Twelve Facts to Help Dispel the Myths about Nicotine Replacement Therapies (NRTs) and Nicotine

For Health Care Providers, Pharmacists, Health Departments, Tobacco "Quitline" Counselors and Others Who Help Tobacco Users Quit

- 1. The U.S. Food and Drug Administration (FDA) and U.S. Public Health Service (USPHS) recommend several Nicotine Replacement Therapies (NRTs) as safe and effective tobacco dependence treatment aids. These products include useful tips on successful quitting (e.g., setting a quit date, seeking social support, and anticipating challenges). ^{1, 2}
- 2. Some Nicotine Replacement Therapies (NRTs) require a prescription (the nicotine inhaler and nasal spray), but some are available over the counter (nicotine gum, nicotine patch, and lozenges).
- 3. NRT can double a smoker's chances of quitting smoking ²⁻⁴ and can be used alone or in combination. ^{2, 4, 5}
- **4.** The likelihood of long-term quitting success (quitting for more than 6 months) increases when a smoker uses NRT as instructed, in adequate amounts, and for a sufficient period of time. ^{4, 5}
- 5. NRT reduces the withdrawal symptoms associated with cigarette smoking such as irritability, frustration, anger, craving, hunger, weight gain, anxiety, difficulty concentrating, restlessness, and insomnia. 4
- **6.** Using NRT is not trading one nicotine addiction for another because the likelihood of long-term dependence on NRT is very low. ¹⁻³
- 7. Nicotine does not cause the yellowing of teeth, fingernails, and skin; rather it is the tar found in cigarettes that does. ⁶
- 8. It is primarily the many toxins found in cigarettes (e.g., Polonium 210, formaldehyde, ammonia, arsenic, hydrogen cyanide, benzene, butane, and carbon monoxide) rather than the nicotine that causes major negative health effects. ^{3, 7-9} NRT products are much safer than cigarettes. ^{3, 10}
- 9. The amount of nicotine in NRT is controlled and the nicotine is delivered more slowly than the nicotine in cigarettes. 11-13
- 10. Generally, NRT can be safely used by people with diabetes or high blood pressure and does not increase the risk of heart attacks. People with these conditions or who are pregnant or trying to become pregnant should consult with a doctor to determine if NRT is the right choice for them. (Note: the effects of NRT on those with acute cardiovascular disease has not been studied sufficiently). 10, 14-27
- 11. The cost of NRT is comparable to the cost of cigarettes for a 1-pack-per-day smoker. In July 2007, the daily cost of NRT was estimated at \$3.67 to \$6.57, depending on the form of NRT (see table on next page). ²⁸ In comparison, the average retail price of a package of 20 cigarettes (full-priced brands) ranged from \$3.35 in South Carolina to \$6.45 in New Jersey. ²⁹
- 12. NRT does not cause weight gain. Nicotine may actually help control appetite. 10



