Good afternoon and thanks for joining us I'm Judy Simpson. Caffeine is the world's most popular front hood separating fact from fiction about caffeine is often difficult. So this afternoon are we're going to spot like caffeine and answer some questions like is it addictive? That and will also explore the effects of caffeine on teenagers and young adults particularly in the form of so called energy drinks. To find out more I'm joined by two guests Ellen Albertson is a registered dietitian with the Vermont dietetic association and Gail Finkelstein is if poison prevention educator with fletcher Allen healthcare and the Northern New England poison center. Thank you so much for being with us both of you. We're going to start out with a slide that you have provided for us that asks the question what to all of these products have in common. As you can see their products include non-sleep aid energy drinks coffee and the one thing they all have in common Gail is?

Gail.: Caffeine.

Judy.: Let's focus on the so called energy drinks. What are some of the ingredients that are commonly found in these drinks and why are they a health concern?

Ellen.: I think the biggest issue with ease energy drinks is that not only do they contain large amounts of caffeine. Caffeine ranges from 15 MG to as much as 500 mg but they also contain a lot of other ingredients such as birds various kinds of things called amino acids and the real issue with these drinks is that they are not regulated by the government. You walk into the store and purchases so to the maximum amount of caffeine in that soda can be 71 MG. So does as you know don't contain any kinds of herbs so the problem with these is that they can put in as much caffeine as they want the manufacturers. They can also make functional structural claims so they can say things like eight
enhances mental alertness gives you more energy because they're being marketed as a dietary supplement. There's also a lot of concern that a lot of the various herbs and ingredients could be dangerous. The substances in these drinks have not been tested. That could be interactions with drugs that people are taking medications that people are taking as well as interactions with the herbs and caffeine that's in the products.

Judy.: When you talk about caffeine how much caffeine is in a regular cup of coffee vs. how much is in one of these drinks?

Ellen.: Caffeine in coffee actually varies depending on how you make it but usually ranges from 50 to 150 mg. I think people have a sense when adults are drinking coffee it's a daily ritual you know how much you're consuming. The big issue with these drinks is that kids particularly teenagers are drinking them and striking them like it's a soda you can get a lot of caffeine extremely rapidly so something like this little energy drink here contains as much caffeine as a cup of coffee and you're getting all of that caffeine instantaneously by chugging this little thing vs. sipping a cup of coffee.

Judy.: Who if anyone should be limiting caffeine intake?

Gail.: Everyone should be limiting their caffeine intake home but especially people who have heart problems. People who may have been diagnosed with anxiety or bipolar disorder. If you're prone to seizures if you're on medication for ADHD like Ritalin and dad are all you should be very careful to not take caffeine because it could cause over stimulation. Also if you're participating in activity has that will increase your heart rate white plains for it could be very dangerous because we get a lot of calls at the poison center where you have someone who just came from a basketball game and now their heart is elevated from just playing basketball and they go to a convenience store on the way home and takes one or two red bull's and has to go to the emergency department for 3 hours because they're having irregular heartbeat.

Judy.: No kidding.

Gail.: And this is a normal healthy teenager so it can affect pretty much anybody so yes you have to be very cautious.

Judy.: Let's talk a little bit about how the caffeine content in these products compare?
Gail.: First we have coke in a normal Coca-Cola we have about 35 mg. Mown do is a little bit more about 54.

Judy.: Once again these are all regulated.

Gail.: These are regulated they can go no more than 71 MG in a container. The red bull is 76 MG a monster is 160 which jumps up a little bit. Then you have no doze which you can buy over the counter and in these each tablet is about 200 mg. But with a node owes it actually does have a label and it tells you how to dose whereas energy drink that has up to 500 mg and again no labeling and no warning on how to dose.

Judy.: We should mention that these are pretty hot Sellers especially among young people. It’s not just having one red bull or just one monster it's several.

Ellen.: Right and I think a big issue of these products is that they've been marketed in a very sexy way. Their market really is the teenage boy so these are drunk. Women drink them too but the majority 65% are male they're largely teenagers and their heavily marketed. I was just watching a diving competition last night on television where it was sponsored by red bull. And monster certainly sponsors a lot of ski type sports so these things are heavily marketed. Kids in treating them because the school and fun and they have absolutely no idea the impact. They know it's going to impact them but they're drinking a lot of it and that's really the danger that any kid a 10 year old can walk into a store and purchase this.

