oils for five per cent of the saturated fat content of the run-in diet, and all participants followed each diet for six weeks, with a break between diet periods.

Following each diet period, the researchers assessed the participants for several cardiovascular risk factors including central systolic and diastolic blood pressure, brachial pressure, cholesterol, and arterial stiffness.

They found that while all treatment diets had a positive effect on cardiovascular outcomes, the diet with whole walnuts provided the greatest benefits, including lower central diastolic blood pressure.

In contrast to brachial pressure—which is the pressure moving away from your heart and measured with an arm cuff in the doctor's office—central pressure is the pressure moving towards your heart.

Tindall said that the results underline the importance of replacing saturated fat with healthier alternatives.

"Seeing the positive benefits from all three diets sends a message that regardless of whether you replace saturated fats with unsaturated fats from walnuts or vegetable oils, you should see cardiovascular benefits," Tindall said. — PTI

Mental disorders

Living alone may increase risk of mental disorders: Study (The Tribune: 20190503)

<https://www.tribuneindia.com/news/health/living-alone-may-increase-risk-of-mental-disorders-study/767096.html>

Mental disorders are more common in people who live alone, regardless of their age and sex, according to a study.

Researchers from the University of Versailles Saint-Quentin-en-Yvelines in France noted that the number of people living alone has increased in recent years due to population ageing, decreasing marriage rates and lowering fertility.

Previous studies have investigated the link between living alone and mental disorders but have generally been conducted in elderly populations and are not generalisable to younger adults.

The latest study, published in the journal PLOS ONE, used data on 20,500 individuals aged 16-64 living in England who participated in the 1993, 2000, or 2007 National Psychiatric Morbidity Surveys.

"Living alone is positively associated with common mental disorders in the general population in England," Louis Jacob from University of Versailles Saint-Quentin-en-Yvelines said in a statement.

Whether a person had a common mental disorder (CMD) was assessed using the Clinical Interview Schedule-Revised (CIS-R), a questionnaire focusing on neurotic symptoms during the previous week.

In addition to the number of people living in a household, data was available on factors including weight and height, alcohol dependence, drug use, social support, and loneliness.

The prevalence of people living alone in 1993, 2000, and 2007 was 8.8 per cent, 9.8 per cent, and 10.7 per cent.

In those years, the rates of CMD was 14.1 per cent, 16.3 per cent, and 16.4 per cent.

In all years, all ages, and both men and women, there was a positive association between living alone and CMD, researchers said.

In different subgroups of people, living alone increased a person's risk for CMD by 1.39 to 2.43 times. Overall, loneliness explained 84 per cent of the living alone-CMD association, they said.

The researchers suggest that interventions which tackle loneliness might also aid the mental wellbeing of individuals living alone.

Globally, the lifetime prevalence of CMDs is around 30 per cent. CMDs have a major impact on quality of life, physical illness and mortality.

In the past decades, there has been a growing interest in the association between living alone and CMDs, researchers said.

This is partly driven by the fact that in many settings, the proportion of individuals living alone is increasing due to factors such as population ageing, lowering fertility, decreasing marriage rates, and increasing divorce rates, they said. — PTI

Kidney cancer

Heavier, taller children at higher risk of kidney cancer: Study (The Tribune: 20190503)

<https://www.tribuneindia.com/news/health/heavier-taller-children-at-higher-risk-of-kidney-cancer-study/765570.html>

Heavier and taller children may be at an increased risk of developing kidney cancer as adults, a study has found.

Renal cell carcinoma (RCC) is the most common form of kidney cancer found in adults. Although it often occurs in men between the ages of 50 and 70, the cancer can be diagnosed throughout adulthood.

Medical experts do not know the exact causes of RCC.

"We know that overweight in adulthood is associated with an increased risk of RCC. We also know that cancers take many years to develop," said Britt Wang Jensen, from the Bispebjerg and Frederiksberg Hospital in Denmark.

"We therefore had a theory that already being overweight in childhood would increase the risk of RCC later in life," Jensen said in a statement.

To tease out the relationships between childhood body size and the risk of RCC in adulthood, researchers used data from 301,422 children born in Copenhagen in the years 1930 to 1985.

The weights and heights were measured at annual school health examinations at the ages 7-13 years.

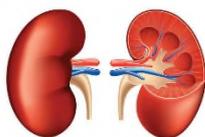
During about 32 years of observation, 1,010 individuals (680 men) were diagnosed with RCC. Among men and women significant and positive associations were observed between childhood BMI and height, respectively, and RCC risk.

When comparing two 13-year old children with one z-score difference in BMI—equivalent to 5.9 kg for boys and 6.8 kg for girls—but with similar height, the heaviest child had a 14 per cent higher risk of RCC than the leaner child.

