



Researches Relevant to Theosophy

Vol. 1, No. 3

A quarterly publication devoted to the collection of researches in the sciences and humanities that are relevant to theosophical studies.

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Happy Older People Live Longer

Even Light Alcohol Drinking of Pregnant Mothers Can Affect Baby IQ

Human Attention Oscillates 240 Times per Minute

New Genetic Editing Technique May Revolutionize Agriculture

And more

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Editorial

New developments happen very quickly in the fields of science, sociology, education and medicine. The world is fast changing because of these. They not only affect our ways of life, but our understanding of life and the universe. This publication hopes to keep you updated in many significant areas

We thank you for your comments on previous issues. It has been suggested that the editors relate the news item to theosophical studies. In some cases, we are able to, but in most cases we just convey the new development to the reader. Perhaps readers can help in doing linking the item to theosophical literature.

It is hoped that more people will be involved in the gathering of research information. We appreciate your feedback. You may contact us at <http://theoscience.org/index.php/contact/> or comment on the website of [Researches Relevant to Theosophy](#).



Researches Relevant to Theosophy

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Contributions to this publication are welcome. Email to the editors the title, date, source and summary of the research report, together with the full citation of the source or sources, whether website, book or article.

Psychology
Health & Medicine

Date: August, 2018

Source: *New Scientist*;
Age and Ageing

Happy Older People Live Longer

Happy people live longer. Every increase of one point on the happiness score lowers the chance of dying — due to any cause — by an additional nine percent.

This was the result of a study of Duke-NUS Medical School in Singapore published in *Age and Ageing*, the scientific journal of the British Geriatrics Society. It involved data on 4,478 participants aged 60 upwards where researchers investigated the link between happiness, assessed in 2009, and the subsequent likelihood of dying due to any cause in 2015. A wide range of other factors, such as health, lifestyles and social factors, were accounted for in the analysis.

The study found that the likelihood of dying due to any cause was 19 percent lower for happy older people.

"The findings indicate that even small increments in happiness may be beneficial to older people's longevity," explained Assistant Professor Rahul Malhotra, Head of Research at Duke-NUS Centre for Ageing Research and Education and senior author of the paper. "Therefore individual-level activities as well as government policies and programs that maintain or improve happiness or psychological well-being may contribute to a longer life among older people."

Source: Duke-NUS Medical School. "Happy older people live longer: New study among senior Singaporeans suggests happiness may be key to longevity." ScienceDaily. ScienceDaily, 27 August 2018. <www.sciencedaily.com/releases/2018/08/180827100426.htm>.

Choy-Lye Chei, June May-Ling Lee, Stefan Ma, Rahul Malhotra. Happy older people live longer. *Age and Ageing*, 2018; DOI: [10.1093/ageing/afy128](https://doi.org/10.1093/ageing/afy128)

Biology
Paleontology

Due: July, 2018

Source: *New Scientist*

Homo Sapiens May Have Originated in Asia

New archaeological discoveries seem to indicate that Homo sapiens may have originated in Asia rather than in Africa as previously believed. In 1992, skulls in Yunxian, China, showed features that were a mix of the earlier Homo Erectus and later Homo sapiens. In 2009, Chinese scientists found a 110,000-year-old jawbone in Guangxi which was classified as Homo Sapiens. This was 50,000 years earlier than what was previously thought. In 2015, 47 teeth were

found in a cave in Daoxian, southern China. Teeth are one of the best ways of identifying human types. They were between 80,000 to 100,000 years old. Earlier consensus was that Homo sapiens left Africa around 60,000 years ago and migrated around the world.

Maria Martinon-Torres, director of the National Research Centre on Human Evolution in Spain, thinks that “maybe Africa was not the only human cradle.”

Source: *New Scientist*, “Asia’s mysterious role in the early origins of humanity,” July 7, 2018

Biology

Economics

Date: July, 2018

Source: *New Scientist*

New Genetic Editing Technique Will Revolutionize Agriculture

You have heard of GM food, or genetically modified food. It uses an expensive method that only huge multinationals could engage in. It is also tightly regulated. Now a new gene-editing method called CRISPR has been developed that makes genetic modification cheaper and easier. Agricultural products could be edited to remove allergens or cancer-causing ingredients such as acrylamides. Crops could also be made resistant to diseases and made more nutritious.

