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Smoking Cessation Therapies

### MEDICAL BREAKTHROUGHS - SMOKING CESSATION THERAPIES

You are listening to ReachMD, The Channel For Medical Professionals. Welcome to Medical Breakthroughs from The University of Pennsylvania Health System with your host, Northwestern University Internist, Dr. Lee Freedman.

The morbidities and health complications from smoking are certainly well established and even with social trends increasingly making the life of a smoker more difficult, many of our patients still can't kick the habit. Joining me today to discuss smoking cessation is Dr. Frank Leone, Pulmonologist and Director of the Comprehensive Smoking Treatment Programs at The University of Pennsylvania.

**DR. LEE FREEDMAN:**

Thanks so much for being with us Dr. Leone.

**DR. FRANK LEONE:**

Hey thanks Lee, it's a pleasure to be here.

**DR. LEE FREEDMAN:**

In thinking about smoking, I wonder if there are any answers as to why people start smoking and then why people when they know intellectually it is not good for them, continue to smoke?

**DR. FRANK LEONE:**

Sure that is a great question, one that is frequently asked. In general, starting smoking is a matter of young people trying to exert their sense of independence, express their ability to make their own independent decision making. So if you think about it in those terms, it turns out that smoking is probably one of the safest ways that young people can really, you know, show of their sort of adult decision-making capability. It is so much easier to just have a cigarette out with a friend behind the school or at a party than it is to experiment with alcohol or experiment with drugs or even to do things like get a piercing or get a tattoo (01:30) and so the problem with experimenting with cigarettes is that compared to many other substances of addiction, nicotine actually turns out to have a much higher addictive attention. That means is that out of 100 kids who experiment with cigarettes even casually, less than 1 cigarette per day within

a very short of period of time, they begin to show signs of withdrawal between the cigarettes. Well that sort of phenomenon doesn't happen as readily with other substances of addiction.

**DR. LEE FREEDMAN:**

Well the thing that pops in my mind is the person who tries to have a suicide gesture and chooses Tylenol thinking that it is the safest, but actually that can be very, very serious. The addictive qualities of nicotine really kick in promptly.

**DR. FRANK LEONE:**

They do, they kick in pretty early, in fact, within a month of casual use. Casual use is generally defined as less than 1 full cigarette per day. So within a month of casual use, about 25% of 11-year-olds start to show signs of addiction. Think about it, that is really within their first pack of cigarettes, they are already getting anxious and agitated and starting to think about opportunities for smoking, how they are going to sort of work the system in order to be able to get a cigarette.

**DR. LEE FREEDMAN:**

I don't know if there is any data on this, but with various social effort and less smoking social icons on TV, etc., are there fewer young people now starting to smoke than say 20 years ago?

**DR. FRANK LEONE:**

It depends on the demographic group that you are looking at **(03:00)**. So for example in total, the incidence of experimentation has gone down in younger kids, but by the time they become older kids, 16, 17, 18, they are starting to experiment again. So also within other demographic breakdowns. For example, males showed a decline in experimentation, while females up until a couple of years ago had shown an increase experimentation. So there is some social phenomenon at work that we are not entirely clear about that are taking some groups and pushing them to experiment while other groups are being protected.

**DR. LEE FREEDMAN:**

Are there any things being done by the tobacco companies that you feel may be luring some of these young people to experiment with cigarettes?

**DR. FRANK LEONE:**

You know from my point of view, when I see things on television or advertisements in magazines where for example the cigarette ads will frequently take the position that it is an adult decision to smoke. You shouldn't smoke if you are kid, but it is an adult decision to smoke. If you are an adult, you can choose to do so. It is a legal thing. In fact, when adults look at that, we think of that as a preventative message. In other words, we look at that and say aha! See that we are telling all the kids that they shouldn't smoke, but generally when young people look at that message actually see that as a reinforcing message. It is in fact, an adult decision to smoke and if what they are seeking is opportunity to express themselves as individuals what better decision to make to try and smoke even if they are below the legal age to buy cigarettes **(04:30)**. Ninety percent of smokers started earlier than the legal age to begin buying cigarettes. There are

very few smokers who started after the age of 21. Beginning smoking is very much a phenomenon of early childhood development.

