



TNP PHOTOS: NG JUN SEN

Can WOKS contribute to cancer?

Madam Tay has lung cancer. But she has never touched a cigarette and no one around her smokes. A study of 328 S'porean Chinese women shows elevated levels of cancer-causing substances in their urine. A majority of these women cook using woks, says the study

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Madam Tay, in her 50s, has early-stage lung cancer. But the online trader has never touched a cigarette in her life. Neither have her family members, including her parents and an aunt, who live with her in a four-room flat in Tampines. "My neighbours don't smoke. I hardly go out. I don't even keep an altar at home," says Madam Tay in Mandarin. She says she has little exposure to second-hand smoke. What she does a lot of, however, is cook. She declines to give her full name for privacy reasons. Now, a recent study suggests that cooking food may have contributed to Madam Tay's condition.

For more than 20 years, I have used a wok to prepare food for the dinner table. It's been done this way for generations in my family and nobody had a problem.

— Madam Tay

More specifically, her use of the wok to stir-fry could have resulted in an increase of carcinogens (cancer-causing substances) in her body. National University of Singapore's Professor Koh Woon-Puay, with a team of researchers from the US, spent two years gathering and putting together data from 328 Singaporean Chinese female non-smokers. Each provided a urine sample and answered questions about her cooking habits and other factors. The result: Frequent cooking with a wok leads to "significantly increased levels" of the toxicants acrolein and crotonaldehyde, substances which can attack a person's DNA. This is due to the large amount of oil fumes created during stir-frying with a wok.

Says Prof Koh: "The problem for many of them is that the diagnosis is usually made at the late stage of disease, as this is not a diagnosis that they would expect." Madam Tay's case is not unique. Cigarette smoking is the main cause of lung cancer, which is the No.2 killer of men and No.3 killer of women here. Between 2010 and 2014, there was an average of 1,370 people in Singapore diagnosed with lung cancer yearly. But three in 10 lung cancer patients here have never smoked before, a study by the National Cancer Centre Singapore found. Of these "never-smokers" with lung cancer, 70 per cent are women. "We chose to conduct the study among Chinese female non-smokers because the incidence of lung cancer is disproportionately high relative to the very low rate of smoking in this population," says Prof Koh, a professor at Saw Swee Hock School of Public Health and the Duke-NUS Graduate Medical School. Her team's decision to focus on this group was based on national health statistics.

DETECTED EARLY
Fortunately for Madam Tay, her cancer was detected early and had not spread beyond her lung yet. She had been coughing for nearly two weeks, deciding to visit a polyclinic only when the cough became distracting. "The doctor told me the X-ray report was worrisome and referred me to a hospital. I was shocked when I found out it was lung cancer," says Madam Tay. As there was no family history of lung cancer, she had little reason to suspect that it could happen to her. She is undergoing treatment and was told by doctors that the survival rate in her case is around 80 per cent.

No choice but to use wok, say some hawkers

Even the possibility of lung cancer will not deter zi char restaurants from abandoning the wok.

The *New Paper* on Sunday visited two zi char restaurants in Toa Payoh to talk about the fumes generated from stir-frying with a wok.

Both say they will never give it up because of the wok hei (wok breath) flavour essential to zi char restaurants.

"What else can we use if we can't use the wok?" says Ms Sandra Lee, 41, from a restaurant at Lorong 2 Toa Payoh.

"The wok flavour is what makes each zi char restaurant different from the other. There is a certain skill needed."

Hong Kong Street Hai Ji's Madam Loh Poh Chee, 46, adds: "Customers love it, they want it, so I'm not worried about any cancer."

"We have to do this for a living. No choice."

Gesturing to the large exhaust fans in her kitchen, Madam Loh says that proper ventilation prevents the cooks from choking on the fumes.

Their restaurants use powerful industrial stoves to create high temperatures, often resulting in smoky kitchens.

They also have ventilation systems as required by the National Environment Agency's Code of Practice on Environment



Health.

According to the code, all fumes from the cooking area must be extracted immediately and treated with an air-cleaning system.

The air-cleaning system should capture particles, grease, oil, water vapour and smell-causing compounds. It also has to be regularly cleaned and maintained.

More research needed

Do not toss away your woks just yet. Several doctors tell *The New Paper* on Sunday that the study is still not conclusive enough.

Dr Daniel Tan, consultant at the Division of Medical Oncology at the National Cancer Centre Singapore, says: "These are association studies that suggest a relationship, although there may be other factors yet to be discovered that may cause lung cancer."

"Current studies do not implicate cooking at home as being dangerous."

Dr Wong Seng Weng, medical director and consultant specialist at Singapore Medical Group's The Cancer Centre, says: "Most Singaporean women I have treated for lung cancer do stir-fry with a wok every now and then."

"Nevertheless, it would be too presumptive to pin down stir-frying with a wok as the definitive cause of their lung cancer."

Professor Koh Woon-Puay, who co-authored the study, agrees that more research needs to be done.

This is because her study did not definitively prove that the increased levels of carcinogens were significant enough to

actually cause harm, says Prof Koh.

It does, however, build upon previous academic studies linking wok cooking to lung cancer among Asian women.

A study in 2000 by local researchers also found that lung cancer risk was higher among women who stir-fried their meat.

Like Prof Koh's study, it could not prove a causal relationship between stir-frying and cancer.

PUZZLE

"These previous studies, though not definitive by themselves, provide information that fills missing gaps in our knowledge of lung cancer, like pieces of a jigsaw puzzle being put together," she says.

"While we are still not certain if exposure to cooking fumes could be a significant risk factor for lung cancer from current state of evidence, it is still good to take precaution."

This can come in the form of proper ventilation, which can help decrease exposure to the cooking oil fumes.

It is also a good idea to use an exhaust hood, says Prof Koh.