“Save a Life in 3 Minutes”

Tobacco Cessation for Dental Hygiene Care

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“Not since the polio vaccine has this nation had a better opportunity to make a significant impact in public health.”

David Satcher, MD, PhD, Former U.S. Surgeon General
About **42.1 million adults** use tobacco products.

The **leading cause of preventable death and disability** in the U.S.A., causing nearly 1 in every 5 deaths.

The **number one risk factor** for heart disease and stroke.

Leading preventable cause of illness and death responsible for **more than 480,000 premature deaths** each year, and costing more than **132.5 billion in healthcare bills** every year and resulting in more than 6 million years of potential life lost each year, with **50,000 adult nonsmokers** who die from exposure to secondhand smoke.

Nearly 90\% of all smokers start at or before age 18; another **700 children become regular smokers every day**, 1/3 of whom will die prematurely as a result.
Deaths Due to Cigarette Smoking

About 443,000 U.S. Deaths Attributable Each Year to Cigarette Smoking

- Lung Cancer: 128,900 (29%)
- Ischemic Heart Disease: 126,000 (28%)
- Chronic Obstructive Pulmonary Disease: 92,900 (21%)
- Other Diagnoses: 44,000 (10%)
- Other Cancers: 35,300 (8%)
- Stroke: 15,900 (4%)

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Tobacco Use in U.S.A.

- Smoking **kills more people** than alcohol, AIDS, car accidents, illegal drugs, murders, and suicides combined, with thousands more dying from spit tobacco use.
- Of the roughly **260,000 kids** who become new regular, daily smokers each year, almost a third will ultimately die from it.
- In addition, **smokers lose a decade of life** because of their smoking.
Preventable Causes of Death

![Graph showing preventable causes of death]

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By The Pack U.S.A. Costs (CDC)

- Smoking-caused health costs and productivity losses per pack sold in U.S.A. (low estimate): $18.20 per pack.
- Average retail price per pack in the U.S.A. (including sales tax): $5.98 per pack.
- And costs 6¢ to make!
Oral Cavity Risks

- Tobacco use responsible for about 75% of all oral cavity cancers - mouth, tongue, lips, throat, nose, larynx.
- Smokers have 6 times the risk for oral cancer as nonsmokers.
- Tobacco users have from 3-17 times as much laryngeal cancer as nonsmokers.
Smoking while pregnant linked to **cleft palate and cleft lip**.

Children who are exposed to secondhand cigarette smoke are more likely to develop **cavities in their primary teeth**.

High risk for **root canals** (70%).
Smoking is Damaging to Periodontal Health

- Smoking is a major risk factor for periodontitis and may be responsible for more than half of the periodontitis cases.
- Smokers are 4 times more likely than persons who never smoked to suffer from periodontal disease.
- Periodontal therapy less effective in smokers.
- Smokers more likely to have recurrence after treatment.
Cessation Facts

- About 30% of patients are current smokers.
- About 70% of smokers say they are “interested” in quitting.
- Only 10 - 20% plan to quit in the next month.
- About 46% of smokers try to quit in a given year.
- In the past, 90 - 95% of smokers quit on their own.
- Currently, 1/3 of smokers now use a medication.
- Overall, self-quitters have a success rate of 5 -10%.
- Half of all smokers eventually quit.

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Dental Practice Implications

- Only **half of smokers** report being asked about smoking by their **physician** in the past year.
- Only a **minority report** being advised to quit.
- There is substantial evidence that even **brief smoking cessation counseling** can be effective.
- Tobacco use status assessment, documentation and intervention by **RDH** and/or **DDS** would have a **huge impact** on cessation efforts.
Nicotine Dependence

- The **most powerful** of all addictions to overcome.

- Nicotine acts on nicotinic acetylcholine receptors in *both* the central nervous system and the peripheral nervous system resulting in a physical and biologic basis for **physical dependence** including:
  - Psychological dependence;
  - Habitual dependence.
Tobacco Cessation: Products

- Nicotine Nasal Inhaler: Prescription
- Nicotine Nasal Spray: Prescription
- Nicotine Patch: Available OTC
- Nicotine Gum: Available OTC
- Nicotine Lozenge and Soluble Nicotine Tablets (Microtabs): Available OTC
- Bupropion Oral Tablets: Prescription
- Chantix Oral Tablets: Prescription
These medications have all been approved by the FDA for tobacco cessation and have been shown to significantly improve abstinence rates by up to 50%.
Nicotine Replacement Therapy (NRT)

- Goal is to replace nicotine from cigarettes in order to reduce or eliminate physical withdrawal symptoms.
- Pharmacokinetic properties differ but none deliver nicotine to the circulation as fast as does inhaling cigarettes.
- Effectiveness of all are broadly similar.
- Few health interventions have such overwhelming evidence of effectiveness.