The technology was first developed in 2014. The issue is now whether it is to be regulated as GM food. There is a legal opinion that CRISPR is not the same as GM under the laws of the European Union. If this is approved by the European Court of Justice, it will cause a boom in CRISPR food around the world.

Source: *New Scientist*, “The Second Great Battle for the Future of our Food is Underway.” July 7, 2018

Space Sciences

Due: May, 2018

Source: *Popular Science*

Planet Nine May Be the Cause of an Asteroid’s Bizarre Orbit

There is evidence that there may be a Planet Nine outside of Neptune that may be ten times more massive than Earth, ten to twenty times farther away than Pluto, and big enough to affect the orbits of smaller objects.

An asteroid called 2015 BP519, which lies in the Kuiper belt outside of Neptune, has a bizarre elliptical orbit that suggests something gigantic is pulling at this object. It has an orbit that is tilted 54 degrees compared to the solar system’s plane.

Source: "The Elusive Planet Nine Might Be Responsible for this Asteroid's Bizarre Orbit" by Neel V. Patel. *Popular Science*, May 22, 2018

Biology

Psychology

Date: August, 2018

Source: *Science Daily*;
Psychological Science

Two Brain Areas Linked to Procrastination

Researchers have found two areas of the brain which appear to be linked to the tendency of people to procrastinate.

1. The procrastinators tend to have a larger amygdala, which is an almond-shaped part of the brain which is responsible for emotions, memory and motivation. Fear is closely connected with the amygdala. It assesses situations and warns us about possible dangers or threats.

2. The connection between the amygdala and the part of the brain called dorsal ACC (anterior cingulate cortex) is less noticeable. The dorsal ACC uses the information from the amygdala to select actions that are put into practice. It also suppresses competing emotions and actions so that the selected action is done.

Biopsychologists of Ruhr-University Bochum examined 264 men and women through MRI (magnetic resonance imaging) scanner measuring the sizes of brain regions and compared the data to surveys of the participants on their ability to execute action control.

These findings open up possibilities of future research on whether individuals can be trained to make neural changes in the brain and alter one's capacity for action control.

Source: Caroline Schlüter, Christoph Fraenz, Marlies Pinnow, Patrick Friedrich, Onur Güntürkün, Erhan Genç. The Structural and Functional Signature of Action Control. *Psychological Science*, 2018; 095679761877938
DOI: 10.1177/0956797618779380

Science Daily, August 22, 2018; www.sciencedaily.com/releases/2018/08/180822090455.htm

Space Sciences

Due: July, 2018

Source: *New Scientist*

Twelve New Moons Found Orbiting Jupiter, totaling 79

Astronomers have found 12 new moons orbiting Jupiter. They were all small, not more than 3 kilometers in diameter. The total number of moons found in Jupiter is now 79.

The moons of Jupiter orbit in different directions. Some travel in the same direction as Jupiter's rotation and others go the opposite way. One small moon, unofficially named Valetudo, which is less than a kilometer in diameter, is in danger of colliding with other objects.

"It's traveling down the highway in the wrong direction," says Sheppard. "It's going to collide with something at some point."

These moons were probably passing objects but which were captured by Jupiter's gravitational pull. It is surmised that these small moons were in fact remnants of larger objects which were broken up after some kind of collision.

Source: "A dozen new moons for Jupiter," *New Scientist*, July 21, 2018

Biology

Psychology

Date: April, 2017

Source: *Popular Science*

Eight Hours Sleep Appears to be the Body's Natural Need

A series of experiments with volunteer subjects appear to confirm that the body's natural need is about eight hours of sleep a day. One experiment involved putting subjects in a laboratory with no sunlight and at night they were given a non-negotiable nine hours of sleep opportunity. The result was that the subjects slept an average of eight hours a day.

In 1938, a sleep researcher, Nathaniel Kleitman and a student spent 32 days in the Mammoth Cave in Kentucky, completely devoid of sunlight. Their sleep patterns showed that they too slept about eight to eight and a half hours each day.

