POSITION STATEMENT ON TOBACCO and ELECTRONIC CIGARETTES

INTRODUCTION

The International Society of Plastic and Aesthetic Nurses (ISPAN) advocates discouraging plastic and aesthetic patients from using all tobacco products and supports encouraging patients who smoke to participate in evidence-based smoking cessation programs and/or use regulated nicotine replacement therapy.

According to the Centers for Disease Control and Prevention (CDC), cigarette smoking is the leading cause of preventable disease and death in the United States, accounting for one of every five deaths and more than 480,000 deaths each year (2018a, 2018b, 2018c). Cigarette smoking harms nearly all body organs, causes numerous diseases, and reduces health quality (CDC, 2018c; Harrell, Simmons, Correa, Padhya, & Brandon, 2014). Although the number of adults who smoke has continued to decrease since 2005, almost 38 million Americans still smoke daily or on some days (CDC, 2018d). More than 16 million Americans live with a smoking-related disease (CDC, 2018a). The U.S. Surgeon General has concluded that the burden of death and disease from tobacco use in the United States is overwhelmingly caused by cigarettes and other combusted tobacco products (U. S. Department of Health and Human Services, 2014, p. 15). Mortality among smokers in the United States is three times higher than mortality among individuals who do not smoke and life expectancy for smokers is at least 10 years shorter than for nonsmokers (CDC, 2018b). Exposure to secondhand smoke among adults in the United States causes an estimated 41,000 deaths each year (CDC, 2018b).

The health-related effects of e-cigarettes are unknown (Taub & Matarasso, 2016). During the next decade, the consumption of e-cigarettes is likely to exceed the consumption of cigarettes (Taub & Matarasso, 2016; Harrell et al, 2014). In 2016, there were 500 brands and over 7,000 flavors of e-liquids and e-cigarette products on the market (Prochnow, 2017). As of May 2016, e-cigarettes are now regulated as tobacco products (Prochnow, 2017).

Evidence suggests e-cigarettes are safer than traditional cigarettes and are possibly as safe as other nicotine replacement products such as gum or lozenges because the tar is removed (Taub & Matarasso, 2016; Harrell et al, 2014). E-cigarettes do not contain tobacco. They use heat to vaporize a liquid-based solution containing nicotine into an aerosol mist. Unlike conventional cigarettes, e-cigarettes do not produce smoke, a
nicotine vapor is released into the air as the user exhales (Galloway, 2014).

The main ingredient in e-cigarettes is highly concentrated nicotine; however, there is wide variability in the amount of nicotine and cytotoxins contained in the solutions (Galloway, 2014). Likewise, labeling related to the amount of nicotine and other ingredients may be inconsistent and unreliable (Galloway, 2014; Harrell et al, 2014). Nicotine concentrations in e-cigarettes are generally between 0 mg and 18 mg of nicotine per 1 mL of base liquid (generally propylene glycol or glycerin, with other natural or artificial flavorings; Prochnow, 2017; Harrell et al, 2014). Cigarettes deliver significant amounts of nicotine to the bloodstream at a rapid rate, which may account for the highly addictive nature of cigarette smoking (Farsalinos et al, 2014). E-cigarettes deliver nicotine faster than lozenges or gum (Taub & Matarasso, 2016), but at a rate significantly lower than cigarettes. It takes 35 minutes for an e-cigarette to deliver the amount of nicotine delivered by a cigarette in five minutes (Farsalinos et al, 2014). Nicotine levels are ultimately dependent upon the individual’s smoking habits (Fracol et al., 2017).

Nicotine is highly addictive. When inhaled, nicotine increases heart rate and cardiac contractility, constricts central peripheral and coronary blood vessels, increases blood pressure, and causes endothelial dysfunction. In individuals with diabetes, nicotine can create insulin resistance. It has been linked to learning, memory, attention and behavioral problems in adolescents. Nicotine can cause preterm births and have negative long-term effects on fetal lung and brain development. There is no safe level of nicotine exposure for adolescents, children, pregnant women, or infants. Liquid nicotine poisoning can occur through ingestion, skin contact, eye contact, or absorption via mucous membranes (Prochnow, 2017).

Compared with secondhand smoke from cigarettes, secondhand vapor from e-cigarettes has a low level of carcinogens (Galloway, 2014); however, toxic chemical, heavy metals, carcinogens and other harmful products are present in secondhand vapor (Prochnow, 2017; Harrell et al, 2014). Secondhand e-cigarette vapor also contains high concentrations of ultrafine particles that can exacerbate respiratory conditions (Prochnow, 2017).

