

## Tobacco-free electronic cigarettes and cigars deliver nicotine and generate concern

Novel cigarette-appearing items have been introduced to the market with the intent, either stated or implied, of reducing toxicants in mainstream and second-hand smoke and/or helping smokers break their nicotine addiction. We report here the introduction to the market of electronic products that mimic a cigar, cigarette or pipe. These articles are unique in that they are the first to have the appearance of conventional tobacco products but contain no tobacco. The products deliver nicotine, at different amounts, but no smoke or tar.

The items have been developed by Beijing SBT Ruyan Technologies and Development, Beijing, China (<http://www.sbtry.cn/anli-en.asp>) and are marketed by the Create Times Industrial & Trading, Shenzhen, China (<http://www.quism.net>).

The electronic cigar we purchased recently is shown in fig 1. The cigar was purchased for US\$108 (€143, £846) and the shipping and handling charges from China to the US was (\$65). All items are sold on the internet and, most probably, circumvent regulatory policies of the US and other countries.

The manufacturer states in the instruction manual that a "... low thickness nicotine liquid

enters an atomizing cell after ultra micro atomizing pump pressurizing and is atomized into about 0.5–1.5 µm fog drops in the high-frequency ultra-sonic vibration field". Further, the product can "... refresh and satisfy the joviality and long-term psychological habit of smokers so as to achieve humanized healthy smoking; and at the same time, it simulates a cigarette and does not contain such hazardous substances as carbon monoxide, nitrogen dioxide, hydro cyanic acid, arsenic, lead, perishing the harm of second-hand smoking to surrounding crowd so as to achieve the authentic humanized smoking".

It has been reported that Ruyan has gained more than 1 billion yuan (¥) (US\$127.6 million) in domestic sales during the past year. Questions regarding product safety have prompted the Chinese Center for Disease Control and Prevention to carry out authoritative tests ([http://news.xinhuanet.com/english/2006-12/04/content\\_5432536.htm](http://news.xinhuanet.com/english/2006-12/04/content_5432536.htm)).

The unanswered, but very important questions raised by these new products are many, including:

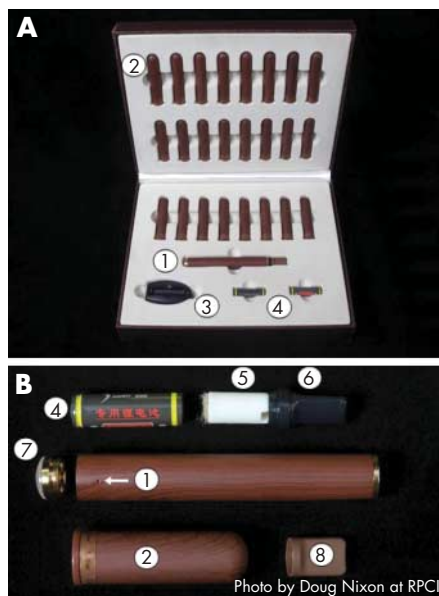
- Are they safe and effective for use as a cessation aid?
- Are they unapproved drug delivery devices making unsupported health claims to consumers?
- What credible, peer-reviewed, scientific evidence exists to support the claims of the manufacturer for these products?
- Do these products deliver a rapid and addictive dose of nicotine similar to that delivered by cigarettes?
- Are these products viewed by consumers as viable alternatives to cigarettes, cigars and other combusted forms of tobacco?
- If consumers use these non-evidence-based products in an attempt to quit smoking and fail, what are the opportunity costs of that failure—a return to tobacco smoking, greater risk of death and disease?

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doi: 10.1136/tc.2006.019687



**Figure 1** View of the cigar case (panel A) and cigar components (panel B) of a Mario Raphael healthy electronic cigar from Ruyan. (1) Cigar-appearing tube of stainless steel; the arrow denotes the hole in which a pin or paper clip is used to reset to normal working conditions every 20–30 days; (2) sealed plastic cases for smoke-generating inserts that deliver high nicotine (18 mg nicotine/cartridge), medium nicotine (14 mg), low nicotine (11 mg) and no nicotine; (3) battery recharger; (4) two lithium-ion batteries; (5) white plastic cylinder containing a fibre plug moistened with glycerol and nicotine; (6) black plastic mouthpiece; (7) indicator light cap with a red light, which when dim indicates that the batteries require recharging; (8) mouthpiece cover to be used during and between smoking sessions and, not shown, an instruction manual.