How about sleeping for less than 8 hours? In 2003, sleep researchers at the University of Pennsylvania and Walter Reed Army Research Institute did a series of studies where subjects were deprived of sleep for varying hours. They found that when a person is deprived of sleep for one night, the brain's cognitive capacity of the brain is equivalent to one who is legally drunk. Those who slept for six hours each night for ten days, the cognitive impairment is the same as one night of total sleep deprivation. Those who sleep only four hours were similarly impaired after three days.

Many people sleep for six hours and feel that they feel all right during the day. Tests show, however, that the cognitive tests for those who sleep for only six hours were significantly worse than those who slept for eight hours.

"You don't know you are sleep deprived when you are sleep deprived," says Walker, "That's why so many people fool themselves into thinking they are one of those people who can get away with six hours of sleep or less."

Source: "How many hours of sleep do you actually need?" By Claire Maldarelli, Popular Science, April 11, 2017

*Biology
Space Sciences*

Date: April, 2017

Source: *New Scientist*;
Science

Lake under Mars' south pole could host life

Satellite data suggests that there is a large lake of liquid hidden under the surface ice of the south pole. Because the water contains calcium, magnesium and sodium, water may still be liquid even at minus 74 degrees centigrade.

The lake is 20 kilometers across and 1.5 kilometers underground. Roberto Orosei of the National Institute for Astrophysics in Bologna, Italy, says that the lake has the potential to host life since microbes on earth survive under similar conditions.

Source: *New Scientist*, "Massive lake of water found beneath Mars' south pole could host life." July 28, 2018.

Science, DOI: 10.1126/science.aar7286.

*Health & Medicine
Psychology*

Date: July 2018

Source: *New Scientist*

Even Light Alcohol Drinking During Pregnancy Affects Baby IQ

Light drinking during pregnancy may be enough to affect the development of the fetus during pregnancy. This was the conclusion of studies made by a team of researchers at the University Hospital Erlangen in Germany.

The team looked into pregnant mothers who had at least two alcoholic drinks per month. Later, the team assessed the IQ and attention skills of the children at the age of 6 or older. The babies of mothers who drank during pregnancy scored 4 points lower on average in an IQ test than those whose mothers did not drink at all. The children of mothers who drank also "had altered patterns of activity in genes involved in brain development. Even the lowest ethyl glucuronide levels were associated with slightly reduced IQ and attention span, hinting that no level of drinking is safe." (*New Scientist*)

It is already well-established that pregnant women who drink heavily can result in intellectual disabilities in children. This is known as fetal alcohol syndrome. Despite this, 23% of the mothers in the above study drank alcohol during pregnancy. Surveys in the UK showed that 75% of women interviewed had drunk

alcohol during pregnancy. In Australia, it was 40%.

Source: *New Scientist*, "Alcohol in the womb affects IQ." July 28, 2018.

Earth Sciences
Space Sciences

Date: March, 2018

Source: *Sci-News*;
Scientific Reports

Extreme Cold Weather Can Be Linked to Solar Cycle

New research from the University of Exeter, UK, found that the 11-year solar cycle has an effect on the weather on Earth. "In its 'weaker' phase, there are warm spells across the Arctic in winter, as well as heavy snow across Eurasia.

Dr. Indrani Roy of the university states that they "explored how the solar cycle — a period change in the Sun's activity including changes in the levels of solar UV radiation and changes in the SSNs [solar sunspot number] — can be linked with the Polar vortex and Arctic Oscillation phenomenon, which affects winter Arctic and Eurasian climate. . . . It subsequently can influence weather conditions in Europe, including the UK, Scandinavia and Asia."

The Mahatma Letters refer to this phenomenon in Letter 23b:

"The coronal changes have no effect upon the earth's climate, though spots have" (Mahatma Letters to A. P. Sinnett.)

Source: *Sci-News*, March 26, 2018.

Indrani Roy. 2018. Solar cyclic variability can modulate winter Arctic climate. *Scientific Reports* 8, article number: 4864; doi: 10.1038/s41598-018-22854-0.

Health & Medicine
Psychology

Date: August 2018

Source: *New Scientist*

Positive Mindset Triggers Healthy Physical Changes

Researches show that a positive mindset is able to bring about changes in an individual that lead to better health and happiness. Alia Crumb, head of the Mind & Body laboratory at Stanford University in California, shared her evidence during a speech at the World's Economic Forum in Davos, Switzerland.