Judy.: So what are the physical or psychological symptoms of consuming too much caffeine?

Gail.: Most common and dangerous than worry about is increased heart rate increase of blood pressure irregular heart rhythms. But you can also get headaches nausea and vomiting tremors it can actually induce a seizure. But a lot of different symptoms and if you do get symptoms like that you have to be very cautious. And if you do you should probably call the poison center to get advice on how to treat.

Judy.: But spree scary for parents you don't know how many of these that your kids had and they're sold in every convenience store.

Gail.: They are and like I said overseeing of ways and center and what we seen Nationwide is that we get calls. The number one colleague at is the age group of 13 to 19 year olds. The 13 a 19 year old boy. But we do actually get a lot of
calls from six and under of parents calling for younger child getting into a drink that's been left on the counter and then they consume an. It is a huge problem and again the problem with the increase in heart rate and irregular rhythms can be a problem.

Ellen.: Also a problem because these are marketed in convenience stores mixes sports drinks. There is a big difference between a sports drink and an energy drink. The sports drinks are manufactured to help you rehydrate a small amount of sugar which can help with a rehydrate shun can help keep your energy up wall you're in the sporting competition. The problem is if you have an athlete who has gone out as Gail was saying has been a part of sporting event is already dehydrating they chug one of these things it actually has a direct effect it's going to decrease the hydration so that can be very dangerous from that perspective as well. And the large amount of sugar that's in the bridges well makes it very difficult to rehydrate. If people are taking this because they're thirsty it's not going to do what you want to do in terms of hydration.

Judy.: It actually has the opposite effect.

Ellen.: Exactly.

Judy.: Tell me about sugar content. I know you brought a poster that shows the different drinks and how much are they contain which is really surprising.

Ellen.: Yes this is very graphic it shows it nicely in terms of sugar cube. So you can see how much sugar is in this first drink is 200 calories of sugar. The recommendation of daily sugar intake it varies between 100 calories and 300 calories depending on how much you can drink you can consume a normal day. So you can see very quickly that you're getting in just one can your maximum amount of sugar that you are to consume in a day. Sugar is problematic. Small amounts to have some discretionary calories is not a big deal to have 100 150 calories of sugar throughout the day but when you're talking about consuming a few of these and you're really quickly going to be in danger of obesity adding pounds. There's also a real problem with sugar because what happens with the simple sugars. You can see the regular table sugar is what's called a simple sugar. It gets into your bloodstream you might get an initial rush of energy but what happens very quickly is your body secretes insulin which is the hormone that gets the sugar into your cells and then your blood sugar very rapid the drops. See get this quick rise in blood sugar maybe a little rise in energy particularly because the caffeine but then you get a big drop a later so this
feeling of euphoria that the drinks create is very quickly changes into more of a fatigue and depression as you come down off caffeine in sugar.

Judy.: Which means you probably want to have another one.

Ellen.: Exactly and that's where the addictive nature of these drinks comes in. So you're getting an addiction because caffeine is an addictive drug. If you have been addicted to caffeine and you go about it for a day you'll get headaches. It's definitely physiologically addictive on top of that you're also interacting with what's called the dopamine pathway. Which is the reward pathway which is where drugs generally affect people. You getting this great feeling of euphoria as you mentioned before and then when you come down you want another one.

Judy.: Talk to me about what this does. We talk about athletic events and these products being marketed during athletic events. What that does psychologically you've studied as far as these products and the performance?

Ellen.: What would happen is a small amount of caffeine definitely can be useful in terms of performing better when you're in an athletic event. I should mention that caffeine is banned in terms of Olympic sports. It's actually a drug you're not allowed to use for performance enhancement. So what might happen let's say you're doing a sport like snowboarding what these drinks do is they actually increase risky behavior so you might get the sense that specially if your teenage kid you get the sense of euphoria you are not going to act you not going to be as cautious as you would be without it so it might make you feel more energized but that can actually lead to some risky type behaviors particularly if you're doing a sport that's dangerous such as skiing snowboarding maybe mountain biking. It can certainly be dangerous in that perspective.

