

Air pollution cuts growth of working memory in kids

London, Oct 11: Exposure to air pollution on the way to school can have damaging effects on growth of children's working memory, suggests new research.

The study, published in the journal *Environmental Pollution*, found an association between a reduction in working memory and exposure to fine particulate matter (PM2.5) — fine inhalable particles that have diameters of 2.5 micrometres or less — and black carbon — a pollutant directly related to traffic — during the walking commute to and from school. The findings of an earlier study had shown that 20 per cent of a child's daily dose of black carbon is inhaled during urban commutes. "The results of earlier toxicological and experimental studies have shown that these short exposures to very high concentrations of pollutants can have a disproportionately high impact on health," said first author of the study Mar Alvarez-Pedrerol, researcher at Barcelona Institute for Global Health (ISGlobal) in Spain.



"The detrimental effects may be particularly marked in children because of their smaller lung capacity and higher respiratory rate," she added. The study was carried out in Barcelona and enrolled over 1,200 children aged from 7 to 10, from 39 schools, all of whom walked to school on a daily basis. The children's working memory and attention capacity was assessed several times during the 12-month study. Their exposure to air pollution over the same period was calculated on the basis of esti-

mated levels on the shortest walking route to their school. Statistical analysis of the findings revealed that exposure to PM2.5 and black carbon was associated with a reduction in the growth of working memory. An interquartile range increase in PM 2.5 and black carbon levels was associated with a decline of 4.6 per cent and 3.9 per cent, respectively, in expected annual growth of working memory, the study said. The interquartile range (IQR) is a measure of variability based on

dividing a data set into quartiles. "The fact that children who walk to school may be more exposed to pollution does not mean that children who commute by car or on public transport are not also exposed to high levels," said Jordi Sunyer, head of ISGlobal's Child Health Programme, and co-author of the study. "The solution is the same for everyone: reduce the use of private vehicles for the school run and create less polluted and safer home-to-school routes," Alvarez-Pedrerol said.

Maintain healthy weight to curb risk of cancer

New Delhi, Oct 11: The problem of weight gain is not taken lightly, even though the unending and often too-good-to-be-true solutions coming from the ever burgeoning weight management industry seem to suggest so. Be warned — for a few extra kilos today can multiply tomorrow, putting you at increased risk of many diseases, including cancer.

They include cancers of the breast (in post-menopausal women), ovary, colon and rectum, liver, kidney, pancreas, gastric cardia, oesophagus (food pipe), and endometrium of the uterus, as well as advanced prostate cancer, cancers of the gallbladder and thyroid, and multiple myeloma (blood cancer) and meningioma brain tumour, according to a report by the World Health Organisation's International Agency for Research on Cancer (IARC). In fact, so enormous has been the burden of obesity-related cancers that in some countries in the western world, they account for close to half of all cancers. In the US, overweight and obesity-related cancers make up 40 per cent of all cancers, according to a report of the US Centers for



Disease Control and Prevention (CDC) in October. The situation in India is not yet so scary, but the burden of obesity and its consequences are increasing here as well. "In India, up to one-fourth of all cancers (25 per cent) may be directly or indirectly linked to obesity," Harit Chaturvedi, a cancer care specialist at Max Super Speciality Hospital at Saket, New Delhi said. "The cases are more common in urban areas and metropolitan cities, where the diet is more rich in saturated fat content and lifestyle is rather more sedentary." "Obesity alters the intrinsic hormonal milieu, thereby disturbing the cell cycle control. This, in turn, affects the various check points of cancer control in the body, making them ineffective and rendering a person prone to develop cancers," Chaturvedi said. "Moreover, an obese patient with cancer undergoing surgery is at higher risk of complications as compared to a lean person," added Deep Goel, Director, Surgical Gastroenterology, Bariatric & Minimal Access Surgery, BLK Super Speciality Hospital in New Delhi. Interestingly, or rather sadly, women are disproportionately affected by cancer attributable to obesity overall. "Women are more at risk of obesity-related cancers because of periodic shift in the hormonal balance in their body. Also, the feminine body has more adipose (fat) tissue content which interacts with certain intrinsic factors making them more prone to cancers," Chaturvedi said. The IARC report high-