An early experiment she did was with the fitness of 84 hotel cleaners. She told half of this group certain detailed information about the effect of the work that they do and that their activity met the US surgeon general's exercise recommendation. One month later, "despite reporting no change to their diet or activity outside work, the cleaners who received the information had lost

about a kilogram each, and their average blood pressure had dropped from elevated to normal. The others showed no difference.”

In a subsequent study involving data of 60,000 people for up to 21 years, they found that the “perceived fitness” of the participants, that is, how they felt compared to the average person, was a better predictor of the risk of death than the actual amount of time they spent on exercise. People who were pessimistic about their fitness were 71% more likely to die during their survey.

In another study, she gave volunteers milkshakes to drink, and then their ghrelin levels were measured afterward. Ghrelin is the “hunger hormone,” which usually drops after a meal. One group was told that they were taking a low-calorie healthy drink, while others were told that they were having an indulgent treat. “The impact was striking,” reports *New Scientist*. “Those who thought they had drunk a low-calorie shake showed markedly higher levels of gherkin afterward, which left them feeling less full.”

Source: *New Scientist*, “Mind over matter: You really can think yourself healthier and happier.” August 25, 2018.

Psychology

Biology

Date: March, 2018

Source: *Inverse*

Human Attention Oscillates 240 Times per Minute

Four times a second, or 240 times per minute, human attention stops focusing on an object. “The brain stops taking snapshots of individual points of focus . . . and collects *background* information about the environment.” (*Inverse*) This means that consciousness oscillates in and out of focus on our object at this rate.

This was the result of two studies. One was made on humans at the University of California in Berkeley. The second one was made on macaques at the Princeton University.

Dr. Ian Fiebelkorn of Princeton University explains that “the brain is wired to be somewhat distractible. . . . The brain seems to check in on the rest of the environment outside to see if there’s something important going on elsewhere.” This enables human beings to assess whether there are external threats in the environment and be able to react accordingly.

Source: *Inverse*. “Scientists Reveal the Number of Times You’re Actually Conscious Each Minute,” August 22, 2018. <https://www.inverse.com/article/48300-why-is-it-hard-to-focus-research-humans>.

*Biology
Psychology
Health and
Medicine*

Date: August, 2018

Source: *Science Daily*;
Frontiers in Physiology

Stress During Pregnancy May Lead to Mood Disorders in Female Children

When people are stressed, they produce cortisol in the bloodstream. A study published in *Biological Psychiatry* found that mothers who are stressed during pregnancy have female children who exhibit mood disorders at the age of two. These manifestations are not observed with boys.

In a study of 70 mothers, a team of researchers found mothers who had a high level of cortisol during pregnancy had female babies who exhibited "heightened stress reactivity and negative emotionality and higher levels of internalizing symptoms." Internalizing symptoms refer to negative behaviors which are directed inwards, such as being fearful, social withdrawal and bodily complaints, as opposed to externalizing behavior such as bullying or violence directed towards others.

Source: Science Daily, August 16, 2018

Alice M. Graham, Jerod M. Rasmussen, Sonja Entringer, Elizabeth Ben Ward, Marc D. Rudolph, John H. Gilmore, Martin Styner, Pathik D. Wadhwa, Damien A. Fair, Claudia Buss. Maternal Cortisol Concentrations During Pregnancy and Sex-Specific Associations With Neonatal Amygdala Connectivity and Emerging Internalizing Behaviors. *Biological Psychiatry*, 2018; DOI: [10.1016/j.biopsych.2018.06.023](https://doi.org/10.1016/j.biopsych.2018.06.023)

*Psychology
Biology
Health & Medicine*

Date: August, 2018

Source: *Science Daily*;
Biological Psychiatry

Smoking Reduces Brain Receptivity

Researchers in the National Institutes of Health in Maryland, U. S. A., have found that there is a lessening of the number of CB1 receptors in the brain of smokers as compared to non-smokers. "We think that the reduction of CB1 receptors may be unhealthy because these receptors are involved in many normal brain functions, such as memory and coping with stress," said Dr. Jussi Hirvonen of NIH and University of Turku, Finland.

The study was made with 46 men, of which 18 were frequent smokers and the others were not smokers. Using MRI they observed a reduction of receptors by 20% and this reduction was observed in all the 18 regions of the brain.

