

IARC Monographs evaluate the carcinogenicity of opium consumption

Lyon, France, 9 October 2020 – The International Agency for Research on Cancer (IARC), the cancer agency of the World Health Organization (WHO), has evaluated the carcinogenicity of opium consumption.

A Working Group of 16 international experts was convened by the *IARC Monographs* programme for a meeting, which was held remotely. After thoroughly reviewing the available scientific literature, the Working Group classified opium consumption as *carcinogenic to humans* (Group 1).

A summary of the final evaluations has now been published online in [The Lancet Oncology](#).¹ The detailed assessments will be published as Volume 126 of the *IARC Monographs*.

Results of the evaluation

There was *sufficient evidence* for the carcinogenicity of opium consumption in humans. Opium consumption causes cancers of the larynx, lung, and urinary bladder. There was also *strong mechanistic evidence* in experimental systems that opium in the form of *sukhteh* (opium dross, the tarry residues formed after smoking raw opium) and opium pyrolysates (solid residues of combusted opium) exhibits key characteristics of carcinogens. There was *inadequate evidence* in experimental animals regarding the carcinogenicity of opium consumption.

The Group 1 classification applies to both ingestion and smoking as routes of exposure and to all forms of minimally processed opium that are consumed (e.g. raw opium, opium dross, and opium sap). It does not apply to other opiates (e.g. heroin, morphine, and codeine) or opioids (e.g. fentanyl).

Cancer sites with evidence of carcinogenicity

There was *sufficient evidence* of carcinogenicity in the larynx, lung, and urinary bladder in humans. There was *limited evidence* of carcinogenicity in the oesophagus, stomach, pancreas, and pharynx in humans.

Forms of opium consumed

¹ *IARC Monographs* Volume 126 Working Group (2020). Carcinogenicity of opium. *Lancet Oncol*, Published online 8 October 2020; [https://doi.org/10.1016/S1470-2045\(20\)30611-2](https://doi.org/10.1016/S1470-2045(20)30611-2)

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Opium is the dried latex from the unripe seed-pods of the opium poppy plant (*Papaver somniferum*). It is consumed in three main forms (with the Persian names in parentheses): raw (*teriak*), dross (*sukhteh*), and minimally processed sap (*shireh*). All three forms may be smoked or ingested.

Populations with highest exposure

About 5 million people worldwide consume minimally processed opium, according to recent estimates. The Islamic Republic of Iran has the world's highest per capita consumption and accounts for 42% of the global consumption of minimally processed opium. Other countries with relatively high opium consumption rates include Afghanistan and India.

Opium consumption is a problem in many low- and middle-income countries, with strong implications for public health and society. In the Islamic Republic of Iran, opium is consumed across the spectrum of society, although more commonly by men than by women, by groups with lower socioeconomic status, and by tobacco users.

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The International Agency for Research on Cancer (IARC) is part of the World Health Organization. Its mission is to coordinate and conduct research on the causes of human cancer, the mechanisms of carcinogenesis, and to develop scientific strategies for cancer control. The Agency is involved in both epidemiological and laboratory research and disseminates scientific information through publications, meetings, courses, and fellowships. If you wish your name to be removed from our press release emailing list, please write to com@iarc.fr.