

Evidence submitted to independent review into standardised packaging for tobacco

Submitted on behalf of the UK Centre for Tobacco and Alcohol Studies (UKCTAS) by John Britton, Professor of Epidemiology, University of Nottingham (j.britton@virgin.net).

Background

The UK Centre for Tobacco and Alcohol Studies (UKCTAS; www.ukctas.ac.uk) is a strategic network of academics from 13 universities researching methods to prevent tobacco smoking and harmful use of alcohol. UKCTAS is funded by the UK Clinical Research Collaboration, with contributions from the MRC, ESRC, Department of Health, British Heart Foundation and Cancer Research UK.

Members of UKCTAS collaborated in producing the two systematic reviews of evidence on standardised packaging commissioned by the Department of Health and published in 2012 and updated in 2013 [1;2]. This submission is made to the independent review into standardised packaging for tobacco to draw attention to two means of effect of branded tobacco packaging on promoting or sustaining tobacco smoking that were not explicitly included in the above systematic reviews [1;2]; and to communicate new research findings from UKCTAS researchers that are or were unpublished at the time of the 2013 update [2]. A paper on the quality of evidence submitted by the tobacco industry will be submitted by Professor Gilmore and colleagues in a separate document.

1. Effects of branded packaging not covered in detail by the systematic reviews

The main effects of standardised packing covered in the two reviews [1;2] relate primarily to the direct effect of packaging on existing and potential new smokers in terms of the appeal of packs, the salience of health warnings, and communication of misleading impressions of the harmfulness of the product. The reviews concluded that preventing these effects through standardised packing would reduce smoking prevalence by promoting cessation among existing smokers, and in particular by reducing smoking uptake among young people.

Historically the tobacco industry has argued consistently that tobacco advertising is not intended to recruit new smokers, but to increase market share among the existing adult smoker population [3]. Publicly, the industry has also argued that it does not aim to encourage smoking initiation among children and young people, and indeed has on occasions funded initiatives purporting to prevent smoking uptake in these groups [4]. Tobacco industry opposition to standardised packaging, the main effect of which is expected to be a modest reduction in uptake of smoking among young people, is therefore inconsistent with these historic positions. Furthermore the scale of the opposition campaign mounted by the tobacco industry in the UK in response to the government consultation in 2012 [5] suggests that standardised packaging represents a much greater threat to industry profit (and hence smoking prevalence) than might be expected from the relatively modest effects summarised in the evidence reviews [1;2]. There are at least two means by which this might be the case: (1) the use of branding to generate brand equities that facilitate secondary marketing of tobacco brands; and (2) the importance of premium branding to tobacco industry pricing models which subsidise the ultra-low price brands used particularly by smokers on low incomes. The first of these is particularly likely to promote the uptake of smoking among young people, whilst the second maintains smoking among existing smokers, which in turn increases uptake through parental modelling, access to tobacco in smoking households, and by shaping social norms [6]. In addition to

the benefits identified in the systematic reviews [1;2], standardised packaging will significantly undermine these processes. The ensuing threat to industry profitability is, we believe, the key reason for the extensive opposition of the tobacco industry to standardised packaging proposals.

1.1 The use of branding to create brand equities that facilitate secondary and alibi marketing

Advertising is a key component of marketing strategy for most commercial products and services, including tobacco products. However, since direct paid-for tobacco advertising is now prohibited in the UK under the terms of the 2002 Tobacco Advertising and Promotion Act, tobacco companies have become more reliant on more indirect means of promotion. These include event sponsorship and the appearance of branded goods in films, television, music videos and other new media, and rely heavily on recognisable brand imagery through which existing and potential new customers can identify or associate a particular tobacco product. These include recognisable branded packs, but also characteristics that are associated with the brand ('brand equities').

A summary of this and other approaches to product promotion in countries in which advertising is restricted (which the tobacco industry refers to as 'dark markets') is provided in the following internal memo on the promotion of the *Silk Cut* brand by BAT in Vietnam and Thailand, in the 1990s, which refers to 'focussed equities that cannot be banned by legal restriction'[7]:

The Techniques

We outline below some of the key techniques that we need to discuss with regard to building the Silk Cut franchise.

Sponsorship- This does not have to take the form of a major sporting commitment. Indeed it can be a cultural sponsorship of an artist or cultural event.

TMD- The development of a product that builds on our brand values and allows us to legitimately advertise.

