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# VEPACHEDU EDUCATIONAL FOUNDATION

The Telangana Science Journal

Health and Nutrition

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

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### **Brain and Learning**

Right hemisphere brain mechanisms that are crucial to representing space around our bodies also interact with processes that keep us vigilant and alert. Damage to certain parts of the brain can lead to a syndrome called hemispatial neglect, in which one loses awareness of one side of their body and the space around it, according to *Scientific Reports*. In extreme cases, a patient with hemispatial neglect might eat food from only one side of their plate, dress on only one side of their body, or shave or apply make-up to half of their face, apparently because they cannot pay attention to anything on that the other side<sup>1</sup>.

Functionally, the striatum helps coordinate motivation with body movement. It facilitates and balances motivation with both higher-level and lower-level functions, such as inhibiting one's behavior in a

<sup>1</sup> <http://www.theguardian.com/science/neurophilosophy/2014/jun/01/sleep-hemispatial-neglect>

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complex social interaction and fine-motor functions of inhibiting small voluntary movement. According to a new study, men with an overly-sensitive striatum could be more likely to use pornography. Alternatively, the brains of men who regularly view pornography may shrink over the time<sup>2</sup>.

Children who are physically fit have faster and more robust neuro-electrical brain responses during reading than their less-fit peers, researchers report. These differences correspond with better language skills in the children who are more fit, and occur whether they're reading straightforward sentences or sentences that contain errors of grammar or syntax. The new findings, reported in the journal *Brain and Cognition*, offer a potential mechanism to explain why fitness correlates so closely with better cognitive performance on a variety of tasks<sup>3</sup>.

Learning a second language can slow the brain's ageing, even if it is learnt in adulthood, according to new research. Previous studies have showed that being bilingual could delay the onset of dementia by several years<sup>4</sup>.

People genetically prone to Alzheimer's who went to college, worked in complex fields and stayed engaged intellectually held off the disease almost a decade longer than others, a study found. Researchers said that lifelong intellectual activities such as playing music or reading kept the mind fit as people aged and also delayed Alzheimer's by years for those at risk of the disease who weren't college educated or didn't work at challenging jobs<sup>5</sup>.

### Sleep

The three pillars of health are good nutrition, enough exercise, and adequate sleep. Parent routines, child routines, and family demographics are associated with obesity in parents and preschool-aged children, according to a study published in the April 2014 issue of *Frontiers in Psychology*. More parental sleep is

<sup>2</sup> <http://www.independent.co.uk/life-style/health-and-families/why-watching-too-much-porn-could-be-bad-for-the-brain-9458357.html>

<sup>3</sup> <http://www.biospace.com/News/physically-fit-kids-have-superior-language-skills/335812>

<sup>4</sup> <http://www.telegraph.co.uk/health/healthnews/10869619/Learning-a-second-language-in-adulthood-can-slow-brain-ageing.html>

<sup>5</sup> <http://www.bloomberg.com/news/2014-06-23/feeding-the-brain-s-curiosity-helps-delay-alzheimer-s.html>

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related to more child sleep, which is related to decreased child obesity. Everyone's sleep routines in a family affect all the members of the household, not just children. And the effects of sleeplessness go beyond just being tired the next day. Studies have shown that moms, dads, and their children are likely to gain weight as they lose sleep<sup>6</sup>.

In a recent study, researchers have shown that sleep after learning encourages the growth of dendritic spines, the tiny protrusions from brain cells that connect to other brain cells and facilitate the passage of information across synapses, the junctions at which brain cells meet. Moreover, the activity of brain cells during deep sleep, or slow-wave sleep, after learning is critical for such growth. The findings, in mice, provide important physical evidence in support of the hypothesis that sleep helps consolidate and strengthen new memories, and demonstrate how learning and sleep cause physical changes in the motor cortex, a brain region responsible for voluntary movements<sup>7</sup>.

## Marijuana

Young men who use cannabis are affecting the size and shape of their sperm according to an investigation into how common lifestyle factors influence sperm morphology, the size and shape of sperm, which also found that sperm size and shape was worse in the summer months but was better in men who had abstained from sexual activity for more than six days, published in the medical journal Human Reproduction. Only sperm with good sperm morphology are able to pass into the woman's body and make their way to the egg and fertilize it. Studies in the laboratory also suggest that sperm with poor morphology also swim less well because their abnormal shape makes them less efficient<sup>8</sup>.

