Carter describes how tobacco companies infiltrated into tobacco control movements in order to damage their efforts. Industry documents on Hungary suggest similar intentions. The transnational tobacco corporations (TTCs) jumped into the new market and privatised the factories of the formerly state owned Hungarian tobacco monopoly in the very first years of the transition from communism (1991-92). Using their sophisticated lobbying practices, the TTCs succeeded in transforming the regulatory framework of tobacco and easing marketing and trade restrictions on their products. As Philip Morris put it, they sought to protect “the legitimate interests of the company ... against discriminatory unfair legislation and practices.”

The Hungarian anti-smoking movement was relatively inexperienced in neutralising the political and economical power of a well-established and influential industry. Nonetheless, documents show the TTCs intended to monitor closely and counteract its efforts. In February 1993, Gabor Garamszegi, CA Manager of Philip Morris Hungary, received a report praising a panel of smoking volunteers in assessing the “social context of smoking in Hungary”. The submission came from the formerly state owned Tobacco Institute (Dohánykutató és Mérlegelő Intézet Kutatási Intézet R.), which had no previous experience in assessing the social and health issues in tobacco use. The plan states that “tobacco and smokers have become ostracized among the health-conscious mass media... and its authors considered smoking nothing more than “a scapegoat for the deteriorating health condition of the population”.

The authors acknowledged that the tobacco control system had succeeded in putting tobacco control higher on the political agenda and gained power from the increasing involvement of its members into the international tobacco control efforts. This “challenge requires appropriate reactions from the tobacco industry”, with the document proposing that a panel of smoking volunteers be formed who could be “regularly questioned to learn the public opinion on social issues”. Members of these panels should be sent to collect information with the aim of learning more about the programmes of anti-tobacco organisations: “As a possible method it could be envisaged that members of the panels... also take part in these programs and pass on their experiences to the leaders of the panels.”

Another document also mentions the “tight monitoring of activities and plans of government and anti-smoking groups” as an important strategy to “maintain the social acceptability of smoking”, since the “growing anti-smoking sentiments... would damage the credibility of the company in all business area to represent and defend company interests”.

More recently, British American Tobacco has engaged in launching a “social dialogue” with tobacco control advocates and government based agencies. This is another effort of TTCs to portray themselves as if they are changed, contrite, and reformed.

Hungary today faces an increasing epidemic of smoking related diseases, with 28 000 deaths (3.5 million people of 10 million population are smokers) attributable to smoking every year. The country ranks first in the world regarding mortality from lung and oral cancers.

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It appears that quitting “dropped off the personal agenda” for some New Zealand smokers in September 2001. It seems likely that at this time of increased media publicity of global security threats, the quitting plans of smokers were eclipsed by other concerns. For example, the psychological impact of these events appears to have been significant—at least for Americans). This was despite the fact that New Zealand is an island nation that is very far removed from international trouble spots. It was also despite the fact that international terrorism has historically posed only a tiny risk of death to the general public related to that from smoking (which kills half of the smokers).

This reduction in calls is of concern considering that the Quitline (especially in the context of providing subsidised nicotine replacement therapy (NRT)) appears to be very successful in supporting smokers who wish to quit. Prevalence data from one survey suggests a point prevalence quit rate at three months of 44%.

Other explanations for this sudden and sustained reduction in calls to the Quitline from 12 September seem unlikely. Nevertheless, this decline in new callers did occur in the context of a longer term decline in calls to the Quitline which had been occurring since a peak in November 2000. That peak was a result of callers becoming eligible to obtain vouchers for heavily subsidised NRT through the Quitline service.

One implication of this relation between global security issues and Quitline calls is that publicity for Quitline services may be less cost effective at times of perceived international crisis. However, the continuance of at least 120 calls per day to the Quitline, during September and October 2001, indicates the strength of the desire to quit in the population of smokers that the Quitline has tapped into.

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Big Mac index of cigarette affordability

As for any other commodity, demand for tobacco responds to price changes; when prices rise, demand for tobacco falls. Price increases encourage cessation; reduce average cigarette consumption among continuing smokers; and deter initiation. Tax increases are thus widely accepted as a key component of tobacco control policy.