lights that the excess of energy intake over energy expenditure is the main driver of weight gain. So, during adulthood, the maintenance of a stable body weight depends on the energy derived from food and drink (energy intake) being equal to the total energy expenditure over time. "This report shows that excess energy intake is the main responsible factor. Although genetic factors play a role, these cannot explain the upward trends in obesity rates, and in turn the report shows that increased physical activity alone cannot solve the problem," said Isabelle Romieu, a scientist at IARC. What, however, is worrying is that excess weight develops progressively, so that a relatively small excess of energy intake can easily produce large weight changes over time. Therefore, it is important to regularly monitor what you eat and how much you exercise. "Just as 'Swachh Bharat', we need a 'Swastha Bharat' campaign, which will encourage people to eat and live healthy," Chaturvedi added. "We should adopt a healthier lifestyle such as weight control, eating before 8 p.m., walking or running for a minimum of 5 km daily. We must also avoid any habit-forming substances like tobacco and alcohol." According to the World Obesity Federation, the percentage of Indian adults living with obesity is set to jump to around 10 per cent (3.1 per cent male and 6.9 per cent female) by 2025 from 7.5 per cent (2.3 per cent male and 5.2 per cent

female) in 2014. The annual cost of treating the consequences of obesity such as heart disease, diabetes, liver disease, depression and many types of cancer will reach a staggering \$13 billion in India by 2025, according to the analysis. "The most effective way to prevent obesity-related cancer would be by maintenance of the weight," said Rajesh Kapoor, Director, Gastrointestinal & Hepato-Pancreatic-Biliary Surgery, Jaypee Hospital, Noida. Weight can be maintained, according to Kapoor, by lifestyle modification which includes dietary modification, exercise regime and behavioural modifications. Limiting the amount of fat and sugar intake, drinking a lot of water while avoiding sugary drinks and soda is critical to maintaining healthy weight, said Sunali Sharma, Dietician and Nutritionist at Amandeep Hospital in Punjab. Public awareness programme, training school children to follow a healthy diet and exercise, and curbing advertisements promoting unhealthy foods are also important to arrest the rise of the obesity burden in India, said Jaydeep Palep, Director & Head of Bariatric and Minimal Access Surgery, Nanavati Super Speciality Hospital in Mumbai. Dietary patterns that include higher intakes of fruits, vegetables, legumes, whole grains, nuts, seeds, and unsaturated fat, as well as lower intakes of refined starch, red meat, trans and saturated fats, and sugar-sweetened foods and drinks can contribute to long-term weight control, according to the IARC. So do not forget to put on your running shoes every day or engage in other physical activities, and introduce some elements of fun in your life without indulging in processed and fatty foods to stave off the diseases associated with overweight and obesity including cancer, rightly called the "emperor of all maladies".

Eating bananas, avocados daily may prevent heart disease: Study

New York, Oct 11: Eating one banana and an avocado a day may prevent hardening of the arteries that can result in heart disease and death, researchers have found. The study, conducted on mice, showed these foods that are rich in potassium reduces vascular calcification — common complication in both heart and kidney disease.



