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VEPACHEDU EDUCATIONAL FOUNDATION

The Telangana Science Journal

Health and Nutrition

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Issue 231

Chief Editor: Dr. Sreenivasarao Vepachedu<sup>1</sup>

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- TEN NUTRITION MISTAKES BY HEALTHY PEOPLE
- DRUG OVERDOSE EPIDEMIC IN THE US
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**TEN NUTRITION MISTAKES BY HEALTHY PEOPLE<sup>2</sup>**

**Whole Flaxseeds v. Ground:** Flaxseeds are filled with omega-3 fats, fiber and lignans (antioxidants), which all benefit heart health. But whole flaxseeds may pass through the intestines undigested, which means you'll miss out on the health benefits inside the seed. Buy ground flaxseeds instead, or put them in a coffee or spice grinder.

**Soothie:** It's easy to toss a combination of superfoods into a blender. Blueberries, cashew butter, chia, kale, bananas and coconut milk sound like a dreamy breakfast elixir, but these concoctions can quickly become calorie bombs. Keep smoothies in the 300-calorie range by serving smaller portions (about 8-12 ounces), using more vegetables than fruit and by going easy on the high-calorie nuts and seeds.

**Supplements with coffee:** Caffeine from coffee can hinder your body's ability to absorb some of the vitamins and minerals in your supplements, including calcium, iron, B-vitamins and vitamin D. And it's not just coffee; beverages such as tea and cola contain caffeine, too. Enjoy your coffee about an hour before taking your supplements, and swallow pills with water instead.

**Canned beans:** Beans are an amazing source of fiber and protein, but canned varieties may have close to 1,000 mg of sodium per cup — two-thirds of what you need in an entire day. Look for cans that say “no salt added” or “low-sodium.” If you can't find them, drain and rinse your canned beans, which will eliminate about 40 percent of the sodium.

**Fruits:** The top source of sugar in the American diet is sweetened beverages, not fruit. Sugary soft drinks have no beneficial nutrients, while fruit has fiber, vitamins and protective antioxidants. Plus, we don't tend to overeat fruit but do tend to drink too much soda. Consider how much easier it is to down a 20-ounce soda, as opposed to eating six bananas at one time. Both pack 16 teaspoons of sugar. Choose fruit and skip the soda.

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**Low-fat and Sugar-free:** It's more important to look at what the food does contain. Ultra-processed foods may be fat-free or sugar-free but also loaded with preservatives or refined ingredients. Read ingredient lists and choose foods that are as close to nature as possible.

**Shake the carton first:** Milk alternatives made from soy, almonds, cashews, rice, etc., are often fortified with calcium and vitamin D. But the added nutrients don't stay in the liquid very well and tend to sink to the bottom of the container. Shake well before serving.

**The dressing on salad:** Vegetables contain fat-soluble vitamins A, E and K and a host of antioxidants that require fat to be absorbed. If you skip the oil and vinegar, you miss out on key nutrients from the salad. Serve your greens with oil-based dressing, nuts, seeds or avocado to dramatically boost your body's ability to soak up the veggies' beneficial nutrients.

**Probiotics:** Yogurt is fermented milk, and fermented foods contain probiotics. If yogurt has been heated or pasteurized, probiotics are destroyed and may not be added back in. Find live active cultures and specific probiotics such as Lactobacillus acidophilus, L bulgaricus, etc. to ensure getting the beneficial bacteria, which aid digestion and support the immune system.

**Sports drinks:** Sports drinks are meant to replace fluid and electrolytes that are lost when you sweat excessively, and they are suitable after endurance sports like a soccer game or marathon. But the extra sugar and salt in sports drinks are not needed for casual exercise with minimal perspiration. After a stroll, hydrating with water is the best choice.

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## DRUG EPIDEMIC IN THE US

According to the American Academy of Pain Medicine, more than 100 million Americans suffer from chronic pain. In an effort to relieve that constant pain, the number of opiate prescriptions has nearly doubled over the last decade. Nearly 2 million Americans were addicted to or abusing prescription opioid drugs in 2014, according to the Centers for Disease Control and Prevention, and the Kaiser Family Foundation estimates that more than 21,000 died from overdoses.

Opioids are painkillers that act on opioid receptors and are prescribed for acute and chronic pain management. Opioids are a class of drugs that include the illegal drug heroin as well as powerful pain relievers available legally by prescription, such as oxycodone (OxyContin®), hydrocodone (Vicodin®), codeine, morphine, fentanyl, and many others. These drugs are chemically related and interact with opioid receptors on nerve cells in the body and brain. Opioid pain relievers are generally safe when taken for a short time and as prescribed by a doctor. However, legally regulated opioids such as oxycodone and illegal opiates including heroin are often used recreationally and frequently result in opiate addiction. Our nation is in the midst of an unprecedented opioid epidemic. More people died from drug overdoses in 2014 than in any year on record, and the majority of drug overdose deaths (more than six out of ten) involved an opioid<sup>3</sup>. Since 1999, the rate of overdose deaths involving opioids—including prescription opioid pain relievers and heroin—nearly quadrupled, and over 165,000 people have died from prescription opioid overdoses<sup>4</sup>. Prescription pain medication deaths remain far too high, including deaths involving synthetic opioids such as fentanyl.