For height, a one z-score difference in two 13-year old children was associated with a 12 per cent increased risk of RCC later in life for the taller boy or girl.

"We have found in other studies that childhood height is positively associated with several cancer forms. Therefore, we did expect to find that tall children have a higher risk of RCC than average-sized children," researchers said.

"Our findings that heavier and taller children have increased risks of RCC opens the door to new ways to explore the causes of kidney cancer," they said. PTI



High BP

Suffering from high BP? Don't take work stress lightly (The Tribune: 20190503)

<https://www.tribuneindia.com/news/health/suffering-from-high-bp-don-t-take-work-stress-lightly/765084.html>

Heavier, taller children at higher risk of kidney cancer: Study

If you are finding it hard to deal with the pressure at the workplace, there is more reason to worry. New research has found that work stress and impaired sleep are linked to a threefold higher risk of cardiovascular death in employees with hypertension.

“Sleep should be a time for recreation, unwinding, and restoring energy levels. If you have stress at work, sleep helps you recover,” said study author Karl-Heinz Ladwig, Professor at Technical University of Munich, Germany.

“Unfortunately poor sleep and job stress often go hand in hand, and when combined with hypertension the effect is even more toxic,” Ladwig said.

The study included around 2,000 hypertensive workers aged 25-65, without cardiovascular disease or diabetes.

Compared to those with no work stress and good sleep, people with both risk factors had a three times greater likelihood of death from cardiovascular disease, showed the findings published in the European Journal of Preventive Cardiology.

People with work stress alone had a 1.6-fold higher risk while those with only poor sleep had a 1.8-times higher risk, the study said.

In the study, work stress was defined as jobs with high demand and low control—for example when an employer wants results but denies authority to make decisions.

“If you have high demands but also high control, in other words you can make decisions, this may even be positive for health,” said Ladwig.

“But being entrapped in a pressured situation that you have no power to change is harmful,” Ladwig added. — IANS

Food and Nutrition

Comfort food leads to more weight gain during stress (The Tribune: 20190503)

<https://www.tribuneindia.com/news/health/comfort-food-leads-to-more-weight-gain-during-stress/765083.html>

Comfort food leads to more weight gain during stress

Using an animal model, the team showed that a high-calorie diet when combined with stress resulted in more weight gain than the same diet caused in a stress-free environment. File photo

MELBOURNE: Indulging in high-calorie ‘comfort’ foods when you are stressed can lead to more weight gain than usual, scientists say.

Researchers from the Garvan Institute of Medical Research in Australia discovered a molecular pathway in the brain, controlled by insulin, which drives the additional weight gain.

Using an animal model, the team showed that a high-calorie diet when combined with stress resulted in more weight gain than the same diet caused in a stress-free environment.

“This study indicates that we have to be much more conscious about what we’re eating when we’re stressed, to avoid a faster development of obesity,” said Herbert Herzog, who led the study.

Some individuals eat less when they’re stressed, but most will increase their food intake—and crucially, the intake of calorie-dense food high in sugar and fat.

To understand what controls this ‘stress eating’, the team investigated different areas of the brain in mice.

While food intake is mainly controlled by a part of the brain called the hypothalamus, another part of the brain—the amygdala—processes emotional responses, including anxiety.

“Our study showed that when stressed over an extended period and high calorie food was available, mice became obese more quickly than those that consumed the same high fat food in a stress-free environment,” said Kenny Chi Kin Ip, lead author of the study published in the journal *Cell Metabolism*.

At the centre of this weight gain, the scientists discovered, was a molecule called NPY, which the brain produces naturally in response to stress to stimulate eating in humans as well as mice.

“We discovered that when we switched off the production of NPY in the amygdala weight gain was reduced. Without NPY, the weight gain on a high-fat diet with stress was the same as weight gain in the stress-free environment,” said Ip.

“This shows a clear link between stress, obesity and NPY,” he said.

To understand what might control the NPY boost under stress, the scientists analysed the nerve cells that produced NPY in the amygdala and found they had receptors, or ‘docking stations’, for insulin—one of the hormones which control our food intake.

Under normal conditions, the body produces insulin just after a meal, which helps cells absorb glucose from the blood and sends a ‘stop eating’ signal to the hypothalamus feeding centre of the brain.

In the study, the scientists discovered that chronic stress alone raised the blood insulin levels only slightly, but in combination with a high-calorie diet, the insulin levels were 10 times higher than mice that were stress-free and received a normal diet.

The study showed that these prolonged, high levels of insulin in the amygdala caused the nerve cells to become desensitised to insulin, which stopped them from detecting insulin altogether.

