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Statement for the SRNT Policy Committee

Low Yield Cigarettes

Although advertised cigarette tar and nicotine yields have declined substantially since the 1950s there has been little apparent reduction in the risk of heart disease and lung disease, and it is unclear if there have been reductions in the risk of smoking attributable cancer. This statement provides a brief examination of the facts and raises questions that need to be answered to guide tobacco product regulation.

At the start it is useful to consider the primary means by which advertised tar and nicotine yields are derived and have been reduced. Cigarette yield data are determined by machine testing in approximately 1-3 puffs of tobacco remaining in the tested cigarette. Tobacco companies have used a variety of chemical and physical engineering strategies to reduce the yield of tar and nicotine to smoking machines. These, have included the use of filters, reconstituted tobacco, expanded tobacco, more porous and faster burning paper, and/or the use of ventilation holes in the filters and paper wrapping material.

It is now well established that machine derived yield do not show a good correspondence to the amount of tar and nicotine that is actually delivery to the smoker and absorbed into the body. The testing parameters (i.e. puff volume, puff number, and puff frequency) do not reflect how smokers actually smoke their cigarettes. Furthermore, how much tar and nicotine is actually delivered to smokers from a given cigarette depends on factors such as variation in smoking patterns that are influenced by efforts to obtain a certain dose of nicotine ("compensation") and cigarette design features that have the potential to deliver more tobacco constituents than suggested by the machine yield ratings. For example, cigarette design features can increase the amount of nicotine in the gas phase that is not detected by filters and increase the fraction of absorbable particles from a given amount of smoke by control of factors such as smoke particle size. Some of the design features that result in the discrepancy between machine yield ratings and delivery to smokers makes the variance virtually inevitable. For example, the position of the ventilation holes makes it easy, if not inescapable for smokers to at least occasionally block

ventilation holes with their lips or fingers. The facts that the ventilation holes are difficult to see in most brands of cigarettes and that smokers are not provided guidance in the packaging and advertising to avoid covering the holes may increase the probability of covering the holes. Smokers may also smoke more of each cigarette down taking "extra" puffs which may contain several times the amount of tar and nicotine as earlier puffs on the cigarette. In addition, smokers may smoke more cigarettes per day to maintain their desired intake of nicotine which further limits the predictive value of yield ratings that are based on the smoking of single cigarettes rather than human smoking patterns.

There is some evidence that the risk of lung cancer from high yield unfiltered cigarettes that dominated the market in the U.S., in the 1950s (generally greater than 25 mg tar/day) was somewhat higher than that attributed to filtered cigarettes which came to prominence in the marketplace in the 1960s. However, demonstration of a reduction of cancer risk has not been universally found and studies, which have determined reduce cancer risk indicated that at best the reductions are very small compared to the reductions associated with quitting smoking. There is little evidence to date that among the currently marketed cigarettes (tar yields less than 17 mg), smoking lower yield cigarettes reduces the adverse health effects of smoking compared to smoking higher yield cigarettes. However, because the risk for certain smoking related diseases such as lung cancer and chronic lung disease, take many years to develop, the risk implications of modern cigarettes cannot yet be fully assessed because the modern low yield cigarettes may not have been smoked for a long enough period of time to yield definitive results.

A current issue of public policy relevance is how cigarettes of different smoking machine determined yields should be labeled and promoted. Presently, cigarettes are marketed using a broad range of terms that are neither consistent nor regulated by a Federal agency. Cigarettes are currently marketed with descriptors such as regular or full flavored, as well as descriptor such as, light, low tar, reduced, and ultra light. Most smokers of light and ultra light cigarettes believe that these cigarettes expose them to lesser amounts of toxic chemicals than do regular cigarettes, and many smokers smoke light cigarettes to reduce the health hazards of smoking. Some smokers see light cigarettes as an acceptable alternative to quitting smoking. If there is some reduction of risk from low yield cigarettes, that reduction is small or insignificant compared to

the risk reduction achieved by quitting altogether. Therefore, the use of labels such as light and ultra light presents a serious health problem.

SRNT recommends that any quantitative labeling or advertising relevant to yield should be supported by data documenting actual deliveries and smoke exposure levels to human smoker's exposure to toxic smoke chemicals by smokers. Qualitative descriptors implying health benefits such as reduced tar should not be permitted until it is determined that cigarettes so labeled deliver levels of toxins that are reduced enough so as to make health benefits probable. Quarterly post marketing surveillance reported to and overseen by FDA should be required for product making any claims just as such monitoring can be required for drug products to enable early detection of unintended effects and corrective actions.

SRNT does support the idea that machine determine yields be included on packages and in advertising, but that such yield information should include smoking machine parameters that are similar to those used by smokers (including with ventilation hole blocking). Hidden ventilation holes should be prohibited and the cigarette companies required placing the holes so they will be least likely to be inadvertently blocked. (Note to SRNTers: Rather than taking an "instruction" approach which might imply "how to safely smoke cigarettes" perhaps the "warning" approach that is used with many consumer products should be used, something like my last draft sentence). Additionally, cigarette smokers should be warned by package labeling that covering the ventilation holes may lead to their inhalation of substantially more tar and nicotine.