

# **Tobacco additives: The increased health risk**

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# **Tobacco additives: The increased health risk**

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## **International consensus: Ban on or regulation of all tobacco additives**



**WHO Framework  
Convention on  
Tobacco Control  
(FCTC)  
Articles 9 and 10**

**Partial guidelines  
for  
implementation of  
Articles 9 and 10  
of the WHO FCTC**



# Tobacco additives: The increased health risk

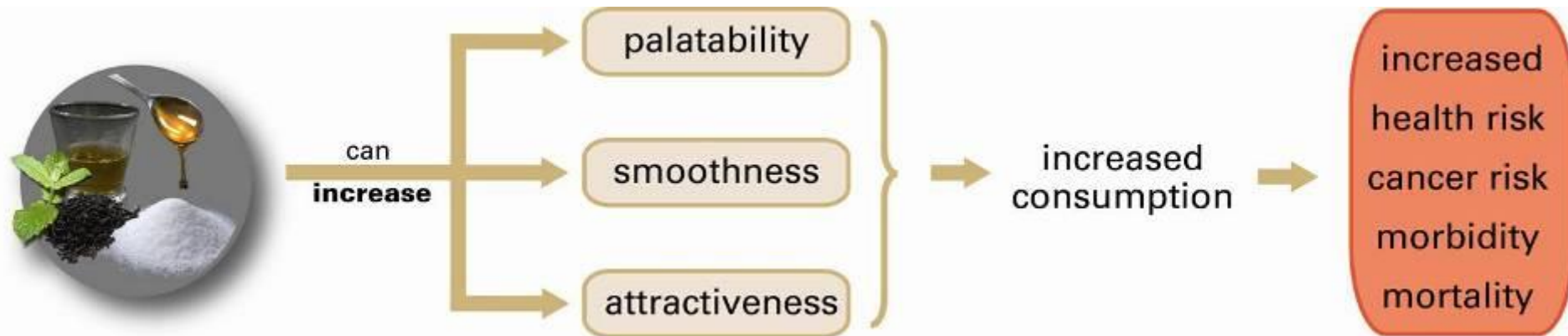
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## More than 600 additives are used in cigarette production

„Ingredients are indeed used to make cigarettes more palatable, and to reduce harshness and irritation.“

(House of Commons Health Committee, Memorandum by BAT

“The Tobacco Industry and the Health Risks of Smoking“, 1999)





## Sugars



### sugar

(& additives, which contain sugar)

for example:

- glucose
- fructose
- saccharose
- molasses
- fruit juices
- honey

- improves taste
- decreases harshness
- increases palatability

- binder
- humectant

### combustion

(high temperatures)

formaldehyde  
acetaldehyde  
acrolein  
acetone

**carcinogenic**

### caramelisation

2-furylmethanol  
2-furylmethanal

**possibly  
genetically  
harmful**

### maillard reaction

(reaction of reduced  
sugars with amino acids)