**DR. LEE FREEDMAN:**

That is a very interesting point about that and I would imagine that people who are smokers and intellectually realize it is not good for them, is it the nicotine that keeps them addicted?

**DR. FRANK LEONE:**

Exactly right. So we all understand nicotine to be the substance of addiction inside of tobacco in all of its forms really. What we don't typically give it credit for is the power of its addictive potential. So for example, we have been taught in medical school and just through pop culture really that signs of addiction, severity of addiction is measured in terms of the drama associated with withdrawal. You know, if I am away from my substance for a while, I am going to start feeling sick or perhaps have seizures. Alcohol withdrawal for example is a medical emergency. Nicotine withdrawal is not. However, if you measure addictive potential in terms not of withdrawal, but instead of the ability of the substance to compel negative behaviors against the usual as well. It turns out that nicotine actually has the capability in animal models and in human models to compel nonproductive behaviors (06:00). Behaviors that they tell you, I don't want to be sick, I don't want to die, but I will quit, but just not right now. So nicotine creates compulsion to behave. Even if the person understands that continued smoking is actually no good for them.

**DR. LEE FREEDMAN:**

And so I imagine these animal models, there is something that is distasteful or harmful or unpleasant and the nicotine just is strong enough to compel the animals to go for the nicotine anyway?

**DR. FRANK LEONE:**

Absolutely, in animal models nicotine is just as effective at reinforcing the lever pushing behavior in mice as any other substance of addiction. So in other words despite the fact that nicotine does not cause euphoria has no noticeable cognitive or motor effects. There is some pleasurable or rewarding effect of the nicotine and so it teaches the animal to press the lever despite the fact that there is really no noticeable euphoric effect with nicotine. If you place a disincentive in front of the lever, an electric pad or heating pad or something along those lines where you create pain, the animal has to endure some level of pain in order to get to that lever. Animals will endure greater degrees of pain to get to the nicotine lever than they will for alcohol, heroin, etc. So in terms of the ability to compel that animal to withstand working would typically think of as a nonsurvival stimulus and an animal just puts up with it (07:30), deals with it because it has to. In fact, much higher percentage of animals addicted to nicotine will sustain lethal levels of electric shock in order to get through that lever.

**DR. LEE FREEDMAN:**

That is quite a strong, compelling substance?

**DR. FRANK LEONE:**

Isn't that amazing.

**DR. LEE FREEDMAN:**

If you have just tuned in, you are listening to Medical Breakthroughs from The University of Pennsylvania Health Systems. I am your host Dr. Lee Freedman and Dr. Frank Leone, Pulmonologist and Director of The Comprehensive Smoking Treatment Programs at The University of Pennsylvania is outlining for us some facts about smoking cessation.

Dr. Leone now we have got patients who have this very formidable opponent in their systems, how can we help them to get rid of this and get over their habit?

**DR. FRANK LEONE:**

Well the first thing we have to understand is that our approach to smoking cessation traditionally has been incorrect. I believe that our traditional approach to helping people stop smoking has assumed some deficit in knowledge some skill that is missing. Some element of motivation that is probably not big enough and so our approach has been just essentially increase the motivation levels. We talk to our patients and we say, hey you know smoking is no good for you. You have emphysema, you are on oxygen, the best thing you can do is stop smoking. You try and increase the motivation. You know we do it with a smile on our face and that is great and we say it in very positive encouraging ways, but really what we are stuck doing is encouraging that behavior. (09:00). If we understand nicotine addiction to be a function of manipulation and sort of hijacking of the survival systems in the brain. If we understand nicotine addiction to be a compulsion to behave. The threat of not allowing that compulsion to be resolved results in lot of fear, a lot of low-grade panic, agitation, anxiety. Smoker gets a little antsy, gets a little agitated.

**DR. LEE FREEDMAN:**

Sure.