Science Daily reports: "Because smoking is so common in people with neuropsychiatric disorders, clinical studies will have to carefully consider

smoking habits in patients.”

Source: Science Daily, August 15, 2018

Jussi Hirvonen, Paolo Zanotti-Fregonara, David A. Gorelick, Chul Hyoung Lyoo, Denise Rallis-Frutos, Cheryl Morse, Sami S. Zoghbi, Victor W. Pike, Nora D. Volkow, Marilyn A. Huestis, Robert B. Innis. Decreased Cannabinoid CB1 Receptors in Male Tobacco Smokers Examined With Positron Emission Tomography. *Biological Psychiatry*, 2018; DOI: [10.1016/j.biopsych.2018.07.009](https://doi.org/10.1016/j.biopsych.2018.07.009)

*Psychology
Health and
Medicine*

Date: June, 2018

Source: *Popular Science*

World Health Organization Recognizes Video Game Addiction

The World Health Organization’s International Classification of Diseases has including gaming disorder or addiction to playing video games as a real mental health condition. The list was released on June 18, 2018.

“I have patients who come in suffering from an addiction to Candy Crush Saga, and they’re substantially similar to people who come in with a cocaine disorder,” Petros Levounis, the chairman of the psychiatry department at Rutgers New Jersey Medical School, told *The New York Times*. “Their lives are ruined, their interpersonal relationships suffer, their physical condition suffers.”

Popular Science states that “Levounis and other mental health professionals who believe in the disorder's veracity say that the WHO's recognition will make it easier for the afflicted to seek out treatment—and for them to use insurance to cover the therapy they get.”

Source: “The World Health Organization now recognizes video game addiction,” by Rachel Feltman, *Popular Science*, June 18, 2018

*Biology
Health & Medicine*

Date: August, 2018

Source: *Science Daily*;
Nature

Congenital Blindness Reversed in Mice

Science Daily reports that “researchers have reversed congenital blindness in mice by changing supportive cells in the retina called Müller glia into rod photoreceptors. Photoreceptors are light-sensitive cells in the retina in the

back of the eye that signal the brain when activated. In mammals, including mice and humans, photoreceptors fail to regenerate on their own. Like most neurons, once mature they don't divide. The findings advance efforts toward regenerative therapies for blinding diseases such as age-related macular degeneration and retinitis pigmentosa.”

The study was made by the National Eye Institute and was published in *Nature* journal.

Source: *Science Daily*, August 15, 2018

Kai Yao, Suo Qiu, Yanbin V. Wang, Silvia J. H. Park, Ethan J. Mohns, Bhupesh Mehta, Xinran Liu, Bo Chang, David Zenisek, Michael C. Crair, Jonathan B. Demb, Bo Chen. Restoration of vision after de novo genesis of rod photoreceptors in mammalian retinas. *Nature*, 2018; DOI: [10.1038/s41586-018-0425-3](https://doi.org/10.1038/s41586-018-0425-3).

Health and Medicine

Date: August, 2018

Source: *Science Daily*;
Bone Reports

e

Soy May Increase Women’s Bone Strength

Science Daily reports that “researchers now have discovered through a new animal study that soy protein found in food might counter the negative effects of menopause on bone and metabolic health. Moreover, the researchers believe that soy protein might also have positive impacts on bone strength for women who have not yet reached menopause.”

The study was made on rats whose tibia bones of the rats that were given soy-based food were stronger than those who were fed with corn-based food. Hinton and Victoria Veira-Potter,

Source: *Science Daily*, August 7, 2018

Pamela S. Hinton, Laura C. Ortinau, Rebecca K. Dirkes, Emily L. Shaw, Matthew W. Richard, Terese Z. Zidon, Steven L. Britton, Lauren G. Koch, Victoria J. Vieira-Potter. Soy protein improves tibial whole-bone and tissue-level biomechanical properties in ovariectomized and ovary-intact, low-fit female rats. *Bone Reports*, 2018; 8: 244 DOI: [10.1016/j.bonr.2018.05.002](https://doi.org/10.1016/j.bonr.2018.05.002)

*Health & Medicine
Psychology*

Date: September, 2018

Source: *Science Daily*;
*National Academy of
Sciences*

Mild Physical Activity Improves Memory

People who engage in mild physical activity such as yoga or tai chi can increase the connectivity between parts of the brain responsible for memory formation and storage. This is the result of a study by researchers at the University of California, Irvine, and Japan's University of Tsuuba.

