

Experience ISO Machine Measurements of Cigarette Yields

David Burns, MD
UCSD School of Medicine
dburns@ucsd.edu

Conference of the Parties - Technical Briefing
Geneva, 7 February 2006

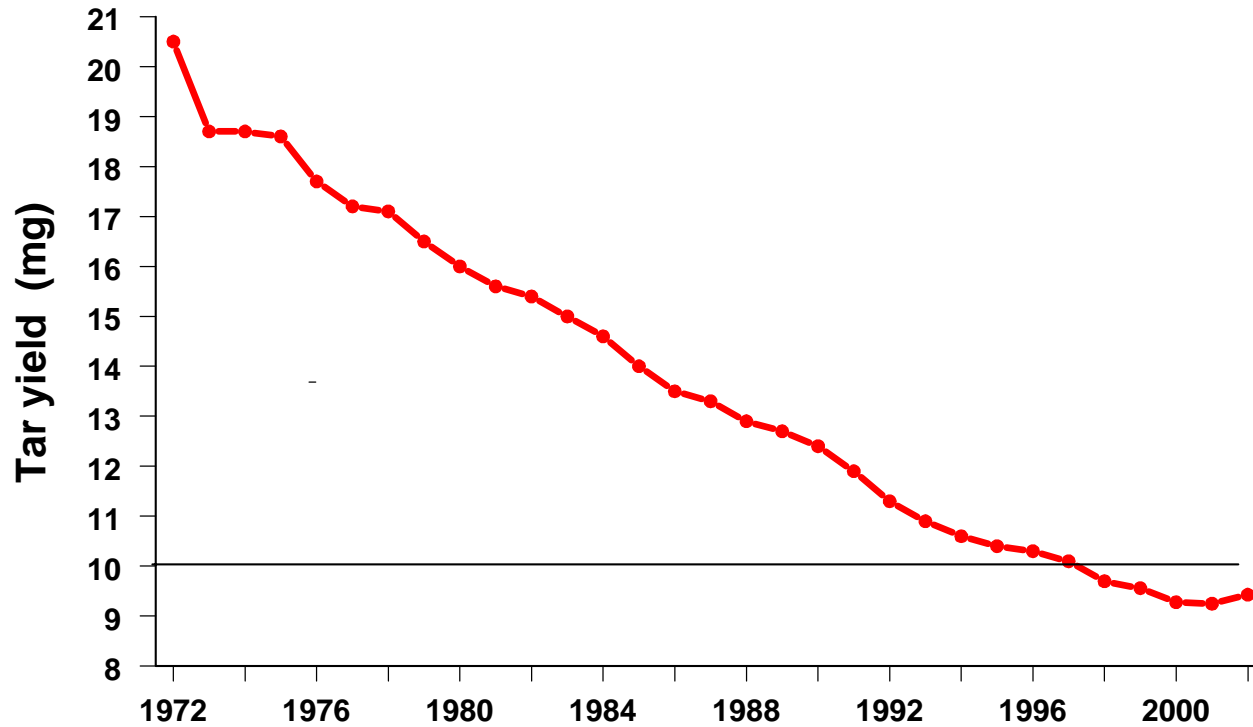
What We Were Trying to Do

The regulatory goal in allowing communication of brand differences in machine measured tar and nicotine was to allow smokers to reduce their exposure by switching to brands with lower yields, with the expectation of reducing future risk.

The intentional circumvention of this goal through changes in cigarette design remains one of the largest public health deceptions of the last century. Generations of cigarette smokers were misled, believing that they did not need to quit because they could reduce their risk by switching to cigarettes with low machine yields