In turn, these desensitised nerve cells boosted their NPY levels, which both promoted eating and reduced the bodies' normal response to burn energy through heat, the study showed.

“Our findings revealed a vicious cycle, where chronic, high insulin levels driven by stress and a high-calorie diet promoted more and more eating,” said Herzog.

“This really reinforced the idea that while it’s bad to eat junk food, eating high-calorie foods under stress is a double whammy that drives obesity,” he added. PTI

Inhale right, live better

Proper breathing techniques can keep your body and mind healthy (The Tribune: 20190503)

<https://www.tribuneindia.com/news/health/inhale-right-live-better/764156.html>

Leads to many lifestyle diseases. These are commonly caused due to lack of physical activity, unhealthy eating habits, inadequate sleep, alcohol, drug and smoking abuse, in addition to chronic stress. Some of the prevalent ones are hypertension, heart disease, stroke, obesity, diabetes, acidity, chronic fatigue syndrome, psychosomatic diseases, etc. These diseases manifest at physical level, if the body, and more importantly, the mind is unable to cope with stress.

Chronic stress can lead to anger, anxiety and frustration, excess of stress hormones, chemicals, oxidative stress, and dysfunction of immune system.

Well being of one's mind and body, is linked to breath. It is practically impossible to control the mind directly, however, if one can control the breath, mind can be tamed.

There have been many studies proving that breath is connected to our state of mind and our wellbeing. When you are feeling calm or happy, your breathing slows and deepens which produces a relaxing effect. Conversely, when you are feeling frightened, in pain, or tense, your breathing speeds up and becomes shallower. The body's reactions to stress is now activated.

The state of the body affects emotions. Breathing, in particular, can affect state of mind. Our brain and breath are connected. The mind stress is directly connected with imbalances in right and left brain.

Left brain is responsible for logic, speech and analysis while the right brain controls creativity, art, intuition and holistic thinking.

Most of us are left-brain oriented. It can create right-left brain imbalance, as the right brain is hardly active. This leads to imbalance in our autonomic nervous system and consequently lifestyle diseases. To overcome this right-left brain imbalance and eliminate accumulated stress and negative emotions, following a few simple measures daily can decrease anxiety and keep us calm. These include awareness about eating right in terms of quality, quantity and timing, listening to soft classical music including instrumental music. One can even learn music to keep the right brain activated and functioning.

Yoga is another important tool for a disease-free body and stress-free mind. A focus on controlled breathing is integral to yoga and can induce relaxation. Increasing scientific evidence shows that breathing techniques are effective against anxiety, stress and sleeping disorders. These influence both physiological factors (by stimulating the parasympathetic nervous system) and psychological factors (by diverting attention from thoughts).

A breathing technique called nadi-shodhan pranayama (anulom-vilom) is a popular yoga practice. It is called cardiac coherence breathing in west as researchers who studied its effect on heart, found it helped to decrease anxiety and chronic stress and stabilise the heartbeat. Other breathing techniques like Sudarshan kriya have a positive effect on areas of brain like amygdala and hippocampus, responsible for emotions, survival instincts, and memory.

Nadi-Shodhan Pranayama

Sit comfortably with back and neck straight, shoulders relaxed and eye closed throughout.

Place your left hand on the left knee, palm-up with tips of thumb and index touching.

Place the tip of the index finger and middle finger of the right hand in between the eyebrows very lightly, the ring finger on the left nostril, and the thumb on the right nostril. Use the ring finger to open or close the left nostril and thumb for the right nostril.

Close the right nostril with thumb and breathe out gently through the left nostril.

Now breathe in from the left nostril and then press the left nostril gently with the ring finger. Removing the right thumb from the right nostril, breathe out from the right. Breathe in from the right nostril and exhale from the left.

This is one round of nadi-shodhan pranayama.

Inhalation should be long, deep, smooth breaths (5-7 seconds) without any force or effort. Exhalation should be equal or slightly longer than inhalation. Continue inhaling and exhaling from alternate nostrils.

Complete 10 rounds by alternately breathing through both the nostrils. After every exhalation, remember to breathe in from the same nostril from which you exhaled and continue.

Note: Each and every step is to be done gently. Do it twice a day, followed by 5 minutes of relaxation with closed eyes every time.

Benefits

Mind becomes calm and centred, leading to stress reduction, emotion control, improved attention and improvement in chronic stress.

Helps to maintain blood pressure, strengthens the heart and improves respiratory problems.

Helps harmonise the left and right hemispheres of the brain, and thus stabilises the autonomic nervous system by strengthening vagus nerve.

Maintains body temperature.