Note:
NRT helps reduce or prevent weight gain after smoking cessation provided they the right dose is used and for a sufficient time.
Plasma Nicotine Concentrations: Cigarettes versus NRT

**Cigarettes**
- 1 cigarette produces rapid surge of plasma nicotine
- ↑ by about 25 mg/ml in minutes; declines rapidly

**NRT**
- No form achieves plasma nicotine concentrations as high as those from smoking 20 cigarettes/day
- Does not reproduce immediate effect of smoking
Common adverse effects of Tobacco smoking

- Larynx cancer
- Oral cavity cancer
- Esophagus cancer
- Myocardial infarction
- Systemic atherosclerosis
- Bladder cancer

- Lung cancer
- Chronic bronchitis
- Emphysema
- Peptic ulcer
- Pancreas cancer

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Withdrawal From Nicotine…

- Withdrawal from nicotine can be **profoundly unpleasant**, coming on 2 to 3 hours after the last cigarette and peaking 2 to 3 days later. Symptoms include an intense craving for nicotine, coupled with any or all of the following: anxiety, depression, drowsiness or trouble sleeping, bad dreams and nightmares, feeling tense, restless or frustrated, headaches, increased appetite and weight gain, and problems concentrating.

- Thus there are **very few contraindications to NRT** as it delivers nicotine in a safe form instead of in a cigarette where you would get nicotine plus tar, carbon monoxide and over 4000 toxic chemicals, many known to be carcinogenic.
Nicotine Inhaler

- Available since 1998 as an Rx
- Each cartridge delivers 4 mg of nicotine over 80 inhalations with full dose absorbed in about 20 minutes
- Combines both pharmacologic and behavioral substitution
- Daily cost at $6.07
Nicotine Nasal Spray

- Available since 1996 as an Rx
- Each spray delivers 0.5 mg of nicotine
- Full dose absorbed in less than 5 minutes
- Minimum recommended treatment is 8 doses per day
- Daily cost at $3.40
Nicotine Patch

- Available since 1994
- OTC 1996
- 21 mg recommended for patients smoking 1 pack per day
- 14 mg for patients smoking 1/2 pack/day
- Full dose absorbed in about 2 hours
- Daily cost at $3.91
Nicotine Gum

- Available since 1984
- OTC 1995
- 2 mg recommended for patients smoking less than 1 pack per day
- 4 mg for patients smoking over 1 pack per day
- Full dose absorbed in about 20 minutes
- Daily cost at $5.81
Using nicotine gum may be contraindicated in those with temporomandibular disorders or extensive dental work.

The American Cancer Society recommends talking with a dentist or doctor first, to help avoid complications.

Chewing the gum too fast, having an improper bite or swallowing the nicotine can all lead to jaw pain and loosening of dental work.

This risk increases when using the gum beyond the three to six month recommended period.
Nicotine Lozenge

- Available since 2002 as an OTC
- 2 mg recommended for patients who smoke more than 30 minutes after waking; 4 mg for patients who smoke within 30 minutes of waking
- Full dose absorbed in about 20 minutes
- Daily cost at $4.98

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Soluble Nicotine Tablets (Microtabs)

- Are fast acting like nicotine gum, but are more discreet than other NRT and simpler to use but tastes unpleasant
- 2mg tablets in handy dispenser
- Can be combined with other NRT medications
- Can be costly…
Tips for Microtab Success

- Need to be taken more frequently as they deliver less nicotine and up to 80 mg can be taken per day.
- Avoid drinking coffee or fruit juice (which are acid) before and while taking the tablets, as these drinks reduce drug absorption.
- Do not chew or swallow the tablets, as this reduces their effectiveness; let the microtabs dissolve under the tongue.
- Do not stop treatment prematurely as this will decrease chances of success.
Nicotine Delivery Pros and Cons

- The nicotine patch is easy to use and gives widely tolerated, steady blood levels of nicotine but not as individually titrated in levels.
- The nicotine gum, lozenge, and microtabs can titrate to individual nicotine needs and at the same time all of them offer oral stimulation similar to smoking.
- However, only the nicotine gum and lozenge offers replacement for smoking.
All of the commercially available forms of NRT (gum, transdermal patch, nasal spray, inhaler and sublingual tablets/lozenges) can help people who make a quit attempt to increase their chances of successfully stopping smoking.