Brand Colours and Shapes- We have in Purple and Silk two focused equities that cannot be banned by legal restriction and will form the basis of our dark market campaign.

The Pack-The pack can form the basis of a successful campaign. Bringing the pack into the right environment and being seen on the right people can create the right cues for the brand.

International Activity- Seeking opportunities in International media or clearly creating International campaigns that impact on the local market.

Third Party Development-Using 3rd parties to deliver your Brand values i.e. Retailers, Bar owners, Promotional partners

Guerrilla Warfare- Undertaking marketing campaigns that are swiftly undertaken and are not permanent and ultimately can not be traced.

A recent clear example of the creation and use of such equities are the use of the colour red, and the chevron pack design used by Philip Morris for their *Marlboro* brand (also known as the 'red roof' design but used with other colours, see figure, from [8]):

Figure 3 A selection of Philip Morris trademarks registered in the UK 1956–82.



The red of the *Marlboro* brand is a focussed equity which translates directly to and from the red of the Scuderia Ferrari Formula One team, which Philip Morris (seemingly illegally, in relation to the EU Tobacco Advertising Directive [9]) continue to sponsor. The result is a perceptual linkage of Ferrari and *Marlboro* through the shared use of this brand equity, with transference of brand attributes between them as demonstrated recently in another context for celebrity product endorsement [10]; by the persistent use of *Marlboro* in the description of the Scuderia Ferrari team despite removal (after complaint [8]) of Marlboro branding; and by the little boy in the Cancer Research-UK video who says that the red cigarette pack “reminds me of a Ferrari” (4 seconds from start in http://www.youtube.com/watch?v=c_z-4S8iicc). Cross-referencing of the brands has also been achieved through the use of the word *Rush* in the *Red Rush Marlboro* advertising campaign, and the use of the word *Rush* as the title of a recent feature film on the rivalry between two Formula One drivers (then racing for the McLaren Formula 1 team, at the time also sponsored by Phillip Morris) and promoting the *Marlboro* brand (examples below):

Marlboro imagery from the film *Rush* (2013)

Red Rush Marlboro branding



Red Rush Marlboro Facebook Imagery (2012)

Scuderia Ferrari Facebook page (2013)

<https://www.facebook.com/pages/Scuderia-Ferrari-Marlboro-F1-Team/172694558145>



Marlboro uses two colours, red and gold, in its branding; and the characteristic 'red roof' pattern facilitates brand recognition even when the brand name is not clearly visible (see <http://www.freestufffinder.com/free-marlboro-zippo-lighter/> for example of use of design on free Marlboro merchandise). This applies in particular to media portrayals of brands, as for example:

Slumdog Millionaire (2008)



Gavin and Stacey Christmas Special (BBC 2008)

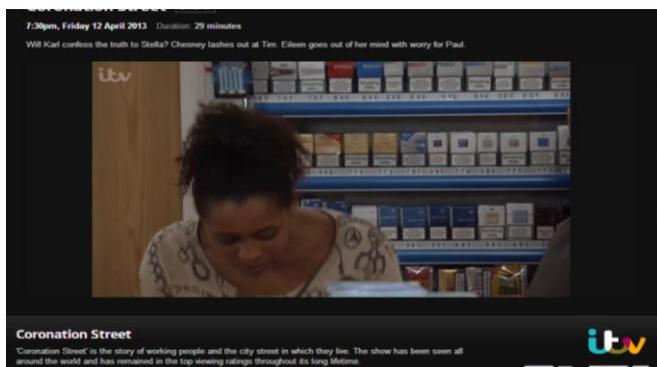


Of the night (Bastille) Youtube 2013

<http://www.youtube.com/watch?v=ZCTDKLjdok4>



Equivalent brand identities allow easy recognition (and hence brand promotion) of *Silk Cut*, *Hamlet* and other brands, despite low detail, in these media portrayals of *Gallaher* brands in *Coronation Street* episodes:



Whilst the fictional corner-shop point of sale displays in *Coronation Street* will disappear when these displays are prohibited in real life in 2015, the point that brand identities and equities facilitate brand promotion through appearance in the media remains salient. Exposure of young people to smoking imagery in the media is well established as a cause of smoking experimentation and

initiation [11-14], and the above examples therefore represent imagery that promotes tobacco brands directly to young people. Standardised packaging will prevent this secondary advertising of tobacco products.

