eTable 1. Search strings used in various sources for the conduction of the systematic review

Source	Date	String used	Filters	N ref
Pubmed	23/2/2022	"heated tobacco" OR "heat-not-burn" OR IQOS OR ploom[tiab] OR "heated cigarette" OR "tobacco heating"	English	589
Embase	23/2/2022	('heated tobacco':ab,ti OR 'heat-not- burn':ab,ti OR iqos:ab,ti OR ploom:ab,ti OR 'heated cigarette':ab,ti OR 'tobacco heating':ab,ti) NOT [medline]/lim AND [english]/lim AND (article:it OR review:it)	Not Pubmed English Article or review	71
Cochrane Library	23/2/2022	"heated tobacco" OR "heat-not-burn" OR IQOS OR ploom OR "heated cigarette" OR "tobacco heating"	Title Abstract Keywords	2
		Duplicates		-52
Total	23/2/2022			610

## eTable 2. PRISMA 2020 checklist

Section and Topic	ltem #	Checklist item	Location where item is reported
TITLE	-		
Title	1	Identify the report as a systematic review.	1
ABSTRACT	T		
Abstract	2	See the PRISMA 2020 for Abstracts checklist.	2
INTRODUCTION	-		
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	3
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	3
METHODS			
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	4
Information sources	6	Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.	3-4, eTable 1
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.	3-4, eTable 1
Selection process	8	Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.	4
Data collection process	9	Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process.	4
Data items	10a	List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect.	4
	10b	List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information.	4-5
Study risk of bias assessment	11	Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process.	NA
Effect measures	12	Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results.	4-5
Synthesis methods	13a	Describe the processes used to decide which studies were eligible for each synthesis (e.g. tabulating the study intervention characteristics and comparing against the planned groups for each synthesis (item #5)).	4-5
	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions.	5
	13c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.	4-5
	13d	Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used.	4-5-6

Section and Topic	ltem #	Checklist item	Location where item is reported			
	13e	Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression).	5			
	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.	NA			
Reporting bias assessment	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).	NA			
Certainty assessment	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.	NA			
RESULTS	1					
Study selection	16a	16a Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram. 4				
	16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.	4, eFigure 1			
Study characteristics	17	Cite each included study and present its characteristics.	eTable 3			
Risk of bias in studies	18	Present assessments of risk of bias for each included study.	NA			
Results of individual studies	19	For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots.	Table 1, eTables 4 and eTable 5			
Results of	20a	For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies.	NA			
syntheses	20b	Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect.	6-7, Figures 1-2-3, Table 1, eFigure 2, eFigure 3, eFigure 4, eFigure 5, eFigure 6, eFigure 7, eFigure 9, eFigure 10, and eFigure 11			
	20c	Present results of all investigations of possible causes of heterogeneity among study results.	Figure 3, eFigure 2, eFigure 3, eFigure 4, eFigure 5, eFigure 6,			

Section and Topic	ltem #	Checklist item	Location where item is reported
			eFigure 7, and eFigure 8
	20d	Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.	NA
Reporting biases	21	Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.	NA
Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.	NA
DISCUSSION	-		
Discussion	23a	Provide a general interpretation of the results in the context of other evidence.	7-9
	23b	Discuss any limitations of the evidence included in the review.	9-10
	23c	Discuss any limitations of the review processes used.	9-10
	23d	Discuss implications of the results for practice, policy, and future research.	10
OTHER INFORMA	TION		
Registration and	24a	Provide registration information for the review, including register name and registration number, or state that the review was not registered.	4
protocol	24b	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.	4
	24c	Describe and explain any amendments to information provided at registration or in the protocol.	NA
Support	25	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.	10-11
Competing interests	26	Declare any competing interests of review authors.	10
Availability of data, code and other materials	27	Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review.	11

From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: 10.1136/bmj.n71

**eTable 3.** Characteristics of 76 original articles providing data on the use of heated tobacco products (HTP) included in the review, with corresponding information contributing to the systematic review

First author, year	Countries	Year of data collection	Sample size	Population	Current HTP use	Ever HTP use	Dual use	Use transitions	Strata
Adamson et al, 2020 <sup>1</sup>	Japan	2018	4,156	Age 20+ living in Tokyo, Osaka and Sendai	х	х	х	Х	
AlMulla et al, 2021 <sup>2</sup>	Qatar	2019	6,904	University students and governmental employees	х		х		Smoking status
Arslan et al, 2020 <sup>3</sup>	Turkey	2019	332	Family physicians working in Samsun	Х	Х			
Atzendorf et al, 2019 <sup>4</sup>	Germany	2018	9,267	Adults	Х				Sex
Azagba et al, 2021 <sup>5</sup>	USA	2019	42,477	Civilian non- institutionalized adults		х			
Berg et al, 2021 <sup>6</sup>	USA	2018	2,375	Young adults between 18 and 34 years of age		х			
Brose et al, 2018 <sup>7</sup>	UK	2017	12,693	Age 17+	Х	Х	Х		Sex, age, SES, smoking status
Brose et al, 2021 <sup>8</sup>	UK	2019	3,883	Adult former or current smokers or vapers	Х	х			
Cerrai et al, 2020 <sup>9</sup>	Italy	2018	15,732	Students between 15 and 19 years of age	Х	Х			

