



## CAP Lung Cancer Medical Writers' Circle

### It is Never Too Late to Quit Smoking -Lung Cancer Diagnosis Notwithstanding!

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It should no longer be controversial whether or not a smoker with lung cancer receives cessation treatment. **Quitting smoking after a diagnosis of lung cancer is crucial and beneficial.** Quitting smoking improves surgical and chemotherapy outcomes. In those with earlier stages of the disease, one study suggested it doubles survival <sup>(1)</sup>. At any stage, quitting smoking decreases the risk of death from non-lung cancer related causes. In addition, there is significant improvement in the quality of life.

It is imperative that health care providers address tobacco cessation, especially when cancer patients are diagnosed, yet very few do so. Smoking cessation programs and treatment options for patients who are smoking at the time of their diagnosis should be readily available, yet very few are. The common misconception is that it would be too stressful to quit at the time of diagnosis. The reality, however, is that it is the best time to quit because of improved response to cancer treatment, easier breathing, less fatigue, less pain, less chance of infection and perhaps most importantly, the effect of being able to take control at a time when the predominant feeling may be of that of a victim.

Tobacco use has long been identified as the leading preventable cause of illness and death. Smoking has been linked to 90% of cases of lung cancer in males and 78% in females. Most smokers identify tobacco as harmful and would prefer to stop smoking. Nearly 35 million people or 70% seriously attempt to quit smoking each year. However, more than 90% of smokers who try to quit without treatment assistance will fail, most relapsing within one week. There is no addiction more powerful - it is harder to control nicotine than heroin, cocaine or alcohol. It is a testament to that power of tobacco addiction that 19% of U.S. adults (about 44 million) are current smokers. Rather than condemnation at the time of a smoking related disease, smokers need and deserve credible cessation treatment. Research has shown that a combination of behavior and pharmacological treatments for nicotine addiction is effective in helping smokers quit.

Healthcare providers need to understand the importance of offering consistent treatment intervention to help smokers stop as well as also encourage smokers to at least try to stop. Smokers site a health professional's advice to quit as an important motivator for attempting to stop smoking. Smokers need to understand that it is possible to quit even if there is no desire to

do so and even when faced with serious health issues. **People who quit with the support of a program have a much better chance of success.**

The Clinical Practice Guideline for Treating Tobacco Use and Dependence published by the United States Department of Health and Human Services is considered the benchmark for cessation techniques and treatment delivery strategies. The updated 2008 Guideline reflects the scientific cessation literature (almost 9000 articles) published from 1975 to 2007. The “bottom line” recommendations are that no matter the level of addiction or desire to quit, anyone who smokes should be offered quit assistance and consider trying at least one or more of the effective cessation medication <sup>(2)</sup>.

Currently, the FDA-approved, first-line agents for smoking cessation include nicotine replacement therapy (NRT) products and non-nicotine medications. All of these medications were found to be effective first-line medications in the guideline’s meta-analyses. There is no question that the odds of a smoker quitting are increased by using a pharmacological treatment. The goal of cessation pharmacotherapy is to alleviate or diminish the symptoms of withdrawal. The more physically comfortable the smoker is, the more likely he or she will make a serious quit attempt and succeed in permanently quitting.

There are five nicotine replacement therapy (NRT) products on the market the United States. The nicotine gum first appeared in 1984 and the nicotine patch was made available in 1994. Between 1995 and 1996 both became available without prescription. This resulted in the largest increase in smoking cessation since the 1964 Surgeon General’s report on smoking. Two NRT products are still only attainable through prescription - the Nicotrol Nasal Spray, which appeared in 1996, and the Nicotrol Inhaler that appeared in 1998. The final NRT product to materialize, available without prescription, is the nicotine lozenge, which has been on the market since 2002.

