Electronic Cigarettes

Electronic cigarettes: getting the science right and communicating it accurately

Electronic cigarettes are being used by millions of people worldwide, mostly in an attempt to reduce smoking or stop altogether. Policy makers, smokers, clinicians and the public in general need accurate information on their safety and potential for reducing smoking rates. Unfortunately in some notable cases the science is being misused, with findings being distorted, misinterpreted or misrepresented. Interestingly, up until now this appears to be mainly (though not exclusively) by those who are opposed to electronic cigarettes. Addiction’s goal in this debate is to present evidence as dispassionately as possible whatever it shows, and to correct misinformation where it appears. It is worth highlighting the ways in which science is being misused so that readers can be better placed to evaluate the messages.

Failure to quantify: e.g., statement that e-cigarette vapour contains toxins so creating the impression that they are dangerous as cigarettes, without indicating that the concentrations are typically orders of magnitude less than tobacco smoke.
Failure to account for confounding and reverse causality: e.g., arguing that use of e-cigarettes reduces chances of stopping because in cross-sectional surveys the prevalence of e-cigarette use is higher in smokers than in recent ex-smokers.

Selective reporting: e.g., focusing on studies that appear to show harmful effects while ignoring those that do not.

Misrepresentation of outcome measures: e.g., claiming that e-cigarette use is prevalent among youth by using data on the proportion who have ever tried and creating the misleading impression that they are all current e-cigarette users.

Double standards in what is accepted as evidence: e.g., uncritically accepting conclusions from observational studies with major limitations when these claim that electronic cigarettes are causing harm, but discounting similar or better controlled studies when these appear to show the opposite.

Discrediting the source: e.g., arguing that researchers who have received financial support from e-cigarette manufacturers (and even companies that do not manufacture e-cigarettes) are necessarily biased and their results untrustworthy, and presenting themselves as having no conflicts of interest when their professional and moral stance represents a substantial vested interest.

These tactics are not restricted to the e-cigarette debate. We must be vigilant in recognising them to ensure that policies are based on the most accurate interpretation of evidence possible. Addiction will seek to adhere to the highest standards of critical review of papers submitted to us whichever direction the findings on e-cigarettes appear to point.

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