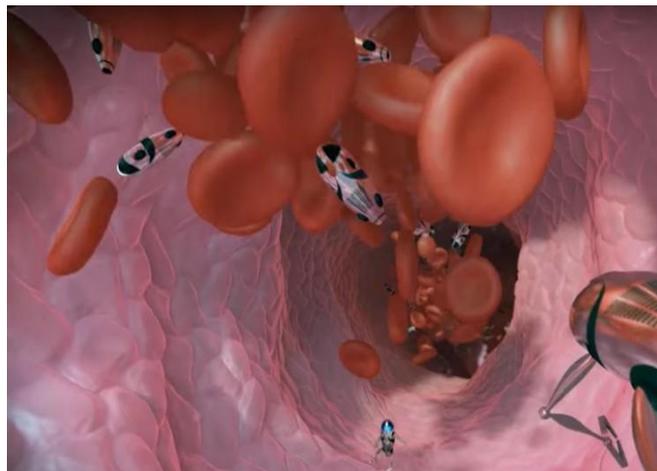


Newsletter

Nanobots Will Be Flowing Through Your Body by 2030

In 10 years, tiny nanobots in your blood might help keep you from getting sick or even transmit your thoughts to a wireless cloud.



In the next 10 or so years, your blood will probably be streaming with tiny nanorobots there to help keep you from getting sick or even transmit your thoughts to a wireless cloud. The future is closer than you may think.

Google's director of engineering, Ray Kurzweil, is an avid predictor of future events and claims to have a fairly high accuracy rate. He is one of the biggest proponents of the notion that nanobots will be streaming through our blood in the near future. The idea surrounding this prediction isn't that far off from modern technology.

Nanobots injected into your bloodstream

According to IFL Science, DNA robots are already being tested in the human body to seek out and destroy cancer cells. These programmed DNA strands have the capability of seeking out and catching cancer cells. If human trials go well, these tiny robots could be revolutionary to cancer research.

Cancer detection and eradication is one thing but tiny nanobots are big players in the future of medicine for other reasons. Researchers believe that nanobots could soon deliver drugs to humans with a high degree of accuracy, according to New Atlas. This would allow for micro dosages right where the patient needs preventing harmful side effects.

Scientists also believe that nanobots could be used to reduce plaque in veins, solve dietary issues, along with a whole slew of other medical uses. Extending beyond simple medicine, nanobots would allow humans to reach a greater state of connectivity.

Theoretically, nanobots could be used to constantly monitor our body for maladies and other symptoms, constantly transmitting this information to a cloud for close monitoring by medical staff. This cloud could be useful for a number of reasons and it would essentially turn the common cold or other sicknesses into easily stoppable problems.

The idea that nanobots could one day transmit our thoughts to the cloud is probably the most far-fetched of the ideas around the subject out there. This feat would require great strides in both neuroscience and nanorobotics. While it is certainly a possibility, this functionality is probably much further off.

By all measures, researchers predict that within the next 10 years, having nanobots injected into your bloodstream will become a much more common practice in the medical world. If nanobot injection becomes an option, will you volunteer to take the first steps to becoming a cyborg?

[Source: Interesting Engineering]



Ending America's War on Drugs Would Finally Unleash the Therapeutic Potential of Psychedelics

The study was sponsored by the non-profit research and educational organization founded, the Multidisciplinary Association for Psychedelic Studies (MAPS), and funded entirely by private donations. Because of the stigma associated with illegal drugs—MDMA is what the party drug, ecstasy contains, though the pills are often impure—MAPS was unable to get grants from the Department of Defense, the Veterans Administration or the National Institute of Mental Health, despite there being over 868,000 veterans with PTSD receiving monthly disability payments from the VA at an estimated cost of \$17 billion per year.

The treatment being tested by the study involved three day-long administrations of MDMA about a month apart, and 12 sessions of psychotherapy within a three-and-a-half-month process.

