



LORAIN COUNTY COMMISSIONERS

LabINFO NEWSLETTER

Volume 2, Number 6

OCTOBER - DECEMBER, 2015

This newsletter is provided by the Lorain County Crime/Drug Lab discussing technical information dedicated to local agencies within Lorain County. The information has been collected from various sources and journals.

PERSONALIZED MEDICINE AND PHARMACOGENOMICS

[Source: mayoclinic.com] By Mayo Clinic Staff

Pharmacogenomics holds the promise that drugs might one day be tailored to your genetic makeup.

Pharmacogenomics is the analyses of how genetic makeup affects an individual's response to drugs. Pharmacogenomic tests look for changes or variants in the genes that may determine whether a medication could be an effective treatment for you or whether you could have side effects to a specific medication.

Modern medications save millions of lives a year. Yet any one medication might not work for you, even if it works for other people. Or it might cause severe side effects for you but not for someone else.

Your age, lifestyle and health all influence your response to medications. But so do your genes. A person's unique genetic makeup (genome) influences his or her response to medications.

Although genomic testing is still a relatively new development in drug treatment, this field is expanding. Currently, more than 100 drugs have label information regarding pharmacogenomic biomarkers – some measurable or identifiable segment of genetic information that can be used to direct the use of a drug.

THE FUTURE OF PHARMACOGENOMICS

Although pharmacogenomics has much promise and has made important strides in recent years, it's still in its early stages. Clinical trials are needed not only to identify links between genes and treatment outcomes but also to confirm initial findings, clarify the meaning of these associations and translate them into prescribing guidelines.



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WHAT ARE THE EFFECTS OF DRINKING ALCOHOL WHILE TAKING ANTIBIOTICS?

[Source: mayoclinic.com] Answer from James M. Steckelberg, M.D.

Antibiotics and alcohol can cause similar side effects, such as stomach upset, dizziness and drowsiness. Combining antibiotics and alcohol can increase these side effects.

A few antibiotics – such as Metronidazole (Flagyl), tinidazole (Tindamax) and trimethoprim-sulfamethoxazole (Bactrim, Septra) – should not be mixed with alcohol because this may result in a more severe reaction. Drinking any amount of alcohol with these medications can result in side effects such as flushing, headache, nausea and vomiting, and rapid heart rate.

Keep in mind that some cold medicines and mouthwashes also contain alcohol. So check the label and avoid such products while taking these antibiotics.

Keep in mind that some cold medicines and mouthwashes also contain alcohol. So check the label and avoid such products while taking these antibiotics.

Although alcohol does not reduce the effectiveness of most antibiotics, it can reduce your energy and delay how quickly you recover from illness. So, it's a good idea to avoid alcohol until you finish your antibiotics and are feeling better.

ADHD AFFECTS ADULTS, TOO

[Source: WebMD.com]

Attention Deficit Hyperactivity Disorder is not limited to children – 30% to 70% of kids with ADHD continue having symptoms when they grow up. In addition, people who were never diagnosed as kids may develop more obvious symptoms in adulthood, causing trouble on the job or in relationships. Many adults don't realize they have ADHD, leaving them mystified about why their goals seem to slip out of reach.



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Coping with the symptoms of adult ADHD can be frustrating in itself. At the same time, many adults with ADHD struggle with depression, anxiety, or obsessive compulsive disorder. They're also more likely to smoke or abuse drugs. People with ADHD can limit these problems by seeking proper treatment.

PURE POWDERED CAFFEINE A SERIOUS HEALTH RISK: FDA

[Source: [WebMD.com News from Heath Day](#)]

Pure powdered caffeine poses a serious health risk and is known to have caused the death of two teens in 2014, the U.S. Food and Drug Administration says.

One teaspoon of pure powdered caffeine contains the same amount of caffeine as in about 28 cups of coffee. Use of this product can cause health problems such as rapid or erratic heartbeat, seizures, vomiting, diarrhea, disorientation and stupor, and even result in death.

The risk from these products is especially high among people with pre-existing health problems.

Due to the threat posed by pure powdered caffeine, the FDA sent warning letters to five distributors of the product.

The difference between a safe amount and toxic dose of caffeine in these products is very small, and safe amounts of the products can be nearly impossible to measure accurately with common kitchen measuring tools such as teaspoons, according to the FDA.

It said it will monitor sales of pure powdered caffeine and take action if it discovers any violations. Possible enforcement measures include seizure of the product or an injunction to stop a company from making or selling the product.

NEW NIH-FUNDED STUDY SHOWS POSSIBLE LINK BETWEEN e-CIGARETTES AND INITIATION OF TOBACCO USE

[Source: [drugabuse.gov](#)]

Students who have used electronic cigarettes by the time they start ninth grade are more likely than others to start smoking traditional cigarettes and other combustible tobacco products within the next year, according to a new study funded by the National Institute of Health (NIH). E-cigarettes deliver nicotine to the lungs by heating a *liquid solution* that contains nicotine and other chemicals to produce an aerosol that the user inhales, a process often called "vaping."

[See video by [Dr. Nora Volkow](#) discusses study findings.]



