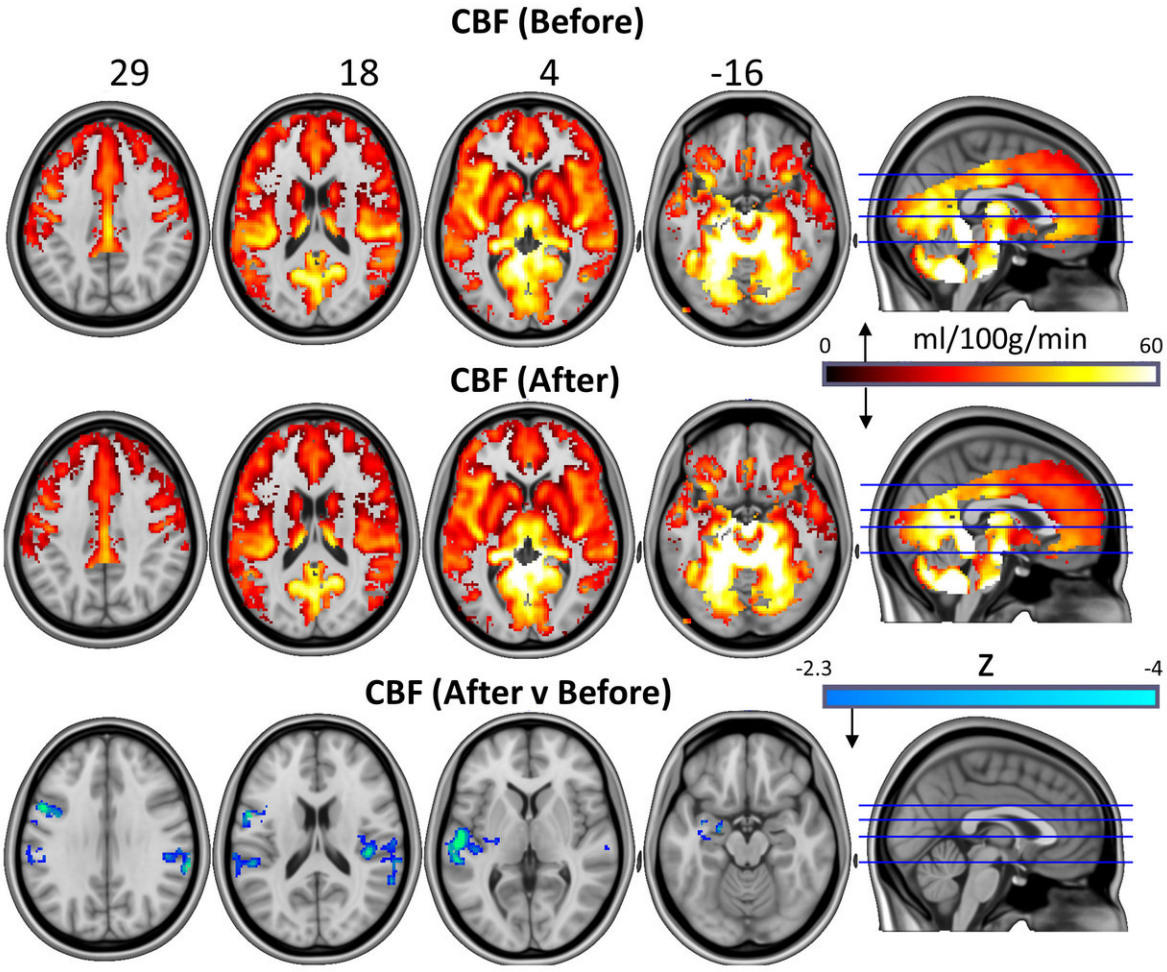
Best of Last Year—The top Medical Xpress articles of 2017