After his treatment with MDMA-assisted psychotherapy, Lubecky managed to heal from his PTSD to the point that he became National Veterans Director for Senator Rand Paul's 2016 presidential primary campaign. His recovery is not unusual. On May 1, The Lancet

Psychiatry published a scientific paper about the study Lubecky volunteered for; it reported that two-thirds of the 26 veterans, firefighters and police officers treated no longer qualified for a diagnosis of PTSD one month after their second MDMA session, with their reduction of PTSD symptoms lasting over time.

If Big Pharma were to try to create from scratch a drug optimized to treat PTSD, MDMA would be that drug. Big Pharma, in the form of Merck, did invent MDMA in 1912, but had no idea what it had created. Merck tested MDMA in animals in 1927 and again in 1959 but the research gave no clues about MDMA's therapeutic potential. MDMA is now out of its patent restrictions, another reason for MAPS' non-profit drug development efforts.

PTSD changes people's brains, increasing activity in the amygdala, where fear is processed, and reducing activity in the prefrontal cortex, where rational decision-making takes place. MDMA does the opposite, decreasing activity in the amygdala and increasing activity in the prefrontal cortex. MDMA also stimulates the release of the hormones prolactin and oxytocin, associated with bonding, affiliation and love, facilitating the therapeutic alliance between patient and therapist and increasing the effectiveness of psychotherapy. MDMA also stimulates the release of the neurotransmitters serotonin, dopamine and norepinephrine, producing a complex symphony of effects that help the drug enhance psychotherapy.

The organization is also sponsoring research into the use of four different kinds of smoked cannabis

(THC, CBD, THC/CBD combination and a placebo) in 76 veterans with chronic, treatment-resistant PTSD. This study took seven years to obtain all the approvals, is funded by a \$2.15 million grant to MAPS from the State of Colorado, and enrollment is about 75% completed. Unlike MDMA-assisted psychotherapy, marijuana for PTSD is usually self-administered on a daily basis to control symptoms, and is used for months or years, with symptoms often returning after cessation of use. Marijuana is reported by many veterans to be helpful for PTSD, but MAPS' study is the first double-blind, placebo-controlled study ever conducted.

U.S. and global drug prohibition has for decades delayed medical research into the healing properties of Schedule 1 drugs. Now that this research is finally being conducted, we're learning that enormous suffering and many suicides could have been prevented over these decades. It's long past time for the mainstreaming of the medical use of psychedelics and marijuana, and for replacing prohibition and criminalization with public health approaches to reducing drug abuse. In a post-prohibition world, we'll finally recognize that.

[Source: Time]



Curcumin improves memory and mood

Twice-daily supplements boosted cognitive power over 18 months



Lovers of Indian food, give yourselves a second helping: Daily consumption of a certain form of curcumin -- the substance that gives Indian curry its bright color -- improved memory and mood in people with mild, age-related memory loss, according to the results of a study conducted by UCLA researchers.

The research, published online Jan. 19 in the *American Journal of Geriatric Psychiatry*, examined the effects of an easily absorbed curcumin supplement on memory performance in people without dementia, as well as curcumin's potential impact on the microscopic plaques and tangles in the brains of people with Alzheimer's disease.

Found in turmeric, curcumin has previously been shown to have anti-inflammatory and antioxidant properties in lab studies. It also has been suggested as a possible reason that senior citizens in India, where curcumin is a dietary staple, have a lower prevalence of Alzheimer's disease and better cognitive performance.

"Exactly how curcumin exerts its effects is not certain, but it may be due to its ability to reduce brain inflammation, which has been linked to both Alzheimer's disease and major depression," said Dr. Gary Small, director of geriatric

psychiatry at UCLA's Longevity Center and of the geriatric psychiatry division at the Semel Institute for Neuroscience and Human Behavior at UCLA, and the study's first author.

The double-blind, placebo-controlled study involved 40 adults between the ages of 50 and 90 years who had mild memory complaints. Participants were randomly assigned to receive either a placebo or 90 milligrams of curcumin twice daily for 18 months.