References
1 Quitline. Website: http://www.quit.org.nz/resources/Quitline%20September%202001%20Analysis.doc
In calling for increases in tobacco tax, tobacco control advocates often find it useful to compare cigarette prices internationally with those in their own country. To do this, they must somehow convert prices in other countries using a standard measure, most commonly the price in $US. Exchange rates, however, may be influenced by many factors including inflation differentials, monetary policy, balance of payments, and market expectations. Guindon et al proposes “purchasing power parity” (PPP) as a more appropriate measure for comparison. This theory argues that exchange rates are only at their “correct” levels when they are equal to the ratio of the two countries’ price level of a fixed basket of goods and services. Developing indices of PPP is a fairly time consuming exercise. The Economist’s Big Mac index, by contrast, provides a “quick and dirty” estimate of the extent to which various currencies may be under or over valued. McDonalds’ Big Mac hamburgers are produced to more or less the same recipe in 120 countries and can be regarded as identical for currency translation. The “Big Mac PPP” is defined as the exchange rate that would result in hamburgers costing the same in the USA as elsewhere.

While Big Mac prices may not perfectly represent a total basket of goods and services—meat prices for instance might vary in different markets—the Big Mac PPP does appear to compare favourably with other more rigorous estimates of purchasing power.

To produce an update of Scollo’s Big Mac index of cigarette affordability we obtained Big Mac and cigarette prices in 30 countries. Big Mac prices were obtained from The Economist magazine and through phone calls to a further 11 McDonalds restaurants worldwide (Dublin, Brugge, Amsterdam, Rome, Barcelona, Lisbon, Vienna, Stockholm, Helsinki, Athens, and Luxembourg, 28-31 May 2002). We used cigarette price and tax levels compiled by the Canadian NSRA and ASH UK and exchange rates as at 31 May 2002. We then divided the (local currency) price of a Big Mac in each country with the (local currency) price of a single cigarette (fig 1). Cigarette prices in SUS and tax levels in 30 countries have been tabulated (table 1). The number of cigarettes per Big Mac provides a slightly different picture of relative affordability of cigarettes than that provided by a simple conversion to SUS.

While by no means a perfect measure, the Big Mac index of cigarette affordability provides a reasonable estimation of relative affordability of cigarettes in the countries listed.

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References

Table 1 Cigarette prices in $US and tax levels compared to Big Mac index of cigarette affordability.

<table>
<thead>
<tr>
<th>Country</th>
<th>Price of 20 cigarettes (SUS)</th>
<th>Total tax (%)</th>
<th>Cigarettes per Big Mac</th>
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<tr>
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<tr>
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<td>$3.99</td>
<td>53.0</td>
<td>9</td>
</tr>
<tr>
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<td>$3.97</td>
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<td>Indonesia**</td>
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</table>

Based on the most popular price category.
Sources: *Smoking and Health Action Foundation; **Ash UK.
†Sales weighted average (reflects 17 June 2002 increase); ‡average of highest (New York) and lowest (Kentucky).

Figure 1 Big Mac ranking of world cigarette prices. Sources: *Smoking and Health Action Foundation; **Ash UK. †Sales weighted average (reflects 17 June 2002 increase); ‡average of highest (New York) and lowest (Kentucky).
they regularly bought tobacco from stores and only rare subjects reported ever having been turned down. The study’s authors correctly concluded that the compliance inspections were an invalid measure of youth access. Yet Fichtenberg and Glantz included this invalid data in the analyses of a threshold effect and it is also included in the figure printed in Tobacco Control.1

It was improper to include a study from England where the legal age was 16 years as the majority of secondary school students would be of legal age to purchase and no impact on youths ages 14–15 would be expected.2

It was improper to include the study from Australia. In addition to the fact that the study involved no enforcement, 46% of the students in the intervention group actually lived outside the intervention area!3

The meta-analysis improperly combined studies of different designs including cohort, cross sectional, controlled interventions and non-controlled interventions.

Combining these studies is also inappropriate because the effect on the youths, and the methods used to test compliance, differed dramatically from study to study. For example, a compliance rate of 82% for a 14 year old is equivalent to a compliance rate of 62% for a 17 year old.4 A compliance rate of 42% for the counter sales is equivalent to a compliance rate of 58% for self service sales.5 Differences in the techniques used to measure compliance render the use of the computations and conclusions in this paper invalid.