December 20 2017, by Bob Yirka


CBF (Before)
29
18
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CBF (After)
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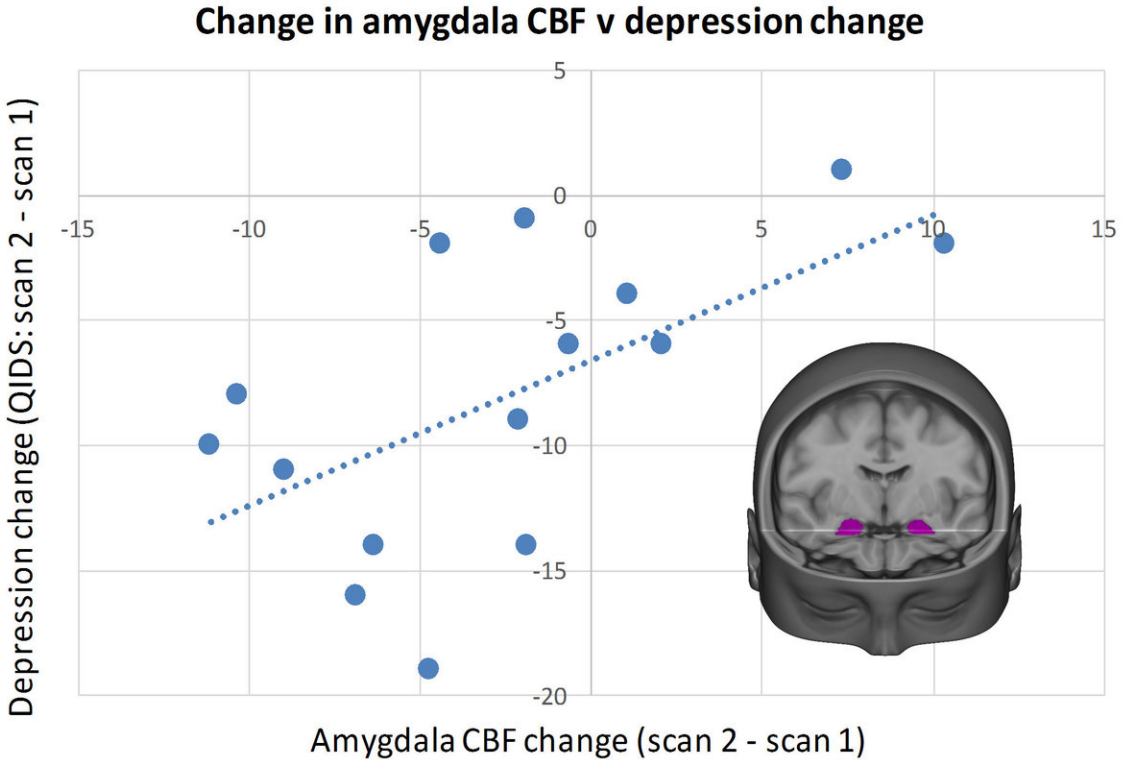
Change in amygdala CBF v depression change
Depression change (QIDS: scan 2 - scan 1)
Amygdala CBF change (scan 2 - scan 1)
5
0
-5
-10
-15
-20
-15
-10
-5
0
5
10
15

Whole-brain cerebral blood flow maps for baseline versus one-day post-treatment, plus the differencemap (cluster-corrected, p Scientific Reports 2017

It was a good year for medical research as a team at the German center for Neurodegenerative Diseases, Magdeburg, found that dancing can reverse the signs of aging in the brain. Any exercise helps, the team found, but dancing offered the most beneficial effect. In addition to increasing the size of the part of the brain that normally deteriorates with age, dancing was found to lead to behavioral changes and improvements in balance.

In a study at Larner College of Medicine at the University of Vermont, a group of researchers found an association between eating hot peppers and decreased mortality. In studying data from the National Health and Nutrition Examination Survey, the group found that those people who consumed red hot chili peppers regularly were 13 percent less likely to die from a heart attack or stroke. Unfortunately, they were not able to say why what that was case.

Also, last May, a team of researchers at National Jewish Health identified a trigger for autoimmune disease. They discovered that autoimmune diseases such as lupus, multiple sclerosis and Crohn's diseases all have a common trigger—transcription T-bet inside B cells. The team identified a subset of B cells that accumulate in patients with autoimmune disease that they named Age-associated B cells, which they shortened to ABCs. Removing T-bet inside B cells in mice prone to autoimmune disease, the team found, caused the mice to remain healthy.

More recently a team at the Lewis Katz School of Medicine at Temple University announced that they had found a link between Canola oil and worsened memory and learning ability in Alzheimer's. In one of the few studies done on the possible health impacts of the wildly popular oil, the team conducted a study that involved giving the oil to Alzheimer's disease mouse models over a 12-month period and then studying the results. They found that in addition to weighing more than a control group, the oil-fed mice performed worse on maze and learning ability tests.

Also, this month, an international team of researchers made headlines when they announced that they had discovered a major cause of dementia. They found that a build-up of urea in the brain led to toxic levels that could cause the type of brain damage that leads to dementia. More specifically, they found a direct link between Huntington's Disease and brain urea levels and other metabolic processes.