Chang et al, 2020 <sup>10</sup>	Taiwan	2018	44,905	Adolescents between 12 and 18 years of age	х	х			
Chung et al, 2020 <sup>11</sup>	South Korea	2018	60,040	Adolescents between 13 and 18 years of age		х			
Cox et al, 2021 <sup>12</sup>	UK	2020	8,486	Age 16+		Х	Х		
Cruz-Jiménez et al, 2022 <sup>13</sup>	Mexico	2021	6,500	Current smokers and/or vapers	Х	Х			
Dunbar et al, 2020 <sup>14</sup>	USA	2019	2,697	Young adults in south California (mean age=21.6)	х	х			
East et al, 2021 <sup>15</sup>	Canada, UK and USA	2018 and 2019	11,753 (2018) and 11,609 (2019)	Adolescents between 16 and 19 years of age	x				
Gallus et al, 2021 <sup>16</sup>	Italy	2019	3,120	Age 15+	Х	Х	Х	Х	Sex, age
Gallus et al, 2022 <sup>17</sup>	Bulgaria, France, Germany, Greece, Italy, Latvia, Poland, Portugal, Romania, Spain and UK	2017	10,961	Age 15+	х	х	х		Sex, age, SES, smoking status
Gallus et al, 2022 18	Italy	2020	6,003	Adults	Х				
Gallus et al, 2022 <sup>19</sup>	Italy	2020	3,185	Adults				Х	
Gentzke et al, 2020 <sup>20</sup>	USA	2020	14,531	Middle and high school students	Х				
Gottschlich et al, 2020 <sup>21</sup>	Guatemala	2019	2,870	Students between 13 and 17 years of age attending Guatemala City private schools	X	х			
Gravely et al, 2020 <sup>22</sup>	Japan	2018	3,838	Smokers aged 20+	Х				
Han et al, 2021 <sup>23</sup>	South Korea	2019	57,303	Middle and high school students	Х	Х			

Harada et al, 2022 <sup>24</sup>	Japan	2019	3,334	Resident population					Sex, age
				and worksite population in the Yamagata Prefecture	х		х		
Havermans et al, 2021 <sup>25</sup>	Netherlands	2020	5,805	Age 13+	х	х	х		Sex, age, SES, smoking status
Hirai et al, 2021 <sup>26</sup>	Japan	2020	441	COPD patients with smoking history aged 40+ in four prefectures	х				
Huh et al, 2021 <sup>27</sup>	South Korea	2019	57,069	Middle and high school students	Х				
Hwang et al, 2019 <sup>28</sup>	South Korea	2018	21,100	Age 19+ living in Kyungpook province	Х	Х	Х		Sex, age, SES, smoking status
Hwang et al, 2020 <sup>29</sup>	South Korea	2019	57,303	Middle and high school students	Х	Х			
Hwang et al, 2021 <sup>30</sup>	South Korea	2018	1,200	Adults living in apartment in seven metropolitan cities		х			
Jankowski et al, 2019 <sup>31</sup>	Poland	2018	423	Physicians attending mandatory public health courses	х	х			Sex
Jankowski et al, 2021 <sup>32</sup>	Poland	2020	5,082	Police employees from the Mazowieckie province	х		x		Sex, age, smoking status
Kanai et al, 2021 <sup>33</sup>	Japan	2018- 2019	158	Tobacco users at a manufacturing company				х	
Kang et al, 2020 <sup>34</sup>	South Korea	2018	59,532	Adolescents between 12 and 18 years of age		х			
Kang et al, 2021 <sup>35</sup>	South Korea	2018	60,040	Middle and high school students		Х			
Kim et al, 2020 <sup>36</sup>	South Korea	2018	6,182	Age 19+	Х		Х		Sex, age, SES, smoking status

