

## News Release

### New study shows completely switching to BAT's Tobacco Heating Product, glo, has similar impact on indicators of potential harm as quitting smoking

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- Evidence shows significant reduction in indicators of potential harm over six months for smokers switching to exclusive use of glo compared with continuing to smoke cigarettes
- Gold-standard<sup>i</sup> indicator supports scientific substantiation of glo's potential as a reduced risk product\*
- First ever long-term study showing sustained reduction in exposure to certain toxicants and indicators of potential harm in smokers switching completely to glo
- Supports BAT's delivery of A Better Tomorrow™ by reducing the health impact of its global business by encouraging smokers who would otherwise continue to smoke to switch completely to reduced risk alternatives\*

New research [published today](#) in the journal, Internal and Emergency Medicine, provides the first real-world evidence that people switching from cigarettes to exclusive use of glo, BAT's flagship Tobacco Heating Product (THP), can significantly reduce their exposure to certain toxicants and indicators of potential harm related to several smoking-related diseases compared with continuing to smoke.

The results, recorded at 6-months of a 12-month study, showed that switching completely to glo resulted in statistically significant changes across a range of "biomarkers of exposure" (BoE)\*\*, and indicators of potential harm, known as "biomarkers of potential harm" (BoPH)\*\*, compared with continuing to smoke.

**For most biomarkers measured, the reductions seen in people using glo were similar to those in participants who stopped smoking completely.**

Based on the toxicants measured, glo users showed a:

- Significant reduction in a biomarker for lung cancer risk
- Significant reduction in white blood cell count, an inflammatory marker indicative of cardiovascular disease risk (CVD) and other smoking-related diseases
- Improvement in HDL cholesterol associated with reduced risk of CVD
- Improvements in two key indicators of lung health
- Improvement in a key indicator of oxidative stress, a process implicated in several smoking-related diseases, such as CVD and hypertension

**Dr David O'Reilly, BAT's Director of Scientific Research said:** "These are exciting results as they allow us to understand the potential for reduction of risk that switching completely to glo can deliver. The study shows that smokers switching to glo can reduce their exposure to certain toxicants, which reduces their risk of developing certain smoking related diseases.\* To have shown a significant reduction in measures of BOPH, some comparable to quitting completely, is very encouraging and provides further scientific substantiation of the harm reduction potential of glo and how it supports our ambition to build A Better Tomorrow by reducing the health impact of our business."

### About the study

Participants in this year-long randomised controlled study were UK-based smokers aged 23 to 55 in good general health who either did or did not want to quit. The smokers who did not intend to quit were randomised to either continue smoking cigarettes or switched to using only glo, while smokers who indicated they wanted to quit smoking received nicotine replacement therapy and access to a cessation counsellor. A group of "never smokers" was also included to act as a control group and continued not to use any tobacco or nicotine products.

This study was designed to explore the risk reduction potential of glo when used in a real world setting rather than in a controlled setting. The only intervention was a monthly clinic visit where samples of blood, urine and other measurements were taken. These samples were tested for "biomarkers of exposure" (to selected cigarette smoke toxicants) and "biomarkers of potential harm". In addition, to ensure compliance, the glo and cessation groups were tested for the biomarker, CEVal, which indicated if they had recently smoked cigarettes.

Further results from the completed study are due by the end of 2021 and will determine whether the reduced exposure to toxicants and biomarkers of potential harm are maintained over the duration of the study.

### Notes to Editors

\* Based on the weight of evidence and assuming a complete switch from cigarette smoking. These products are not risk free and are addictive.

