



THE SCIENCE OF HEATED TOBACCO: RISK PERCEPTION AND INTENTION TO USE PULZE

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Pulze is our innovative Heated Tobacco (HT) device for adult smokers who are uninterested or unwilling to quit, and who would otherwise continue to smoke.

By heating (and not burning) a portion of refined tobacco contained in its iD tobacco-stick consumable, Pulze produces an inhalable aerosol containing far fewer and lower levels of the many toxicants found in cigarette smoke.

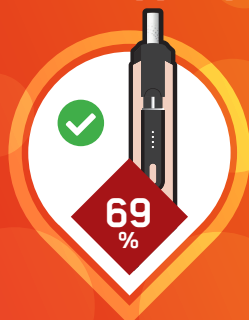
As part of our continuing scientific substantiation of Pulze to understand its significant tobacco harm reduction (THR) potential, we conducted two cross-sectional studies involving 4848 adult smokers, HT and vape users, as well as non-users of tobacco and nicotine products, all age 18-60 in Italy, Greece and Germany.¹



Assessing behavioral intentions and risk perceptions toward the Pulze device and iD stick², the results indicate:

→ THE VAST MAJORITY OF ADULT SMOKERS WANT TO TRY PULZE FOR THR RELATED REASONS

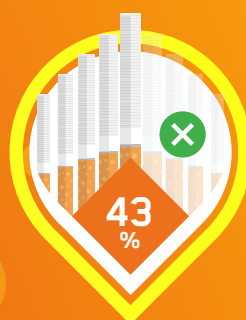
THEIR MOST POPULAR MOTIVATIONS WERE:



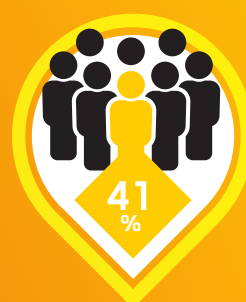
→ IT MAY BE LESS
HARMFUL TO ME
THAN COMBUSTIBLE
CIGARETTES



→ I'M CURIOUS
ABOUT IT



→ IT MIGHT HELP ME
CUT BACK ON SMOKING



→ IT MAY BE LESS
HARMFUL TO PEOPLE
AROUND ME



→ IT COULD HELP ME
QUIT SMOKING



→ IT DOESN'T
PRODUCE ASH



→ IT MIGHT NOT BOTHER
OTHERS WHO DON'T
SMOKE



→ IT DOESN'T SMELL
BAD

1. Studies conducted in September and October 2020. Internal data, Imperial Brands 2021
2. After viewing the product packaging and user guide



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→ ADULT SMOKERS WOULD USE PULZE TO REDUCE OR REPLACE COMBUSTIBLE CIGARETTES

74% WOULD USE IT IN PLACE OF THEIR NORMAL CIGARETTES, EITHER COMPLETELY OR PARTIALLY¹



→ IMPORTANTLY, PULZE IS NOT APPEALING TO NON-USERS² OF EITHER TOBACCO OR NICOTINE PRODUCTS.

While it's extremely encouraging adult smokers believe Pulze may offer an acceptable alternative to combustible cigarettes, it's crucial to understand if this appeal is mirrored in non-smoker populations – particularly young adults – as this may limit the technology's THR potential at the population level.³

OUR RESEARCH FOUND

94%

OF ADULT TOBACCO AND NICOTINE NON-USERS SAY THEY WOULDN'T USE PULZE.

→ PULZE IS PROPERLY UNDERSTOOD AS POTENTIALLY LOWER RISK COMPARED TO COMBUSTIBLE CIGARETTES BUT NOT RISK-FREE

When all user groups were asked about the risk of using combustible cigarettes or Pulze on their own (known as the absolute risk):



53%

thought combustible cigarettes were "extremely harmful"



14%

felt Pulze carried the same risk level, showing many people recognise its harm reduction potential



2%

thought Pulze presented no risk, meaning the vast majority recognise – like all nicotine-containing products – it is not risk free

1. Of those adult smokers who said they would purchase Pulze
2. Non users refers to both never users of either tobacco or nicotine products, as well as former smokers (both groups aged between 18-60).
3. For further information on the THR equation see the supporting blog post for this infographic



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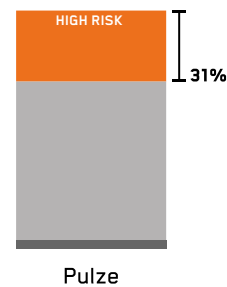
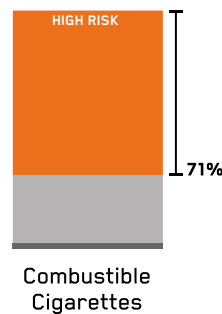


PULZE'S USE IS ASSOCIATED WITH LOWER PERCEIVED RISK FOR VARIOUS SMOKING-RELATED DISEASES RELATIVE TO COMBUSTIBLE CIGARETTE SMOKING

Encouragingly, adult smokers consistently identified Pulze as having a lower perceived-risk for lung cancer, respiratory disease and cardiovascular disease compared to combustible cigarettes.