Kim et al, 2021 <sup>37</sup>	South Korea	2018	7,000	Age 20+	Х	Х	Х		Sex, SES, smoking status
Kinjo et al, 2020 38	Japan	2018	4,628	Age 20+	Х	Х			Sex, age, SES
Kioi et al, 2018 39	Japan	2015	4,432	Age 40+	Х	Х	Х		Sex, age
Koyama et al, 2021 <sup>40</sup>	Japan	2020	5,120	Tobacco users				Х	
Kuwabara et al, 2020 <sup>41</sup>	Japan	2017	64,152	Middle and high school students (mean age=15.7)	Х	х			
Kwon et al, 2021 <sup>42</sup>	South Korea	2019	4,028	Smokers between 12 and 18 years of age	Х				
Laverty et al, 2021 <sup>43</sup>	27 European countries and UK	2020	27,786	Age 15+	х	х	х		Sex, age, smoking status
Lee et al, 2019 44	South Korea	2018	60,040	Adolescents between 12 and 18 years of age		х			
Lee et al, 2021 <sup>45</sup>	South Korea	2020	663	Female smokers aged 19+	Х				
Lee et al, 2021 <sup>46</sup>	South Korea	2018	7,000	Age 20+	Х				Age
Lee et al, 2021 47	USA	2019	19,018	Middle and high school students	Х	Х			
Li et al, 2021 <sup>48</sup>	Australia, Canada, UK and USA	2020	10,296	Adult former and current cigarette smokers	х				
Li et al, 2021 49	USA	2020	150,516	Californian high school students	Х	Х			
Liu et al, 2019 50	Italy	2017	3,086	Age 15+		Х	Х		
Lotrean et al, 2020 <sup>51</sup>	Germany, Greece, Hungary, Poland, Romania and Spain	2016 and 2018	6,011 (2016) and 6,027 (2018)	Adult smokers	Х	х			
Luk et al, 2021 52	Hong Kong	2018	1,213	Daily smokers				Х	
Majek et al, 2021 53	Poland	2019	1,344	Medical students at the Medical	Х	Х			

				University of Silesia					
Marynak et al, 2018 <sup>54</sup>	USA	2017	4,107	Adult population		Х	Х		
Matsuyama et al, 2022 <sup>55</sup>	Japan	2019 and 2020	7,766 (2019) and 5,947 (2020)	Adult non-smokers of conventional cigarettes				х	
McKelvey et al, 2021 <sup>56</sup>	USA	2018	450	Californian students (mean age=19.3)		Х			
Miller et al, 2021 57	Australia, Canada, UK and USA	2018	11,421	Adult smokers	х				
Miller et al, 2022 58	Australia, Canada, UK and USA	2018	12,987	Adult former and current smokers	х	x			
Myagmar-Ochir et al, 2021 59	Japan	2018	7,714	Retail business workers	Х		Х		Sex
Nyman et al, 2018 60	USA	2016 and 2017	6,014 (2016) and 5,992 (2017)	Adult population	х	х	х		Sex, age, SES, smoking status
Odani et al, 2022 61	Japan	2020	9,044	Age 15+	Х		Х		Sex, age, smoking status
Park et al, 2021 62	South Korea	2019	57,303	Middle and high school students	Х	Х	Х		
Park et al, 2022 63	South Korea	2018	2,000	Tobacco product users aged 19+	Х	Х			
Pinkas et al, 2019 <sup>64</sup>	Poland	2019	1,011	Age 15+	Х				Sex
Pokhrel et al, 2021 <sup>65</sup>	USA	na	2,229	Hawaiian university students	Х	х			
Sansone et al, 2020 <sup>66</sup>	Japan	2018	4,684	Smokers aged 20+	Х				
Sugiyama et al, 2020 <sup>67</sup>	Japan	2017	10,114	Age 15+	Х		Х		
Sutanto et al, 2019 68	Japan	2018	4,684	Age 20+	Х		Х		
Tabuchi et al, 2016 69	Japan	2015	8,240	Age 15+		Х	Х		
Tabuchi et al, 2018 <sup>70</sup>	Japan	2015, 2016 and 2017	8,240	Age 15+	Х		х		Sex, age, SES, smoking status

Tattan-Birch et al, 2021 71	UK	2016 and 2020	75,355	Age 16+	Х		Х		Sex, age, SES
Wang et al, 2021 72	Hong Kong	2019	33,991	High school students	Х	Х			
Wu et al, 2020 <sup>73</sup>	Hong Kong	2017	5,131	Chinese population aged 15+		Х	Х		
Xia et al, 2022 <sup>74</sup>	Hong Kong	2016- 2019	579	Young smokers who want to quit				Х	
Yi et al, 2021 <sup>75</sup>	South Korea	2017	271	Male current or former smokers	Х				
Zhu et al, 2021 76	USA	2020	20,449	Adult population	Х	Х			

COPD, Chronic obstructive pulmonary disease; SES, socio-economic status.