acrylamide

**carcinogenic**



## Menthol



**MENTHOL**

**Cooling effect**

**Pain-relieving and slightly numbing effect**

**Desensitization to nicotine response, tolerance and longer exposure to nicotine**

**Inhibition of nicotine metabolism\***

**Increased absorption of tobacco smoke components into the lung**

**Inhibition of breakdown of carcinogenic substances\***

**Masks the irritating effect of tobacco smoke and makes it easier to inhale**

**Increases potential for addiction**

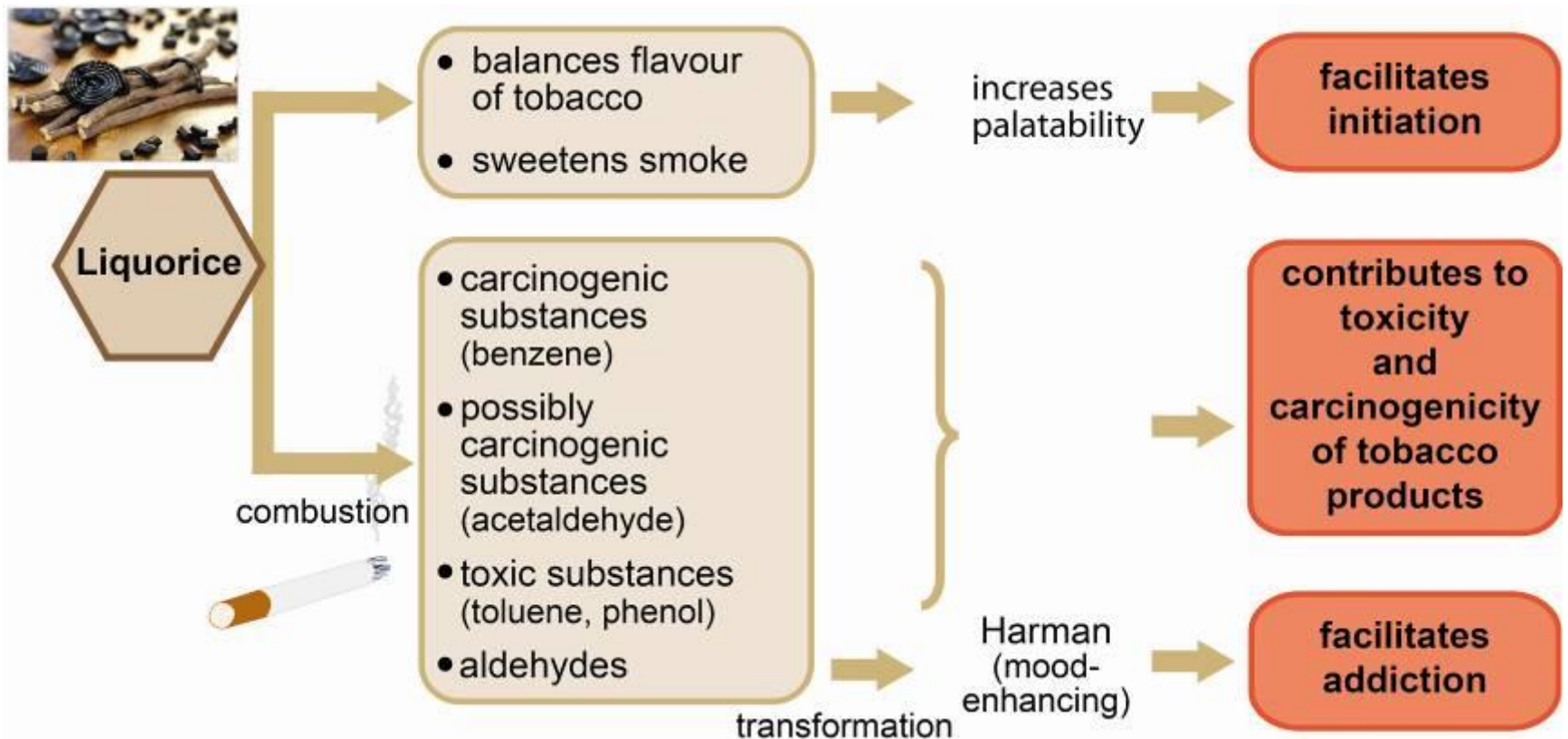
**Increases risk of cancer**

\*possible







## Liquorice



## Additives without flavour

- binders  
(guar gum: combustion → carcinogenic substances)  

- humectants (moisturing agents)  
(glycerol, sugar: combustion → carcinogenic substances)  

- colouring agents  
(azo dyes: tartrazine (yellow): carcinogenic)



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## Tobacco products with characterising flavours



Only a small market!





# Tobacco additives: The increased health risk

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## Big market: Mix of many additives

- flavours in very low amounts  
„Ingredients are indeed used to make cigarettes more palatable, and to reduce harshness and irritation.“ (BAT, 1999)
- facilitation of initiation and maintenance of smoking
- interaction and synergistic effects of additives  
mixture of small amounts of several additives can have similar effects as bigger amounts of single additives
- many additives produce carcinogenic substances on pyrolysis:
- no harmless threshold levels for additives





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## New technologies

- enhance attractiveness
- capsule can be filled with any additive



Excerpts from US  
patent No. 7878962  
(Karles et al., Philip  
Morris)

Suitable flavors or flavorings include, but are not limited to, menthol, mint, such as peppermint and spearmint, chocolate, licorice, citrus and other fruit flavors, gamma octalactone, vanillin, ethyl vanillin, breath freshener flavors, spice flavors such as cinnamon, methyl salicylate, linalool, bergamot oil, geranium oil, lemon oil, ginger oil, and tobacco flavor. Other suitable flavors may include flavor compounds selected from the group consisting of an acid, an alcohol, an ester, an aldehyde, a ketone, a pyrazine, combinations or blends thereof and the like. Suitable flavor compounds may be selected, for



## **What should be done?**

**Ban of all additives that may  
enhance the palatability,  
smoothness and attractiveness of  
tobacco products**

## **Why?**

- to protect youth from initiation
- to support smokers to quit smoking



## **What should be done?**

**Ban of all additives that are carcinogenic  
in unburnt or burnt form**

## **Why?**

- to protect consumers
- to reduce morbidity and mortality



## What should **NOT** be done?

**Set maximum levels for any additives**

### Why?

- no reliable methods to define a threshold level for distinctive taste
- many interactions between additives with synergistic effects on palatability, smoothness and inhalation





## Summary

- ban is needed on additives that enhance palatability, smoothness and attractiveness of tobacco products
- ban is needed on additives that are carcinogenic in unburnt or burnt form
- manufacturers and importers must prove that any additive they want to use is harmless