All 40 subjects received standardized cognitive assessments at the start of the study and at six-month intervals, and monitoring of curcumin levels in their blood at the start of the study and after 18 months. Thirty of the volunteers underwent positron emission tomography, or PET scans, to determine the levels of amyloid and tau in their brains at the start of the study and after 18 months.

The people who took curcumin experienced significant improvements in their memory and attention abilities, while the subjects who received placebo did not, Small said. In memory tests, the people taking curcumin improved by 28 percent over the 18 months. Those taking curcumin also had mild improvements in mood, and their brain PET scans showed significantly less amyloid and tau signals in the amygdala and hypothalamus than those who took placebos.

The amygdala and hypothalamus are regions of the brain that control several memory and emotional

functions.

Four people taking curcumin, and two taking placebos, experienced mild side effects such as abdominal pain and nausea.

The researchers plan to conduct a follow-up study with a larger number of people. That study will include some people with mild depression so the scientists can explore whether curcumin also has antidepressant effects. The larger sample also would allow them to analyze whether curcumin's memory-enhancing effects vary according to people's genetic risk for Alzheimer's, their age or the extent of their cognitive problems.

"These results suggest that taking this relatively safe form of curcumin could provide meaningful cognitive benefits over the years," said Small, UCLA's Parlow-Solomon Professor on Aging.

[Source: University of California - Los Angeles]



News

Maker of sleeping pill Ambien responds after Roseanne blames drug for tweet: 'Racism is not a known side effect'

The maker of Ambien blasted back at Roseanne Barr after she faulted the sleeping pill for a racist tweet that led to her television show's cancellation.

"People of all races, religions and nationalities work at Sanofi every day to improve the lives of people around the world", Ambien manufacturer Sanofi US said on Twitter.

"While all pharmaceutical treatments have side effects, racism is not a known side effect of any Sanofi medication".

As of early afternoon on the East Coast, some 90,000 people had liked or shared the tweet.

A resoundingly popular revival of the 1990s sitcom "Roseanne" was pulled off the air this week after Ms Barr issued a racist tweet describing Valerie Jarrett, a former adviser to Barack Obama, to the product if "muslim brotherhood & planet of the apes had a baby". Ms Jarrett is African-American.

After ABC executives swiftly moved to cancel the show, with president Channing Dungey blasting the statement as "abhorrent, repugnant and inconsistent with our values", Ms Barr sought to attribute the

bigoted missive to medication.

"It was 2 in the morning and I was Ambien tweeting-it was memorial day too-i went 2 far & do not want it defended-it was egregious Indefensible", Ms. Barr tweeted.

While the White House told reporters that Donald Trump was focused on policy matters and was "not responding to other things", the president weighed in by excoriating Bob Iger - the CEO of Disney, which owns ABC - for apologising to Ms Jarrett but not to Mr Trump "for the HORRIBLE statements made and said about me on ABC".

"Maybe I just didn't get the call?" Mr Trump wrote.

[Source: The Independent]

Digmus: Fighting Counterfeit Goods with Blockchain Technology

According to the Organization for Economic Co-operation and Development, international trade in counterfeit and pirated goods was worth \$250 billion in 2007.

On the other hand, the International Anti-Counterfeiting Coalition reports that the counterfeit market today generates revenues of up to \$600 billion annually if you include online piracy or counterfeits that are sold in the same country they are made in. That is \$600 billion losses for businesses from across the world.

Counterfeit products put the health and safety of consumers at risk worldwide, while robbing the local governments, businesses, and communities as a whole of tax

revenues, profits, and employment. Today, counterfeiters are capable of reproducing food and beverages, medicine, electronics, household products, among others.

Counterfeit goods account for up to 2.5% of world trade. This means that the methods used to prevent such trade are not very effective. After extensive research and consultation with manufacturers and suppliers of affected products, developers came up with a system for storing and verifying information regarding the authenticity of various products.

The Digmus systems include two components, where the first component is a blockchain that acts as the storage of unique products keys and history of product transfer between suppliers. A blockchain based database will then store the product information and additional data to verify authenticity. The second component is a mobile app which will be used to verify the product keys and provide verification

for additional signs of authenticity. The certification center, which is controlled by Digmus, will check the ownership of the trademark, prevent similar copycat trademarks, and revoke any compromised certificates.

