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National Candle Association Responds to Television Doctors' Claims About Candles

WASHINGTON, DC (February 26, 2016)---The *Dr. Oz Show* and the BBC2 program, *Trust Me I'm a Doctor*, are causing unnecessary concern about scented candles by promoting findings from a statistically insignificant experiment. These television programs and the other media sources reporting the story, unnecessarily alarm consumers by sensationalizing the presence of compounds naturally found in the environment at very low, harmless levels. The conclusions drawn by television show hosts and journalists are not supported by the observational data gathered by the scientists during the experiment on which these stories are based.

The National Candle Association assures consumers that candles, whether scented or unscented, when used properly, are safe.

The root of the stories is an uncontrolled experiment conducted by the BBC2 television program in six homes which sought to measure levels of volatile organic compounds (VOCs) in homes. The BBC used equipment and measurement information provided by Dr. Alastair Lewis of the National Centre for Atmospheric Science at the University of York in the UK. However, Dr. Lewis has informed the National Candle Association that he did not interpret the television program's findings and hence, did not draw any scientific conclusions from the BBC's experiment.

The television program drew its own conclusion that limonene, a chemical used to scent household cleaners and candles and to flavor foods, was detected in the homes, that it may have come from scented candles and that because limonene produces formaldehyde when exposed to ozone, it may be cause for concern. The television program – not the scientist – made unverified connections between scented candles and the limonene and alpha-pinene that were detected in the homes.

Dr. Lewis has specifically stated to the National Candle Association that, "The scientific interpretation that was made in the web article and that appeared on the BBC website were made by the BBC journalist, and not by me." He explained that the television program's experiment had no source-specific measurements to identify the exact source of the individual compounds. He did not make a connection between very high limonene levels found in some homes and scented candles, and said he finds it "most probable that room fragrances and domestic cleaners were the largest sources of monoterpenes, not candles, but the latter has been emphasized in the BBC article, and subsequent reporting."

Professor Lewis acknowledges, “There are no source-specific measurements in this study, so the exact source of each chemical cannot be confirmed, although candles have been emphasized in the BBC article and in subsequent reporting. A range of different consumer products are likely to have contributed to the exceptionally high limonene observed.”

The television program, however, does correctly state that limonene produces formaldehyde when exposed to ozone. Humans produce formaldehyde, too, every time we breathe, and it is present in the foods we eat, as well. Low levels of formaldehyde are found everywhere.

Consumers can be confident that a well-made and properly burned candle, whether scented or unscented, will burn cleanly and safely. Although there are no known health hazards associated with the use of scented candles, unfounded concerns about the safety of man-made fragrances vs. “natural” fragrance materials and essential oils continue to pepper popular media and Internet. The fragrances approved for candle usage – whether synthesized or “natural” – do not release toxic chemicals.

Validated scientific studies have shown that all major candle waxes exhibit the same basic burn behavior and produce virtually identical combustion byproducts, both in terms of composition and amount. To date, no peer-reviewed scientific study has ever collected or analyzed any emissions data on any candle wax, including petroleum-based paraffin, and proven them to be harmful to human health.

Furthermore, candles with lead wicks have not been sold in the US since 2003, yet media such as *The Dr. Oz Show* continue to lead consumers to believe that lead wicks may pose a risk. Today, wicks that have metal cores, such as those in container candles and votives, are typically made of zinc or tin. Scientific studies have shown both zinc and tin-core wicks to be safe.

The candle industry conducts health and safety studies for all materials used in candles. These include toxicological and dermatological testing. These tests are required by regulators, and they are taken very seriously. The National Candle Association and its members are committed to safety and we, along with regulators, rely on scientific studies – not anecdotal findings or claims made by television show hosts – to assure product safety. We encourage consumers and the news media to do the same. The assumptions made on these television shows and by the other media sources reporting the story are not statistically valid, seriously misrepresent the observed information and unnecessarily alarm consumers by sensationalizing the presence of compounds naturally found at very low levels.