

EFFECTS OF CIGARETTE SMOKE UPON CHILDREN AND YOUTH.

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The subject assigned me is an old one, one that has long since been laid aside for others more recent and interesting, yet, if we observe that the habit of cigarette smoking is constantly increasing among the boys, it should demand our attention to-day. Something should be done to stop it.

What is there about tobacco smoke so injurious to the young? Analyzing the smoke from the different varieties of tobacco, it is found to contain water in the form of vapor, free carbon in minute particles, ammonia compounds in a state of vapor, carbonic acid and carbonic oxide in a gaseous state, and nicotine, a complex substance which when analyzed, is found to contain a fluid alkaloid—nicotine proper, a volatile empyreumatic substance containing ammonia, and a bitter resinous extract. Numerous other substances are often produced, but those mentioned are always present, and to them can be traced the evil effects of smoking. These are more readily taken into the lungs when smoking cigars and cigarettes than when a pipe is used; as the stem of a pipe, if porous and clean, absorbs the nicotine as it passes through.

Dr. Richardson says that when tobacco is used, the blood becomes thinner and, in extreme cases, paler. Examined microscopically the red blood corpuscles are found fewer in number and to lie widely separated, the tendency to form into rouleaux being lost. The form is changed from the double concave and smooth border to an oval form with a crenated border indicating a change in the density of the plasma. The ammonias have the effect of dissolving the blood corpuscles, the absorption by the blood of the various poisons inhaled when smoking, lessens the oxygen-carrying

power, hence oxidation of the tissues is partially arrested and their disintegration retarded. The poisonous products are quickly eliminated through the lungs, kidneys and skin, and one day of abstinence from the use of tobacco is sufficient to restore the blood to its normal condition.

The influence upon the heart is that of a functional derangement producing irregularity of action, due to the poisonous effect of nicotine upon the nerves controlling its action. The symptoms are those of palpitation, dyspnea, and sometimes pain.

Upon the nervous system, the poison, nicotine, has a decided effect. It paralyzes the nerves controlling the muscles of the iris, and consequently the pupil becomes widely dilated. The symptoms produced are obscurity of vision, specks before the eyes, and sometimes deep-seated pain. Upon the exhausted brain it has a soothing effect; upon the fully nourished brain it acts as an irritant. In extreme cases the most pronounced effect is that, upon the cord, both the sensory and the motor nerves of which may be affected, as shown in external insensibility, convulsions, and paralysis. Death results from respiratory failure due to spasm of the chest muscles, or paralysis of the heart.

Through the sympathetic nervous system the secretions are disturbed, also the regulation of involuntary muscular contraction, as shown by the muscular spasm of the stomach and by the vomiting produced on the first attempt at smoking. The nerves controlling the secretions of the glands are affected in such a way as to cause oversecretion and if tobacco is excessively used secretions may become uncontrollable. In the majority of smokers the salivary glands are excited to oversecretion, and if the saliva is swallowed it conveys to the stomach the poisons, nicotine, and the bitter extract. These irritate the mucous membrane, and cause inflammation. Irregular secretion of the gastric juice follows, and often a

deficient amount is produced, causing dyspepsia and loss of appetite.

The muscular contraction of the stomach and intestines is increased. In moderate smokers this acts as an aperient; but if smoking is carried to excess the muscles may become paralyzed and constipation results. These disturbances being functional, the tissues quickly regain their normal condition when tobacco is not used.

Although the salivary secretion is increased, the mucous membrane of the tongue and throat becomes dry and irritable, due to the ammonia inhaled. The gums may become firm and contracted, or vascular and sore with a tendency to bleed. In the smoker's sore throat the mucous membrane is inflamed, the tonsils enlarged and soft, causing pain on swallowing.

Free carbon is deposited upon the teeth, discoloring them; but acting, it is thought, as an antiseptic and preservative. Inhaled into the lungs it acts as a mechanical irritant to the mucous membrane of the bronchial tubes, and if bronchitis be present it maintains an irritable state of the membrane and keeps up the cough. It cannot be said to cause directly any organic disease of the lungs; but the absorption by the blood of the various poisons inhaled causes a general enfeeblement of the system—the carbonic acid and oxide causing incomplete oxidation of the blood, the nicotine producing various nervous phenomena, and the ammonia compounds having a solvent power upon the blood corpuscles. Thus by lessening the bodily vigor the person is unable to withstand disease, and if he inherits weak lungs, may easily become a prey to the tubercular bacilli.