Smokeless tobacco is not a safe alternative to smoking. More than three of every 100 adults and seven men of every 100 adults uses smokeless tobacco (CDC, 2018e). Using smokeless tobacco can lead to a number of health problems, including nicotine addiction; cancer of the mouth, esophagus, and pancreas; early delivery and stillbirth when used during pregnancy; nicotine poisoning when ingested by children; and heart disease and stroke (CDC, 2018f). Smokeless tobacco may contain up to 28 cancer-causing chemicals (CDC, 2018e). The amount of cancer-causing chemicals varies by product. The higher the levels of these chemicals, the greater the risk for developing cancer (CDC, 2018f).
RATIONALE

Supporting healthy lifestyles and behaviors and encouraging smoking cessation is consistent with the mission of the ISPAN. Plastic and aesthetic nurses are in the position of using evidence-based practice to promote patient safety, healthy lifestyles and optimal patient outcomes.

The relationship between smoking and poor or delayed postoperative wound healing, wound dehiscence, wound infections, and scarring has been well established (Rinker, 2013; Coon, Tuffaha, Christensen, & Bonawitz, 2013; Taub & Matarasso, 2016). Cigarette smoke contains over 250 toxins known to impair wound healing. The components most frequently implicated include nicotine, carbon monoxide, hydrogen cyanide, and nitric oxide. These components work synergistically to impair wound healing by decreasing delivery of oxygen to the tissues, injuring epithelial tissue, reducing utilization of oxygen by the body, increasing the potential for clot formation, and preventing cellular repair (Rinker, 2013; Coon et al, 2013). Notably, with or without nicotine, e-cigarettes decrease subcutaneous blood flow resulting in decreased tissue oxygenation; therefore, the use of e-cigarettes may also lead to serious negative effects on wound healing (Fracol et al., 2017; Page, Hamnett, Wearn, Hardwicke, & Moiemen, 2016).

Wound healing is adversely affected by smoking; however, the ideal duration of smoking abstinence before elective surgical procedures is not known. The ideal duration of cessation before surgery appears to be a minimum of four weeks, with additional benefits occurring with cessation periods of six weeks or more (Rinker, 2013; Taub & Matarasso, 2016). It seems reasonable to advise plastic surgery candidates to cease e-cigarette use in a manner similar to what is advised with traditional nicotine inhalation compounds (Taub & Matarasso, 2016).

Patients may misrepresent their smoking status and their amount of compliance with smoking cessation programs or therapies. Implementing preoperative laboratory testing to assess and measure the amount of nicotine or its derivatives within the patient allows the surgeon to determine preoperatively whether the patient is smoking and to develop a personalized approach for managing surgery and achieving optimal outcomes in patients who use tobacco (Rinker, 2013; Coon et al, 2013).

Because of the harmful effects of smoking and smokeless tobacco, and the unknown health effects and growing number of individuals using e-cigarettes, the ISPAN recognizes the importance of addressing smoking, and the use of e-cigarettes and smokeless tobacco among plastic and aesthetic patients.

ISPAN RECOMMENDATIONS

The plastic and aesthetic registered nurse should
• Be familiar with the
  o effects of smoking on perioperative risk,
  o importance of smoking cessation, and
  o tools to help patients stop smoking or using other tobacco products (Rinker, 2013, p. 599).

• Advise patients and others not to smoke.
• Recommend that patients undergoing elective (non-emergent) plastic surgical procedures stop smoking and discontinue the use of products containing nicotine, including nicotine replacement therapy and e-cigarettes, for a minimum of one day to four weeks preoperatively and 5 days to 4 weeks postoperatively.
• Provide patient education about options available to assist with smoking cessation including
  o counseling and behavioral interventions,
  o nicotine replacement therapy (e.g., gum, lozenges, transdermal patch, nasal spray, inhaler, sublingual tablets), and
  o medications (e.g., bupropion, varenicline).
• Encourage patients to use a regulated nicotine replacement therapy to quit smoking (Galloway, 2014; Harrell, 2014).
• Ask the patient about and document all tobacco use, including e-cigarettes and smokeless tobacco (i.e., chewing tobacco, snuff, snus, and dissolvable forms of tobacco).
• Identify patients who smoke and document user status as “never,” “former,” or “active” users, and specify pack-years.
• Ask the patient about and document if there are any household smokers.
• Discuss the dangers of smoking with the patient and patient’s caregiver including the associated increased risk for skin necrosis, wound dehiscence, postoperative infections, and the potential for poor results with scarring.
• Question the patient about the presence of any comorbidities that could exacerbate the effects of smoking including chronic cough and chronic obstructive pulmonary disease.

Health care organizations may

• Consider preoperative testing for nicotine or its derivatives as a method for confirming patient compliance with smoking cessation before elective surgery to promote improved patient outcomes (Rinker, 2013; Coon et al, 2013).

REFERENCES


DISCLAIMER

These clinical practice guidelines and/or recommendations and/or other guidance published herein are provided by the International Society of Plastic and Aesthetic Nurses to assist practitioners in clinical decision-making. The information should not be relied upon as being complete and should not be considered inclusive of all proper treatments, methods of care, or as a statement of the standard of care. All guidelines and recommendations require periodic revision to ensure that clinicians utilize appropriate procedures, and that the materials encompass the recent critical review of literature and expert opinion. The reader must realize that clinical judgment may justify a course of action outside of the recommendations contained herein.

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