Country	First Author, year	Year of conduction	Ever HTP use (%)	Current HTP use (%)
Austria	Laverty et al, 2021 43	2020	12.0	2.0
Belgium	Laverty et al, 2021 43	2020	7.8	1.7
Bulgaria	Gallus et al, 2022 <sup>17</sup>	2017	2.0	0.3
	Laverty et al, 2021 43	2020	12.0	2.4
Croatia	Laverty et al, 2021 43	2020	6.8	0.7
Cyprus	Laverty et al, 2021 43	2020	8.2	3.1
Czech Republic	Laverty et al, 2021 43	2020	14.6	3.1
Denmark	Laverty et al, 2021 43	2020	6.0	0.3
Estonia	Laverty et al, 2021 43	2020	8.2	1.1
Finland	Laverty et al, 2021 43	2020	9.5	1.3
France	Gallus et al, 2022 <sup>17</sup>	2017	1.8	0.2
	Laverty et al, 2021 43	2020	2.8	0.8
Germany	Atzendorf et al, 2019 <sup>4</sup>	2018	-	0.8
	Gallus et al, 2022 <sup>17</sup>	2018	1.4	0.1
	Laverty et al, 2021 43	2020	5.5	0.6
Greece	Gallus et al, 2022 <sup>17</sup>	2018	8.3	1.0
	Laverty et al, 2021 43	2020	9.0	1.9
Hong Kong	Wu et al. 2020 <sup>73</sup>	2017	1.0	-
Hungary	Laverty et al, 2021 43	2020	4.8	1.3
Ireland	Laverty et al, 2021 43	2020	12.3	1.8
Italy	Gallus et al, 2022 <sup>17</sup>	2016	1.1	0.0
	Liu et al, 2019 <sup>50</sup>	2017	1.4	-
	Gallus et al, 2021 <sup>16</sup>	2019	1.6	1.1
	Gallus et al, 2022 <sup>18</sup>	2020 (pre-lockdown)	-	4.0
	Gallus et al, 2022 <sup>18</sup>	2020 (post-lockdown)	-	4.5
	Laverty et al, 2021 43	2020	9.7	3.0
Japan	Tabuchi et al, 2018 70	2015	-	0.3
	Tabuchi et al, 2018 <sup>70</sup>	2016	-	0.6
	Tabuchi et al, 2018 <sup>70</sup>	2017	-	3.6
	Kioi et al, 2018 <sup>39</sup>	2015	0.1	0.0
	Tabuchi et al, 2016 69	2015	0.6	-
	Sugiyama et al, 2020 67	2017	-	2.7
	Kinjo et al, 2020 <sup>38</sup>	2018	8.7	5.0
	Sutanto et al, 2019 68	2018	-	2.7
	Adamson et al, 2020 <sup>1</sup>	2018	9.6	5.0
	Myagmar-Ochir et al, 2021 59	2018	-	6.4
	Odani et al, 2021 61	2020	-	10.9
Latvia	Gallus et al, 2022 <sup>17</sup>	2018	1.8	0.0
	Laverty et al, 2021 43	2020	13.8	2.9
Lithuania	Laverty et al. 2021 43	2020	10.6	2.2
Luxemboura	Laverty et al, 2021 43	2020	11.4	0.6
Malta	Laverty et al, 2021 43	2020	3.9	1.8
Netherlands	Laverty et al, 2021 43	2020	4.1	0.5

eTable 4. Prevalence of use of heated tobacco products (HTP) among adults by country

	Havermans et al, 2021 <sup>25</sup>	2020	3.0	0.4
Poland	Gallus et al, 2022 <sup>17</sup>	2018	1.6	0.0
	Jankowski et al, 2019 <sup>31</sup>	2018	8.5	1.9
	Jankowski et al, 2021 32	2020	-	5.5
	Laverty et al, 2021 43	2020	3.8	1.0
Portugal	Gallus et al, 2022 <sup>17</sup>	2017	3.0	0.5
	Laverty et al, 2021 43	2020	7.9	1.0
Qatar	AlMulla et al, 2021 <sup>2</sup>	2019	-	0.7
Romania	Gallus et al, 2022 <sup>17</sup>	2017	3.0	0.0
	Laverty et al, 2021 43	2020	5.4	0.5
Slovakia	Laverty et al, 2021 43	2020	9.6	2.5
Slovenia	Laverty et al, 2021 43	2020	7.4	1.1
South Korea	Kim et al, 2020 <sup>36</sup>	2018	-	4.4
	Hwang et al, 2019 <sup>28</sup>	2018	3.5	2.1
	Hwang et al, 2021 <sup>30</sup>	2018	23.9	-
	Kim et al, 2021 <sup>37</sup>	2018	16.8	10.2
Spain	Gallus et al, 2022 <sup>17</sup>	2017	0.6	0.1
	Laverty et al, 2021 43	2020	6.3	1.0
Sweden	Laverty et al, 2021 43	2020	6.6	0.4
Turkey	Arslan et al, 2020 <sup>3</sup>	2019	2.7	0.3
UK	Tattan-Birch et al, 2021 71	2016	-	0.2
	Gallus et al, 2022 <sup>17</sup>	2017	2.1	0.2
	Brose et al, 2018 <sup>7</sup>	2017	1.8	0.8
	Cox et al, 2021 <sup>12</sup>	2020	0.1	-
	Laverty et al, 2021 43	2020	6.6	0.9
	Tattan-Birch et al, 2021 <sup>71</sup>	2020	-	0.2
USA	Nyman et al, 2018 60	201	1.4	0.5
	Nyman et al, 2018 <sup>60</sup>	2017	2.2	1.1
	Marynak et al, 2018 54	2017	0.7	-
	Azagba et al, 2021 <sup>5</sup>	2019	0.5	-
	Zhu et al, 2021 <sup>76</sup>	2020	0.6	0.1