1.2 Importance of branding to tobacco industry pricing models

Use of tax to increase the price of tobacco is a key effective tobacco control policy [15]. In the European Union, typical cigarette prices in Member States have historically been expressed in terms of a metric known as the Most Popular Price Category, which originated as the price of the dominant brand in any country but over time became synonymous with the cost of one or more premium cigarette (or hand-rolling tobacco) brands and unrepresentative of the wide range of prices at which tobacco products are available to customers [16;17]. Although recently replaced by the Weighted Average Price, neither of these summary measures reflects the complex price trends that occur across the various tobacco product and price segments, including the low and ultra-low price cigarette and hand-rolling tobacco products that are preferred by cash-poor smokers, which particularly comprise children and those of low socio-economic status.

Recent work by Professor Anna Gilmore and colleagues on tobacco pricing in the UK [17] demonstrates this problem by showing that whilst the real price of premium, mid-price and economy cigarette brands increased over the past decade, the real price of so called ‘ultra-low-price’ cigarettes (launched by the major tobacco companies from 2006) remained almost unchanged to the end of the period for which data were available:

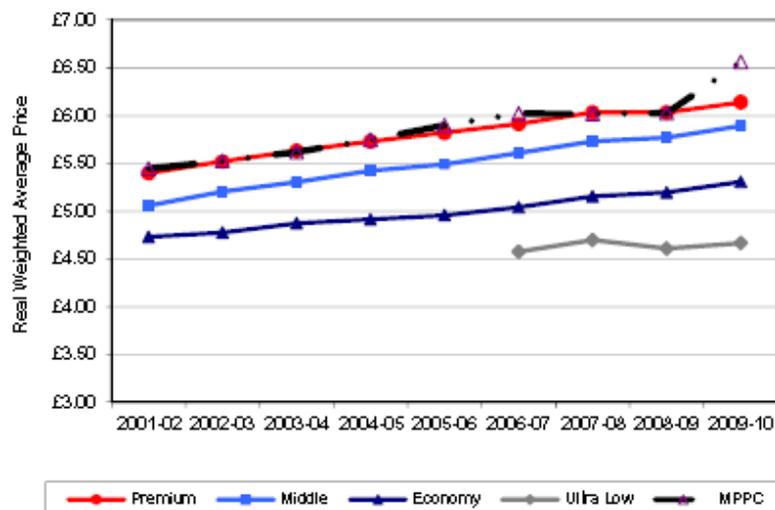


Figure 1 Real weighted average cigarette prices by price segment (2001–2 to 2009–10) using Consumer Price Index (CPI) indexation

Source: PriceChecker and General Household Survey (for 2001–05), Nielsen (for 2006–09).

CPI data used are Office for National Statistics’ (ONS) ‘all items’ CPI (designation: D7BT).

The most popular price category (MPPC) data are published by the Tobacco Manufacturer’s Association (TMA) (<http://www.the-tma.org.uk/tma-publications-research/facts-figures/ulc-cigarette-prices/>).

The weighted average price measure is based on our own calculations

Note: CPI and weighted average price data are taken from November each year, while the MPPC data are taken from January of the following year. Hence, the year categories have been labelled ‘2001–02’, ‘2002–03’, etc. in this graph.

The effect of this increasing price advantage in the ultra low category translated into increased sales volumes (see next figure), almost all of which will have occurred among less well-off smokers:

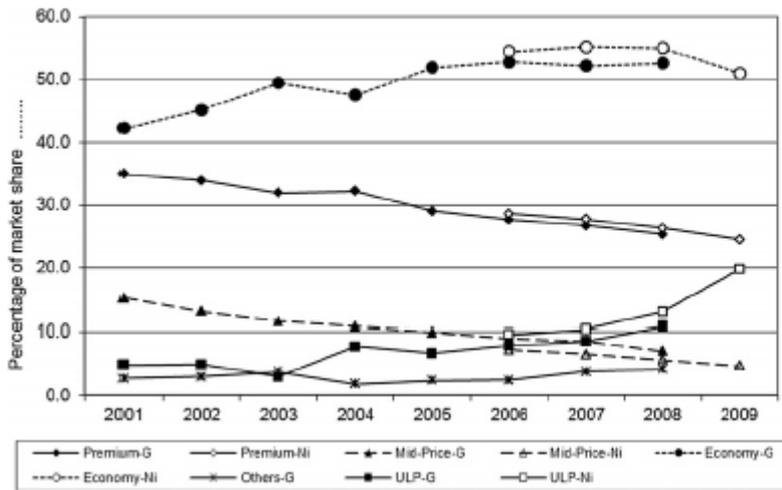
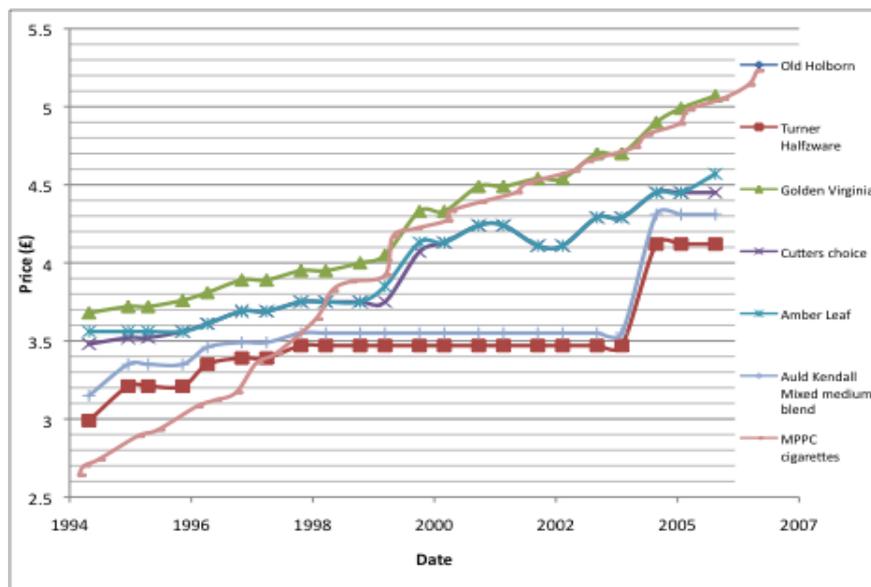


Figure 2 Volume market share by price segment, 2001–09

Source: General Household Survey (GHS) and Nielsen data

G=GHS data; Ni=Nielsen data; ULP= ultra-low price. 'Others-G' = market share held by brands that were not identified in the GHS (this includes brand not found, i.e. the smoker names the brand, but it is not identified in the GHS list; 'smokes two brands equally' or 'no regular brand'—for the last two categories the survey does not attempt to record a brand) or that were identified in the GHS, but for which we were unable to identify price data and thus to allocate to a price segment, the brands in this second group all had very low market shares.

During this period the tax on *all* cigarettes increased progressively, and the static price in the ultra-low category reflects the industry practice of 'undershifting' taxes on the ultra-low price brands (that is, absorbing the tax increase at the point each year when the government increases taxes). Simultaneously the tobacco industry was 'overshifting' (increasing prices on top of the tax increase) taxes on higher price products. In other words, the tobacco industry was cross-subsidising the tax component of the retail price of low-profit ultra-low price products from profits on higher price category brands, and particularly from the more than three-fold higher industry revenue from premium brands [17]. Overshifting explains why tobacco industry profits in the UK (and other high income countries) have been increasing despite declining sales, and are substantially greater than those in other industries [18]. Analysis of prices of hand-rolling tobacco brands for which data are published (available from 1995 to 2005) demonstrates similar price segmentation with constant prices in the lowest price brands (*Turner Halfzware* and *Auld Kendall Mixed Medium Blend*) from 1998 to 2004; a period in which tax on hand-rolling tobacco increased substantially (see figure, from unpublished work by Rothwell, Bogdanovica and Britton):



The relevance of these findings is that they indicate that branding, now conveyed almost entirely via packaging due to restrictions on other forms of advertising, is crucial to these price models. If all

cigarette and hand-rolling tobacco packs look the same, the brand identities and loyalties that lead consumers to pay premium prices for erstwhile premium brands will be significantly diminished, and industry profit reduced. This in turn will result in higher prices in the ultra-low price category, which is likely to have a major impact on smoking prevalence. Given the impact of adult smoking on young people, this will also have a knock-on impact on young people's smoking.