Calcification happens when calcium builds up in body tissue, blood vessels, or organs. This buildup can harden and disrupt your body's normal processes. A potassium rich diet also reduces the risk of aortic stiffness — a classic cardiovascular risk factor. The hardening or stiffening of the arteries is called arteriosclerosis. The stiffness of arteries influences how hard the heart has to work to pump blood through the body. "The findings have important translational potential, since they

demonstrate the benefit of adequate potassium supplementation on prevention of vascular calcification in atherosclerosis-prone mice, and the adverse effect of low potassium intake," said Paul Sanders, professor at the University of Alabama. For the study, published in the journal *JCI Insight*, the team analysed mice who are at-risk of heart disease when fed a high-fat diet. These mice were given diets that are either low, normal or had high levels of potassium. The results revealed the arteries of mice fed a

low-potassium diet became significantly harder, while those fed on a high potassium diet had substantially less artery hardening. Mice fed potassium-rich food also had reduced stiffness in their aorta — the body's main artery. This may be due to low-potassium levels in the blood preventing the expression of genes that maintain artery flexibility. The results also provides new targets for potential therapies to prevent or treat atherosclerotic vascular calcification and arterial stiffness, the researchers added.

Skipping breakfast may damage arteries: Study

Are you in the habit of missing your breakfast everyday? Beware, you may be at an increased risk of atherosclerosis, a condition in which the arteries tend to harden and narrow due to a build-up of plaque, researchers have warned. On the other hand, eating a healthy breakfast has been shown to promote greater heart health, including healthier weight and cholesterol.

The study showed that atherosclerosis was observed with more frequency among people who skipped breakfast and was also higher in participants who consumed low-energy breakfasts compared to breakfast consumers. Importantly, people who skipped breakfast had the greatest waist circumference, body mass index, blood pressure, blood lipids and fasting glucose levels. Participants who skipped breakfast were more likely to have an overall unhealthy lifestyle, including poor overall diet, frequent alcohol consumption and smoking. They were also more likely to be hypertensive and overweight or obese. Additionally, cardiometabolic risk markers were more prevalent in those who skipped breakfast and low-energy breakfast consumers compared to breakfast consumers. "People who regularly skip breakfast likely have an overall unhealthy lifestyle," said author Valentin Fuster, Director of Mount Sinai Heart Institute "This study provides evidence that this is one bad habit people can proactively change to reduce their risk for heart disease," Fuster added. For the study, published in the *Journal of the American College of Cardiology*, the team in Madrid examined 4,052 male and female volunteers who were free from cardiovascular or chronic kidney disease. Of these, 2.9 per cent skipped breakfast, 69.4 per cent were low-energy breakfast consumers and 27.7 per cent were breakfast consumers.

Oil in salads may boost its nutritional benefits: Research



New York, Oct 11: Love to eat salads? Adding a spoonful or two of soybean oil as dressing may help you derive the optimal nutritional benefit from your veggies, suggests a research. The findings showed that eating salad with added fat in the form of soybean oil promotes the absorption of seven different

micronutrients that promote human health including cancer prevention and eyesight preservation. These nutrients include four carotenoids — alpha and beta carotene, lutein and lycopene — two forms of vitamin E and vitamin K, said researchers from the Iowa State University in the US.

The oil also promoted the absorption of vitamin A, which formed in the intestine from the alpha and beta carotene. "The best way to explain it would be to say that adding twice the amount of salad dressing leads to twice the nutrient absorption," said Wendy White, Associate Professor at the varsity. The study

also found that the amount of oil added to the vegetables had a proportional relationship with the amount of nutrient absorption. That is, more oil means more absorption. Conversely, eating the same salad without the added oil lessens the likelihood that the body will absorb the nutrients. The study showed that the results may ease the guilt of countless dieters who fret about adding dressing to their salads. For the study, appearing in the *American Journal of Clinical Nutrition*, the team included college-age women who consumed salads with various levels of soybean oil.

The team created two packages for fake creams

and told volunteers that they are used to treat itchy skin. One package looked like an expensive pharmaceutical brand name, while the other looked like a cheaper, generic medication. The participants were shown one of the two creams and told that it was believed to increase a person's sensitivity to pain as a side effect,



active ingredients, the generic-looking cream raised pain on average by around three per cent, while the expensive-looking cream increased pain by nearly 30 per cent, researchers said. The finding confirms that the price of treatment effects not only placebo strength but nocebo power too, they said.

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Sarun Kumar

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