The authors’ basic premise is that the percentage change in merchant compliance should correlate with the percentage change in the prevalence of youth smoking. The use of this measure represents a straw man. In my review of 176 articles concerning youth access, I cannot recall anybody in this field ever suggesting that the change in percentage of merchant compliance is an appropriate measure of youth access. To the contrary, there is wide agreement among experts in this field that absolute levels of merchant compliance above 90%, as measured through realistic compliance checks using youths close to the legal limit, will be necessary to effect a change in the prevalence of youth smoking.6

In the figure presented in the Tobacco Control editorial, intervention communities are being inappropriately compared to control communities from other continents and legal systems. If the authors wanted to compare smoking rates and youth access interventions across communities, a random sample should be used, uniform measures should be employed, and other confounding factors such as socioeconomic status and the cost of tobacco should be controlled for. When this type of analysis has been performed on a community and state level of analysis, reductions in youth smoking have been observed.7 8

It has been known for centuries that the prevalence of smoking increases during adolescence. This factor must be controlled for in cohort studies by the inclusion of a matched control group. During the period when most of these studies were conducted there was a secular trend of dramatically rising teen smoking rates observed in English speaking countries. Since merchant compliance would also be expected to increase over time in these intervention studies, it would be expected that a positive association between the intervention and smoking prevalence would be seen in both cohort and cross sectional studies if enforcement were completely ineffective. The meta-analysis does not appropriately incorporate control communities for each intervention community. Only three control communities are included for 15 intervention communities across seven studies.

In the same analysis, the few control communities are inappropriately included as additional “data points” in the mix. Baseline data rather than outcome data were used for one intervention community. These procedures indicate that the intention of this analysis was not to determine the impact of the interventions as the authors state.

The Fichtenberg and Glantz article is strongly reminiscent of the “scientific” papers secretly commissioned by the now defunct Tobacco Institute. It is sad that the scientific community continues to perform political ends. The Tobacco Control editorial which was based on this travesty of science also excludes and misinterprets data which contradicts the authors’ long held biases.9

References


7 DiFranza JR, Rigotti NA. Impediments to the enforcement of youth access laws at the community level. Tobacco Control 1999;8:152–5.


Authors’ replies

Since DiFranza’s criticism of the editorial by Ling et al.1 concentrates mostly on criticism of the paper by Fichtenberg and Glantz, published in late 1999,2 we are writing in response to those criticisms separately. We recognise that this is unusual, since the standard procedure would have been for DiFranza to write to PostScript and then we respond as a group.3 We are responding here.

The premise of youth access programmes is that increased merchant compliance reaches a high enough level, it will reduce youth access to cigarettes and, therefore, youth smoking. The goal of our analysis was to see if, based on the available literature, there was a relation between merchant compliance and youth smoking. Whether or not the laws were being enforced at the time and, if so, in what manner, is irrelevant to this analysis. If youth access programmes work because high merchant compliance leads to lower smoking, there should be an association between high merchant compliance rates and low smoking rates, regardless of what led to those rates. If an intervention designed to increase merchant compliance was successful, we should see high compliance rates and low smoking. If the intervention was not successful, because they did not increase merchant compliance as DiFranza suggests, then we should see low compliance and low smoking. Both of these cases would contribute to our test of the hypothesis that increased merchant compliance was associated with reduced smoking. The data to test this hypothesis revealed an association (fig 1A of Fichtenberg and Glantz).4 All youth access programmes measure merchant compliance through surveys, and lower sales attempts by underage youth, as was done in the Bogotá study. If merchant compliance measured in this way is not an accurate reflection of youth access, then none of the studies of youth access that base their effectiveness on merchant compliance are valid. The goal of our analysis was to determine if compliance is a good measure of youth access, but rather to relate the most common pulmonary metric for measuring the effectiveness of youth access programmes—namely merchant compliance, to youth smoking rates.