HTP, heated tobacco products.

Country	First author, year	Year of conduction	Age (years)	Ever HTP use (%)	Current HTP use (%)
Canada	East et al. 2021 <sup>15</sup>	2018	16-19	-	0.6
	East et al. 2021 <sup>15</sup>	2019	16-19	-	1.0
Guatemala	Gottschilich et al. 2020 <sup>21</sup>	2019	13-17	11.3	2.9
Hong Kong	Wang et al. 2021 72	2018-2019	14.0 (mean)	2.6	1.6
Italy	Cerrai et al. 2020 <sup>9</sup>	2018	15-19	5.0	2.0
Japan	Kuwabara et al. 2020 <sup>41</sup>	2017-2018	12-18	1.8	0.8
South Korea	Chung et al. 2020 <sup>11</sup>	2018	13-18	2.9	-
	Kang et al. 2020 <sup>34</sup>	2018	12-18	2.8	-
	Kang et al, 2021 <sup>35</sup>	2018	12-18	2.9	-
	Lee et al, 2019 44	2018	12-18	2.9	-
	Han et al. 2021 <sup>23</sup>	2019	12-18	4.9	2.6
	Huh et al. 2021 <sup>27</sup>	2019	12-18	-	2.6
	Park et al. 2021 62	2019	12-18	4.7	2.4
	Hwang et al. 2020 <sup>29</sup>	2019	12-18	4.9	2.6
Taiwan	Chang et al, 2020 <sup>10</sup>	2018	12-18	4.2	2.3
UK	East et al. 2021 <sup>15</sup>	2018	16-19	-	0.6
	East et al. 2021 <sup>15</sup>	2019	16-19	-	0.8
USA	East et al. 2021 <sup>15</sup>	2018	16-19	-	1.3
	East et al. 2021 <sup>15</sup>	2019	16-19	-	1.4
	Lee et al. 2021 47	2019	11-18	2.3	1.6
	Li et al. 2021 49	2019-2020	14-18	0.7	0.2
	Gentzke et al. 2020 <sup>20</sup>	2020	11-18	-	1.4

eTable 5. Prevalence of use of heated tobacco products (HTP) among teenagers by country

HTP, heated tobacco products.

eTable 6. Quality evaluation of the 5 cohort studies included in the meta-analysis on use transitions using the New-Castle Ottawa (NOS) scale

		SELE	CTION		COMPARABILITY		EXPOSURE		
Author, Year	Represent ativeness of the exposed cohort	Selection of the non- exposed cohort	Ascertain ment of exposure	Outcome of interest not present at start of study	Comparability of cohorts <sup>a,b</sup>	Ascertain ment of outcome	Follow-up long enough for outcome to occur <sup>c</sup>	Adequacy of follow- up cohorts <sup>d</sup>	TOTAL NOS SCORE
Kanai, 2021 33	-	☆	-	-	**	-	-	☆	4
Luk, 2021 <sup>52</sup>	-	☆	-	☆	**	-	☆	-	5
Gallus, 2022 <sup>19</sup>	-	☆	-	-	☆	-	☆	-	3
Matsuyama, 2022	-	*	-	-	☆	-	\$	-	3
Xia, 2022 74	-	☆	-	-	**	-	☆	-	4

<sup>a</sup> Each item could be scored with a maximum of one star, except for the item "Comparability of cohorts" which could receive a maximum of two stars.

<sup>b</sup> Studies controlling for age or sex in the design or in the analysis received one star. Studies with all the previous variables and at least one of the following variables: previous quit attempt, pharmacological support, intention to quit, level of nicotine dependency received two stars.

<sup>c</sup> Studies with follow-up time ≥6 months received one star.