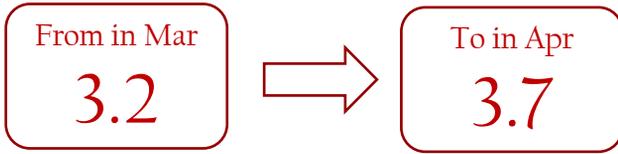
For the Pre-ICO, Digmus is offering its tokens at the rate of 300/1 ETH with 300,000 tokens available for the Pre-ICO Sale. Once the ICO has launched, investors who purchase from the first batch of tokens will get 200 tokens per ETH contribution. On the second, third and fourth batches, investors will get 185, 170, and 155 tokens respectively for the same price. The token supply for the ICO is set at 1,500,000 for the first, second and third batches, with 1,900,000 tokens for the fourth batch. According to their financial plan, by the year 2021, the total amount of profits distributed among all members of the ICO is expected to reach \$4million a year.

[Source: NewsBTC]

Market Update

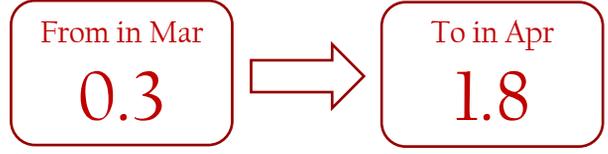
Monthly Inflation (Consumer Price Index)

% Increase in CPI vs. Same Month Last Year



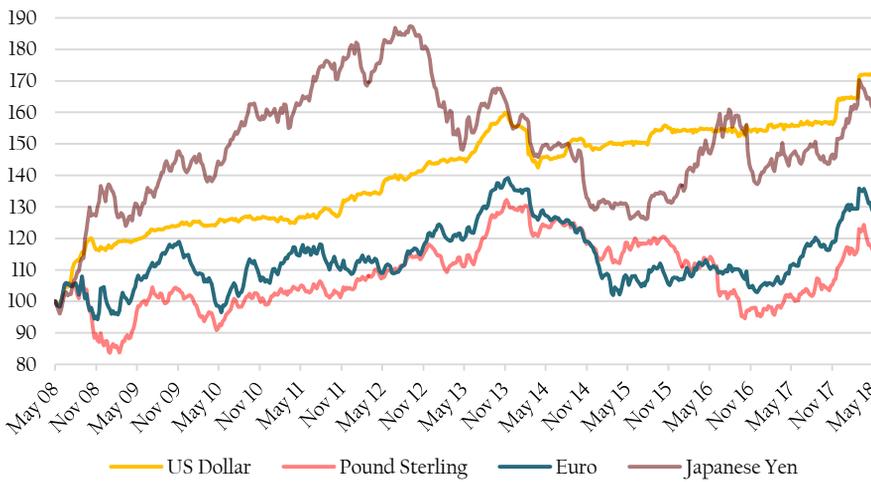
Major increase was due to increase in house rent(7.04%), motor fuel (10.56%) and education (12.99%), as compared to the previous year. It has a contribution of 28.78% in the Consumer Price Index (CPI).

% Increase in CPI vs. Previous Month



Major increase was due to increase in education (2.33%), house rent (3.06%) and prices of food items such as Fresh Fruit(5.76%) and Fresh Vegetables (15.2%) as compared to the previous month.