DiFranza says that we should not include studies from England because the legal age to purchase cigarettes is 16 years. We see no reason why youths aged 14–15 would not be affected by laws limiting purchase of cigarettes to those 16 and older. DiFranza objects to including data from Australia, because 46% of the students lived outside the enforcement area. As discussed above, whether or not active enforcement was intended to be relevant to our analysis is the association between merchant compliance with youth access laws and youth smoking prevalence. All that is important is that compliance and smoking was assessed in the same way in all of the studies. In this case the authors point out that for the follow up survey, 46% of students in the intervention community— which was defined based on school location— did not live in the intervention area. They conclude that this would be a problem if these children bought cigarettes closer to home rather than to school. Since there was no residence information from the baseline survey it was not possible to limit the analysis to students living in the intervention area.

Nevertheless, we chose to include the study in our analysis despite this limitation. It is important to note that the results of this study were consistent with the others. There is no problem with combining studies of different design in a quantitative meta-analysis, as long as we are measuring the same function at the same end point. As was reported in the methods section of our paper, the quantitative meta-analysis only included controlled studies. DiFranza objects to combining studies because the ages of the youths, and the methods used to test compliance, differed. While we agree that factors such as age and sex of the youths may affect merchant compliance, we did not expect this variability to mask the effect of youth access programmes, if they actually affected youth smoking rates. The small number (five) of controlled studies of youth access programmes which reported youth smoking made it impossible to stratify according to the age of the youths used in the compliance checks.

DiFranza objected to our evaluation of the change in youth smoking prevalence as a function of change in merchant compliance on the grounds that it was unnecessary to obtain compliance rates above 90% to have an effect on youth smoking prevalence. In addition to the fact that the data show no empirical evidence to support the hypothesis of such a threshold (fig 2A in Fichtenberg and Glantz), reproduced as fig 1 in Ling et al.), our basic premise is that if youth access programmes actually reduced youth smoking, higher compliance rates would be associated with lower smoking rates. We examined this hypothesis in two ways. First, we compared compliance and smoking rates in all communities for which both variables were measured at the same time. Since this is an ecological analysis which does not take into account temporal trends or other potential confounders, such as other tobacco control programmes, we agree that factors such as age and sex of the youths, and the ages of the youths, and the meth-
Health messages on smoking and breastfeeding in maternity hospitals of Eastern Europe

Smoking, particularly antenatal smoking by the mother, has been consistently shown in many studies to be associated with increased risk for sudden infant death syndrome (SIDS). After the prone sleep position, smoking is the next most important modifiable risk factor for SIDS. Smoking not only undermines the health, development, and survival of the child, but of the mother and other family members, too. A survey of maternity hospitals in Eastern European countries was undertaken in 1999 to collect information on practices associated with increased risk of SIDS. We report here a comparison of smoking and breastfeeding practices of these hospitals.

The collaborative network of the World Health Organization in Eastern Europe (CCEE/Euro) organized the survey in 20 countries in Eastern Europe and the data were received from 489 hospitals in 20 countries. The study instrument, in either English or Russian, was translated into local languages. A survey of maternity hospitals in Eastern European countries was undertaken in 2000. The study instrument, in either English or Russian, was translated into local languages. A survey of maternity hospitals in Eastern European countries was undertaken in 2000. The study instrument, in either English or Russian, was translated into local languages.

In contrast to the success of SIDS prevention campaigns advising babies that should not sleep prone, it has been much more difficult to motivate parents not to smoke. UNICEF and WHO have launched the “The Baby Friendly Hospital Initiative” where hospitals are encouraged to adopt 10 evidenced-based steps to promote breastfeeding. One of these steps is to have a written hospital breastfeeding policy. Our data may reflect the success of this initiative, that 72% of maternity units had written information on breastfeeding available for parents and 61% had a written policy. In contrast, our data suggest that only 20% of units had written information available on smoking and only 12% of hospitals had a written policy (table 1). Given that maternal smoking undermines breastfeeding through increased risk of early weaning, reduced milk supply, reduced prolactin concentrations, and low fat concentrations in milk from smoking mothers; a tobacco strategy is likely to enhance breastfeeding outcomes as well as many other health benefits to babies. The “Tobacco Free Initiative” is one of WHO’s current priority programmes. Pregnancy and the birth of a child are important intervention points to encourage parents to stop or reduce smoking. The well established and strong association between smoking and SIDS and the evidence of a dose effect of reduced risk with reduced smoking provide encouraging messages to help motivate parents to address their smoking before and after the birth of their infant.