2 New evidence

2.1 Randomised trial of effect of standardised packs on smoking behaviour and attitudes

Professor Munafò's group in Bristol has recently completed a randomised controlled trial of smoking behaviour and attitudes when using standardised as compared to branded packs, in which 128 adult regular smokers were randomised to receive their regular brand of cigarette in a standardised pack as currently used in Australia, or a branded United Kingdom pack, and to use these over a 24-hour period. Primary outcomes were the number of cigarettes smoked, and the volume of smoke inhaled per cigarette measured using a portable smoking topography monitor. Secondary outcomes were self-reported ratings of motivation to quit smoking, cigarette taste, experience of smoking from the cigarette pack, experience of smoking the cigarette, attributes of the cigarette pack, perceptions of the health warning on the pack, changes in smoking behaviour, and views on plain packs. Smokers randomised to the standardised pack smoked fewer cigarettes but inhaled more smoke per cigarette than those randomised to a branded UK pack, but the confidence intervals on these differences were wide and included the null. Secondary outcomes demonstrated however that smokers randomised to standard packs rated the cigarette pack and the experience of smoking from it more negatively, and rated the health warning as more impactful. This work will be presented at the Society for Research into Nicotine and Tobacco (SRNT) meeting in Seattle in February 2014; copy submitted abstract appended (see appendix 1)

2.2 Functional imaging of brain activation on viewing branded and standardised packs

This study, also from Prof Munafò's group and to be presented at the Seattle SRNT meeting, investigated whether there are differences in activation in brain areas related to threat (amygdala) and reward (nucleus accumbens) in functional magnetic resonance imaging carried out in 19 non-smokers, 19 occasional (weekly) smokers, and 20 daily smokers viewing standardised and branded packs of cigarettes. Whole-brain analyses indicated that the presentation of branded as compared with standardised packs increased activation in the upper visual field around the calcarine sulcus among both non-smokers and weekly smokers. However, this activation was less marked among daily smokers. Bilateral region of interest analyses in the amygdala and nucleus accumbens indicated differences in brain activation in the right amygdala among non-smokers and weekly smokers when they viewed branded and standardised packages of cigarettes, but this difference was not observed among daily smokers. These findings demonstrate for the first time that viewing standardised cigarette packs as compared with branded packs results in a greater perceived threat among non-smokers and occasional smokers, and therefore that standardised packaging is likely to reduce uptake of smoking. The absence of an effect among regular smokers is consistent with previous evidence suggesting that regular smokers pay relatively little attention to health warnings on packs, whether standardised or branded (see appendix 2 for abstract).

2.3 Survey of attitudes to standardised packs among secondary schoolchildren in Nottingham

Prof Britton's group in Nottingham has completed analysis of a questionnaire survey of 4300 students aged 11-16 attending eight Nottingham secondary schools, carried out in March-April 2012. Students were shown pictures of branded, plain white and plain green versions of a single popular cigarette brand (*Richmond*). We found that the branded pack was perceived to be the most appealing among ever smokers, susceptible never smokers and non-susceptible never smokers. We also asked students which pack they thought was the least harmful, and found that although the majority of respondents did not think there was a difference, a larger proportion of ever smokers compared to non-susceptible never smokers viewed the branded pack as least harmful. Ever smokers preferred to be seen with branded pack, while never smokers reported that they did not want to be seen with any of the packs. One fifth of respondents agreed that implementation of plain white or green packs would reduce the prevalence of smoking among young people. These findings were presented at the Society for Research on Nicotine and Tobacco conference in Boston, USA, in March 2013 (see appendix 3 for abstract).

2.4 Trail of effect of standardised packaging on craving and intention to quit smoking

Dr Leonie Brose (KCL, formerly UCL) and colleagues have completed a study (accepted for publication in *Psychology and Health* pending minor edits [19]) on standardised packaging and craving in which they assessed a number of measures in response to exposure to 1) own branded cigarette package, 2) another branded package (both were packages available in the UK now) or 3) a standardised package (as available now in Australia but without brand name). Following abstinence from smoking for at least 12 hours, 98 regular and occasional smokers were randomised to an exposure task with one of the three packages. Measures of craving and motivation to stop smoking were taken before and after exposure; a range of other attributes concerning pack design, perceived smoker characteristics and effects on behaviour were rated after exposure. There was a significant interaction between the different types of packaging and craving, such that the standardised package reduced hedonic (e.g. 'A cigarette would taste good right now') craving. Standardised packaging was also perceived as less appealing and less motivating to buy cigarettes, and smokers using them were perceived as less popular and cigarettes from them expected to taste worse. However, there was no effect on motivation to stop smoking from this brief exposure task. The standardised packaging had the larger Australian health warnings which would make these findings conservative. This study suggests that standardised cigarette packaging may reduce acute hedonic craving and is associated with more negative perceptions than branded packaging with less prominent health warnings (see appendix 4 for abstract).

