



## BURNING INCENSE IN YOUR HOME CAN BE HARMFUL FOR YOU

Zamantimande Kunene  
Environment & Health Research Unit, Medical Research Council  
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# INTRODUCTION

- Incense burning inside the house is a common practice in China, Taiwan, Singapore, India, North Africa and Middle Eastern nations.
- Clean air is a requirement of life, and harmful materials produced from human activities indoors, such as burning incense, can lead to a number of health problems.
- Because people spend up to 90% of their time inside the house, This, indoor air pollution is a vital issue for public health workers (RSCPHN, 2016).

# WHAT IS INCENSE?

- Incense is aromatic biotic material which releases fragrant smoke when burned.
- There is Indirect Burning incense which does not combust
- And Direct Burning– the most common form of incense today, and the easiest to use.



# USES OF INCENSE

- Incense has been used for years in many different cultures for important events
- Ritual purification
- Aromatherapy
- Religious events
- Ceremonies
- Meditating
- Masking bad odors
- Creating a mood
- Prayer
- Insect repellent



Zhou, R., An, Q., Pan, X.W., Yang, B., Hu, J. and Wang, Y.H., 2015. Higher cytotoxicity and genotoxicity of burning incense than cigarette. *Environmental Chemistry Letters*, 13(4), pp.465-471.

Yuan, J.M., Wang, R., Koh, W.P., Lee, H.P., Yu, M.C. and Friberg, J.T., 2008. Incense use and respiratory tract carcinomas: a prospective cohort study. *Cancer*

# DANGERS OF BURNING INCENSE

- Research has linked incense to various health disorders:
  - Respiratory distress
  - Headaches
  - Cardiovascular complications
  - Cancer
  - Unwanted transformations in lung-cell structure.
- Exposure to incense smoke may be linked to the occurrence of asthma (Hong et al., 1994)
- Increased risk of childhood brain tumors odds ratio, 3.3;  $p = 0.005$  (Preston-Martin et al., 1982 )

Hong CY, Ng TP, Wong ML, Koh KT, Goh LG, Ling SL. Lifestyle and behavioural risk factors associated with asthma morbidity in adults. QJM 1994;87:639-45

Preston-Martin S, Yu MC, Benton B, Henderson BE. N-Nitroso compounds and childhood brain tumors: A case-control study. Cancer Res 1982;42:5240-5

RSCPHN, D.P.P.R., 2016. The health risks of incense use in the home: an underestimated source of indoor air pollution?.

# DANGERS OF BURNING INCENSE

- Prolonged burning of incense deteriorates air quality in the home causing
  - Irritation of the eyes
  - Irritation of the nose
  - Irritation of the throat (Cheng et al., 1995)
- Cancer of the respiratory tract (Yuan et al., 2008, Schoental and Gibbard, 1967 and Lin and Wang, 1994)
- Incense smoke is more toxic than the cigarette smoke (Zhou et al., 2015)
- Out of the 64 properties found in the incense smoke, two were reported to be very toxic (Zhou et al., 2015)

Schoental, R. and Gibbard, S., 1967. Carcinogens in Chinese incense smoke. *Nature*, 216(5115), pp.612-612.

Cheng, Y.S., Bechtold, W.E., Yu, C.C. and Hung, I.F., 1995. Incense smoke: characterization and dynamics in indoor environments. *Aerosol Science and Technology*, 23(3), pp.271-281

Lin, J.M. and Wang, L.H., 1994. Gaseous aliphatic aldehydes in Chinese incense smoke. *Bulletin of environmental contamination and toxicology*, 53(3), pp.374-381

# DANGERS OF BURNING INCENSE

- Incense smoke was found to be:
  - Mutagenic-Change genetic material such as DNA
  - Cytotoxic- Toxic to cells
  - Genotoxic-Toxic to DNA
  - It generates high levels of benzene, 1,3-butadiene and PAHs in ambient air
  - These compounds are carcinogenic (Wang et al.,2007, Navasumrit et al.,2008 and Zhou et al., 2015)

Navasumrit, Panida, et al. "Potential health effects of exposure to carcinogenic compounds in incense smoke in temple workers." *Chemico-biological interactions* 173.1 (2008): 19-31.

Wang, B., Lee, S.C., Ho, K.F. and Kang, Y.M., 2007. Characteristics of emissions of air pollutants from burning of incense in temples, Hong Kong. *Science of the total environment*, 377(1), pp.52-60.

Zhou, R., An, Q., Pan, X.W., Yang, B., Hu, J. and Wang, Y.H., 2015. Higher cytotoxicity and genotoxicity of burning incense than cigarette. *Environmental Chemistry Letters*, 13(4), pp.465-471.

# CONCLUSION

The factors increasing the risk from PM are long exposure duration, inadequate room ventilation, small size of the room, long burning time and high-emission rates.

Given the above facts, it is advised to only burn incense in a well ventilated room and for a short period of time.