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Biomarker of Exposure	Associated toxicant	Carcinogen	Respiratory Toxicant	CV Toxicant	Reproductive Toxicant
NNN	NNN	Y			
1-OHP	Pyrene	Y			
NNAL	NNK	Y			

<b>Biomarker of Exposure</b>	<b>Associated toxicant</b>	<b>Carcinogen</b>	<b>Respiratory Toxicant</b>	<b>CV Toxicant</b>	<b>Reproductive Toxicant</b>
<b>o-Tol</b>	o-toluidine	Y			
<b>3-HPMA</b>	Acrolein		Y	Y	
<b>HMPMA</b>	Crotonaldehyde	Y			
<b>4-ABP</b>	4-aminobiphenyl	Y			
<b>eCO</b>	Carbon monoxide				Y
<b>HEMA</b>	Ethylene oxide	Y	Y		Y
<b>2-AN</b>	2-aminonaphthalene	Y			
<b>MHBMA</b>	1,3-butadiene	Y	Y		Y
<b>S-PMA</b>	Benzene	Y		Y	Y
<b>CEMA</b>	Acrylonitrile	Y	Y		

<b>Biomarker of Potential Harm</b>	<b>Indicator</b>	<b>Association</b>
<b>HDL</b>	Lipid metabolism	CVD
<b>WBC</b>	General inflammation	CVD, COPD, cancers
<b>FEV1</b>	Lung health	Respiratory disease
<b>FeNO</b>	Bronchodilation/vascular tone	Respiratory disease, CVD
<b>sICAM</b>	Endothelial dysfunction	CVD
<b>11-dTx B2</b>	Platelet activation/coagulation	CVD

<b>Biomarker of Potential Harm</b>	<b>Indicator</b>	<b>Association</b>
<b>8-epi-PGF2a</b>	Oxidative stress	CVD, COPD, cancers
<b>NNAL</b>	NNK exposure	Lung cancer

<sup>i</sup> US Institute of Medicine: Scientific Standards for Studies on Modified Risk Tobacco Products 2012.

## Forward Looking Statements

References to ‘BAT’, ‘BAT Group’, ‘we’, ‘us’ and ‘our’ refer to BAT Group operating companies, collectively or individually as the case may be. This release contains certain forward-looking statements, including “forward-looking” statements made within the meaning of the US Private Securities Litigation Reform Act of 1995. These statements are often, but not always, made through the use of words or phrases such as “believe,” “anticipate,” “could,” “may,” “would,” “should,” “intend,” “plan,” “potential,” “predict,” “will,” “expect,” “estimate,” “project,” “positioned,” “strategy,” “outlook”, “target” and similar expressions. These include statements regarding our intentions, beliefs or current expectations reflecting knowledge and information available at the time of preparation, and concerning our results of operations, financial condition, liquidity, prospects, growth, strategies and the economic and business circumstances occurring from time to time in the countries and markets in which BAT Group companies operate, including the projected future financial and operating impacts of the COVID-19 pandemic.

All such forward-looking statements involve estimates and assumptions that are subject to risks, uncertainties and other factors. It is believed that the expectations reflected in this release are reasonable but they may be affected by a wide range of variables that could cause actual results to differ materially from those currently anticipated.

Among the key factors that could cause actual results to differ materially from those projected in the forward-looking statements are uncertainties related to the following: the impact of adverse domestic or international legislation and regulation; the inability to develop, commercialise and deliver BAT’s New Categories strategy; the impact of significant increases or structural changes in tobacco, nicotine and New Categories-related taxes; changes or differences in domestic or international economic or political conditions; the impact of serious injury, illness or death in the workplace; adverse decisions by domestic or international regulatory bodies; and the inability to lead the development and roll-out of BAT innovations (New Category products and combustibles), including as a result of unsuccessful research and development or a failure to develop robust scientific risk assessment frameworks. The forward-looking statements reflect knowledge and information available at the date of preparation of these materials, and BAT undertakes no obligation to update or revise these forward-looking statements, whether as a result of new information, future events or otherwise. Readers are cautioned not to place undue reliance on such forward-looking statements.

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Additional information concerning these and other factors can be found in British American Tobacco p.l.c.'s filings with the US Securities and Exchange Commission ("SEC"), including the Annual Report on Form 20-F and Current Reports on Form 6-K, which may be obtained free of charge at the SEC's website, <http://www.sec.gov>.

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