Using high-resolution Magnetic Resonance Imaging (MRI) to examine the brains of 36 young adults after exercise sessions, the researchers better connectivity between the hippocampal dentate gyrus and critical areas. These areas are related to human memory functions.

"The hippocampus is critical for the creation of new memories; it's one of the first regions of the brain to deteriorate as we get older -- and much more severely in Alzheimer's disease," said project co-leader Michael Yassa, UCI professor and Chancellor's Fellow of neurobiology & behavior. "Improving the function of the hippocampus holds much promise for improving memory in everyday settings."

Source: *Science Daily*, September 24, 2018;

Kazuya Suwabe, Kyeongho Byun, Kazuki Hyodo, Zachariah M. Reagh, Jared M. Roberts, Akira Matsushita, Kousaku Saotome, Genta Ochi, Takemune Fukuie, Kenji Suzuki, Yoshiyuki Sankai, Michael A. Yassa, Hideaki Soya. Rapid stimulation of human dentate gyrus function with acute mild exercise. *Proceedings of the National Academy of Sciences*, 2018; 201805668 DOI: [10.1073/pnas.1805668115](https://doi.org/10.1073/pnas.1805668115)

*Health & Medicine
Psychology*

Date: September, 2018

Source: *Science Daily*;
NeuroImage

Breast Milk Best for Premature Babies' Brain

Premature babies fed with breast milk show better brain connectivity compared to formula milk.

Researchers at the University of Edinburgh studied the MRI brain scans of 47 babies who were born earlier than the 33 weeks gestation. The study was made at the Jennifer Brown Research Laboratory at the University's Medical Research Council Centre for Reproductive Health. It was funded by Theirworld charity. The result was published in the journal *NeuroImage*.

Source: *Science Daily*, September 21, 2018;

Biology

Manuel Blesa, Gemma Sullivan, Devasuda Anblagan, Emma J. Telford, Alan J. Quigley, Sarah A. Sparrow, Ahmed Serag, Scott I. Semple, Mark E. Bastin, James P. Boardman. Early breast milk exposure modifies brain connectivity in preterm infants. *NeuroImage*, 2019; 184: 431 DOI: [10.1016/j.neuroimage.2018.09.045](https://doi.org/10.1016/j.neuroimage.2018.09.045)

*Health & Medicine
Psychology*

Date: September, 2018

Source: *Science Daily*;
*Acts Psychiatric
Scandinavica*

Depressed People Have Larger Hypothalamus

Scientists have found that people who are predisposed to depression or bipolar disorder have larger left hypothalamus by about five percent compared to normal individuals. It was observed that the more severe the depression, the larger was the hypothalamus. The size was not affected by prescribed medication.

The study was made with 84 persons by scientists at the Max Planck Institute for Human Cognitive and Brain Sciences in Leipzig and the Department of Psychiatry and Psychotherapy of the University Clinic, using high-resolution 7-Tesla MRI scanner.

Source: Science Daily, September 20, 2018,

S. Schindler, L. Schmidt, M. Stroske, M. Storch, A. Anwander, R. Trampel, M. Strauß, U. Hegerl, S. Geyer, P. Schönknecht. Hypothalamus enlargement in mood disorders. *Acta Psychiatrica Scandinavica*, 2018; DOI: [10.1111/acps.12958](https://doi.org/10.1111/acps.12958)

*Psychology
Health & Medicine*

Date: September, 2018

Source: *Science Daily*;
eLife

Marijuana During Pregnancy Affects Sociability of Male Children

Male children of mothers who take cannabis or marijuana during pregnancy can become less sociable and have increased neuronal excitability. This is based on a study of rats by researchers of Aix-Marseille University Mediterranean Institute of Neurobiology, France, and Roma Tre University, Italy, in collaboration with Indiana University. The study showed that the mGlu5 gene was reduced in the males' prefrontal cortex of the brain. They also found that activating a certain receptor of the brain (CB1R) can normalize behavioral deficits and the synaptic mechanisms of the brain. This suggested a way of reversing effects of marijuana through pharmacological means.

