Please stand by for realtime captions. >> We've tried to decrease the amount of people using tobacco products, cigarettes, now . There are a lot of antismoking advertisements. They've done bad historically but increasingly smarter campaigns are going on which emphasize health and show positive role models of people quitting. There are a lot of ways we can discourage use , having age restrictions, tobacco free laws, policies, you cannot smoke in restaurants and parks and offering a lot of easy to access treatment and supports for cessation to drive the numbers down. >> We are talking about tobacco products which have or products which have nicotine which is a naturally occurring alkaloid which triggers the release of various neural active hormones . People like the effect of CNS . It enhances consultation, alertness, goes right to the circuitry we have been learning about this week. You get the dopamine spike and it gets rewired so it surges in your desire to get it and it enters the CNS system rapidly after inhalation. It's rapid effect on CNS contributes to the reinforcement independents. It hopes to soothe . It hijacks circuitry and quickly becomes the answer to so many questions to a smoker's date. What do they do when they want to work, take a break, and everything revolves around the use of these things.

Nicotine and reinforcing sensory stimulus and associated are responsible for the compulsive use of tobacco. The method of administration modifies the addictive potential associated with use the compulsive use increases with rapid administration. The quicker you get it into the system, more reinforcing it is. So it's more reinforcing to smoke and tape. It gives you a quick hi and it propels the use forward . Nicotine which is the main 20 seconds after elation and gradually increases occupancy over minutes. Smoking one a cigarette leads to the significant occupancy of alpha for beta-2 containing the receptors for more than three hours. The initially written relatively rapid rate of rise of nicotine occurs within minutes. Once you start smoking, I'm sure there are smokers in the room, you learn how to control nicotine intake, intake of puffs, intensity of puffs to get what you are looking for. Half-life is two hours . to chelates in different tissues throughout the body during the day. It continues to be released from tissues for 6 to 8 hours after smoking ceases during sleep. It is metabolized in the liver. Major metabolite is cottony. It does cross the placenta and is found in breast milk as well. >> It undergoes a first pass metabolism. Oral bioavailability is about half. It is poorly absorbed from the stomach , well absorbed and small intestine, renal clearance accounts for 2% to 35% of total nicotine clearance. It's mostly through the liver. Nicotine obtained via tobacco reaches high initial concentration in all these areas. It is distributed to the brain and stored in the fat and muscle tissue. >> You can see more about the pharmacology here. It has an effect infallibly or can have a profound effect on the fetus. It crosses placenta freely and found in amniotic fluid and the umbilical cord of neonates and found in breast milk concentrations of parsley two times those . There are differences based on sex and race. Women metabolized mixing faster than men secondary to estrogen effect on the breakdown of it it even faster during pregnancy. Related to the different gene variants, African-Americans obtain on average 30% more nicotine per cigarette and they clear nicotine and can't mean more slowly than Caucasians. Chinese Americans show lower nicotine intake and slower metabolism. This is secondary to having a higher prevalence of alleles. This is a reason why there might be less