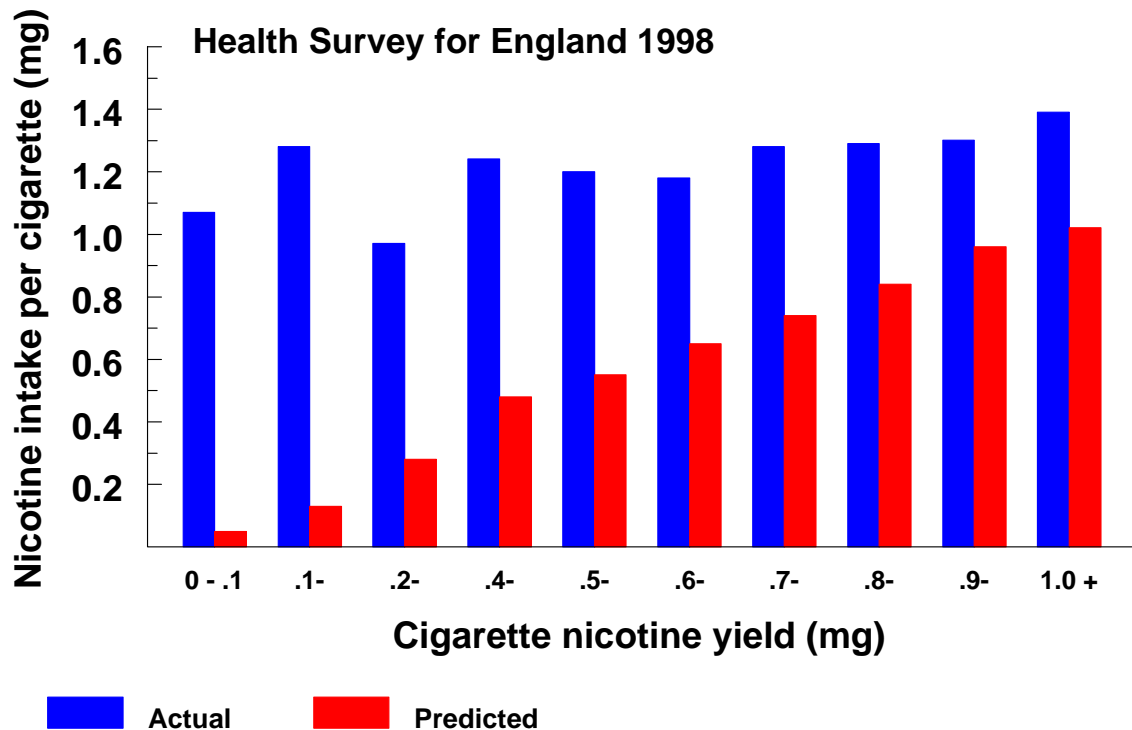
Machine Yields Came Down

Trends in ISO tar yields 1972-2002: UK



Human Exposure Did Not Decline

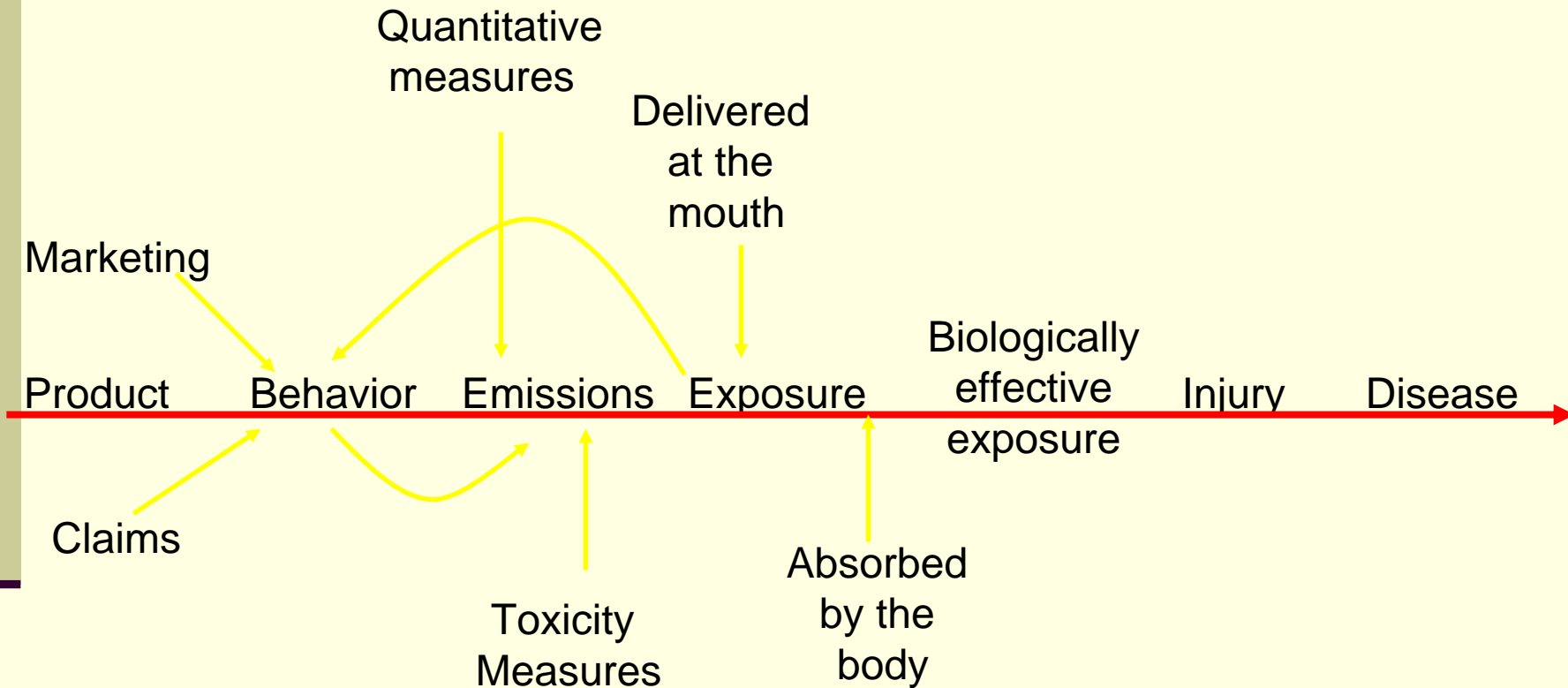
Predicted and actual nicotine intakes per cigarette smoked by nominal nicotine yield of usual brand



Current Scientific Consensus

- Epidemiological and other scientific evidence, including patterns of mortality from smoking-caused diseases, does not indicate a benefit to public health from changes in cigarette design over the last 50 years

Challenges in Regulating Tobacco



Limitations of Current Science



We have no measures

Takes too long

Potential Measures of Injury

Measures of genetic damage, inflammation, oxidation, endothelial injury etc

Where We Are

- Comparison of brands using existing ISO tar and nicotine measurements are meaningless as measures of exposure or risk
- Smokers are misled by existing ISO yields
- Smokers who switch based on ISO yields instead of quitting are harmed by communication of ISO yields
- Modifying existing ISO standards is complicated by tobacco industry domination of ISO TC 126 – the technical committee that creates testing standards for tobacco products

New Approach to the Use of Machine Yields

- Smokers smoke to get nicotine
- Smokers change the way they smoke to obtain a desired dose of nicotine
- It is the toxic constituents that are inhaled along with the nicotine that cause most of the harm
- Can we reduce the toxicity of the smoke per mg of nicotine?

Regulatory Strategies

- With known toxicants, reductions in exposure based on the precautionary principle is a common strategy
- Threshold levels are set by what is technically achievable

Regulatory Approach

- Measure level of toxicant per mg nicotine by brand
- Examine the variation by brand in level of toxicant per mg nicotine in the market (this establishes what is technically achievable for cigarettes that are acceptable to smokers in the market)
- Set a threshold level that excludes the highest brands
- Prohibit the sale of cigarettes that exceed the threshold level
- Prohibit claims based on the level of toxicant per mg nicotine

Additional Issues

- Smoke should be generated under a variety of machine settings that mimic the range of patterns with which smokers use cigarettes (e.g. The Canadian Intense Method)
- There are no standards for other forms of tobacco use which are common in many countries