Source: "Prenatal exposure to cannabis impacts sociability of male offspring only." ScienceDaily. ScienceDaily, 11 September 2018. <www.sciencedaily.com/releases/2018/09/180911132101.htm>.

Anissa Bara, Antonia Manduca, Axel Bernabeu, Milene Borsoi, Michela Serviado, Olivier Lassalle, Michelle N Murphy, Jim Wager-Miller, Ken Mackie, Anne-Laure Pelissier-Alicot, Viviana Trezza, Olivier J Manzoni. Sex-dependent effects of in utero cannabinoid exposure on cortical function. *eLife*, 2018; 7 DOI: [10.7554/eLife.36234](https://doi.org/10.7554/eLife.36234)

Biology
Psychology
Health and
Medicine

Date: June, 2018

Source: *Science Daily*;
Journal of Public Health

Back Pain Linked to Mental Problems and Risky Behaviors in Teenagers

Adolescents who have frequent back pains are more likely to smoke cigarettes, drink alcohol and have anxiety and depression. From data of about 6,500 teenagers, researchers found that 14-15 year olds who had back pains once a week were 2-3 times more likely to have drunk alcohol or smoked in the past month compared to those who didn't have pain.

"Back pain and unhealthy behaviors not only occur together but also track into adulthood. This means that they are responsible for current issues, and also have implications for future health. Adolescent back pain may play a role in characterizing poor overall health, and the risk of chronic disease throughout life. The researchers involved with the study believe this is of concern because the developing brain may be susceptible to negative influences of toxic substances, and use in early adolescence may increase the risk of substance abuse and mental health problems in later life." (*Science Daily*)

Source: "Back pain linked to mental health problems and risky behaviors in teenagers." ScienceDaily, 11 September 2018. <www.sciencedaily.com/releases/2018/09/180911083143.htm>.

S J Kamper, Z A Michaleff, P Campbell, K M Dunn, T P Yamato, R K Hodder, J Wiggers, C M Williams. Back pain, mental health and substance use are associated in adolescents. *Journal of Public Health*, 2018; DOI: [10.1093/pubmed/fdy129](https://doi.org/10.1093/pubmed/fdy129)

Earth Sciences
Health and Medicine

Date: June, 2018

Source: *Science Daily*;
Nature Sustainability

Water Use Reduced by 55% with Healthier Diet

Vegetarian or pescetarian diets can reduce freshwater consumption by up to 55%, according to a study of the European Commission Joint Research Centre published in *Nature Sustainability*, using data from 43,000 areas in France, UK and Germany.

“The study is the most detailed nationwide food consumption-related water footprint ever made, taking into account socio-economic factors of food consumption, for existing and recommended diets.” (*Science Daily*)

Source: European Commission Joint Research Centre. "Change your diet to save both water and your health." ScienceDaily. ScienceDaily, 10 September 2018. <www.sciencedaily.com/releases/2018/09/180910142419.htm>.

Davy Vanham, Sara Comero, Bernd Manfred Gawlik, Giovanni Bidoglio. The water footprint of different diets within European sub-national geographical entities. *Nature Sustainability*, 2018; DOI: 10.1038/s41893-018-0133-x

Psychology
Health & Medicine
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Date: September, 2018

Source: *Science Daily*, *The Journal of Neuroscience*

Eye Exercise Reduces Fear Reaction to Traumatic Memory

Two independent studies made for 48 persons showed that goal-directed eye movements seem to deactivate the amygdala reaction to a traumatic memory. Amygdala is the part of the brain that is connected with the experiencing of emotions.

The method used is a therapeutic approach called Eye Movement Desensitization and Reprocessing (EMDR). The study showed that side-to-side eye movements deactivated the amygdala. A similar effect was observed when the person is engaged in a working memory task.

Source: Society for Neuroscience. "Eye movements take edge off traumatic memories: Human study investigates neurobiology of widely used yet controversial psychotherapy technique." ScienceDaily. ScienceDaily, 7 September 2018. <www.sciencedaily.com/releases/2018/09/180907110527.htm>.