71%

FELT THERE WAS
A HIGH RISK FOR
COMBUSTIBLE
CIGARETTES



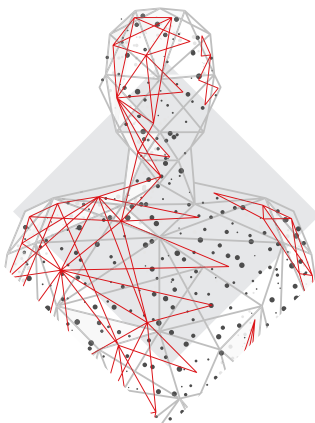
COMPARED TO
31%
FOR PULZE

Tested using a seven-point scale ranging from 1 (no risk) to 7 (substantial risk). Across the three smoking-related diseases, the figures above give the average number of adult smokers that rated each product 6/7 (high risk).



HOWEVER, IN RELATION TO THESE SPECIFIC SMOKING-RELATED DISEASES, ON AVERAGE **97% PERCEIVED PULZE CARRIED SOME LEVEL OF RISK.**

AS SUCH, WHILE ADULT SMOKERS ASSUME PULZE MAY BE LESS LIKELY TO CAUSE SOME OF THE SPECIFIC RISKS ASSOCIATED WITH SMOKING, EQUALLY THEY CORRECTLY RECOGNISE THE PRODUCT IS NOT RISK-FREE.



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→
OVERALL, THE DATA
FROM THIS PRE-
MARKET STUDY IS
ENCOURAGING AND
INDICATES:

Adult smokers are
interested in Pulze but its
appeal to non-smokers
(which includes never
users of tobacco/nicotine,
as well as former smokers)
is **very low**

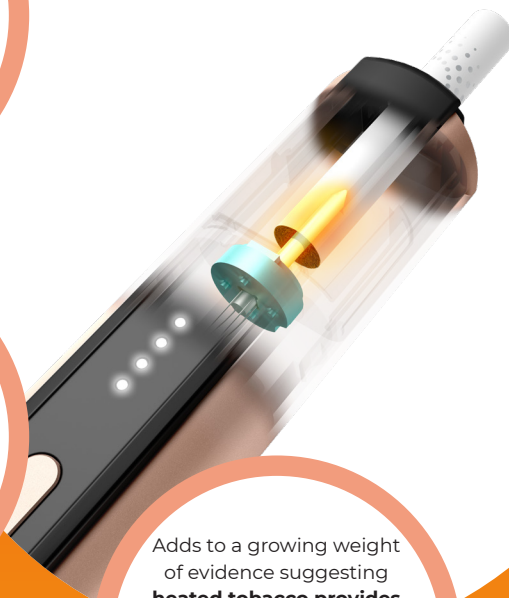
Adult smokers
motivations to try Pulze
is **predominantly for THR**
reasons, and of those who
would try and buy it, **the**
vast majority would use
it to reduce and replace
combustible cigarettes

All participants **recognise**
Pulze is potentially less
harmful than cigarettes
but correctly recognise
it is not risk free

Adult smokers **perceive**
lower health risks for
specific smoking-related
diseases with the use
of Pulze compared to
combustible cigarettes

These factors **may help**
adult smokers who
would otherwise
continue to smoke to
transition away from
combustible cigarettes

Adds to a growing weight
of evidence suggesting
heated tobacco provides
a viable and potentially less
harmful alternative for adult
smokers who would otherwise
continue to smoke, whilst
crucially not appealing
to non-smokers



By reducing smoking prevalence, we believe that if all Next
Generation Products (NGPs), like Pulze, are:



scientifically substantiated as
harm reduced compared to
combustible cigarettes



regulated proportionately
according to their risk
reduction profile



and fully endorsed by adult
smokers, media and
regulators alike

**they can make a meaningful contribution to tobacco harm reduction
and with it, global public health.**