In conclusion I would say that upon the young tobacco has a decidedly injurious effect. If, as I have tried to show, tobacco produces functional disturbances of the principal organs of the body, the heart, stomach, lungs, etc., and that the system

is constantly striving to eliminate the poisons, then surely so much energy is wasted through all the years when so much is needed for growth and repair. With the blood incompletely oxidized, heart acting feebly, stomach refusing to digest properly, lungs, skin and kidneys overworked, the whole organism is in a state of disorder. What is the result? Dr. Richardson says, "Impairment of growth, premature manhood and physical degradation."

By all means prohibit the young from smoking. Already several states have passed laws prohibiting the manufacture and sale of cigarettes to minors. Anti-cigarette leagues are formed among the boys in some of our large cities with very encouraging results. Let the good work go on.

**DISCUSSION ON EFFECTS OF TOBACCO SMOKE
ON INFANTS AND YOUNG CHILDREN.**

Dr. Tanner: I want to compliment the last speaker inasmuch as she discriminated between the use and abuse of tobacco, not saying that tobacco should be put away altogether, but should be kept out of the sick room. It certainly is a bad place to have tobacco smoke where a child is lying sick with bronchitis; but I think very often in condemning the use of tobacco and whiskey, we fail to discriminate between the use and abuse of them. Now, I think, speaking for tobacco, that an occasional cigar, as I said yesterday, speaking on the subject of the hygiene of the physician himself, is all right if you take it in its proper place and time. A man that smokes twenty-five or thirty cigars a day is abusing his privilege; and on that same line I think that the use of liquor is subject to the same discrimination. I am a great lover of mince pie, and I think that mince pie made without a dash of brandy in it is not good; but a man who drinks a pint of brandy at a meal is guilty of abuse. Consequently I think that we should bear in mind the distinction between the use and abuse of these things.

Dr. Reynolds: I have smoked for many years. I learned to smoke in the army. I smoke from eight to twelve cigars a day, yet I want to own up it is one of the filthiest, meanest practices that I, or any other man was ever guilty of. I have been ashamed a thousand times when I was in the company of lady patients and obliged to stay there, to have to make an excuse to get out and take a few whiffs. I get nervous if I cannot get my cigar in such cases. Now the trouble is, it is a habit. And it is a habit that you form in your youth, which grows upon you and becomes second nature. I con-

demn it from beginning to end, and always have. But it reminds me of an incident. I once talked with an old sea captain who had gout. I said, "Captain, if you will leave off your indulgences, drinking and smoking, late suppers and all that, you will enjoy a great deal better health—you will live longer and won't have these attacks." He braced up in his rocking chair, with his toes as big as a pan of meat; his foot was paining him incessantly night and day, but he said, "Doctor, I would rather live a little broader and not quite so long." That is the trouble, when we get to living broad we cannot live so long. Whiskey will ruin a man, tobacco will make him good-natured and of *strong breath*; he may not live as long, but it is a kind of satisfaction after your day's work is over to sit down and take your Havana, brace yourself in an easy position and smoke. It is a night-cap to me. I have got so old now that I do not care so much about it, but I would have given thousands of dollars years ago if I had not learned that habit. There is no question that it is deleterious to youth and age both. Everybody that uses it understands that. All narcotics should be left severely alone. I never drank a pint of liquor in my life. A near example showed me the folly of drinking. There are many in this audience whose children will be cursed with an appetite for liquor if their fathers continue to imbibe. It grows upon them and they cannot see their condition. They believe that every other man is drunk but that they are all right themselves. The drunkest man in the crowd will go up and say, "Landlord, give me a little more. Those other fellows have had enough." That is the way it goes right along, and my experience has been that it ruins us all more or less, and I am sorry I ever learned to use tobacco. I would give anything if I had never learned this bad habit, and I advise all, old and young, to use it as sparingly as possible, if they have the habit, and otherwise to let all narcotics entirely alone.

Dr. Caldwell: I don't want all these gentlemen to go home and say: "That is just like women, they want to deprive us of all our comforts." We were not speaking of gentlemen but of children. When a gentleman calls to see me, I offer him a cigar, and I not only enjoy his society but the odor of his cigar.

Dr. Farnham: The object of these papers, I understand, is to urge the protection of the infant and young child; and every fiber of our being should thrill with sympathy for the totally unprotected babes and children, that are here not through any wish of their own, and their future prosperity should certainly not be hindered by the very people that have brought them into the world.