## Allergies

Infants exposed to rodent and pet dander, roach allergens and a wide variety of household bacteria in the first year of life appear less likely to suffer from allergies, wheezing and asthma, according to results of a

<sup>6</sup> <http://www.biospace.com/News/for-both-parents-and-kids-sleep-critical-to/336286>

<sup>7</sup> <http://www.biospace.com/News/sleep-after-learning-boosts-your-memory-power-nyu/336057>

<sup>8</sup> <http://www.biospace.com/News/sperm-size-and-shape-in-young-men-affected-by/335932>

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new study, which is in accordance with previous research that has shown that children who grow up on farms have lower allergy and asthma rates, a phenomenon attributed to their regular exposure to microorganisms present in farm soil. The new study adds that those who encounter such substances before their first birthdays seem to benefit rather than suffer from them. Importantly, the protective effects of both allergen and bacterial exposure were not seen if a child's first encounter with these substances occurred after age 1, the research found<sup>9</sup>.

### Drinking

According to a new study, even before conception, a son's vulnerability to alcohol use disorders may be shaped by a father who chronically drinks to excess. The findings show that males that have been chronically exposed to alcohol before breeding had male offspring more sensitive to its effects. Previous studies indicated that alcoholism ran in families, particularly father to son, but to date only a few gene variants have been associated with Alcohol Use Disorder and they account for only a small fraction of the risk of inheriting the problem<sup>10</sup>.

### Caffeine

A new study finds that after puberty, boys and girls experience different heart rate and blood pressure changes after consuming caffeine. Responses to caffeine across the menstrual cycle in post-pubertal girls vary, with decreases in heart rate that were greater in the mid-luteal phase and blood pressure increases that were greater in the mid-follicular phase of the menstrual cycle. Phases of the menstrual cycle, marked by changing levels of hormones, are the follicular phase, which begins on the first day of menstruation and ends with ovulation, and the luteal phase, which follows ovulation and is marked by significantly higher levels of progesterone than the previous phase. Caffeine intake by children and adolescents has been rising for decades, due to the popularity of caffeinated sodas and energy drinks<sup>11</sup>.

<sup>9</sup> <http://www.biospace.com/News/babies-exposed-to-dirt-and-germs-may-have-lower/336064>

<sup>10</sup> <http://www.biospace.com/News/dads-drinking-habit-could-influence-sons-intake/336060>

<sup>11</sup> <http://www.biospace.com/News/caffeine-affects-boys-and-girls-differently/336858>

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## Vitamin D

Researchers have found that people with lower blood levels of vitamin D were twice as likely to die prematurely as people with higher blood levels of vitamin D. The findings were based on a systematic review of 32 previous studies that included analyses of vitamin D, blood levels and human mortality rates<sup>12</sup>.

## Television

According to new research, adults who watch TV for three hours or more each day may double their risk of premature death compared to those who watch less. Researchers say that television viewing is a major sedentary behavior and that there has been an increasing trend toward all types of sedentary behaviors. Their findings are consistent with a range of previous studies in which time spent watching television was linked to mortality<sup>13</sup>.

## Self-Esteem

You may want to rethink cheering up your friends who have low self-esteem because chances are, they don't want to hear it. People with low self-esteem have overly negative views of themselves, and oftentimes interpret critical feedback, romantic rejections, or unsuccessful job applications as more evidence of their general unworthiness. A new study found that they likely don't want you to try to boost their spirits. Researchers say that people with self-esteem issues want their loved ones to see them as they see themselves; as such, they often resist their friends' reminders of how positively they see them and reject positive reframing—expressions of optimism and encouragement for bettering their situation. These individuals usually prefer negative validation, which conveys that the feelings, actions or responses of the recipient are normal, reasonable, and appropriate to the situation. So a friend could express understanding about the predicament or for the difficulty of a situation, and suggest that expressing negative emotions is appropriate and understandable. The researchers found no evidence that positive reframing helps

<sup>12</sup> <http://www.biospace.com/News/lower-vitamin-d-level-in-blood-ups-early-death/336738>

<sup>13</sup> <http://www.sciencedaily.com/releases/2014/06/140625184853.htm>

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participants with low self-esteem. In fact, the people providing support to friends with low self-esteem often felt worse about themselves when they attempted to cheer up their friend<sup>14</sup>.

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!)

<sup>14</sup> <http://www.biospace.com/News/why-debbie-downer-and-negative-nancy-may-not-want/338087>

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