Regulates sleep and prevents insomnia.

Help to counter the accumulation of physical tension associated with stress.

—The writer is senior consultant, neurology, Fortis Hospital, Mohali

Breathless (The Tribune: 20190503)

<https://www.tribuneindia.com/news/health/breathless/764153.html>

Around 74 million people in India are suffering from asthma, and the number is only rising. Most of the asthmatics are in the age group of five and 25 years

Is a nagging cough or sneezing bothering you for some time? Have you noticed a recent worsening of your symptoms that include wheezing, shortness of breath, chest tightness, etc.? You could be suffering from bronchial asthma. Bronchial asthma is one of the most common respiratory diseases around the world affecting 1-18 per cent of population all over. Around 74 million in India are suffering from this disease and the number is only rising. Most of the asthmatics are between five and 25 years, with nearly half of the patients being affected before 16 years, although late onset in adulthood is known to occur, especially in women.

What causes asthma?

It is a disease caused by interplay of genetics and environment, which means that one can inherit it from parents.

Asthma is caused by inflammation of the air passage making the airways narrow temporarily, resulting in difficulty in breathing.

Wheat husk during harvest months, stubble burning, Congress grass, pollen and weeds are some of the most common allergens behind the increase in the number of asthma attacks during the harvesting season in April-May. Stress, viral infections, vitamin D deficiency, extreme exercise and smoke are also known to make asthmatic attacks worse.

Low-birth weight and lack of breast feeding during infancy, obesity are associated with development of asthma later in life.

Certain medications e.g. anti-hypertensives like ACE inhibitors and beta blockers; aspirin, ibuprofen, naproxen precipitate the symptoms of asthma as do certain occupations e.g. adhesive handlers, vets, textile workers, bakers, millers, farmers, carpenters, hairdressers, milk and egg powder handlers in food production, healthcare and pharmaceutical workers, spray painters and welders.

Why is the prevalence on the rise?

Warm weather is conducive to early and prolonged pollination of trees. With greenhouse effect on Earth, this process is expected to further increase.

Earlier, most Indians followed a traditional lifestyle and diet that was healthy, wholesome and mostly constituted of locally grown foods. As western culture and foods invaded our life and dictated our lifestyles, it affected the immune system and made us prone to asthma and other allergic diseases.

Food allergens like sulphites and preservatives added to pickled foods, shrimp, dried fruit, processed potatoes, beer and wine, set off asthma attack. A low intake of antioxidants and omega fatty acids might be another risk factor for asthma.

Pollution, especially indoor air pollution from dust mites, dusty carpets, incense sticks, curtains, old cars and unplanned urbanisation play a big role in adding to pollution and hence aggravating breathing problem.

Treatment

Asthma is a chronic disease which cannot be cured but can be definitely controlled with inhalers, the best treatment for bronchial asthma. All inhalers are not the same. There are different combinations in varying doses meant for step-wise treatment of both adult and paediatric asthma patients.

Complications

If left untreated or inadequately treated, there may occur fixed remodelling of airways leaving fewer chances of control by inhalers and other medications. Also in long standing, poorly managed cases of asthma, there may occur a fungal infection of the airways, which is further difficult to cure.

Dos and Don'ts

Do not get yourself treated from quacks on as-and-when-needed-basis or do self medication with over-the-counter cough syrups and tablets, lest you should land in emergency with severe breathlessness or intractable cough lingering for months.

If your doctor has put you on inhalers, do not stop treatment after some weeks once you feel better. Almost 80 per cent asthmatics in India are on oral tablets whereas in rest of the world asthma is treated primarily with inhalers.

Stick to your doctor's prescription and bring your medications along when you visit your doctor. So that s/he can double-check that you're taking right dosage of medications and using your inhaler correctly.

Follow your asthma action plan with your doctor.

Identify and avoid asthma triggers.

Monitor your breathing. Regularly measure and record your peak airflow (PEFR) with a home peak flow meter.

Identify and treat attacks early. When your PEFr measurements decrease, take your medication as instructed and immediately stop any activity that may have triggered the attack. If your symptoms don't improve, get medical help as directed in your action plan.

Get vaccinated for influenza and pneumonia to prevent flu and pneumonia from triggering asthma flare-ups.

Asthma is closely linked to gastroesophageal reflux; preventing that will help reduce frequency and severity of asthma symptoms.

Raise the head of your bed by six inches.

Eat a small meal, at least three to four hours before lying down, and avoid bedtime snacks.

Maintain a healthy weight.

Limit consumption of fatty foods, chocolate, peppermint, coffee, tea, cold drinks, ice cream and alcohol. Give up smoking — all of these relax the lower esophageal sphincter. Avoid tomatoes and citrus fruits or juices.

