

A HISTORY OF EFFORTS TO REDUCE THE RISK OF CIGARETTES

People have believed that smoking is harmful to health for at least 400 years. For example, in 1604, King James I of England, a vehement anti-smoker, published a pamphlet called "Counterblaste to Tobacco" in which he called smoking:

"A custom loathsome to the eye, hateful to the nose, harmful to the brain, dangerous to the lungs, and in the black stinking fume thereof, nearest resembling the horrible Stygian smoke of the pit that is bottomless."

During the late 19th and early 20th centuries, 14 U.S. states prohibited the sale of cigarettes. More than a hundred years ago, people in the United States commonly referred to cigarettes as "coffin nails," and as early as the 1940s, cigarettes were called "cancer sticks."

So the risks of smoking have been recognized for a long time. And it has also been obvious throughout this period that the best way to reduce the risks of smoking is to quit.

Nevertheless, many people enjoy smoking and don't want to quit. As a result, there is a long history of efforts to modify cigarettes to reduce the risks presented by tobacco.

The long search for alternative types of cigarettes goes back at least to 1839, when a U.S. patent described the use of sunflower and rhubarb leaves as tobacco substitutes.

Since then, many designs based on burning natural or processed plant materials as a partial or complete substitute for tobacco filler have been described. Proposed substitutes include cornstalks, eucalyptus leaves, lettuce leaves, cocoa bean hulls and many treated wood and paper products.

These efforts failed for a variety of reasons. First, most substitutes were unable to provide satisfactory tobacco taste. Second, although cigarette fillers based on plant and wood materials produced many of the same types of combustion compounds as tobacco, they sometimes introduced new compounds into the smoke. In addition, other products did not gain consumer acceptance because they did not resemble, nor produce smoke similar to, existing cigarettes.

During the past several decades, cigarette design innovations have focused largely on "tar" and nicotine reductions. This approach was based on a philosophy endorsed for many years by the U.S. Surgeon General and the public health community: "Less ought to be better."

Reynolds Tobacco continues to believe that less ought to be better. We have spent many decades developing ways to reduce overall "tar" and nicotine yields, and to reduce the levels of specific compounds in tobacco smoke, while maintaining the taste, aroma and other sensory characteristics that smokers desire.

Throughout our company's history, Reynolds Tobacco has been a leader in innovative cigarette design. RJRT was the first to manufacture and market:

- A nationally popular filter cigarette (Winston in 1954);
- A filter-tipped menthol cigarette (Salem in 1956);
- A nationally popular low-“tar” cigarette (Vantage in 1970);
- A cigarette that produces smoke by heating, rather than burning, tobacco (Premier in 1988); and
- A cigarette that primarily heats, rather than burns, tobacco (Eclipse in 1996).

Our company pioneered the development of many of the technological innovations that have helped reduce average “tar” and nicotine yields by 67 percent during the past 40 years.

“Tar” and nicotine reductions have been achieved across the board – in full-flavor, light and ultra-light cigarettes. The techniques used to achieve these reductions include:

- Using more efficient filters;
- Perforating the filter-wrapping material, which dilutes the smoke by allowing more air to be drawn into the filter;
- Using more porous cigarette papers, which allow more air to enter and dilute the smokestream;
- Using a higher proportion of expanded (puffed) tobacco in the blend, which increases the size of tobacco particles, and therefore reduces “tar” and nicotine by reducing the amount of tobacco required to fill the cigarette rod; and
- Using a higher proportion of reconstituted tobacco, which is a tobacco sheet made from tobacco dust, stems and small leaf particles using a process similar to paper-making. The “tar” and nicotine yields of reconstituted tobacco are lower than those from equivalent amounts of natural tobacco leaf.

These and other techniques have allowed Reynolds Tobacco to offer a wide variety of cigarettes, ranging from the lowest “tar” products on the market to a number of full-flavor cigarette styles.

Reynolds Tobacco’s continuing quest to produce cigarettes with the potential to reduce risk resulted in the 1988 test-marketing of Premier, a new type of cigarette that heated, rather than burned, tobacco. Premier also significantly reduced secondhand smoke compared to tobacco-burning cigarettes.

Because of Premier’s unique design, many of the compounds commonly found in cigarette smoke were dramatically reduced in, or eliminated from, the smoke of Premier. In addition, a comprehensive battery of toxicological tests showed that the smoke from Premier had significantly less biological activity (impact on animal cells and tissues) than that from tobacco-burning cigarettes.

After several months, RJR withdrew Premier from the market, primarily for two reasons:

- Smokers found Premier's taste and aroma unacceptable;
- Some public health officials fiercely attacked Premier.

RJR researchers went back to their laboratories to address the taste and aroma problems that hindered consumer acceptance of Premier. Three facts quickly became apparent:

- First, Premier's simplified smoke chemistry, reduced biological activity, and diminished secondhand smoke are irrelevant if smokers will not smoke the product.
- Second, a cigarette must burn some tobacco to provide a taste and aroma acceptable to smokers.
- Third, advancements in mainstream smoke chemistry, biological activity and secondhand smoke must be balanced against acceptability of taste, aroma and other characteristics desired by smokers.

In 1996, following several years of intense development efforts, RJR began test marketing Eclipse, a new-generation cigarette that primarily heats, rather than burns, tobacco. While Eclipse is based on the same principle as Premier, its design is significantly different.

Although the Eclipse cigarette burns a small amount of tobacco, its smoke chemistry is much simpler than that of traditional cigarettes. In addition, the biological activity of the smoke, as assessed by a battery of toxicological assays, is greatly reduced.

Although smokers have found Eclipse prototypes more acceptable than Premier, they continue to report product deficiencies. Consequently, Reynolds Tobacco is focusing on issues concerning taste, lightability and ease of puffing to further improve consumer acceptability of Eclipse.

In other areas as well, Reynolds Tobacco remains committed to our decades-long effort to develop lower-risk, consumer-acceptable cigarettes.

For example, some scientists believe that smoke constituents called tobacco-specific nitrosamines (TSNAs) are among the most potent carcinogens in cigarette smoke. And most scientists would agree that it is worthwhile for cigarette manufacturers to reduce or eliminate TSNAs. However, it is doubtful whether just removing TSNAs, or any other single class of smoke constituents, will result in a demonstrable or measurable reduction in risk.

Reynolds Tobacco has discovered a way to dramatically reduce the naturally occurring nitrosamines in tobacco. We are field-testing this method to see if laboratory results can be reproduced in real-world environments. And we are exploring ways to introduce that tobacco into our blends once we determine the feasibility of doing so.

We will not, however, make any health claims – direct or implied – about the use of low-nitrosamine tobacco unless an appropriate battery of scientific tests can substantiate the use of low-nitrosamine tobacco results in cigarettes with reduced risk.

Reynolds tobacco believes the scientific and regulatory communities should, in conjunction with cigarette manufacturers, develop a national policy and scientific consensus concerning risk-reduction approaches that are achievable and consumer-acceptable. And we believe that Reynolds Tobacco should play a role in that process because of our extensive knowledge and experience in the area of cigarette risk-reduction.

Links

For more information from RJRT about topics related to this section, see our website sections on:

R.J. Reynolds' Philosophy Regarding Reduced Risk Cigarettes

An Overview of Efforts to Reduce the Risk of Cigarettes

Smoking and Health

Smoking-related Diseases

"Tar" and Nicotine

Product Stewardship

Cigarette Ingredients

Corporate Responsibility

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