

## KEY FACTS ABOUT SMOKING

### NICOTINE ADDICTION AND CIGARETTE SMOKING: A GROWING GLOBAL HEALTH CHALLENGE

UPDATED April 10, 2007

#### FIGHTING THE URGE: CIGARETTE SMOKING AND PUBLIC HEALTH

Tobacco use is the single leading preventable cause of death in the United States.<sup>1</sup> In the U.S. alone, nearly 50 million people<sup>2,3</sup> smoke and more than 440,000 people<sup>1</sup> will die each year due to health consequences from smoking. Still, each day more than 4,000 young people<sup>1</sup> smoke their first cigarette and 70 percent of teenage smokers feel they need or are dependent on cigarettes.<sup>4</sup>

The health risks attributable to smoking are proven. The 2004 Surgeon General's Report, *The Health Consequences of Smoking*, states that smoking harms nearly every organ of the body, causing many diseases and reducing the overall health of smokers. Smokers are more likely to develop cancer, heart disease, stroke, respiratory disease and reproductive and immune system complications.<sup>1</sup>

When a smoker does have an illness, it often lasts longer and requires longer hospital stays than for nonsmokers, increasing healthcare costs and absence from work. The Centers for Disease Control and Prevention (CDC) estimates the cost of smoking to the U.S. economy is over \$157 billion each year.<sup>1</sup> Since the first Surgeon General's report on smoking was issued in 1964, cigarette smoking has caused approximately 12 million deaths and today more than 8.6 million people are seriously ill due to smoking.<sup>5</sup>

Smokers want to quit. In fact, over 70 percent of smokers want to quit, but less than five percent of those who try stay tobacco free for 3 to 12 months. Most smokers do not succeed in quitting on their first attempt.<sup>1</sup>

#### IT'S NEVER TOO LATE TO QUIT

Quitting smoking has immediate as well as long-term benefits, reducing the risk for diseases caused by smoking and improving the health of smokers in general. The CDC outlines the benefits to the now ex-smoker, after he or she smokes a last cigarette. Within:

- 20 minutes – heart rate drops.
- 12 hours – carbon monoxide level in the blood returns to normal.
- 2 weeks to 3 months – heart attack risk begins to drop and lung function improves.
- 1 year – risk of coronary heart disease is half that of someone who smokes.
- 10 years – risk of developing several types of cancer is decreased.
- 15 years – risk of coronary heart disease is the same as a nonsmoker.

Quitting smoking at any age reduces a person's risk of dying from a smoking-related illness.<sup>1</sup>

#### CURRENT THERAPIES ARE NOT EFFECTIVE IN TREATING ADDICTION

Nicotine is responsible for the psychoactive and addictive effects of smoking. Smoking a cigarette immediately releases nicotine into the blood, where it passes through the blood/brain barrier and enters the brain. Once in the brain, nicotine stimulates the release of neurotransmitters (such as dopamine) that generate positive sensations, such as pleasure, relaxation and appetite suppression. It is this release of neurotransmitters, especially dopamine, that is responsible for tobacco users' addiction to nicotine.<sup>6</sup>

Therapies to aid smoking cessation on the market today, including nicotine gum, patch, tablets and the prescription drug Zyban, only reduce withdrawal symptoms and the urge to smoke. Nicotine replacement therapies work by reducing and controlling the concentration of nicotine in the body but do nothing to stop the release of the neurotransmitters that cause the physical and psychoactive effects of smoking.<sup>7</sup> In addition, efficacy rates for all of these therapies are often close to or equal to that of placebo.<sup>8</sup>

Whether nicotine reaches the brain within ten seconds after inhaling smoke or with nicotine replacement therapies, according to the current standard of care, the underlying cause of addiction is not eliminated. The positive stimulus produced in the brain is still caused by the nicotine. The key to a successful smoking cessation program is to not only stop the urge to smoke, it must prevent relapse by preventing the initial addiction.

- <sup>1</sup> U.S. Department of Health and Human Services. The Health Consequences of Smoking: A Report of the Surgeon General. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2004.
- <sup>2</sup> Centers for Disease Control and Prevention. Cigarette Smoking Among Adults – United States, 2002. MMWR 2004;53:427-431.
- <sup>3</sup> Centers for Disease Control and Prevention. Surveillance Summaries, May 21, 2004. MMWR 2004:53 (No. SS-2).
- <sup>4</sup> Centers for Disease Control and Prevention. Youth and Nicotine Addiction: Background. National Center for Chronic Disease Prevention and Health Promotion, Tobacco Information and Prevention Source (TIPS), April 2003. Available from [http://www.cdc.gov/tobacco/research\\_data/youth/ythaddt2.htm](http://www.cdc.gov/tobacco/research_data/youth/ythaddt2.htm) Accessed on September 23, 2004.
- <sup>5</sup> U.S. Department of Health and Human Services. Targeting Tobacco Use: The Nation's Leading Cause of Death 2004. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, 2004.
- <sup>6</sup> U.S. Department of Health and Human Services. National Institute on Drug Abuse Research Report Series Nicotine Addiction. National Institutes of Health, printed July 1998, reprinted August 2001. Last updated November 25, 2002. Available from <http://www.nida.nih.gov/PDF/NicotineRR.pdf> Accessed on September 23, 2004.
- <sup>7</sup> American Lung Association. Nicotine Replacement. June 2002. Available from <http://www.lungusa.org/site/pp.asp?c=dvLUK9O0E&b=33566> Accessed on September 23, 2004.
- <sup>8</sup> Physicians' Desk Reference. 58th ed. Montvale, NJ: Thomson PDR, 2004.

## CONTACT INFORMATION

**Keri P. Mattox**

Investor Relations and Corporate Communications

**Nabi Biopharmaceuticals**

5800 Park of Commerce Blvd N.W., Boca Raton, FL 33487

T: 800.635.1766 P: 561.989.5815 E: [irpr@nabi.com](mailto:irpr@nabi.com) [www.nabi.com](http://www.nabi.com)