

# Study finds substantial rise in cigarette nicotine content

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Newly published research from the Tobacco Control Research Program at the Harvard School of Public Health (HSPH) documents a substantial increase in nicotine content in major brand name cigarettes over the past decade. The findings indicate that, in the face of numerous legal defeats and a declining national market, the tobacco industry has focused on increasing the addictiveness of its products.

The Harvard analysis substantiates earlier conclusions, based on data collected by the Massachusetts Department of Public Health, that US cigarette manufacturers have hiked so-called nicotine yields of cigarette smoke by implementing a combination of chemical and manufacturing design modifications.

Cigarettes produced by the R.J. Reynolds Tobacco Company, Philip Morris, Brown & Williamson and Lorillard all registered nicotine levels in 2005 that were 11 percent higher than in 1998, an average yearly increase of 1.6 percent.

Researchers arrived at the figure by taking into account the level of nicotine present in cigarette smoke as measured by machine, along with changes in the filters and burn-rate of the paper used in cigarettes. The Federal Trade Commission was once responsible for such testing, which is now performed by the manufacturers themselves and submitted to government agencies for review.

The trend occurred in every style, including not only the unfiltered and “full flavor” varieties, but also styles marketed as less harmful options such as “ultralight,” and in styles unambiguously marketed toward youth, such as “exotic” and candy-flavored cigarettes.

Of particular significance, the study suggests that the increased nicotine content over the last eight years may “represent an effort by tobacco manufacturers to enable

persons of lower income to sustain prior levels of nicotine intake, even with a consumption of fewer cigarettes on the assumption that prices would increase due to litigation during this time period.”

The lead authors of the study have called for the Food and Drug Administration to oversee the tobacco industry, which is currently the only US drug industry independent of federal regulation.

“Cigarettes are finely-tuned drug delivery devices, designed to perpetuate a tobacco pandemic,” one of the directors of the program, Howard Koh, former Massachusetts commissioner of public health and associate dean for public health practice at HSPH, told the media. “Yet precise information about these products remains shrouded in secrecy, hidden from the public. Policy actions today requiring the tobacco industry to disclose critical information about nicotine and product design could protect the next generation from the tragedy of addiction.”

Gregory Connolly, HSPH professor of the practice of public health, concurred, “Our findings call into serious question whether the tobacco industry has changed at all in its pursuit of addicting smokers since signing the Master Settlement Agreement of 1998 with the State Attorneys General. Our analysis shows that the companies have been subtly increasing the drug nicotine year by year in their cigarettes, without any warning to consumers, since the settlement.”

Predictably, major manufacturers have denied any deliberate effort to increase the intake of the addictive substance. Philip Morris released a press statement insisting that nicotine yields in its Marlboro brand cigarettes were exactly the same between 1997 and 2006 except for “random variations in cigarette nicotine yields, both upwards and downwards” Similarly, R.J. Reynolds suggested the nicotine

increase was due to “natural variability of tobacco crops from year to year, small errors in the machine-test method and/or changes in the range of brand styles available for smokers.”

However, it is well established both in the tobacco industry and medical community that the concentration of nicotine and ease with which it can be extracted are some of the main determinants of the addiction potential of a cigarette. Since the 1970s, cigarette manufacturers have used computer modeling to precisely control and optimize nicotine yields in their products.

The Harvard study notes that tobacco manufacturers have an “extensive understanding of how design parameters affect the composition of smoke delivered to a smoker, and this understanding influences the selection and combination of these parameters...”

This assertion is supported by recent court testimony from William Farone, a former research director at Philip Morris. The lawsuit, filed by the government against nine cigarette manufacturers in US District Court, is one of many against cigarette manufacturers in recent years. (Civil Action No. 99-2496, United States of America v. Philip Morris, USA, Inc., et al.)

Farone explained that “a critical part of cigarette design is first ensuring that enough nicotine is available in the unsmoked rod, and then making sure that the design enables the smoker to get enough of the nicotine out to maintain his or her addiction.” The tobacco blend of a cigarette was cited as the primary factor in nicotine delivery, and that “the manufacturers blend not only across types of tobacco, but also across years, in order to compensate for the year-to-year variations...”

Cigarettes are the only legal product responsible for killing half of all users when consumed as directed, in no small part because of the enormous effort by manufacturers to obscure and suppress health information in order to prevent litigation.

Researchers from Brown & Williamson as well Philip Morris have confirmed that documents and research are sometimes destroyed as a matter of company “spring cleaning” policy, to prevent their release to the public. It has also been revealed in court testimony that company lawyers often review and edit scientific documents in order to ensure no liabilities remained in company files.

Additionally, both Brown & Williamson and Philip

Morris arranged to withhold scientific findings by shipping them for storage outside the US, and used foreign facilities to shield documents from disclosure laws.

The Centers for Disease Control and Prevention estimate that cigarette smoking causes one out of every five premature deaths nationally each year, or about 438,000 deaths. As many as 90 percent of lung cancer cases are attributable to smoking, according to the CDC, and the latter is directly related to cancers of the throat and mouth, and cardiovascular and respiratory diseases.

In addition to being listed as the number one cause of “preventable” death in the US, the World Health Organization characterizes tobacco use as “the major contributor to what is now a global chronic disease epidemic” and the second leading cause of death worldwide. Developing countries are particularly impacted by a surge in youth smoking rates. The most recent WHO report on global tobacco use reported 5 million tobacco-related deaths in 2005, and “conservatively” projected 10 million tobacco attributable deaths annually by the year 2020, based on the huge growth of international tobacco sales and lack of industry regulation.



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