Why the JRC Report cannot carry the evidence burden for the EU regulation of e-cigarettes, heated tobacco products and nicotine pouches

In April 2026, the European Commission's Joint Research Centre (JRC) published its report entitled "*Health outcomes associated with the use of e-cigarettes, heated tobacco products, and nicotine pouches*"[1] as part of the evidence base for the revision of the Tobacco Products and the Tobacco Advertising Directives.

According to the JRC, "several of the examined sources recommend a precautionary approach" towards these products "due to the concerning associations with short- and medium-term health outcomes", and "long-term follow-up is necessary to accurately estimate their health risks".

This conclusion may now do more than inform the debate. It may define the problem, shape the regulatory options, frame proportionality and narrow the space of Member States to regulate different product categories according to their risk profile.

That is too much weight for this report to carry, especially given its demonstrable limitations.

This contribution identifies five serious limitations in the JRC Report. Taken together, they show it cannot serve as a sound scientific basis for the regulation of e-cigarettes, heated products and nicotine pouches.

Public health reports that synthesise primary peer-reviewed evidence are robust and valuable components of the evidence base.

However, the JRC Report appears to rely on these secondary interpretations without undertaking a transparent or systematic synthesis of the underlying primary literature itself. This creates a risk of layered interpretation, where conclusions are derived from an interpretation of existing interpretations, rather than from direct engagement with the primary evidence.

Such an approach can affect the balance and accuracy of conclusions, particularly where the inclusion of relevant public health reports and review publications is not comprehensive.

The warning signs are already visible. Numerous independent scientists and academics have challenged the direction of the debate through Call for Evidence responses, public letters and reactions to Commissioner Várhelyi's statement that these products are "one hundred per cent" as harmful as traditional cigarettes[2] which lacks scientific substantiation.

The Impact Assessment should therefore not treat the JRC report as a ready-made comprehensive evidentiary foundation. It should test it against the wider body of peer-reviewed science on e-cigarettes, heated products, nicotine pouches, relative risk and tobacco harm reduction.

The problem is not a lack of evidence. It is whether the Commission is prepared to engage with evidence that challenges its pre-determined political direction. This can and should be addressed **in the Impact Assessment.**

[1] PEREZ CORNAGO, A., SARASA RENEDO, A., JARACH, C., WOLLGAST, J. and MARAGKOUDAKIS, P., Health outcomes associated with the use of e-cigarettes, heated tobacco products, and nicotine pouches, Publications Office of the European Union, Luxembourg, 2026, https://data.europa.eu/doi/10.2760/0061469, JRC146139. Available here.
[2] Euractiv. (2025, December 18). *EXCLUSIVE: EU health chief 100% convinced new products as harmful as cigarettes*.

The five limitations in the JRC Report:

Limitation	Why it matters for the Impact Assessment
1. Evidence pushed further than it can go	The report may present limited, mixed or cautious sources as more settled than they are.
2. No attention to relative-risk	Policy options need to compare risks with continued smoking, not only with non-use.
3. Real-world evidence treated as secondary	Population-level trends are needed to understand what happens outside controlled study settings.
4. Narrow evidence base	A small and incomplete set of primary evidence cannot carry broad regulatory conclusions.
5. Evidence labels without a transparent method	Terms such as sufficient, moderate and limited need clear grading and critical appraisal.

1. The report pushes evidence further than it can go

The JRC Report does not always carry the caution of its sources into its own conclusions.

In several places, the report uses evidence that is limited, mixed or inaccurate and this is often presented in a more established way than it actually is.

The problem is visible in at least three instances:

- In the cancer-related section, some sources cited by the JRC do not establish clear evidence of harm, contrary to what the JRC narrative indicates. Cited studies often indicate “no evidence”, “weak evidence” or “lower exposure”. These considerations are not consistently carried into the report’s wider narrative and conclusions.
- In the abstract, the report refers to possible “tumorigenic effects” associated with e-cigarette use. Later, when discussing long-term effects, it states instead that “there is no conclusive evidence” for long-term effects associated with e-cigarette use.
- The JRC report cites the Committee on Toxicity of Chemicals in Food, Consumer Products and the Environment (COT) 2020 report, but does not consistently carry over its caveats on animal studies. Although animal studies are informative, their results cannot be directly translated to human health.

The European Parliament should not be asked to scrutinise policy options built on scientific certainty the evidence does not suggest.

2. The report evaluates smokeless products in isolation from continued smoking

The JRC Report gives significant attention to potential risks from e-cigarettes, heated products and nicotine pouches.

The missing question is how those risks compare with continued cigarette smoking.

While millions of adults in Europe continue to smoke, millions have also switched to non-combustible alternatives.

The report does not give this comparison enough focus and therefore lacks significant contextualization in terms of relative risk.

