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**СВЯЗЬ ИСПОЛЬЗОВАНИЯ ЭЛЕКТРОННЫХ СИГАРЕТ И КАРИЕСА**  
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**THE LINK BETWEEN USING VAPES AND DENTAL DECAY**  
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**Резюме.** Использование электронных сигарет становится все более популярным как предполагаемая более здоровая альтернатива традиционному курению. Тем не менее, исследования показали, что вейпинг оказывает негативное влияние на здоровье полости рта и способствует развитию кариеса.

**Ключевые слова:** вейпинг, электронные сигареты, курение, кариес, заболевания ротовой полости.

**Resume.** The use of e-cigarettes is becoming increasingly popular as a supposed healthier alternative to traditional smoking. However, studies have shown that vaping has a negative impact on the oral health and contributes to the tooth decay.

**Keywords:** vaping, e-cigarettes, smoking, dental decay, oral diseases.

**Relevance.** Vaping has become a popular alternative to traditional smoking in recent years, and many people use e-cigarettes as a supposedly healthier and less harmful option. However, while vaping may be less harmful than smoking in some respects, it can still have a negative impact on oral health and even pave the way for tooth decay.

**Aim:** to reveal the impact of using electronic cigarettes on oral health and identify the correlation between electronic cigarette consumption and the development of caries.

**Objectives:**

1. To consider cases and researches dealing with changes in the oral cavity microbiome produced by e-cigarettes.

**Materials and methods.** Various methods and tools are used to determine the electronic cigarettes effect on teeth, including:

1. Clinical examination of the teeth: the dentist may examine the teeth to look for signs of caries, stomatitis and other oral diseases.

2. Dental X-rays: dental X-rays are used to detect caries and other dental diseases.

3. Measuring the acidity level in the oral cavity: some studies show that electronic cigarettes increase the acidity level in the oral cavity, leading to the tooth enamel demineralization. Measuring the acidity level in the mouth helps determine the e-cigarettes amount affect the mouth acidity.

4. Plaque Composition Analysis: plaque is analyzed to identify changes in its composition caused by the electronic cigarettes use.

However, it should be noted that these methods cannot give a complete picture of the electronic cigarettes effect on the dental health, and additional research may be required to obtain more accurate information.

**Results and their discussion.** One of the main ways in which vapors contribute to the tooth decay is the nicotine content. Nicotine is known to reduce saliva production, which causes dry mouth. Saliva plays a crucial role in safeguarding teeth and gums by washing away food particles and neutralizing acids that erode enamel. When the mouth is dry, these protective mechanisms are compromised, making teeth and gums more susceptible to decay and other dental issues. This leads to the accumulation of bacteria and plaque in the mouth, which eventually leads to the tooth decay and gum disease. Another way vaping contributes to the tooth decay is through the heat generated by e-cigarettes. Heat causes your teeth and gums to become more sensitive, making them more susceptible to damage and decay. Moreover, heat causes the release of toxic chemicals from e-liquid, further damaging teeth and gums and contributing to their decay over time. In addition, the flavors and chemicals contained in the vapors also contribute to the plaque formation and tooth decay.

Another factor to consider is the way vaping used. Unlike traditional cigarettes, usually smoked in one sitting, vapes are often used throughout the day, exposing the mouth to constant influence chemicals and flavors. Such prolonged damage increases the likelihood of developing caries and other oral health problems.

Studies show that e-cigarettes affect the oral cavity microbiome. For example, in 2018, researchers from the University of New York published an article in the journal "Science Advances". They focused on the use of electronic cigarettes leading to the oral cavity microbiome changes. The researchers discovered that e-cigarette users might increase the number of bacteria certain types causing inflammation. In addition, studies have also linked the e-cigarettes use with an increased risk of periodontitis, associated with gum disease and destruction of the tissues supporting teeth. Although the research works have not answered definitively yet the question how e-cigarettes affect the oral microbiome, some results indicate they may be detrimental to the oral health.

E-cigarettes contain some chemicals present in regular cigarettes, such as nicotine and acetaldehyde. These substances negatively affect microorganisms in the oral cavity, as they kill or weaken beneficial bacteria and give an advantage to the pathogenic microorganisms.

Recent surveys have also shown that e-cigarettes can change the bacteria composition in the oral cavity, including an increase in the certain bacteria number associated with the development of caries.

**Conclusions:** electronic cigarettes have a harmful effect on the oral health and their use leads to various problems, such as:

1. Dry mouth: use of e-cigarettes leads to the decrease in the saliva amount, leading to dry mouth. This contributes to the development of cavities, gum disease, halitosis, and other oral health problems.

2. Damage to the tooth enamel: nicotine and other chemicals found in e-cigarettes demineralize tooth enamel, leading to cavities.

3. Gum Disease: e-cigarette use increases your risk of developing gum disease such as gingivitis and periodontitis.

4. Bad breath: use of e-cigarettes leads to bad breath (halitosis), caused by a decrease in saliva and the oral diseases development.

5. Development of oral cancer: electronic cigarettes contain some of the same carcinogens as conventional cigarettes and may increase the risk of oral cancer.

6. Violation of the oral microbiome: e-cigarette use alters the oral microbiome composition, leading to the development of various oral health problems.

To avoid these problems, it is necessary to avoid using electronic cigarettes. It is also necessary to monitor regular oral hygiene, including brushing your teeth and regular visits to the dentist. In addition, the use of electronic cigarettes increases the risk of developing heart and lung diseases. It releases harmful substances into the air. This can increase your risk of developing respiratory and other diseases due to the fact that e-cigarettes contain nicotine, which is a carcinogenic substance, as well as other chemicals such as acetaldehyde, acetone, formaldehyde, etc.

In general, e-cigarettes use is not a safe alternative to traditional cigarettes and has harmful effects on the person's health and those around. Therefore, for smokers the doctor's advice is recommended. It should be figured out about possible methods of dealing with nicotine addiction and choosing the most appropriate path to achieve the goal of quitting smoking.

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