NRTs increase the rate of quitting by 50 to 70%, regardless of setting.

The effectiveness of NRT appears to be largely independent of the intensity of additional support provided to the individual.

Provision of more intense levels of support, although beneficial in facilitating the likelihood of quitting, is not essential to the success of NRT.
Daily Cost of NRT Treatments

Over time the cost of NRT is less expensive than the cost of cigarettes. NRT is generally used for a limited time, whereas cigarettes are typically consumed many years. Compare the price of the NRT products to the average price of $3.51 for a package of 20 cigarettes in South Carolina (lowest in the United States) and the $5.96 for a package of 20 cigarettes in Alaska.

<table>
<thead>
<tr>
<th>NRT Product</th>
<th>Average Daily Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nicotine Nasal Spray</td>
<td>$3.40</td>
</tr>
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<td>Nicotine Patches</td>
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Bupropion

- An **atypical antidepressant** with dopaminergic and noradrenergic activity
- First FDA approved **non-NRT**
- Can be used in **combination** with NRT
- Is effective in those with no current or past depressive symptoms
Bupropion

- Exact mechanism of action unknown
- Brand names: Wellbutrin or Zyban
- Dosing: 300 mg (150 mg initially)
- Begin therapy while still smoking
Bupropion

- Side effects: Dry mouth and insomnia
- Risk of seizure: approximately 1 in 1,000
  - Contraindicated for patients with seizure disorder or predisposing factors that increase seizure risk (head injury, active substance abuse)
Bupropion

- Significantly higher abstinence rates than placebo during treatment and at 6-, 12-month follow up
- Combination therapy (with step-down, 24-hour nicotine patch)
  - Approved indication
  - Provided slightly higher abstinence rates than bupropion alone
Varenicline

- **Brand name:** Chantix.
- Data showed that the odds of quitting successfully at the end of 12 weeks of treatment using 1 mg twice a day were 4 times greater than those taking placebo and 2 times greater than those taking bupropion.
Patients may continue for a further 12 weeks if they so wish.

The FDA does *not* recommend that it be used with any other stop-smoking drug.

Most common side effect was nausea.
“Smoking will no more be fun, as Chantix cuts off the usual thrill and the kick that nicotine induces in your brain. And withdrawal symptoms of quitting smoking won't be anymore a bitter pill to swallow, as it eases and soothes the symptoms.”
Varenicline

- Varenicline, the main ingredient of Chantix, behaves differently from the other quit smoking medicaments. It surprisingly operates in a way that is way similar to the working of nicotine.

- When a person smokes, nicotine goes straight to the brain and binds with the nicotine receptor cells, thereby activating the pleasure cells. It is an agonist and it acts just like nicotine, as it gets attached with high intensity to the a4ß2 neuronal nicotinic acetylcholine receptors when it is consumed.

- It gives the same feel good factor that nicotine gives. However, it blocks nicotine from binding with the receptors and prevents it from aggravating the cells further. It doesn't have any of the addictive features of nicotine.
Varenicline/Chantix- Important Note to Dental Professionals

- Product has a warning that patients who are attempting to quit smoking by taking Chantix should be observed by a physician for serious neuropsychiatric symptoms like changes in behavior, agitation, depressed mood, suicidal ideation and suicidal behavior.

- Thus, the dental team may want to have the drug prescribed and monitored by the patient’s physician.
Psychosocial Therapies

- Behavioral therapy is the only proven psychosocial treatment for smoking cessation.
- Usually administered in a group setting.
- Can also be conducted on an individual basis.
- Major disadvantage is limited availability and acceptability.

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Why Bother?