This represents a gap, which is visible in at least three instances:

- The report uses a source from the New Zealand Ministry of Health stating that "vaping has been a key factor in recent drops in New Zealand's smoking rates". The same source refers to evidence supporting vaping as a cessation tool. Yet this point is not incorporated into the e-cigarette section when smoking cessation is discussed.
- The report acknowledges that flavours may increase uptake, while also potentially supporting smoking cessation among adults. This balanced perspective matters, but it is not consistently reflected across the report or in its conclusions.
- In its cancer-related discussion of e-cigarettes and heated products, the report refers to "lower exposure" and to potentially reduced risk due to lower carcinogen exposure, but does not explain what this means for tobacco harm reduction: for adult smokers who do not quit nicotine, moving away from combustion may materially change the risk profile of their nicotine use due to the exposure to substantially fewer and lower levels of toxicants related to combustion of tobacco.

Member States' competence to regulate smokeless products according to their own evidence, experience and public health outcomes should not be narrowed by an evidence base that has not comprehensively evaluated relative risk, real-world experience, and national epidemiological findings.

3. The report treats real-world evidence as secondary

The JRC Report gives limited relevance to real-world and population-level evidence.

That is a serious gap.

While the report refers to some datasets, including Eurobarometer, it does not fully reflect smoking trends in countries where non-combustible alternatives have been widely adopted, including Sweden, or where access to such products has been regulated proportionately, including Greece and the Czech Republic.

Real-world evidence matters because it shows what actually happens outside a controlled study setting and accounts for consumers' behaviours in their everyday life.

A report that gives limited attention to population-level trends across multiple countries, cannot fully assess the role of smokeless products in the context of tobacco harm reduction.

4. The report rests on a narrow evidence base

The JRC Report ultimately draws broader conclusions than its evidence base can robustly support.

While it cites 47 references, only 34 are used to inform the assessment, with the remainder confined to the introduction. Within this subset, primary peer-reviewed research is limited to 8 studies. The majority of the evidence base therefore comprises institutional reports, summaries, and secondary interpretations rather than original scientific research.

In a rapidly evolving field, this represents a constrained evidentiary foundation for policy-relevant conclusions.

The report itself acknowledges that some sources lack methodological transparency or rely on expert judgement to interpret findings. In this context, the absence of explicit triangulation and critical appraisal of the full evidence base limits confidence in the strength and objectivity of the conclusions drawn.

Additionally, the source selection is incomplete. The report uses an evidence cut-off of November 2024. Yet relevant and recent authoritative publications falling within that cut-off were not included. For example;

- The 2024 Royal College of Physicians report on e-cigarettes and harm reduction is not included, despite falling within the stated cut-off.
- The 2023 Cochrane review on interventions for quitting vaping is also not included, despite falling within the same cut-off.
- At the same time, approximately one-third of the sources contributing to the assessment were published in 2018 or earlier. That matters because the evidence base on e-cigarettes, heated products and nicotine pouches has moved quickly, particularly on smoking cessation and the so-called "gateway" hypothesis.

5. The report labels the evidence without showing the method

The JRC Report uses labels such as "sufficient", "moderate" and "limited" to describe the strength of evidence linking product use to health outcomes.

But it does not clearly explain how those labels were assigned and graded.

That is a material weakness.

- The problem is visible in the cardiovascular disease section. The report relies on 10 references, but only two actually address heart rate. Those two sources indicate that heart rate can increase shortly after nicotine intake, but this effect is transient and reversible, or lower over time compared with that observed in people who smoke.
- Despite this, and other sources indicating that finding are generally mixed, the JRC report classifies the evidence on the association between e-cigarette use and heart rate as "sufficient", without explaining how that judgement was reached based solely on the referenced science.

Without a transparent grading and balanced interpretation, triangulation and critique of the broader existing science, it is difficult to know whether the report's conclusions reflect the strength of the evidence or the interpretation placed on it.

Questions for the European Commission as it prepares the Impact Assessment:

1. *Will the Commission genuinely open the evidence base to peer-reviewed science, targeted scientific consultation and public health expertise, including evidence that challenges the JRC Report's conclusions?*
2. *Will the Commission test and, if necessary, correct the claim that new nicotine products present the same risks as combustible products, given that even the JRC Report does not support it?*
3. *Will the Commission finally answer the question the European Parliament has put on the table: how do the risks of e-cigarettes, heated products and nicotine pouches compare with continued smoking for adults who do not quit?*
4. *Will real-world outcomes count when they show smokers moving away from cigarettes, especially in Sweden, or will such evidence be discounted because those outcomes were achieved through access to nicotine-containing alternatives to smoking?*
5. *Will the evidence base be independently stress-tested before policy options are chosen, with transparent grading of evidence, or will methodological weaknesses again be left only for the Regulatory Scrutiny Board to identify?*
6. *Will the Commission ensure that any contractor, agency or expert shaping the evidence base is selected for scientific independence, methodological rigour, and neutrality?*