Foreign Currencies

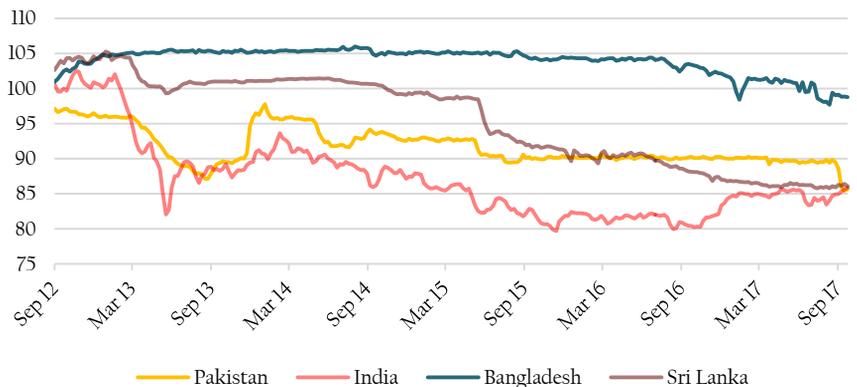


PKR vs. Major Foreign Currencies

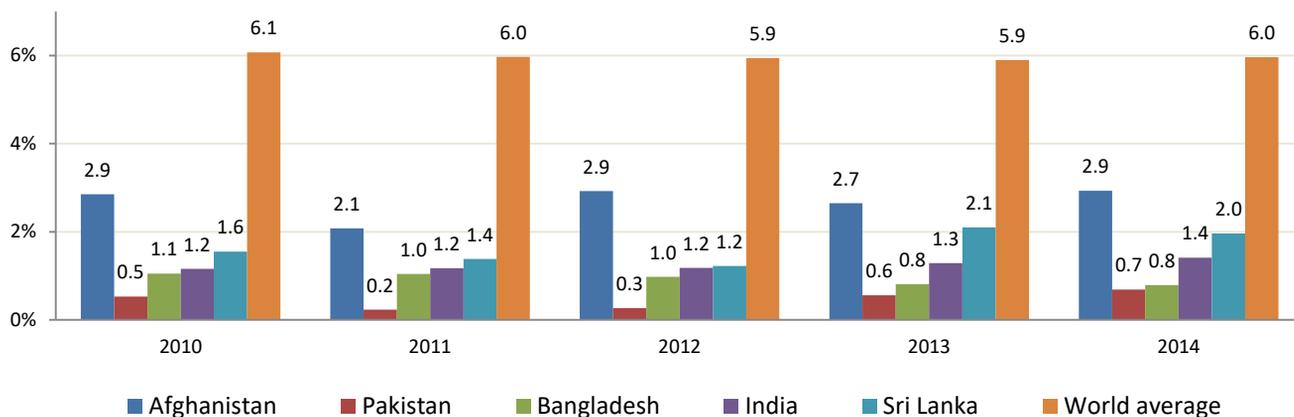
PKR has depreciated against: USD (0.2%) and appreciated against GBP (3.1%), EUR (3.5%) while JPY (0%) remained stable.

USD vs. Major South Asian Currencies

USD appreciated against Pakistan Rupee (0.2%) Sri Lankan Rupee (0.2%) and Indian Rupee (1.5%). Whereas, Bangladesh Taka remained unchanged.



Health spend to GDP percentage Comparison – World Bank



According World Bank website Pakistan has the lowest health spend to GDP percentage in the region.

Questions? We'd love to hear from you

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The Pharma Bureau is a representative body of multinational pharmaceuticals in Pakistan. Part of the Overseas Investors' Chamber of Commerce & Industry, the Pharma Bureau was founded in October, 1988, when a small group of like-minded research based multinational pharmaceutical companies felt the need to have their own separate forum to articulate and resolve the problems and issues confronting overseas investors in the pharmaceutical industry in Pakistan.

Pharma Bureau Mission: Work closely with the relevant Government authorities to tackle and help resolve health industry related issues. Assist member firms in Product Registration Procedures. Protection of Intellectual Property Rights of members by respecting international patent laws. Bring about positive changes in the Health Administration set-ups by encouraging the Government to bring about improvements and changes in the structure and workings of health administrations

Our members: Provide quality drugs to the population at affordable prices without compromising on stringent industry standards. Introduce innovative drugs and medicines in Pakistan to enhance patient welfare and quality of life. Provide refresher courses to doctors on latest health topics / trends and educate them on new medication. Introduce, uphold and promote Good Manufacturing Practices (GMP) and Good Distribution Practices (GDP). Are conscientious and ethical members of society, providing social care and support during national disasters.

