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# Flavour capsule heat-sticks for heated tobacco products

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Heated tobacco products (HTPs), or ‘heat-not-burn tobacco products’, are battery-powered devices that deliver nicotine to the user by heating a tobacco stick, instead of combusting tobacco like conventional cigarettes or heating liquids like electronic cigarettes.<sup>1,2</sup> Philip Morris International (PMI) launched its HTP, I Quit Ordinary Smoking (IQOS), in Japan in November 2014. Since then, PMI has rapidly expanded the IQOS market. PMI’s CEO has publicly expressed a belief in HTPs’ commercial success in upcoming years.<sup>3</sup> As of July 2018, IQOS is sold in 37 countries,<sup>4</sup> with evidence of rapidly increasing sales.<sup>5–9</sup> To help ensure that potentially reduced harm products like HTPs benefit public health, the tobacco control community must monitor industry behaviour around HTPs.

In November 2017, KT&G, the largest Korean tobacco company, introduced the product innovation of tobacco sticks with flavour capsules for HTPs (hereafter capsule heat-sticks) into the Korean market. The filters for capsule heat-sticks include a small case that contains flavouring agents, and consumers are to crush the capsule at any time during a smoking session to flavour the aerosol. Flavour capsules for conventional cigarettes work the same way and were first introduced in Japan in 2007, followed by their rapid introduction and growth in cigarette market share around the world.<sup>10,11</sup> Capsule cigarette flavours originally included only menthol, but flavours have expanded to include fruits (eg, mango, cherry, grape, lemon, strawberry and orange) and drinks (mojito).<sup>12,13</sup> Some capsule cigarettes even include two capsules with different flavours in the filter, and some brand varieties include multiple capsule flavours for different cigarette sticks inside a single pack.<sup>14</sup> In Korea, there are at least 35 flavour capsule cigarette brand varieties available.<sup>13</sup>

Capsule heat-sticks are a key innovation for KT&G’s attempt to attain market share for its HTPs in Korea, where PMI successfully launched IQOS

in June 2017.<sup>15</sup> Indeed, while IQOS heat-sticks (HEETS) include a variety of flavours (tobacco, menthol, bubble gum and lime), no IQOS heat-sticks include capsules. Furthermore, when British American Tobacco (BAT) introduced its ‘glo’ HTP into the Korean market in August 2017, their heat-sticks (Dunhill Neosticks) did not include capsules. Like IQOS, the heat-sticks included flavour options (tobacco, menthol and lemon ginger), with three additional flavours introduced in December 2017 (‘Ruby fresh (cherry)’, ‘purple fresh (grape)’ and ‘smooth fresh (light menthol)’). By contrast, when KT&G introduced its HTPs under the ‘lil’ (a Little Is a Lot) brand name in November 2017, all the lil heat-sticks (Fiit) included capsules (menthol and bubble gum flavours; see figure 1). In April 2018, KT&G further extended its offerings by introducing a capsule heat-stick named ‘Fiit SPARKY (menthol and apricot flavour)’. In the same month, BAT introduced Dunhill Neosticks with capsules for glo ‘Boost (strong menthol)’ and ‘Switch (tobacco and light menthol)’.

HTP product innovations appear to be gaining in popularity in Korea. Sales of HTPs increased in terms of both the volume and market share between May 2017 to March 2018, with approximately 163 million packs of heat-sticks sold, with each pack containing 20 heat-sticks.<sup>16</sup> Government data suggest that heat-sticks accounted for an estimated 8.6% of the market share for all tobacco products in February 2018, which was almost triple their market share (3%) in July 2017.<sup>17</sup>

The market share for capsule heat-sticks is currently unknown, but the rapid introduction of the HTP innovation into the Korean market along with the high market share for capsule cigarettes suggests that they are likely to be successful. Capsule cigarettes were first introduced in Korea by BAT in 2010 (KENT Convertibles), and KT&G introduced the world’s first ultraslim capsule cigarette brand, Esse Change, in Korea in 2013.<sup>18</sup> The market share of



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**Figure 1** Flavor capsule cigarettes ‘Fiit’ for heat-not-burn tobacco product ‘lil’. The warning label covers 50% of the front of the pack and writes ‘Caution for addiction. Sales are prohibited for adolescents aged less than 19 years! Electronic tobacco causes nicotine addiction. Quitline 1544-9030’.

flavour capsule cigarette increased from 2.3% in 2012 to 15.0% in 2015 in Korea.<sup>19</sup> Given that capsule cigarettes appeal to youth<sup>20 21</sup> and are perceived as more stylish and less harmful than regular cigarettes,<sup>22</sup> capsule heat-sticks may also appeal to youth. Like capsule cigarettes, capsule heat-sticks contain menthol<sup>23</sup> and other flavours that can mask the harshness of tobacco<sup>24</sup> and may appeal to female and young non-smokers.<sup>21 25–28</sup> Therefore, it is critical to monitor the growth, toxicity and potential public health impact of heat-sticks with and without flavour capsules, as well as the continuing growth of capsule cigarettes.

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