REFERENCES

- 1. Fiore, M.C., Bailey, W.C., Cohen, S.J., et. al. *Treating Tobacco Use and Dependence*. Clinical Practice Guideline. Rockville, MD: U.S. Department of Health and Human Services. Public Health Service. June 2000.
- 2. Silagy C., Lancaster T., Stead L., Mant D., & Fowler G. (2004). Nicotine replacement therapy for smoking cessation. *Cochrane Database Systematic Reviews*, Issue 3. CD000146. DOI: 10.1002/14651858.CD000146.pub2.
- 3. Luty J. (2002). Nicotine addiction and smoking cessation treatments. Advances in Psychiatric Treatment, 8, 42-48.
- 4. Schroeder S.A. (2005). What to do with a patient who smokes. Journal of the American Medical Association, 294(4), 482-487.
- 5. Bars M.P., Banauch G.I., Appel D., Andreachi M., Mouren P., Kelly K.J., et al. (2006). "Tobacco Free With FDNY": the New York City Fire Department World Trade Center Tobacco Cessation Study. Chest, 129(4), 979-987.
- 6. Bowman K.C., Ross G.L., Schneider K.L., & Whelan E.M. (Eds). (1997). Cigarettes: what the warning label doesn't tell you. American Council on Science and Health, New York: Prometheus Books.
- 7. 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 [cited 2007 July 2]. Available from: http://www.cdc.gov/tobacco/data_statistics/sgr/sgr_2004/index.htm.
- 8. Hoffman G. & Hoffman I. (1997). The changing cigarette, 1950-1995. Journal of Toxicology and Environmental Health, 50, 307-364.
- 9. Smith C.J., Livingston S.D., & Doolittle D.J. (1997). An international literature survey of "IARC Group I carcinogens" reported in mainstream cigarette smoke. *Food and Chemical Toxicology*, 35, 1107-1130.
- 10. Stratton K., Shetty P., Wallace R., & Bondurant S. (Eds.). (2001). Clearing the smoke: assessing the science base for tobacco harm. Institute of Medicine, Washington DC: National Academy Press.
- 11. Shiffman S., Dresler C.M., Hajek P., Gilburt S.J.A., Targett D.A., & Strahs K.R. (2002). Efficacy of a nicotine lozenge for smoking cessation. Archives of Internal Medicine, 162, 1267-1276.
- 12. Benowitz N.L., (Ed.). (1998) Nicotine safety and toxicity. Oxford University Press.
- 13. Choi J.H., Dresler C.M., Norton M.R., & Strahs K.R. (2003). Pharmacokinetics of a nicotine polacrilex lozenge. *Nicotine and Tobacco Research*, 5(5), 635-644.
- 14. Eliasson B., Taskinen M.R., & Smith U. (1996). Long-term use of nicotine gum is associated with hyperinsulinemia and insulin resistance. *Circulation*, 94, 878-881.
- 15. Epifano L., Di Vincenzo A., Fanelli C., Porcellati F., Perriello G., De Feo P., et al. (1992). Effect of cigarette smoking and of a transdermal nicotine delivery system on glucoregulation in type 2 diabetes mellitus. *European Journal of Clinical Pharmacology*, 43, 237-263.
- 16. Assali A.R., Beigei Y., Schreibman R., Shafer Z., & Fainaru M. (1999). Weight gain and insulin resistance during nicotine replacement therapy. *Clinical Cardiology*, 22, 357-360.
- 17. Nicotine replacement therapy for patients with coronary artery disease. Working Group for the Study of Transdermal Nicotine in Patients with Coronary Artery Disease. (2004). *Archives of Internal Medicine*, 154, 989-995.
- 18. Joseph A.M., Norman S.M., Ferry L.H., Prochazka A.V., Westman E.C., Steele B.G., et al. (1996). The safety of transdermal nicotine as an aid to smoking cessation in patients with cardiac disease. *New England Journal of Medicine*, 335, 1792-1798.
- 19. Pardell H., Tresserras R., Salto E., Armario P., & Hernandez R. (1998). Management of the hypertensive patient who smokes. *Drugs*, 56, 177-187.
- 20. Tanos-Santos J.E., Toledo J.C.Y., Cittadino M., Sabha M., Rocha J.C., & Moreno H. (2001). Cardiovascular effects of transdermal nicotine in mildly hypertensive smokers. *American Journal of Hypertension*, 14, 610-614.
- 21. Kimmel S.E., Berlin J.A., Miles C., Jaskowiak J., Carson J.L., & Strom B.L. (2001). Risk of acute first myocardial infarction and use of nicotine patches in a general population. *Journal of the American College of Cardiology*, 37, 1297-1302.
- 22. Greenland S., Satterfield M.N., & Lanes S.F. (1998). A meta-analysis to assess the incidence of adverse effects associated with the transdermal nicotine patch. *Drug Safety*, 18, 297-308.
- 23. Tzivoni D., Keren A., Meyler S., Khoury Z., Lerer T., & Brunel P. (1998). Cardiovascular safety of transdermal nicotine patches in patients with coronary artery disease who decide to quit smoking. *Cardiovascular Drugs and Therapy*, 12, 239-244.
- 24. Basler H.D., Brinkmeier U., Buser K., & Gluth G. (1992). Nicotine gum assisted group therapy in smokers with an increased risk of coronary disease—evaluation in a primary care setting format. *Health Education Research*, 7, 87-95.
- 25. Murray R.P., Bailey W.C., Daniels K., Bjornson W.M., Kurnow K., Connett J.E., et al. (1996). Safety of nicotine polacrilex gum used by 3,094 participants in the Lung Health Study. *Chest*, 109, 438-445.
- 26. Keeley E.C., Pirwitz M.J., Landau C., Lange R.A., Hillis L.D., Foerster E.H., et al. (1996). Intranasal nicotine spray does not augment the adverse effects of cigarette smoking on myocardial oxygen demand or coronary arterial dimensions. *American Journal of Medicine*, 171, 357-363.
- 27. Ludviksdottir D., Blondal T., Franzon M., Gudmundsson T.V., & Sawe U. (1999). Effects of nicotine nasal spray on atherogenic and thrombogenic factors during smoking. *Journal of Internal Medicine*, 246, 61-66.
- 28.Rx for Change. Pharmacologic Product Guide: FDA-Approved Medications, July 2007. The Regents of the University of California, University of Southern California, and Western University of Health Sciences.
- 29. Campaign for Tobacco-Free Kids Fact Sheet (July 2007). State Cigarette Prices, Taxes, and Costs Per Pack. Retrieved July 2007 from http://tobaccofreekids.org/research/factsheets/pdf/0207.pdf.

Estimated Daily Cost of NRT Use, July 2007 ²⁸

Product	Estimated Daily Cost
Inhaler	\$5.29
Gum	\$6.57
Lozenges	\$5.26
Patches	\$3.89
Nasal Spray	\$3.67
Sustained-release Buproprion (tablet)*	\$6.04
Varenicline (tablet)*	\$4.22

*non-nicotine cessation aid