<sup>d</sup> Studies with follow-up rate ≥80% or with a description of those lost at follow-up received one star.

**eTable 7.** Quality evaluation of the 21 cross-sectional studies providing results on the association between heated tobacco products use and socio-demographic characteristics (sex, age, socio-economic status, use of conventional cigarette) using the New-Castle Ottawa scale adapted for cross-sectional studies

	SELECTION			COMPARABILITY	OUTCOME				
Author, Year	Represent ativeness of the sample	Non- responde nts	Ascertain ment of the exposure	Comparability <sup>a,b</sup>	Ascertainment of outcome	Statistical test	TOTAL NOS SCORE	Socio-demographic characteristics evaluated	
AlMulla, 2021 <sup>2</sup>	☆	☆	-	-	-	-	2	Smoke	
Atzendorf, 2019 <sup>4</sup>	☆	-	-	-	-	-	1	Sex	
Brose, 2018 <sup>7</sup>	☆	-	-	-	-	-	1	Sex, age, smoke	
Gallus, 2021 <sup>16</sup>	☆	-	-	**	-	☆	4	Sex, age	
Gallus, 2022 <sup>17</sup>	☆	☆	-	**	-	☆	5	Sex, age, SES, smoke	
Harada, 2022 <sup>24</sup>	-	-	-	-	-	-	0	Sex, age	
Havermans, 2021 <sup>25</sup>	\$	-	-	-	-	-	1	Sex, age, SES, smoke	
Hwang, 2019 <sup>28</sup>	\$	☆	-	**	-	☆	5	Sex, age, SES, smoke	
Jankowski, 2019 <sup>31</sup>	-	☆	-	-	-	-	1	Sex	
Jankowski, 2021 <sup>32</sup>	-	-	-	-	-	-	0	Sex, age, smoke	
Kim, 2020 <sup>36</sup>	☆	-	-	**	-	☆	4	Sex, age, SES, smoke	
Kim, 2021 <sup>37</sup>	☆	-	-	**	-	☆	4	Sex, SES, smoke	
Kinjo, 2020 <sup>38</sup>	☆	-	-	-	-	-	1	Sex, age, SES	
Kioi, 2018 <sup>39</sup>	-	-	-	-	-	-	0	Sex	
Laverty, 202143	☆	☆	-	**	-	☆	5	Sex, age, smoke	
Myagmar-Ochir, 2021 <sup>59</sup>	-	☆	-	-	-	-	1	Sex	
Nyman, 2018 <sup>60</sup>	\$	-	-	**	-	\$	4	Sex, age, SES, smoke	
Odani, 2022 <sup>61</sup>	☆	-	-	-	-	-	1	Sex, age, smoke	

Pinkas, 2019 <sup>64</sup>	☆	-	-	-	-	-	1	Sex
Tabuchi, 2018 <sup>70</sup>	☆	-	-	**	-	☆	4	Sex, age, SES, smoke
Tattan-Birch, 2021 <sup>71</sup>	☆	-	-	-	-	-	1	Sex, age

NOS, New-Castle Ottawa Scale; SES, socioeconomic status.

<sup>a</sup> Each item could be scored with a maximum of one star, except for the item "Comparability of cohorts" which could receive a maximum of two stars.

<sup>b</sup> Studies controlling for age or sex in the design or in the analysis received one star. Studies with all the previous variables and at least one of the following variables: level of education, income, cigarette use, e-cigarette use, alcohol consumption received two stars.





**eFigure 2.** Forest plot of pooled odds ratio for current heated tobacco product use among adults according to sex (male vs female), overall and stratified by continent