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RESEARCHING MARIJUANA for THERAPEUTIC PURPOSES: THE POTENTIAL PROMISE of CANNABIDIOL (CBD)

[Source: www.drugabuse.gov]

July 20, 2015

Nora D. Volkow, Director- NIDA

The chemical in marijuana that causes the high (and many of its other effects) is *delta-9 tetrahydrocannabinol*, or THC. But there are over 100 other cannabinoid chemicals in the plant; Cannabidiol (CBD), for example, does not make people high and is not intoxicating. And, there is reason to believe it may have a range of uses in medicine, including in the treatment of seizures and other neurological disorders. In the impassioned, often emotional debates these days over medical marijuana, CBD is often cited as one of the main reasons restrictions on marijuana should be loosened.

Although CBD first rose to public prominence two years ago as a result of a CNN piece on medical marijuana, CBD has been considered as a potential therapeutic agent since the 1970s, when its anti-seizure properties were first examined in animal studies. A few very small randomized clinical trials were also conducted in adults with epilepsy, some showing positive results. But what has generated the renewed interest and excitement is the anecdotal reports that some children with otherwise untreatable severe epilepsies respond well to CBD extracts and oils. A follow up to the CNN piece depicted the struggles of parents of children with a seizure condition called *Dravet syndrome*, who moved their families to Colorado in order to get CBD-rich marijuana legally. Several drug companies have recently developed CBD-based medications, and one of these, called *Epidiolex*, is now being tested in clinical trials. Epidiolex was developed by GW Pharmaceuticals and has been given to more than 400 children under the FDA's expanded access ("compassionate use") program.



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While the existing data show promise, it is still too soon to tell whether and for whom CBD will be effective. Like most medical treatments, it doesn't seem to work for everyone. Much more research needs to be done, but it should be done quickly.

Parents can't wait – their children are growing; their children's brains are actively developing; and the repeated seizures may be damaging this growth. Parents currently must navigate states' medical marijuana laws or defy the law to obtain CBD extracts – which, in the current unregulated market, may be of questionable quality and content.

In short, CBD appears to be a safe drug with no addictive effects, and the preliminary data suggest that it may have therapeutic value for a number of medical conditions. Addressing barriers that slow clinical research with CBD would accelerate progress. NIDA (National Institute on Drug Abuse) will do what they can to address such barriers and expedite the study of this potentially valuable compound, as well as other components of the marijuana plant.

ACETYL FENTANYL

[Source: deadiversion.usdoj.gov]

Acetyl fentanyl, similar to the Schedule II opioid Fentanyl, is a potent opioid analgesic. Recently, it has been linked to a number of overdose deaths in the United States.

Fentanyl-like substances, similar to other opioid analgesics, produce a variety of pharmacological effects including alteration in mood, euphoria, drowsiness, respiratory depression, suppression of cough reflex, constriction of pupils, and impaired gastrointestinal motility.

Acetyl fentanyl has not been approved for medical use in the United States and there are no published studies on safety for human use. Acetyl fentanyl is being mixed into street drugs that are marketed as heroin.



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According to DEA's STARLiMS and National Forensic Laboratory Information System (NFLIS), federal, state and local forensic laboratories reported 10 exhibits identified as acetyl fentanyl in 2013 and 40 exhibits in 2014. Lorain County Crime/Drug Lab identified 7 exhibits of acetyl fentanyl between January-July of 2015.

Currently, DEA is aware of at least 52 confirmed fatalities involving acetyl fentanyl in the United States in 2013-2015.

Acetyl fentanyl is a Schedule I substance under the Federal Controlled Substances Act (CSA).

CAN YOU DRINK TOO MUCH WATER?

[Source: WebMD.com] by Mary Jo DiLonardo; reviewed by Michael W. Smith, MD

You've heard it a million times. When it's hot outside or you're exercising, drink lots of water. It's how your body stays hydrated.

But can there be too much of a good thing? In rare cases, drinking an extreme amount in a short time can be dangerous. It can cause the *level of salt, or sodium*, in your blood to drop too low. That's a condition called *hyponatremia*. It's very serious, and can be fatal. You may hear it called *water intoxication*.

According to Sharon Bergquist, MD, an assistant professor of medicine at Emory University School of Medicine in Atlanta, "these are very isolated cases, and are extremely rare.

WHAT IS WATER INTOXICATION?

If you drink a bottle of water here and there when you exercise or when you're hot, you'll be fine. Where you run into problems is drinking way too much too fast. "Young, healthy people don't normally [get hyponatremia] unless they drink liters and liters of water at once, because your kidneys can only [expel] about half a liter at most an hour," says Chris McStay, MD, an emergency medicine doctor at the University of Colorado School of Medicine. "You're drinking more than your kidneys can pee out."

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The issue boils down to sodium levels. One of sodium's jobs is to balance the fluids in and around your cells. Drinking too much water causes an imbalance, and the liquid moves from your blood to inside your cells, making them swell. Swelling inside the brain is serious and requires immediate treatment.

Sometimes babies can have issues. Their bodies are so tiny that they can't handle lots of water. That's why doctors say infants should drink only milk or formula.

SYMPTOMS AND TREATMENT

The warning signs of hyponatremia look a lot like the symptoms of heatstroke and exhaustion. You might be hot, have a headache, and just feel crummy. Other early symptoms can include diarrhea, nausea, and vomiting.

Sometimes, it helps to have sports drinks instead of plain water. Sports drinks have sodium and other electrolytes. But too much liquid of any kind too fast can cause issues.

The dose makes the poison. Everything is toxic at the right concentration – even water.

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