Wear loose clothes.

Avoid junk and fried foods. There are allergenic ingredients in the former and bloating and flatulence due to the latter. Both impair asthma control.

Another condition, chronic rhinosinusitis (CRS) with its severe symptoms of sneezing, post-nasal drip, persistent cough, heaviness of head and face, is directly linked with poor asthma control and hence the two should be treated as a common airway disorder.

Effective treatment for allergic rhinitis (hay fever, seasonal or perennial), another common chronic disease affecting 10-20 per cent of the populations, often coexistent with bronchial asthma, may reduce severe asthma attacks, and make the lungs work better.

Take steps to curb air pollution and greenhouse effect. Plant trees, carpool, switch off the lights when not in use etc.

Have a bath, change clothes, keep your shoes out, if you have been out for long, as those must have gathered pollen.

Breathing techniques like pranayam can decrease attacks and use of drugs. These also show significant improvement in the PEFr and are helpful as an adjunct therapy to alleviate asthma symptoms.

Diet soda

Diet soda doesn't help kids cut calories: Study (New Kerala: 20190503)

<https://www.newkerala.com/news/read/136384/diet-soda-doesnt-help-kids-cut-calories-study.html>

Children and teenagers who consume low-calorie sweetened beverages take in more calories on a given day compared with those who drink water, says a study.

Teenagers who consumed diet beverages ended up having about the same number of calories as youth who consumed sugary beverages, the study said.

"These results challenge the utility of diet or low-calorie sweetened beverages when it comes to cutting calories and weight management," said Allison Sylvetsky, Assistant Professor at the George Washington University and lead author of the study.

The study looked at data from over 7,000 children and teenagers, enrolled in the US National Health and Nutrition Examination Survey from 2011 to 2016.

Kids and teenagers reported what they ate and drank during a 24-hour period. The research team zeroed in on the reported consumption of sweetened beverages, those with low-calorie sweeteners and those with sugar.

Kids and teens who reported drinking low-calorie sweetened beverages, such as a diet soda, not only ingested extra calories compared with water drinkers, but also took in more calories from added sugars in foods and beverages, said the study published in the journal *Pediatric Obesity*.

Gene

Both mother and baby genes affect birth weight (New Kerala: 20190503)

<https://www.newkerala.com/news/read/136271/both-mother-and-baby-genes-affect-birth-weight.html>

Recent findings have discovered links between genetic code and birth weight of human beings which explain how mothers' and babies' genes influence birth weight.

Scientists have long known that babies who are particularly small at birth have a higher risk of birth complications, and also tend to be more prone than average weight babies to high blood pressure in adulthood.

Findings of the study were published in the *Journal of Nature Genetics*.

As part of the study, the researchers looked at genetic information from 230,069 mothers, with the birth weight of one child each, in addition to genetic information and birth weights of 321,223 people across the UK Biobank and the Early Growth Genetics consortium cohorts.

A child inherits half their genes from their mother and a half from their father, and the child's own resulting genetic make-up plays a role in birth weight. The paper reveals the complex balance of how both the mother's genes and the baby's genes can influence the baby's growth.

The researchers concluded that the direct effects of a baby's genes made a substantial contribution to birth weight. However, around one-quarter of the genetic effects identified were from the mother's genes that were not passed on to the child. Instead, these affected the baby's growth by influencing factors in the baby's environment during pregnancy, such as the amount of glucose available.

The study found that some parts of the genetic code can be linked to birth weight both directly from the child and indirectly from the mother. A number of these were seen to work together,

with the mother and baby effects pushing birth weight in the same direction, while others had opposing effects, like a mother-baby tug of war.

For example, some of the genetic effects that raise the mother's glucose levels work to make the baby bigger because the baby produces more insulin in response which makes it grow. But when those same variations in the genetic code are inherited by the child, they restrict the amount of insulin the baby can produce, so limiting its growth and counter-acting some of the mother's growth-promoting effects.

"This is the first time we've really been able to unpick the effects of both mother and baby's genes on baby weight, which is an important health indicator. It's particularly useful to know about the maternal genetic influences on the environment in the womb because these give us clues as to which factors are causal. Better understanding of the causes may mean we can help ensure babies are born at healthy weights," said Rachel Freathy, one of the lead authors on the study.

According to the researchers, this study highlights the value of large-scale international research collaborations.

The research involved more than 200 international researchers from 20 countries who are members of the Early Growth Genetics (EGG) Consortium.

Premature birth

Premature birth linked to increased risk of chronic kidney disease: Study (New Kerala: 20190503)

<https://www.newkerala.com/news/read/136135/premature-birth-linked-to-increased-risk-of-chronic-kidney-disease-study.html>

As part of a recent study, researchers have discovered links between premature birth and increased risk of chronic kidney disease.