2.5 Study of perceptions of young female smokers of standardised packs

UKCTAS colleagues from the University of Stirling (Crawford Moodie, Linda Bauld, Allison Ford and Anne Marie Mackintosh) have recently completed a paper, funded by Cancer Research UK, exploring the perceptions of young female smokers to using standardised packs. The paper is an extension of an earlier naturalistic study (in which women used plain packs over a two week period) that outlines findings from in-depth interviews with a random sample of women in the larger study. This paper is being submitted to your office separately along with other new research authored by Dr Moodie and colleagues.

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Appendix 1

Plain packaging of cigarettes and smoking behaviour: A randomised controlled trial (ISRCTN 52982308)

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Introduction: Plain packaging would require all cigarettes to be sold in packs with a standard pack shape, colour and method of opening, leaving only the brand name in a standard font and location. We conducted the first randomised controlled trial of smoking behaviour and attitudes when using plain as compared to branded packs. **Methods:** Adult regular smokers were randomised to receive their regular brand of cigarette in a plain Australian pack or a branded United Kingdom pack, and used these over a 24-hour period. The primary outcomes were number of cigarettes smoked, and volume of smoke inhaled per cigarette, measured using a portable smoking topography monitor. Secondary outcomes were taken after the 24-hour period and comprised self-reported ratings of motivation to quit smoking, cigarette taste, experience of smoking from the cigarette pack, experience of smoking the cigarette, attributes of the cigarette pack, perceptions of the on-pack health warning, changes in smoking behaviour, and views on plain packs. Analyses were conducted using linear regression, adjusted for age, sex, heaviness of smoking at baseline and, where appropriate, self-reported ratings at baseline. This trial is registered with ISRCTN (52982308). **Results:** 128 smokers were randomised, 64 to plain packs and 64 to branded packs. Smokers randomised to the plain pack condition smoked on average fewer cigarettes than those randomised to the branded pack condition and inhaled more smoke per cigarette, but in both cases the confidence intervals were wide and included the null. Our secondary outcomes indicated that smokers randomised to the plain condition rated the experience of smoking from the cigarette pack more negatively, rated the cigarette pack more negatively and rated the health warning as more impactful. **Conclusions:** Plain packaging may not directly impact on smoking behaviour among regular smokers, although a larger trial would be required to answer this question with certainty. However, using a plain pack for a 24-hour period appears to have clear effects on ratings of the experience of smoking from the pack, the pack itself, and the impact of the health warning.

Justification: This is the first randomised controlled trial to investigate the effectiveness of plain tobacco packaging, a tobacco control policy currently being considered by a number of jurisdictions worldwide.

Funding: Economic and Social Research Council, Medical Research Council.

Conflict of Interest: No conflicts

Appendix 2

Effects of cigarette packaging on neural responses to health warnings

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Introduction: Previous neuroimaging studies have found that presenting smokers with smoking-related cues increases activation in brain areas related to reward. However, no neuroimaging studies have yet examined the effects of plain cigarette packaging on brain activation. Our previous research indicates that plain packaging increases visual attention to health warnings among non-smokers and weekly smokers, but not daily smokers, who appear to actively ignore health warnings.

Methods: The present study investigated whether there are differences in activation in brain areas related to threat (amygdala) and reward (nucleus accumbens) when viewing plain and branded packs of cigarettes, and whether this differs between non-smokers, weekly smokers and daily smokers. Participants underwent a single functional magnetic resonance imaging scan whilst viewing images of plain and branded cigarettes. **Results:** A total of 72 participants were recruited from Bristol, and after exclusions due to poor quality scans, data from 19 non-smokers, 19 weekly smokers and 20 daily smokers were available for analysis. Whole-brain analyses indicated that the presentation of branded as compared with plain packs increased activation in the upper visual field around the calcarine sulcus among both non-smokers and weekly smokers. However, this activation was attenuated among daily smokers. Furthermore, bilateral region of interest analyses in the amygdala and nucleus accumbens indicated differences in brain activation in the right amygdala among non-smokers and weekly smokers when they viewed branded and plain packages of cigarettes, but this difference was not observed among daily smokers. **Conclusions:** Our findings demonstrate for the first time that viewing plain cigarette packaging as compared with branded packaging results in a different pattern of brain activation, particularly in the right amygdala, and that this difference is reduced among daily smokers. These findings extend our previous observations that daily cigarette smokers actively avoid cigarette package health warnings and lend support to the view that plain packaging might be an effective tobacco control strategy.