	Users					
Author, year (country)	Male	Female		OR	[95% CI]	Weight %
Continent = Asia Harada et al, 2021 (res)* (JP) Harada et al, 2021 (work)* (JP) Hwang et al, 2019 (KR) Kim et al, 2020 (KR) Kinjo et al, 2020* (JP) Kioi et al, 2020* (JP) Myagmar-Ochir et al, 2021* (JP) Odani et al, 2021* (JP) Tabuchi et al, 2018 (JP) Pooled estimate Heterogeneity: $J^2 = 91\%$ , $p < 0.01$	33 39 375 177 373 131 18 233 814 224 <b>2417</b>	3 11 28 28 201 55 0 256 228 74 <b>884</b>		13.77 7.75 1.42 8.93 1.52 2.93 7.37 2.41 3.42 3.57 <b>3.65</b>	[4.21; 45.01] [3.89; 15.42] [0.66; 3.06] [1.25; 13.36] [2.13; 4.04] [0.44; 122.57] [2.00; 2.90] [2.93; 3.99] [1.30; 10.00] [2.28; 5.84]	3.7 4.9 4.7 5.6 5.9 5.8 1.3 5.9 6.0 4.1 <b>47.9</b>
Continent = Europe Atzendorf et al, 2019* (DE) Brose et al, 2018* (UK) Gallus et al, 2021 (IT) Gallus et al, 2022* (EU) Havermans et al, 2021* (NL) Jankowski et al, 2021* (PL) Jankowski et al, 2021* (PL) Laverty et al, 2021* (PL) Pinkas et al, 2018* (PL) Tattan-Birch, 2021* (UK) Pooled estimate Heterogeneity: $I^2 = 72\%$ , $p < 0.01$	66 51 23 5 14 5 189 196 2 37 588	15 54 11 9 3 87 168 2 41 <b>401</b>		3.67 0.93 1.85 0.51 1.59 3.07 1.10 0.84 1.09 0.91 <b>1.25</b>	[2.09; 6.43] [0.63; 1.36] [0.90; 3.70] [0.18; 1.47] [0.69; 3.69] [0.72; 13.03] [0.85; 1.42] [0.68; 1.03] [0.15; 7.76] [0.58; 1.42] [0.58; 1.42]	5.3 5.6 4.9 4.0 3.1 5.8 5.9 2.2 5.5 <b>46.9</b>
<b>Continent = North America</b> Nyman et al, 2018 (USA)	48	48		1.13	[0.63; 2.04]	5.2
Pooled estimate Heterogeneity: $l^2 = 93\%$ , $p < 0.01$ Test for subgroup differences: $\chi_2^2 =$	<b>3053</b> 14.90, df = 2	<b>1333</b> (p < 0.01)	0.3 0.5 1 2 10	2.11	[1.47; 3.04]	100.0

\*OR values estimated from raw data. CI, confidence interval; DE, Germany; EU, Europe (different countries); IT, Italy; JP, Japan; KR, South Korea; NL, Netherlands; OR, odds ratio; PL, Poland; res, resident population; UK, United Kingdom; USA, United States of America; work, working population.

**eFigure 3.** Forest plot of pooled odds ratios for current heated tobacco product use among adults according to age group (middle aged vs young adults), overall and stratified by continent



\*OR values estimated from raw data. CI, confidence interval; EU, Europe (different countries); F, female; IT, Italy, JP, Japan; KR, South Korea; M, male; NL, Netherlands; OR, odds ratio; PL, Poland; UK, United Kingdom; USA, United States of America.

**eFigure 4.** Forest plot of pooled odds ratios for current heated tobacco product use among adults according to age group (old adults vs young adults), overall and stratified by continent



\*OR values estimated from raw data. CI, confidence interval; EU, Europe (different countries); F, female; IT, Italy; JP, Japan; KR, South Korea; M, male; NL, Netherlands; OR, odds ratio; PL, Poland, UK, United Kingdom.

**eFigure 5.** Forest plot of pooled odds ratios for current heated tobacco product use among adults according to socio-economic status (intermediate vs low), overall and stratified by continent



\*OR values estimated from raw data. CI, confidence interval; EU, Europe (different countries); F, female; JP, Japan; KR, South Korea; M, male; NL, Netherlands; OR, odds ratio; SES, socioeconomic status; USA, United States of America.

**eFigure 6.** Forest plot of pooled odds ratios for current heated tobacco product use among adults according to socio-economic status (high vs low), overall and stratified by continent

Author, year (country)	Users High SES	Low SES		OR	[95% CI]	Weight %
Continent = Asia Hwang et al, 2019 (KR) Kim et al, 2020 (KR) Kinjo et al, 2020 (KR) Kinjo et al, 2020 (F)* (JP) Kinjo et al, 2020 (M)* (JP) Tabuchi et al, 2018 (JP) Pooled estimate Heterogeneity: $I^2 = 12\%$ , $p = 0$	117 81 6 31 54 <b>289</b> 34	24 16 13 32 73 <b>158</b>		3.06 1.07 1.42 0.97 2.01 1.72 <b>1.49</b>	[1.19; 7.87] [0.58; 1.96] [1.09; 1.84] [0.37; 2.57] [1.21; 3.35] [0.63; 4.70] <b>[1.22; 1.83]</b>	7.2 10.6 14.8 7.0 11.9 6.7 <b>58.1</b>
Continent = Europe Brose et al, 2018* (UK) Gallus et al, 2022* (EU) Havermans et al, 2021* (NL) Tattan-Birch, 2021* (UK) Pooled estimate Heterogeneity: $I^2 = 47\%$ , $p = 0$	54 4 8 37 <b>103</b> 13	48 3 2 41 <b>94</b>		0.65 2.60 2.19 0.59 <b>0.68</b>	[0.44; 0.96] [0.58; 11.62] [0.46; 10.32] [0.38; 0.93] <b>[0.52; 0.91]</b>	13.4 3.9 3.7 12.6 <b>33.5</b>
Continent = North America Nyman et al, 2018 (USA)	13	42		0.88	[0.39; 2.01]	8.3
Pooled estimate Heterogeneity: $l^2 = 68\%$ , $p < 0$ Test for subgroup differences: $p$	<b>405</b> .01 c <sub>2</sub> <sup>2</sup> = 19.63, df	<b>294</b> = 2 (p < 0.01 <b>b.3</b>	0.5 1 2 10	1.21	[0.86; 1.69]	100.0