According to the study, preterm and early term birth are strong risk factors for the development of chronic kidney disease (CKD) from childhood into mid-adulthood.

The researchers claim that given the high levels of preterm birth, and better survival into adulthood, these findings have important public health implications.

Preterm birth (before 37 weeks of pregnancy) interrupts kidney development and maturity during late-stage pregnancy, resulting in fewer nephrons forming (filters that remove waste and toxins from the body).

Lower nephron number has been associated with the development of high blood pressure and progressive kidney disease later in life, but the long-term risks for adults who were born prematurely remain unclear.

As part of the study, a team of researchers set out to investigate the relation between preterm birth and risk of CKD from childhood into mid-adulthood.

Findings of the study published in the Journal of The BMJ.

Using nationwide birth records, they analysed data for over 4 million single live births in Sweden during 1973-2014. Cases of CKD were then identified from nationwide hospital and clinic records through 2015 (maximum age 43 years).

Overall, 4,305 (0.1 pc) of participants had a diagnosis of CKD, yielding an overall incidence rate of 4.95 per 100,000 person-years across all ages (0-43 years).

Bacteria

Right combination of diet and bacteria limits cancer progression: Study (New Kerala: 20190503)

<https://www.newkerala.com/news/read/135866/right-combination-of-diet-and-bacteria-limits-cancer-progression-study.html>

While fibre-rich diets are an effective means of cancer prevention, their possible roles in cancer progression and treatment remains poorly understood. According to recent findings, the right combination of diet and bacteria limits cancer progression.

The diet of a person can have significant effects on the gut microbiome, i.e. the populations of microorganisms such as bacteria which live in the human gut. It is well recognised that dietary habits through complex metabolic interactions contribute to cancer prevention. More specifically, diets rich in fibre reduce the risk of developing specific cancers such as colorectal cancer.

The team of researchers found that a combination of prebiotics, such as dietary fibre, and probiotics, i.e. specific beneficial bacteria, reduces the expression of pro-carcinogenic and drug resistance genes. The combination leads to metabolic changes that affect the growth of cancer cells and may help treat diseases such as CRC.

In order to study diet-microbiome-host interactions, the biologists worked with HuMiX ("Human-Microbial X(cross)-talk") a unique in vitro model of the gut ("gut-on-a-chip") which

allows the cultivation of human intestinal cells together with bacteria under representative conditions.

As part of the study, published in the Journal of Cell Reports, they investigated the effects of dietary regimens and a specific probiotic on CRC cells.

In contrast to individual fibre-rich or probiotic treatments, it was only the combination of fibre and probiotics that led to the observed beneficial effects.

Together with their collaborators, the researchers integrated a computer-based metabolic model of the interactions between diet, host, and microbiome. They identified the effects of the combined treatment the downregulation of genes associated with colorectal cancer and drug resistance as well as the attenuation of self-renewal capacity of the cancer cells.

Importantly, through careful molecular analyses, they also identified the cocktail of molecules produced by the combination, thereby providing a mechanistic basis for the observed beneficial effects.

"Currently, cancer patients are not provided with evidence-based personalised dietary interventions during chemotherapy treatment. Our results provide support for exploiting the food-microbiome interactions as a supportive therapeutic approach in anti-cancer therapy," said Kacy Greenhalgh lead author of the study.

"I hope that our results will reach patients and medical practitioners in their respective fields and that in the future more effort is put in including personalised dietary recommendations into cancer treatment plans," Greenhalgh asserted.

According to the researcher, this is especially the case in CRC, where the microbiome has increasingly gained importance over the last couple of years. A deeper understanding of the microbiome-host interaction could lead to new therapeutic strategies for CRC patients.

Sleep, exercise

Sleep, exercise affect new mothers and fathers differently (New Kerala: 20190503)

<https://www.newkerala.com/news/read/135856/sleep-exercise-affect-new-mothers-and-fathers-differently.html>

While sleep and exercise are vital to the well being of a new parent, a recent study suggests that the activities affect new moms differently than new dads.

As part of the study, researchers looked at the daily lives of new parents and they found that, in general, adding physical activity and more sleep to their day lead to better personal well-being, a better couple relationship and more closeness with their baby.

However, fathers who slept more on average than other fathers reported lower overall well-being and less closeness with their partner and child. In contrast, mothers who slept more on average than other mothers reported greater well-being.

Additionally, the researchers found that on days when fathers exercised more than usual, there was a lower likelihood of an argument between the couple. But, on days when mothers exercised more than usual, there was a higher chance of an argument.