Justification: Plain tobacco packaging is a tobacco control policy currently being considered by a number of jurisdictions worldwide, and this study demonstrates for the first time, the effect of plain packaging on neural responses.

Funding: Economic and Social Research Council, Medical Research Council, Action on Smoking and Health.

Conflict of Interest: No conflicts

PA15-4

EXPLORING THE ASSOCIATIONS BETWEEN ATTITUDES TOWARDS PLAIN PACKAGING AND SMOKING SUSCEPTIBILITY AMONG YOUTH

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Background: It has been suggested that the introduction of tobacco pack plain packaging is an effective approach to restrict marketing of tobacco products and will reduce appeal of these products to young people thus reducing smoking prevalence. This study explores predictors of attitudes towards plain packs by investigating associations between attitudes towards packaging and susceptibility to smoking. **Methods:** Data on smoking susceptibility, smoking status and attitudes towards cigarette packs were obtained from a cross-sectional study carried out in eight schools in England including 4300 students. Students were categorized as ever smokers, susceptible and non-susceptible never smokers, and differences in attitudes towards packaging between these groups were investigated using Chi-square tests. **Results:** Over 75% of respondents thought that branded packs were most appealing; however a larger proportion of non-susceptible never smokers compared to ever smokers reported no difference in the appeal of packs. A significantly larger proportion of smokers and susceptible never smokers viewed branded packs as less harmful compared to non-susceptible never-smokers, although the majority of all students reported no difference. Half of ever smokers, and more than a third of susceptible never smokers, preferred to be seen with branded packs; however, this was true for only 14% of non-susceptible never smokers. Half of ever smokers preferred to use branded packs to try smoking, while only 17% of non-susceptible never smokers would choose branded packs and most commonly reported that they would not use any of the packs. About 20% of students agreed that the introduction of plain packs (either green or white) would reduce smoking prevalence. **Conclusions:** The results suggest that, compared to non-susceptible never smokers, ever smokers and susceptible never smokers are more likely to view branded packs as more appealing, less harmful and would prefer to be seen with branded packs and try out smoking using these packs. As plain packaging is viewed as significantly less attractive it is likely that introduction of plain packs would help to prevent the uptake of smoking.

This study was originally supported by Cancer Research UK, Nottingham City PCT and the UK Centre for Tobacco Control Studies, with core funding from the British Heart Foundation, Cancer Research UK, Economic and Social Research Council, Medical Research Council, and the Department of Health under the auspices of the UK Clinical Research Collaboration.

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Appendix 4

Effects of standardised cigarette packaging on craving, motivation to stop and perceptions of cigarettes and packs.

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Objective: To assess whether standardised packs of the form introduced in Australia are associated with a reduction in acute craving and/or an increase in motivation to stop, and to replicate previous findings on perceptions of packaging, perceptions of smokers using it and perceived effects on behaviour.

Design: Following abstinence of at least 12 hours, 98 regular and occasional smokers were randomised to exposure to their own cigarette package, another branded package or a standardised package.

Main Outcome Measures: Baseline and post-exposure: Craving (QSU-brief), motivation to stop (MTSS). Post-exposure only: Ratings of 10 attributes concerning package design, perceived smoker characteristics and effects on behaviour.

Results: For craving, a mixed model ANCOVA showed a significant interaction of packaging and time of measurement ($F(2,94)=8.77$, $p<0.001$, partial $\eta^2=0.16$). There was no significant main effect or interaction for motivation to stop smoking ($p=0.9$). The standardised pack was perceived to be significantly less appealing and less motivating to buy cigarettes, smokers using them were perceived as less popular and cigarettes from them expected to taste worse.

Conclusion: Standardised cigarette packaging may reduce acute (hedonic) craving and is associated with more negative perceptions than branded packaging with less prominent health warnings.

Justification: This was the first trial of effects of standardised cigarette packaging on acute craving in smokers, showing that it may reduce craving for a cigarette.

Funding: National Centre for Smoking Cessation and Training (NCSCT).

Conflict of Interest: Leonie Brose's post was funded by the NCSCT, Andy McEwen is Director of the NCSCT and Susan Michie is a Co-Director.