**DR. FRANK LEONE:**

Those create significant barriers to behaving in ways that they would like to behave. I would like to not smoke, but I don't see how and so our job really has to be rather than assuming a deficit in motivation, our job has to be understand to sort of try and tease out what the emotional and sort of environmental barriers to cessation might be and offer support to overcome those barriers. So for example, the smoker says, really want to stop smoking, but I don't see how, I am little nervous. I don't know, I can't really see my life, it is the only thing I have that can help me deal with stress. Our job is to really say something to the effect of, I think you ought to be able to deal with stress. I think it is normal to want to feel comfortable, to want to feel normal, I just don't think you should be forced to use a cigarette in order to accomplish that (10:30). I have some tools, I have some medications that can help you maintain that sense of normalcy without exposing yourself to the toxic smoke in order to do that and that sort of approach starts to undermine or limit decrease the barriers to cessation. So we are essentially guiding our patients toward us rather than pushing them towards cessation.

**DR. LEE FREEDMAN:**

That is a wonderful way that you articulated that and to try to give them support with the anxiety and the other feelings that they are naturally going to have to deal with when they are trying to get away from this very potent addictive chemical.

**DR. FRANK LEONE:**

Absolutely.

**DR. LEE FREEDMAN:**

Leaving the medicines aside at this point, are there some very practical things in a doctor's office that we can do from a nonpharmacologic standpoint?

**DR. FRANK LEONE:**

Yeah that is a fantastic question. You know when I speak with physicians in the neighborhood about counseling smokers, just the sort of word counseling conjures up all kinds of images of you know, sitting around and trying to dig deep in to the psyche and deal with emotions. In fact, what tobacco use treatment counsel really is all about is an opportunity to have open, honest and I believe very interesting conversation with your patients and so if you acknowledge the fact that the idea of quitting is a little bit anxiety provoking and if you acknowledge, if you take some responsibility for essentially causing that anxiety at the moment. That opens up an opportunity for physicians (12:00) and patients to dialogue, develop a therapeutic relationship if you don't already have one and sort of start to get the ball going, what you can't do is feel like there is a recipe for counseling. Counseling is nothing more than just an opportunity to educate the patient with respect to your position, but you will allow the patient to educate you with respect to their same position at the same time.

**DR. LEE FREEDMAN:**

I want to thank Dr. Frank Leone, The Director of The Comprehensive Smoking Treatment Programs at The University of Pennsylvania.

You have been listening to Medical Breakthroughs from the University of Pennsylvania Health Systems on ReachMD, The Channel For Medical Professionals. To learn more about this or any other show, please visit us at [ReachMD.com](https://ReachMD.com) where you can also register and sign up for access to our on-demand features. Thank you for listening.

You are listening to ReachMD, The Channel For Medical Professionals. Welcome to the CDC Flu View Update provided by the Influenza Division of The Centers for Disease Control and Prevention. This week's featured speaker is Dr. Anthony Fiore, CDC Liaison to ACPI Influenza Vaccine Working Group.

Flu season is coming up soon and CDC is recommending that a record number of Americans get vaccinated against the flu. For this year, the number of people recommended to get the vaccine is 261.5 million, that is around 85% of the US population. (13:30) The increase in numbers is due to an expansion of the recommendations to include all children from 6 months up through 18 years of age. Influenza is a serious disease and places a large burden on children and families. In fact, influenza illness rates are highest in school-aged children and vaccinating them will help prevent them for getting sick and from having complications due to flu. Yearly flu vaccinations should begin in September or soon as vaccine is available and continue throughout the influenza season into December, January, and beyond. Getting vaccinated early is especially important for children younger than 9 years' old getting a flu vaccine for the first time. One final thing to consider is that vaccinating children and families with infants under 6 months or with elderly family members may help prevent illness in these loved ones who are high risk for severe influenza disease. We have a safe and effective vaccine that

can protect our children from illness and flu-related complications and we should make use of it. So protect yourself and protect your loved ones, get vaccinated.

You have been listening to the CDC Flu View update provided by the Influenza Division of the Centers for Disease Control and Prevention. For more details on this week's show or to download the segment, visit us at [ReachMD.com](http://ReachMD.com) and tour the CDC's flu view web site at [cdc.gov/flu](http://cdc.gov/flu).