\*OR values estimated from raw data. CI, confidence interval; F, female; EU, Europe (different countries); JP, Japan; KR, South Korea; M, male; NL, Netherlands; OR, odds ratio; UK, United Kingdom; SES, socioeconomic status; USA, United States of America.

**eFigure 7.** Forest plot of pooled odds ratios for current heated tobacco product use among adults according to cigarette smoking status (former vs never smokers), overall and stratified by continent



\*OR values estimated from raw data. CI, confidence interval; EU, Europe (different countries); JP, Japan; KR, South Korea; OR, odds ratio; UK, United Kingdom; USA, United States of America.

**eFigure 8.** Forest plot of pooled odds ratios for current heated tobacco product use among adults according to cigarette smoking status (current vs non/never smokers), overall and stratified by continent

Author, year (country)	Users Current smokers	Never/non smokers		OR	[95% CI]	Weight %
$\begin{array}{l} \textbf{Continent = Asia} \\ AlMulla et al, 2021 * (QA) \\ Hwang et al, 2019* (KR) \\ Kim et al, 2020 (KR) \\ Kim et al, 2021* (KR) \\ Odani et al, 2021* (JP) \\ Tabuchi et al, 2018* (JP) \\ \textbf{Pooled estimate} \\ Heterogeneity: I^2 = 91\%, p < 0 \end{array}$	32 339 170 464 778 200 <b>1983</b> .01	15 1 35 110 208 62 <b>431</b>		12.51 1356.5 25.67 25.90 15.53 9.88 <b>27.64</b>	[ 6.75; 23.18] 1 [190.46; 9661.40] [17.72; 37.18] [20.80; 32.26] [ 13.20; 18.27] [ 7.39; 13.21] <b>[ 9.17; 83.31]</b>	8.6 6.0 8.8 9.0 8.9 <b>50.2</b>
$\begin{array}{l} \label{eq:continent} \textbf{Europe} \\ \text{Brose et al, } 2018^* (UK) \\ \text{Gallus et al, } 2022^* (EU) \\ \text{Havermans et al, } 2021^* (NL) \\ \text{Jankowski et al, } 2021^* (PL) \\ \text{Laverty et al, } 2021 (EU) \\ \textbf{Pooled estimate} \\ \text{Heterogeneity: } I^2 = 93\%, p < 0 \end{array}$	32 9 22 200 280 <b>543</b> .01	36 6 2 59 31 <b>134</b>		3.66 2.80 47.66 7.73 36.30 <b>10.19</b>	[ 2.27; 5.91] [ 1.00; 7.88] [ 11.19; 203.00] [ 5.75; 10.40] [ 22.92; 57.49] [ <b>3.42; 30.36</b> ]	8.7 7.9 7.1 8.9 8.8 <b>41.3</b>
Continent = North America Nyman et al, 2018 (USA)	79	18	<b>B</b>	1.57	[ 0.81; 3.04]	8.5
Pooled estimate Heterogeneity: $l^2 = 94\%$ , $p < 0$ Test for subgroup differences: $p$	<b>2605</b> .01 .2 = 22.23, df = 2 ( <i>p</i> <	583 0.01) 0.5	1 2 15	14.53 0	[ 6.34; 33.31]	100.0

\*OR values estimated from raw data. CI, confidence interval; EU, Europe (different countries), JP, Japan; KR, South Korea; NL, Netherlands; OR, odds ratio; PL, Poland; QA, Qatar; UK, United Kingdom; USA, United States of America.

**eFigure 9.** Forest plot of pooled odds ratios for conventional cigarette smoking initiation among never smokers according to heated tobacco product use (current vs non/never users)



CI, confidence interval; OR, odds ratio.

**eFigure 10.** Forest plot of pooled odds ratios for conventional cigarette smoking relapse among former smokers according to heated tobacco product use (current vs non/never users)



CI, confidence interval; OR, odds ratio.

**eFigure 11.** Forest plot of pooled odds ratios for conventional cigarette smoking cessation among current smokers according to heated tobacco product use (current vs non/never users)



CI, confidence interval; OR, odds ratio.

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