rates in lung cancer among Chinese-Americans than among African-Americans and Caucasians in some studies. >> There are a lot of ways we assess the use , you know, blood, salivary, plasma cotinine can be used. We use urine screening . That's pretty much people use. I think urine screen has fallen out of favor for a lot of reasons. Certainly urine screen based on work assessments or other reasons, I see a lot of parents starting to urine screen for nicotine , taping , as a way to motivate kids come if they do not use, set up rewards. Practitioners are doing yearly urine screens to see if they can pick up nicotine and other substances. The idea with urine screens or not to bust people but rather to see what they are using and potentially with parents motivated with a set of rewards by using them. There are a lot of interactions from tobacco smoke. It affects the form of kinetics or pharmacodynamic mechanisms. When smokers discontinue abruptly , doses of meds may need to be lowered to avoid toxicity. Drugs that may have a decreased effect due to induction of 1 A 2 by tobacco include these. We have a unit here in Westchester called the second chance unit were folks with chronic , serious mental illness are taken from state hospitals and they use or work on developing skills to get back out into the community. For a long time, the rewards on the unit were set up to be smoking breaks and cigarettes. But when smoking was no longer allowed in the hospital, they got rid of the smoking breaks and instead used caffeine so what happened is suddenly everyone had these reactions because they went from getting , they were having a lower level of antipsychotic due to the smoking to having more than caffeine might have the opposite effect and they also saw a lot of readmissions immediately after discharge because people started smoking again and it drove down antipsychotic medication levels and had symptoms that ended up back in. Talking about the pharmacologic actions, especially CNS, we mentioned early, it activates things, increases blood pressure, heart rate, cardiac output, causes muscle relaxation, high doses can release adrenal --I can never say that. Very high doses can result in slowing of heart rate. We know the psychoactive effects, if you ever smoked or know someone that smokes, it causes arousal and relaxation , enhances mood, attention, reaction time. It resulting relief of withdrawal symptoms. That's true for anything you use daily. As mentioned before, there's a lot of psychiatric comorbidities in those who are using tobacco products or nicotine products. 37% of those with a mental illness are smokers versus 20% of smokers who do not carry a mental illness. Those with schizophrenia, depression, or ADHD have a higher prevalence of cigarette smoking compared with the general population. The numbers are incredibly high in folks with serious mental illness such as schizophrenia, three fourths are smokers, and there's a lot of reason why this may be. There's the impact on relieving negative symptoms. It is also potentially driving down their medications , levels of medications, resulting in less side effect. Those with ADHD, about 40% of smokers associated with early initiation of regular cigarette smoking even after controlling for confounding variables listed there. Transdermal patches might improve the attentional symptoms of ADHD . >> If you wake up in the middle the night to use, that is problematic. Less than five minutes after waking might indicate severe in nicotine use and less than 30 is moderate . There are indications for treatment, when you might want to give replacement treatment or combination products , need for medications, applications per dose, and certainly as with almost other substances, you develop a tolerance over time. Question 1 to keep you on your toes, which of the

following is not a tobacco withdrawal symptom? >> It's distressing, not life-threatening like other substance we have talked about this week but it is a beast. If you've ever been a smoker, it is very uncomfortable. Acute withdrawal symptoms reach maximum intensity 24 to 48 hours after cessation and gradually diminish over weeks. It's pretty tough. There are a number of factors involved from CRF two different mechanisms . For everyone, it is pretty tough. A big fear is when I stop smoking, everyone wants sour patch kids and chocolate as soon as they stop and to any degree, you can help them anticipate that and find other behaviors to help manage withdrawal. It certainly helps. The training system is involved and it's an old type of antidepressant that we have used, we is an effort difficult to treat depression states. But you know, as with a lot , we are learning about a lot of the genetics and inhibitions with cigarette smoking and you can see the interactions with the system here.

I think you've got it that tobacco smoke has a lot of contaminants that are volatile and potentially toxic. The tar in the cigarettes contains many carcinogens . For women, it lowers levels of estrogen, earlier menopause, increased risk of osteoporosis, skin changes, teeth coloring, enhanced facial skin wrinkling. Why is it so hard to quit? Some say it is harder than heroin and cocaine in her some data to support that. Is addictive. Withdrawal is brutal. Not everyone knows how to access treatment , and use it properly, and we are not good at prescribing effective treatments as clinicians either. The consequence is utilization of treatment is poor. In terms of asking questions your patients about use , never apologized. These are questions I ask everyone, you vape, how much, what kinds, and certainly, I mean, you could give your name to get more info but we certainly want all of you to figure out how to help your folks quit together. Part of addiction treatment is running experience with people, especially if they are doubtful of their ability to quit or not motivated or they think they are not addicted. Any of the strategies to see what they are up for as he what motivates them to saving money or trying free treatments or quitting for a week or six hours or a day to see what it is like and there are good resources. Hopefully you will all be able to do this treatment in your office setting. There are quit lines , free nicotine replacement treatment available for a lot of folks, so there are a lot of good options out there. There's the nicotine replacement treatment, gum, lodges's, sprays, and primarily the use of drugs in combination for the best outcomes plus counseling plus medications . Question 2, which of the following is true of nicotine replacement therapies? >> The Lancer answer is C. We will all be prepared on how to do this now. Nicotine medications, use high enough dose, start with four milligrams, 21 milligram patches , scheduled better than PRN, used for long enough time., And these days we say sometimes for months , sometimes longer, depending on the severity. Certainly you can combine with Wellbutrin or can be combined with each other. For severe use, put on the patch. Try to get off the gum and stand the patch for about a month. Go to the lower doses. Have almost no contraindications come have no drug drug interactions and their safe enough to be over-the-counter they are over-the-counter. In the digital to the patina gum, there's a spray which was approved recently. They say why not just vape but there's some more study real-world and efficacy trials , it contained a tiny amount of ethanol with some odd side effects but that's another tool in the arsenal. So the best evidence is for using patch plus a spray