Judy.: Gail, talk a little bit about mixing some of these products with alcohol because I know that's also popular among younger people.

Gail.: It's very very popular and the danger of that is you take something like a red bull and you mix it with vodka or your beer it can lead to risky behavior. What we're finding is that people who consume alcohol with energy drinks are three times more likely to binge thank and binge drinking for woman to consume more than four beverages in a sitting and for male it's five. Again that would lead two people leaving a bar or party more intoxicated then they really feel they are. The problem is it gives them a false sense of security. They think that they are less drunk and they will consume more but even though their blood alcohol level still rising they don't feel that affect from the
beer that they are consuming or the vodka or whatever else they're taking because as being masked by the caffeine. In reality there are increasing all the time and it can be very dangerous. They go and get in their car and their blood alcohol level could be pretty high. It's very very dangerous. And again the thing that Ellen address is with the dehydration both caffeine and alcohol are diuretics and they can cause dehydration. What happens is when you have dehydration it can cause the metabolism of alcohol slowdown so they could actually increase your alcohol toxicity much quicker.

Judy.: Wow that is pretty dangerous. Are there any kinds of withdrawal symptoms?

Gail.: There are you can get jitters you can get fatigued you can get headaches can actually cause depression.

Ellen.: If you're trying to get off caffeine you really want to do it slowly because it's so ubiquitous in our society and so many people are consuming it that we don't really think of it as a bad drug. But it does have very strong physiological addiction. So if you decide that you want to get off caffeine you want to do a really slowly. Certainly if you're drinking these drinks and you are doing it on a daily basis and you want to cut down you might want to cut down if you're having two or three cans to one can a day. If you're a coffee drinker you might want to drink your coffee half regular half decaffeinated. You might want to switch to tea and slowly been yourself off of it it's definitely not something you want to do cold Turkey.

Judy.: There are also other health concerns too we talked about calories and carbohydrates and you brought another slide along that takes a look at some of products and asks which has more carbohydrates in the form of sugar. You might think it's a big Mac or even a Krispy Kreme doughnut but the answer is?

Ellen.: The energy drink. The energy drink actually has 260 calories and 66 g of sugar. Almost the entire 260 calories is pure sugar. That's what these drinks are we're talking about 1/4 cup of sugar which is way more than you should be consuming in a day. There's actually some very interesting studies on teenagers that teenagers who consume a higher degree of sugar actually have a higher cholesterol level so the actual push to reduce sugar consumption actually came from the American heart association. Who is really trying to get people to think about sugar in terms of discretionary calories so you can have somewhere between 400 to 300 calories of sugar a day. So you are getting more than the amount of sugar you should be having. Teenagers are drinking about
20% of their diet is coming from sugar. The first product the energy drink is 260 calories mostly sugar and the Krispy Kreme is actually only 23 g quite a lot less sugar than the energy drink.

Judy.: That is unbelievable. Also a quick message on this. It says with Taurine it vitalizes body and mind. What is that?

Ellen.: Taurine is actually an amino acid and again because these products are not regulated by the FDA you can put that kind of claim there and there certainly is not the science to back that up. In addition we just don't know what both the short term and long-term effects of the czars and other types of supplements. What they're going to do your body particularly if you might be taking a medication. I hate to think of the child who has ADHD who is taking some kind of medication and then a drinking one of these on top of it.

Judy.: If a parent or someone who sees some signs or symptoms of caffeine overdose who should they call?

Gail.: They should call the poison center. The number to call is 1-(800)-222-1222.

Judy.: And Ellen for overall nutrition and health information the Vermont dietetic association has a web site?

Ellen.: Yes our web site is eatrightvt.org and you're welcome to visit us there we have lots of information. You can also contact us if you want to talk to a registered dietitian perhaps about your sugar consumption or your caffeine consumption. We're also just frankly if you want to know how to get more energy in my life by eating right.

Judy.: Thanks so much for joining us today. That's our program for today I'm Judy Simpson will see you again next time on across the fence.

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