Lycia D. de Voogd, Jonathan W. Kanen, David A. Neville, Karin Roelofs, Guillén Fernández, Erno J. Hermans. Eye-movement intervention enhances extinction via amygdala deactivation. *The Journal of Neuroscience*, 2018; 0703-18 DOI: 10.1523/JNEUROSCI.0703-18.2018

*Psychology
Health and
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Date: September, 2018

Source: *Science Daily*;
Nature Communications

Bravery Cells Found in the Hippocampus

Scientists have found “that neurons known as OLM cells, when stimulated, produce a brain rhythm that is present when animals feel safe in a threatening environment (for example, when they are hiding from a predator but aware of the predator's proximity).” (*Science Daily*) These cells are found in the hippocampus. The study found that “anxiety and risk-taking behavior can be controlled by the manipulation of OLM cells. To find a pathway that quickly and robustly modulates risk-taking behavior is very important for treatment of pathological anxiety since reduced risk-taking behavior is a trait in people with high anxiety levels.”

Source: Uppsala University. "Bravery cells found in the hippocampus." ScienceDaily. ScienceDaily, 7 September 2018. <www.sciencedaily.com/releases/2018/09/180907091506.htm>.

Sanja Mikulovic, Carlos Ernesto Restrepo, Samer Siwani, Pavol Bauer, Stefano Pupe, Adriano B. L. Tort, Klas Kullander, Richardson N. Leão. Ventral hippocampal OLM cells control type 2 theta oscillations and response to predator odor. *Nature Communications*, 2018; 9 (1) DOI: 10.1038/s41467-018-05907-w

*Psychology
Biology*

Date: August, 2018

Source: *Science Daily*,
*Proceedings of the
National Academy of
Sciences*

Bodily sensations give rise to conscious feelings

Researches in Finland have classified feelings into five categories, and these feelings were accompanied by strong bodily sensations. The feelings are positive emotions, negative emotions, cognitive functions, somatic states and illnesses.

"These results show that conscious feelings stem from bodily feedback. Although consciousness emerges due to brain function and we experience our consciousness to be 'housed' in the brain, bodily feedback contributes significantly to a wide variety of subjective feelings," said Associate Professor Lauri Nummenmaa from PET Centre of the University of Turku in Finland.

The study is based on an online questionnaire where more than 1,000 participated. “The participants first evaluated a total of 100 feeling states in terms of how much they are experienced in the body and mind, and how emotional and controllable they are. Next, they also evaluated how similar the feelings are with respect to each other, and whereabouts in the body they are felt.” (*Science Daily*)

This study relates to the use of awareness of bodily sensation in dealing with strong emotions, especially negative ones. In the Self-Transformation Seminar of the Theosophical Society, awareness of physical sensation is used to identify emotional reactions and in the release of any suppressed energy connected with the emotions.

Source: University of Turku. "Bodily sensations give rise to conscious feelings." ScienceDaily. ScienceDaily, 31 August 2018. <www.sciencedaily.com/releases/2018/08/180831110422.htm>.

Lauri Nummenmaa, Riitta Hari, Jari K. Hietanen, Enrico Glerean. Maps of subjective feelings. *Proceedings of the National Academy of Sciences*, 2018; 201807390 DOI: 10.1073/pnas.1807390115

*Psychology
Health and
Medicine*

Date: August, 2018

Source: *Science Daily;
Depression and Anxiety*

Maternal Depression May Affect Children's Well-Being Throughout Life

In a study published in *Depression & Anxiety*, researchers found that depressed mothers affected the child's immune system and stress response, leading to greater psychological problems later.

The study followed 125 children from birth to 10 years, where the cortisol and the secretory immunoglobulin (s-IgA) of both the mothers and the children were measured. Cortisol and s-IgA are markers of stress and the immune system.

"Depressed mothers had higher CT and s-IgA levels and displayed more negative parenting, characterized by negative affect, intrusion, and criticism. Children of depressed mothers tended to exhibit certain psychiatric disorders, have higher s-IgA levels, and display greater social withdrawal." (*Science Daily*)

Sources: "Maternal depression may alter stress and immune markers in children." ScienceDaily. ScienceDaily, 22 August 2018. <www.sciencedaily.com/releases/2018/08/180822082545.htm>.

Adi Ulmer-Yaniv, Amir Djalovski, Avital Priel, Orna Zagoory-Sharon, Ruth Feldman. Maternal depression alters stress and immune biomarkers in mother and child. *Depression and Anxiety*, 2018; DOI: 10.1002/da.22818