And in an October announcement, a team of researchers from the University of Liverpool, Maastricht University and King's College London reported that consuming alcohol improves foreign language skills. The researchers made this finding by testing the impact of alcohol on German-speaking volunteers attempting to learn Dutch. One of the team members suggested that small reductions in anxiety levels could possibly explain their results.

Also, another team at Imperial College found that magic mushrooms may 'reset' the brains of depressed patients—or more specifically, the psychoactive compound psilocybin might. After giving the chemical to several patients with severe depression who were not responding to other treatments, the researchers found that they had reduced symptoms for up to five weeks. More work will have to be done, but initial results are promising.

In another case of recreational drugs being tested for positive medicinal impacts, a team with members from the University of Bonn and colleagues at the Hebrew University of Jerusalem found that cannabis reverses aging processes in the brain. The group gave aging mice THC over a period of time and found that doing so prevented normal memory loss due to aging. Older mice, they found, regressed to the state of two-month old pups.

Also, a team led by researchers at McMaster University made headlines when they announced that they had found evidence of antidepressants being associated with a significantly elevated risk of death. They found that because such drugs altered the level of serotonin in the body, they caused harm to major organs, sometimes leading to death.

In a bit of interesting research, David Dunson with Duke University and the University of Padova's Daniele Durante found that creative people have better-connected brains. By applying statistical analysis to the results of work done by a team at the University of New Mexico conducting MRI brain scans, the two found patterns that indicated that the degree to which the two brain hemispheres communicate distinguishes people who are highly creative.

Also, a team led by investigators at Georgetown Lombardi Cancer Center offered some sage advice to cigarette smokers with a report suggesting that tobacco smokers could gain a collective 86 million years of life if they switched to vaping. Because vaping is less harmful, they calculated that up to 6.6 million cigarette smokers could live much longer if they switched from smoking cigarettes to e-cigarettes. Switching, they noted, would also reduce the pain and suffering that go along with the long-term effects of smoking cigarettes.

And a team with members from the University of Bath and King's College London reported on work they were doing that revealed sugar's

"tipping point" link to Alzheimer's disease. Theirs was the first study to identify a tipping point molecular link between Alzheimer's disease and blood sugar levels. The results of their study also revealed why diabetes patients are at higher risk of developing Alzheimer's.

In a bit of surprising news this past summer, a combined team of researchers at the Ohio State University's Wexner Medical Center and College of engineering announced that they had developed a breakthrough device that could heal organs with a single touch. It was, they reported, based on technology they called tissue nanotransfection, or TNT for short—the device, the team further reported, was able to generate any type of cell using skin from the patient's own body.

In another bit of surprising news, a team at the University of Connecticut found evidence suggesting that it is not eating fatty food that causes fatty lipid buildup on arterial walls; it is instead fats shed from bacteria that live in the mouth. This, the team claimed, means that bacterial fats, not dietary ones, may deserve the blame for heart disease.

There was also some unsettling news nearly a year ago, as a combined team from the Harvard T.H. Chan School of Public Health and the Broad Institute of MIT and Harvard found a drug-resistant "nightmare bacteria" showing a worrisome ability to diversify and spread. A family of drug resistant bacteria was found to be spreading more widely and with less notice than would have been expected for a potentially deadly strain called carbapenem resistant Enterobacteriaceae.

A thought-provoking study asked, "Which countries have the best healthcare?" The study, led by Christopher Murray, director of the Institute for Health Metrics and Evaluation at the University of Washington, and carried out by a consortium of hundreds of contributing experts, found that many developed countries including the U.S., Canada and Japan are not doing very well, while many in western Europe are

doing exceptionally well. Sadly, they found also that many third-world countries are making little progress.

In another interesting study, a team at the University of Sussex claimed to have found the first evidence for a higher state of consciousness—a sustained increase in neural signal diversity in people under the influence of psychedelic drugs. Neural researchers have come to believe that signal diversity is a measure of brain complexity, and provides a mathematical index of the level of consciousness.

And a team at Uppsala University in Sweden found that tea consumption leads to epigenetic changes in women. The chemical modifications that turn genes on or off were impacted by tea drinking and were linked to an impact in genes that interact with cancer and estrogen in women, but not men. There was also no impact found for either gender for coffee consumption.

And finally, another team announced that they had found evidence showing that the sugar industry withheld evidence of sucrose's health effects nearly 50 years ago. The team, made up of members from the University of California, found the evidence when reviewing internal sugar industry documents. They also found evidence of the Sugar Research Foundation pulling funding of the impact of sugar on animals when such research revealed the harmful impacts of sugar consumption.