or patch plus Wellbutrin. What we usually do is we set a quick date where people say they will stop and on quickly, put the patch on in the morning and then take the gum or lozenge or the spray . Most people will take the patch off, and you typically do it for about a month and try to use less of the immediate release product during the day and at the end of the month, you will put on the 40 milligram , next month it is a seven milligram, and you try to manage the last month just on sprayer gum and taper off . Most people take off patch before bedtime. That's especially after a week or so. About a week before the quit date, you start with either of these two medications. On the quit date, you can taper down the cigarettes or keep them and put the patch and gum and throw away the cigarette . Certainly giving medication plus getting replacement, we will talk about that in the second. I the FDA in terms of some concerns about the no psychiatric adverse effects of Wellbutrin , they approved removal of the boxed warning regarding serious neuropsychiatric affects . To summarize, all tobacco users should be opportunity try to stop. Counseling plus medications equals the best treatment plan. And the best thing to do is to make sure they are using the medications appropriately , some for as long as six months to make sure it works better and, starting with higher patch and gum doses, decreasing slowly over time and certainly using the medications often starting than the week before the quit date. I often offer a menu of options. I say there's a ton of ways to quit. Women are less likely to be successful quitting than men. There are different theories about why that may be. Advantages over bupropion and nicotine replacement is greater for women than men. Offering commendation treatment seems to be the best although it's not clear that adding them together is necessarily , it could improve it potentially but that's a lot of meds to offer someone but it's something to keep in mind. If I decide between the two , if someone has depression, one is that antidepressant. There are different formulations and doses. You can use them both together as well. People often stop the meds somewhere between four months and eight months of sustained recovery although it is sometimes a little unclear for any given individual when they might stop. If they have no current depression and benefit , they often keep it on longer term. We mentioned a couple of times some risk during pregnancy and you can see some consequences there. They are motivated to quit because of the consequences. They want to use counseling. But nicotine replacement are acceptable second line options . Limited information is available regarding the safety of veranda clean. For adolescents, unfortunately, there's not a lot of evidence about the use of nicotine replacement or the medication to help people stop during adolescence and that is a concern because we are in this epidemic. As we mentioned, we were high-fiving each other about driving down nicotine use in adolescence, especially cigarettes. Starting in 2018, associated with a hospital for special surgery and they always you do urine screens for nicotine because they are worried about its impact on own healing so they are actually the pretty much only people in the hospital screening adolescence for nicotine . There were none in 2017 but by the time 2019 came around, they were starting to see 10% to 50% urine positive and slowly increasing . People argue it is a lot less toxic and problematic than tobacco and that may be true. We do not have it like cigarettes but it certainly has stuff that you probably would rather not have and I often get talks at different high schools around New York City and there are subtle to severe lung injuries that we are starting to see among E

cigarette smokers, certainly much more pronounced with long consequences from these as well. >> [Event has exceeded scheduled time. Captioner must proceed to next scheduled event. Disconnecting at 2:31 PM ET.] >> [event concluded] >> [Event Concluded]