The team of researchers suggested that these differences may be due to mothers often being seen as the primary caretaker.

"Fathers may resist or feel resentful when mothers spend more time than usual on their own needs such as exercise, leaving fathers to pick up more responsibility for childcare -- leading to arguments. But, it's also possible that the extra time spent with the child is stressful for fathers, leading fathers to be more irritable on such days and leading to more arguments with the partner," said Mark Feinberg, lead researcher of the study.

The findings -- published in the *Monographs of the Society for Research In Child Development* -- were part of a study that examined how factors like exercise, sleep, and different daily stressors affected the day-to-day lives and family relationships of new parents.

According to Feinberg, while early parenthood is stressful for parents both as individuals and as a couple, it is also a vital period of rapid development for the newborn child, making it especially important to understand and support parents' well-being during this time.

"In general, new parents report higher levels of stress, depression and couple conflict, as well as less sleep, companionship, and romance with their partner. Ironically, it's also the period when children are most vulnerable when their brains and regulatory systems are rapidly developing to set the stage for their functioning for the rest of their lives, and when they are most dependent on parents for consistent affection and support," Feinberg explained.

Feinberg stated that looking at how changes in one stressful or replenishing factor are linked to changes in parents' well-being and relationships from day to day -- instead of annually, for example -- can give researchers a better understanding on how to help parents achieve better functioning and well-being on more days.

"In past research, we might find that on average, one father sleeps more, is less depressed, and more affectionate with his child than another father. But that doesn't tell us if enhancing sleep for that father would affect his level of depression or parenting warmth," said Feinberg.

For the study, the researchers used data from 143 mothers and 140 fathers collected ten months after their child's birth. The researchers interviewed the mothers and fathers separately by phone every night for eight days to gather data about the previous 24 hours.

The researchers gathered data about time spent sleeping, at work, doing chores and physical activity. They also asked the participants about stress, well-being, and their relationships with their spouse and child.

"Some parents are happier or sleep better overall than others, but most parents experience some difficult days and some good days," Feinberg said.

"Most parents already have a good place to start from at least on some days, so it's a matter of figuring out what works on those days and then doing more of that. This would be an easier and maybe more effective approach than thinking that we have to help someone completely change their routines and emotional patterns," Feinberg explained.

Stress

Stress in the womb lead to mental resilience later in life? (New Kerala: 20190503)

<https://www.newkerala.com/news/read/135732/stress-in-the-womb-lead-to-mental-resilience-later-in-life.html>

Like other animals, humans can be prepared via epigenetic changes to face the environment their mother experienced during pregnancy, a recent study suggests.

A new human study shows that in high-violence communities where children experience prenatal stress, psychiatric problems appear to be less frequent - and a different, potentially protective, the pattern of epigenetic changes emerges.

"In animals, under some circumstances, exposure of pregnant mothers to predators leads to behavioural and molecular changes in the offspring, that are beneficial in predator-rich environments but not otherwise. A similar relationship between prenatal and postnatal stress may help us explain why some individuals develop psychiatric problems while others seem resilient," explained Daniel Natt, lead author of the study.

The team of researchers hypothesised that in high-violence communities, stress during pregnancy will have different consequences than what has been reported in studies of less violent communities.

"The participating Brazilian families of our study were exposed to high levels of community violence, such as gang violence. Exposure to violence was also high within families, between for example intimate partners," Natt said.

According to the researchers, such intimate partner violence (IPV) was relatively often maintained during pregnancies in this cohort, which is a sensitive period for both mother and child.

The findings were published in the Journal of Frontiers in Genetics

To test their hypothesis, the researchers analyzed interviews and saliva samples from 120 mothers and 120 of their children.

"As well as assessing psychiatric profiles, we assessed DNA methylation in saliva cells. DNA methylation is a type of epigenetic change, which alters the way genes are expressed without modifying the genetic code. Based on previous studies, DNA methylation is believed to be involved in shaping psychiatric resilience following early life stress," Natt asserted.

Prenatal stress seems to interact with postnatal stress to influence resilience

The results showed that the more mothers were exposed to IPV during pregnancy the worse they suffered depression, PTSD and anxiety symptoms. However, the way this affected the children of abused mothers differed from many other studies.

"The interviewed children showed lesser psychiatric consequences of prenatal stress than reported repeatedly from less violent populations," Natt said.

According to the researchers, while the results need further validation since they are based on only one Brazilian cohort, in this cohort, they were able to replicate other studies showing that children experiencing maternal IPV after being born, have more psychiatric problems.

Only when maternal IPV occurred both during and after pregnancy these psychiatric problems were less severe. Thus, the prenatal component seems to have played a role here, the researchers explained.