Within maternity hospitals in Eastern Europe breastfeeding promotion messages appear to be more widely available than anti-smoking messages. Smoking prevention strategies should ensure that parents receive written information on the health risks of smoking and hospitals should have written policies. Consideration should be given to including evidenced based strategies to prevent and reduce smoking into an expanded Baby Friendly Hospital Initiative.

References


Table 1

<table>
<thead>
<tr>
<th>Country</th>
<th>Smoking</th>
<th>Breastfeeding</th>
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<tbody>
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<tr>
<td>Uzbekistan</td>
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</tbody>
</table>

Total | 489 | 20% | 12% | 72% | 61% |

BH, Bosnia Herzegovina; FYR, Former Yugoslav Republic.
using the same technique but each based on over 3000 filters, indicate that 21–30% of the filter vents examined were blocked, and most were only partially blocked. These latter studies are in reasonable agreement with large studies conducted by industry scientists using the saliva stain technique, which indicate that up to 24% of filters examined were blocked by lips, and again, most only partially. Direct video observation indicates finger blocking is negligible since most smokers release their fingers from the cigarette as they take a puff,8 but it would be virtually impossible to determine from the video whether smokers’ lips had covered the vents. We devoted a great deal of space in our 1997 review9 to considering the degree of filter ventilation across a number of cigarette brands (cf. allegations 2 and 3). Reassuringly, some of the latest results from Kozlowski et al and industry scientists are in reasonable agreement, despite the very different experimental techniques used.

Kozlowski and O’Connor state that “one notable omission” in our 1997 review11 is a 1982 study of a 1 mg “tar” cigarette smoked under various puffing conditions (allegation 4). In fact, data from that study are plotted in fig 8 of the 1997 review. We attribute the results to RF Ferris, the project leader, rather than T Hirji, the author of the memo, but it is the same study. They quote the smoke yields from this study but fail to notice that the data are the same as those in our review.11

Likewise, Kozlowski and O’Connor say that we ignored pertinent Swiss12 and Canadian13 studies, but data summaries are included in our 1997 review. Our 2001 review12 quotes both studies and indicates a dependence of insertion depth on “tar” yield that is, degree of ventilation. Kozlowski and O’Connor concentrate on the less detailed unpublished Swiss data but virtually ignore similar trends pointed out in the more comprehensive data published by Baker et al.13 (Kozlowski and O’Connor even re-plot some of the Swiss data to emphasise their point, ignoring the fact that these data were obtained using the saliva stain technique that they criticise elsewhere12).

Kozlowski and O’Connor correctly state that we did not mention a 1977 study by Creighton.14 They quote from this report that “[n]one subject was seen to cover the ventilation holes with clear adhesive tape”. They fail to mention, however, that the “subjects” in this study were R scientists evaluating two cigarette brands12 (cf. Kozlowski et al 1997). Kozlowski and O’Connor correctly state that over 60% of Kozlowski’s and O’Connor’s references are unpublished industry documents. Many of these are short memos written for internal use, not complete reports. References by those not involved can lead to misleading conclusions, such as the discrepancy in attribution noted with Ferris and Hirji. It is very difficult to place these documents in proper context, and, in some cases, to try to do so nearly 50 years after they were written.

Filter vent blocking

In their recent article Kozlowski and O’Connor criticise a 1997 review11 on cigarette filter ventilation blocking and claim it is in error because it (1) relies on saliva based estimates, (2) does not consider degree of ventilation, (3) does not address brand-to-brand variation, and (4) omits certain tobacco industry studies. We disagree and stand by our conclusions.1

In their criticisms Kozlowski and O’Connor refer only to the 1997 review11 presented at a conference and not a peer reviewed article published in early 2001. In the latter review, Braker and I considered measurement techniques, effects of vent blocking on machine smoke yields, effects of vent blocking on human smoke yields, and simultaneous determination of ventilation and smoke yields. We concluded that vent blocking among smokers has only a relatively minor effect on human smoke yields compared to other smoking behaviour factors. The large effects observed with smoking machines are misleading because people do not smoke like machines.