- Single most effective **step** to lengthen and improve patients’ lives.
- Quitting smoking has immediate and long-term **benefits** and is well worth the difficulty, both for patient and clinician.
The Benefits Of Quitting Smoking

- At 1 year excess **risk of coronary heart disease decreases** to half that of a smoker.
- At 5 years **stroke risk reduces** to that of people who have never smoked.
The Benefits Of Quitting Smoking

- At 10 years the **risk of lung cancer drops** to one-half that of continuing smokers.
- At 15 years the **risk of coronary heart disease is now similar** to that of people who have never smoked and the risk of death returns to nearly the level of people who have never smoked.
The Benefits Of Quitting Smoking

- Children in households will be less likely to become smokers once their parents quit.
- All family members will be exposed to less second-hand smoke.
- Former pack-a-day smokers save about $120-190 a month.
Protocols for the Dental Office

(From ADHA Past Files)
Protocols

**Step 1: Ask**

- Systemically ask every patient about tobacco use at every visit.
- Determine if patient is current, former, or never tobacco user.
- Determine what form of tobacco is used.
- Determine frequency of use.
- Document tobacco use status in the dental record.
Protocols

Step 2: Advise 1 min

- In a clear, strong, and personalized manner, urge every tobacco user to quit.
- Tobacco users who have failed in previous quit attempts should be told that most people make repeated quit attempts before they are successful.
- Employ the “teachable moment”: link oral findings with advice.
Step 3: Refer 1 min

- Determine if patient interested in quitting.
- For those interested in quitting provide information on:
  - Statewide or national quit lines, websites and local cessation programs.
- Use proactive referral if available:
  - Request written patient permission to fax their contact information to a cessation quit line or program. Inform the patient the cessation program staff will contact them.
- Document referral in dental record
**What are Quit Lines?**

- Tobacco Quit Lines are telephone-based tobacco cessation services available in most states that are often accessed through a toll-free number **1-800-QUIT-NOW**

- They provide callers with a number of services:
  - Individualized telephone counseling
  - Educational materials
  - Referrals to local programs
If the patient uses tobacco:

- “How many cigarettes per day do you smoke?”
- “How many cigars per day do you smoke?”
- “How many bowls of pipe tobacco do you use per day?”
- “Do others in your household use tobacco?”
Scripts

For the patient who never regularly used tobacco:

- “Congratulations, you have made a wise choice to protect your health.”
- “Congratulations, you have very good judgment.”
- “Congratulations on being a non-smoker.”
Scripts

For the patient who quit using tobacco:

- “Congratulations, you made a wise decision.”
- “Congratulations on quitting tobacco use. We have some good programs to help you remain tobacco-free. I can give you the contact information for the program.”
For the patient who currently uses tobacco:

- “Have you thought about quitting?”
- “I can help you even if you do not want to quit. Let me give you the phone number for the statewide quit line. You can receive free counseling on how to quit and remain tobacco-free.”
- “Quit lines have had proven success in helping people get through the difficult stages of quitting and most people prefer to use them.”
Scripts

For the patient who currently uses tobacco:

- "I know quitting smoking is very difficult. Even people who do not want to quit are successful. Sometimes it takes more than one try. I know you can do it. Let me refer you to the cessation quit line, they can help you quit."

- "I can’t see what tobacco is doing to your heart, lungs, brain and other organs, but I would like to show you some changes in your mouth."

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What to Ask and When

Does patient/client now use tobacco?

If YES: Is patient now willing to quit?
  - If YES: Provide appropriate referral to cessation.
  - If NO: Promote motivation to quit.

If NO: Did patient once use tobacco?
  - If YES: Prevent relapse
  - If NO: No intervention required. Encourage continued abstinence.
The efficacy of several tobacco cessation therapies is well established.

All proven treatments appear to be equally effective: quit rates are doubled.

Early evidence suggests allowing smokers to choose treatment produces better outcomes.
Conclusions

- Nicotine dependence is a **chronic condition**.
- Every patient who uses tobacco should be **offered** treatment.
- It is essential that clinicians and health care delivery systems institutionalize the consistent **identification**, documentation and treatment of every tobacco user.
- Studies show **brief** tobacco dependence treatment is effective.
- There is a strong **dose-response relationship** between the intensity of tobacco dependence counseling and its effectiveness.
- Numerous effective **pharmacotherapies** now exist to use.
General References To Consider

Tobacco Cessation Resources for Patients and Professionals Website:
www.dhed.net/Tobacco_Cessation.html

Centers for Disease Control and Prevention (CDC):
www.cdc.gov/tobacco/ or 1-800-QUIT-NOW

Cancer Information Service Website:

Web-based cessation programs:
www.smokefree.gov/ or www.quitnet.com
Thank you

Margaret

~ Margaret J. Fehrenbach, RDH, MS

Information provided on this program and associated sites are designed to support, not replace, the relationship that exists between a patient/site visitor and his/her existing physician/dentist.