Almost all researchers agree that nicotine is not a carcinogen. All of the NRT formulations are associated with slower onset and much lower nicotine levels than are cigarettes and, of course, they do not produce carbon monoxide, toxins and carcinogens. The safety and abuse records of NRT have been excellent. The choice of NRT should be individualized — based on preference, past experience, smoking dependence and habits. Most smokers under-dose themselves and do not use the NRT products long enough (three to six months of NRT treatment is recommended). It is important to try to equal the amount of nicotine typically obtained through daily smoking via NRT. With proper use, NRT products can double chance of success.

There are two non-nicotine medications available to tobacco users as well. Bupropion (Zyban), an atypical antidepressant, has been shown to double quit rates. It blocks the reuptake of dopamine and norepinephrine in the central nervous system, which modulates the dopamine reward pathway and reduces cravings for nicotine and symptoms of withdrawal. It is effective in those whether or not the symptoms are current or past depressive symptoms. Combining bupropion with NRT often increases success rates over Bupropion used alone.

The most recent non-nicotine medication, approved in 2006, is Varenicline (Chantix), a partial agonist selective for a specific nicotine receptor subtype. The drug’s efficacy is believed to be the result of a sustained, low-level agonist activity at the receptor site, combined with

competitive blockade of nicotine binding. The partial agonist activity modestly stimulates receptors, leading to increased dopamine levels that reduce nicotine withdrawal symptoms. By blocking the binding of nicotine to receptors in the central nervous system, Varenicline inhibits the surge of dopamine release that occurs immediately (seven to 10 seconds) following each inhalation of tobacco smoke. This effect may help prevent relapse by reducing or even eliminating the pleasure linked with smoking. Evidence suggests that using Varenicline can increase successful quitting three times more when compared to placebo.

Multiple combinations of medications have been shown to be effective. For the first time, the 2008 clinical practice guideline update assessed the relative effectiveness of cessation medications. These comparisons showed that two forms of pharmacotherapy, varenicline (Chantix) used alone and the combination of a long-term nicotine patch plus ad lib (i.e., as needed) nicotine nasal spray or gum, produced significantly higher long-term quit rates than did the patch by itself. This is “off label” use but now it is definitively medically sanctioned. Few health interventions have such overwhelming evidence of effectiveness as cessation medications. The seven first-line FDA approved therapies reliably increase long-term smoking abstinence rates. All approximately double the rate of cessation when compared to placebo. Yet they are woefully underutilized. Both providers and tobacco users need to understand the safety and efficacy of cessation medication use.

**Of course, cessation medications alone are not the whole picture. It is vital for healthcare providers to know that the efficacy of even brief tobacco dependence counseling has been well established and is also extremely cost-effective relative to other medical and disease-prevention interventions. With effective education, counseling and support (rather than condemnations and warnings about dangers of smoking), practitioners in all healthcare fields can provide an invaluable service. Helping someone overcome a nicotine addiction may be the most broad-reaching health care intervention a practitioner can achieve.**

It is crucial for smokers to know that even after long-term use and even with a smoking related disease such as lung cancer, quitting smoking results in major and immediate health benefits for men and women of all ages. Benefits apply to healthy people and to those already suffering from smoking-related disease. Smoking cessation represents the single most important step that smokers can take to enhance the length and quality of their lives, lung cancer diagnosis notwithstanding.

The Tobacco Cessation Program offered at Northwestern Memorial Hospital in Chicago has group sessions that meet hourly once a week for eight consecutive weeks. The highly successful program includes a comprehensive support group combined with individualized interventions. The foundation of the program is a strong focus on the behavioral approach to quitting smoking. Relapse prevention is provided to all clients as needed via a support group network. For more information see: <http://www.nmpg.com/integrative-medicine/cimw-tobacco-cessation>

- (1) Parsons, A. et al. [Influence of smoking cessation after diagnosis of early-stage lung cancer on prognosis: systematic review of observational studies with meta-analysis](#). British Medical Journal BMJ2010;340:b5569. Published online 21 January 2010.
- (2) Fiore MC, Jaen CR, Baker TB, et al. Treating tobacco use and dependence: 2008 update. Washington, DC: US Department of Health and Human Services, Public Health Service; 2008.