### Economic Impact of the Opioid Epidemic<sup>5</sup>

- 55 billion in health and social costs related to prescription opioid abuse each year
- 20 billion in emergency department and inpatient care for opioid poisonings

There are over 100 cannabinoids that can be extracted from cannabis: the two most notable are tetrahydrocannabinol (THC) and cannabidiol (CBD)<sup>6</sup>. In a 2011 study published in the journal Clinical Pharmacology & Therapeutics, researchers suggest the following medical marijuana components offer pain-relieving properties: Delta-9 Tetrahydrocannabinol (Delta-9 THC), Cannabidiol (CBD), Cannabinol (CBN), and Tetrahydrocannabivarin (THCV). THC is the primary psychoactive component. CBD, however, offers many medical benefits without any psychoactive effect. While some conditions warrant a THC/CBD combination (the pain relieving effects of cannabis significantly increase with THC/CBD strains), CBD alone has been proven to have anti-inflammatory, anti-anxiety, and anti-seizure effects. CBD oil has been especially useful in for children with seizure disorders, in many cases allowing them to get off benzodiazepines and other strong sedatives. These children are not stumbling around stoned; they are taking a drug that provides incredible relief from their symptoms with virtually no side effects.

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Synthetic pot — sometimes called fake weed — covers a variety of drugs sold under hundreds of brand names. Marijuana is often seen as a relatively benign drug that produces a typically mellow high, but new U.S. government research shows that the drugs called synthetic pot appear to be much different. Teens who use synthetic pot are at a heightened risk for violent behavior, risky sex and abuse of other drugs, the US Centers for Disease Control and Prevention study revealed. These drugs are often marketed as natural and safe. But they have unpredictable and, in some cases, life-threatening effects, according to the U.S. National Institute on Drug Abuse. About 1 in 10 high school students has reported using fake weed<sup>7</sup>.

### EVATAR

Using tissues from human fallopian tubes, a uterus, and cervix donated by women who had undergone surgery, scientists have created a a microfluidic system called “Evatar<sup>8</sup>,” a term derived from “avatar” meaning representation or incarnation. These systems simulate the in vivo female reproductive tract and the endocrine loops between organ modules for the ovary, fallopian tube, uterus, cervix and liver, with a sustained circulating flow between all tissues. The reproductive tract tissues and peripheral organs integrated into a microfluidic platform. In the meantime, the Northwestern researchers have already started to work on a male equivalent of the Evatar. They've created a system involving male testes and prostate tissue they call the "Dude Cube." They are working on a more complex system that would connect the Dude Tube to other parts of the anatomy — a system they dub the "Adatar."

### YOGA IN AMERICA

According to United States Court of Appeals for the Ninth Circuit<sup>9</sup>, the Indian practice and philosophy of yoga date back thousands of years<sup>10</sup>. Derived from ancient Hindu scriptures, including the Bhagavad Gita, the practice of yoga teaches students to attain spiritual fulfillment through control of the mind and body<sup>11</sup>. Yoga has evolved into a diverse set of spiritual, philosophical, and physical disciplines. Some students practice yoga to transcend the physical body and unite with divine powers; others focus on improving strength, flexibility, and overall physical fitness.

The history of yoga in the United States reflects its wideranging appeal. Some of yoga’s first American adherents included nineteenth-century transcendentalists, such as Henry David Thoreau and Ralph Waldo Emerson, who were fascinated by yoga’s approach to achieving enlightenment. In the early twentieth century, yoga grew more popular as scientists and physicians began to study the physical benefits of the practice. These physical benefits caught the attention of Hollywood celebrities, including Gloria Swanson, Greta Garbo, and Marilyn Monroe, who embraced

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yoga as a tool to fight illness and aging<sup>12</sup>. By the 1960s, Americans increasingly turned to yoga as a form of physical exercise<sup>13</sup>. Research suggests that implementation of yoga in a secondary school setting and has the potential of playing a protective or preventive role in maintaining mental health<sup>14</sup>.

The 2016 Yoga in America Study Conducted by Yoga Journal and Yoga Alliance found that the number of American yoga practitioners has increased to over 36 million in 2016; there are more male and older practitioners than ever before approximately 10 million male practitioners; Yoga practitioners report spending over \$16 billion on yoga clothing, equipment, classes and accessories in the last year; and about 9 in 10 Americans are aware of the practice of yoga<sup>15</sup>.