DNA methylation might mediate adaptation of the stress response in early development

The researchers also observed that several well-known stress genes, like the glucocorticoid receptor and its repressor protein FKBP51, which both regulate one of our most important stress hormones, cortisol, were among the most differentially methylated.

The way these genes were methylated suggested to us that prenatally stressed children had an enhanced ability to terminate stress responses.

Altogether, these results imply that prenatal stress may be involved - via changes in DNA methylation - in shaping psychiatric resilience. Natt is, however, very clear that the findings must be scrutinized by others.

"For instance, prenatal stress has been associated with a-social behavior and a higher risk for autism spectrum disorder. In other communities, the same behavioral traits might become a benefit for you. In the violent communities that we have studied, having asocial "skills", by for example being able to block out the emotional consequence of seeing and performing violence, might be a benefit for you. It might even make you climb the social ladder, which probably would make you feel better," Natt explained.

The researchers suggest that the findings of this study can provide a warning to many violent and non-violent communities. Violent communities for promoting such violent behaviors, and non-violent communities for not giving enough support to individuals that fall out of the norms.

अनियमित दिनचर्या से कैंसर होने का खतरा (Hindustan: 20190503)

http://epaper.livehindustan.com/textview_67197_64431284_4_24_03-05-2019_1_0.html

लगातार बदलती शिफ्ट में काम करने और अधूरी नींद लेने वाले लोगों को कैंसर होने का खतरा अधिक रहता है। वैज्ञानिकों का मानना है कि शरीर का समय बदलने या सर्केडियन रिदम खराब होने की वजह से कैंसर जैसी घातक बीमारी होने की आशंका बढ़ जाती है। जब प्रकृति के साथ शरीर का तालमेल सही नहीं होता तो शरीर कैंसर से लड़ने में भी सक्षम नहीं होता।

जीन में हो जाते हैं बदलाव :

पेंसिल्वेनिया की न्यू यूनियर्सिटी के शोध में यह पता चला है कि बदलती शिफ्ट में काम करने और देश-विदेश की यात्रा में होने वाली थकान की वजह से जीन में कई तरह के बदलाव होने लगते हैं जिससे ट्यूमर बढ़ता है और ट्यूमर से लड़ने वाली दवा का असर कम हो जाता है।

अध्ययन के मुताबिक सर्केडियन रिदम बाधित होने यानी लंबे समय तक अनियमित दिनचर्या की वजह से जींस की संरचना में बदलाव आने लगता है,



24 घंटे के समय में फलो करता है शरीर का सर्केडियन रिदम

05 से 20 फीसदी तक स्तन कैंसर का खतरा बढ़ जाता है शिफ्ट में काम करने वाली महिलाओं में

जो कैंसर की कोशिकाओं को कई गुना बढ़ा देते हैं।

शोधकर्ताओं के मुताबिक, पूरी और समय पर नींद लेने से कैंसर के खतरों को कम किया जा सकता है। साथ ही उनका यह भी मानना है कि सही समय पर कैंसर थेरेपी देने से कैंसर रोधी जीन सक्रिय हो जाते हैं। लेकिन, अधूरी नींद और थकान के चलते कैंसर के इलाज का असर कम हो जाता है।

देर रात जगना नुकसानदायक : स्मार्टफोन स्क्रीन पर लंबे समय तक

धूम्रपान छोड़ने से मूत्राशय कैंसर का खतरा कम

धूम्रपान छोड़ देने से उम्रदराज महिलाओं में मूत्राशय कैंसर को खतरा कम होगा। धूम्रपान छोड़ देने के 10 साल अंदर मूत्राशय कैंसर कई गुणा तक कम हो जाएगा। शोधकर्ताओं ने कई स्टैटिस्टिकल मॉडल की मदद से धूम्रपान छोड़ने और मूत्राशय कैंसर होने के बीच के समय की जांच की गई। इस शोध में 143,279 महिलाओं को शामिल किया गया। इस दौरान उनके धूम्रपान के बारे में जानकारी जुटाई गई।

देखने या तेज लाइट में रहने से भी मानव के शरीर पर असर पड़ता है। इससे सोने और जागने का चक्र बिगड़ जाता है। इसलिए टेक्नोलॉजी का बहुत अधिक इस्तेमाल करने से बचने की कोशिश करें।

इसके अलावा जब हम अपने शरीर को देर रात तक जगने या अंधेरे में रहने के लिए मजबूर करते हैं तो शरीर आंतरिक रूप से खुद से लड़ता है। इस तरह की प्रक्रियाएं स्वाभाविक रूप से रात में होती हैं।