Concerning the allegation that we erred because of our reliance on saliva based estimates, the facts are that we discussed the potential limitations of all techniques used to estimate the extent of vent blocking.8 We reported that four studies by Kozlowski and colleagues, using the “tar” stain technique, indicate that 50–99% of the 14 to 158 filters examined in each study showed some degree of vent blocking. Two other studies,8

References

1 Kozlowski LT, O’Connor RJ. Filter ventilation is an effective design because of misleading taste, bigger puffs, blocked vents. Tobacco Control 2002;11:i40–50.
8 McBride C. A study to determine the maximum cigarette insertion depth used by Canadian smokers [abstract]. Imperial Tobacco 1985. Bates No: 109874617. URL: www.tobaccopapers.org

Authors’ reply

Lewis takes us to task for criticising an article published in 1997 by noting that we ignore new points they made in a paper published...
unknown to us, in an industry sponsored journal. We learned of this publication a year after our paper was accepted for publication.

Lewis implies that we had reviewed an earlier submission of their paper to *Psychopharmacology*. We did review this draft, but were not privy to its fate. Journal rules and professional ethics require that the information in their submitted paper be treated as confidential, and we did not mention or make use of any of this confidential draft in our articles. That Lewis and Baker publish a revised paper that was informed by our thinking and suggestions on the topic should hardly be an occasion for criticising our discussion of a work that had not been informed by our advice.

Our paper appeared in a special journal issue dealing with industry documents. Ideally, review articles should derive from published, peer reviewed research. Failing that, public availability (as on the internet) of the primary reports should be expected. But when industry scientists (here from RJ Reynolds and British American Tobacco) characterise internal reports—that may not be or ever become available on the web—the opportunity for independent evaluation of findings may be lacking. Presumably, industry scientists have the ability to bring primary source internal research to peer reviewed publication. For non-industry scientists, in contrast, industry documents on the web are likely all that is available. In other words, we are limited to discuss those findings that are open to public view, while they are in a position to characterise studies to which independent scientists have no access. It would be best if all studies used to support or refute findings were available to all interested parties, preferably through peer reviewed publication.

Figure 8 in their 1997 paper, which they attribute to Hirji, is related to data that we attribute to Hirji. Compared to the Hirji version, their fig 8 contains both more data (another blocking condition) and at the same time significantly less data (for example, no mention of results from a 75 ml puff in 1 second every 25 seconds, that produces from a nominal 1 mg total particulate matter (TPM) cigarette a TPM yield of 15 mg with no blocking and 23 mg TPM with a 50% block. The Hirji report mentions by name the individuals who did the work, and Ferris is not mentioned.

Lewis writes that Creighton used industry scientists (as was noted in the version we have) who could be expected to conduct “ad lib experimentation” with the then innovative filter design. One of these scientists/ad hoc experimenters dropped out of the study after a day because of “an unpleasant taste in the mouth, persistent irritation and lack of satisfaction” (page 5). Why Creighton did not report that he received testimony from his colleagues that abuses were happening, rather than having to “observe” or write that “one subject was seen to cover up the ventilation holes” with tape, is interesting.

Lewis engages us particularly on the issue of vent blocking—a theme we think is less important overall than taste and puff volume, and probably only important for less common heavily ventilated cigarettes. (We never say the saliva based measures of blocking are worthless, just much less sensitive.) In their recent paper, they go into some puff volume data, but for them, interestingly, the blocked vent results (smaller puffs, fewer puffs) are caused by under-puffing on blocked cigarettes rather than over-puffing on unblocked cigarettes. Their rhetoric encourages us to see a self protecting smoker, rather a compensating smoker. Nice try!

The data in their more recent paper also support the position that filter ventilation is a defective and dangerous design that contributes to the misleading nature of standardised testing of cigarettes.

**References**

1 Baker RR, Lewis LS. Filter ventilation – has there been a ‘cover-up’? Recent Advances in Tobacco Science 1997;23:152-96.

**SOLUTION to the crossword on page 279**

![Crossword Grid]

1 CONTROL
2 L
3 E
4 A
5 C
6 GRANDPRIX
7 INHALES
8 REAL OR NOT YELP
9 STIFFEN
10 DAI SMELL
11 E
12 TESE
13 CADAVER
14 DALLOW FEE
15 ILL LIBERAL
16 CHAPMAN BAKO
17 AMIDDOOMSAYER
18 TOBACCORTEA
19 EE W OVERALL

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