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<sup>2</sup>Cara Rosenbloom Washington Post (<http://www.smh.com.au/lifestyle/health-and-wellbeing/nutrition/ten-nutrition-mistakes-even-really-healthy-people-make-20170314-guy7y9.html>; <https://authoritynutrition.com/top-11-most-common-nutrition-mistakes/>; <http://www.longevitylive.com/nutrition-body/top-ten-nutrition-mistakes/>; [https://article.wn.com/view/2017/03/14/Ten\\_nutrition\\_mistakes\\_even\\_really\\_healthy\\_people\\_make/](https://article.wn.com/view/2017/03/14/Ten_nutrition_mistakes_even_really_healthy_people_make/); [https://www.acefitness.org/updateable/update\\_display.aspx?pageID=536](https://www.acefitness.org/updateable/update_display.aspx?pageID=536); <http://www.primabody-primalmind.com/top-10-nutritional-mistakes/> )

<sup>3</sup> CDC, MMWR, 2015; 64;1-5.

<sup>4</sup> CDC Vital Signs, 60(43);1487-1492.

<sup>5</sup> Pain Med. 2011;12(4):657-67.

The Opioid Epidemic: By the Numbers: <https://www.hhs.gov/sites/default/files/Factsheet-opioids-061516.pdf>

Why opioid overdose deaths seem to happen in spurts: <http://www.cnn.com/2017/02/08/health/opioids-overdose-deaths-epidemic-explainer/index.html>

Opioid epidemic in the United States, Pain Physician. 2012 Jul;15(3 Suppl): <https://www.ncbi.nlm.nih.gov/pubmed/22786464>

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<http://www.asam.org/docs/default-source/advocacy/opioid-addiction-disease-facts-figures.pdf>

<sup>6</sup> <http://apps1.seiservices.com/nih/mj/2016/Agenda.aspx>

<sup>7</sup> Published online in March in the journal Pediatrics.

Why U.S. Doctors Love Opioids and Hate Marijuana for Chronic Pain: <http://labblog.uofmhealth.org/rounds/why-us-doctors-love-opioids-and-hate-marijuana-for-chronic-pain>

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What Can't Medical Marijuana Do? Recent studies indicate that the drug is making seniors healthier and helping stem the tide of the opioid epidemic—all while making their health care cheaper.

<https://www.theatlantic.com/politics/archive/2016/07/medical-marijuana-costs-elderly-health/491306/>

Could pot help solve the U.S. opioid epidemic? <http://www.sciencemag.org/news/2016/11/could-pot-help-solve-us-opioid-epidemic>

Patients Are Ditching Opioid Pills for Weed: <https://www.theatlantic.com/health/archive/2017/02/marijuana-cannabinoids-opioids/515358/>

Legalizing Marijuana Decreases Fatal Opiate Overdoses, Study Shows: <http://drugabuse.com/legalizing-marijuana-decreases-fatal-opiate-overdoses/>

<sup>8</sup> A microfluidic culture model of the human reproductive tract and 28-day menstrual cycle:

<http://www.nature.com/articles/ncomms14584>

Meet Evatar: The Lab Model That Mimics the Female Reproductive System:

[https://www.nytimes.com/2017/03/30/science/menstrual-cycle-in-a-dish.html?\\_r=0](https://www.nytimes.com/2017/03/30/science/menstrual-cycle-in-a-dish.html?_r=0)

Female menstrual cycle in a dish Miniature, personalized reproductive system will test drugs for safety, effectiveness in women:

<https://news.northwestern.edu/stories/2017/march/female-menstrual-cycle-reproductive-system/>

<sup>9</sup> BIKRAM'S YOGA COLLEGE OF INDIA v. EVOLUTION YOGA, LLC,

<https://www.yogaalliance.org/Portals/0/Ninth%20Circuit%20opinion.pdf>

<sup>10</sup> See Linda Sparrowe, *Yoga 9* (2002).

<sup>11</sup> See Stefanie Syman, *The Subtle Body: The Story of Yoga in America 4* (2010).

<sup>12</sup> See Pankaj Mishra, *Posing as Fitness*, *N.Y. Times*, July 23, 2010. This article may be found at

<http://www.nytimes.com/2010/07/25/books/review/Mishra-t.html>

<sup>13</sup> See Linda Sparrowe, *Yoga 9*, 50 (2002).

<sup>14</sup> Evaluation of the Mental Health Benefits of Yoga in a Secondary School: A Preliminary Randomized Controlled Trial, *The Journal of Behavioral Health Services & Research*, January 2012, Volume 39, Issue 1, pp 80–90:

<https://link.springer.com/article/10.1007%2Fs11414-011-9249-8>

<sup>15</sup> The 2016 Yoga in America Study Conducted by Yoga Journal and Yoga Alliance,

<https://www.yogaalliance.org/Portals/0/2016%20Yoga%20in%20America%20Study%20RESULTS.pdf>

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