- Bees / Lung cancer

// SCIENCE UPDATE

Honeybees can smell early-stage lung cancer



In a new study, researchers have demonstrated that honeybees can spot lung cancer in even small concentrations. This could lead to earlier diagnosis of the disease.

HEALTH The honeybee is beneficial in various ways to many species in nature, including ourselves. Now we may be able to add another surprising skill to the list.

So concludes a new study from Michigan State University in the US, where a team of researchers have tested bees' ability to smell their way to lung cancer, one of the world's biggest killers.

The researchers used chemistry to simulate the breath of two people – one with biomarkers associated with lung cancer, and one that was disease-free.

Twenty bees then smelled them, the researchers having first attached a small electrode to their brains, enabling signals from the brain to be measured when the odour was applied to the bees' antennas. The researchers looked for changes in the signals.

Bees have such an excellent sense of smell that they can distinguish between different types of cells. The experiment showed that they can also smell cancer – even in very low concentrations.

The researchers also changed the odours to see how the bees reacted, and to investigate how low a concentration of the carcinogen they could smell. The signals monitored from the bees' brains showed that they could react to concentrations as low as one in one billion.

"The bees could smell very low concentrations. It was a very strong result," says Debajit Saha, a professor at Michigan State University and one of the researchers behind the study.

The researchers believe that bees can detect complex mixtures and concentrations of biomarkers, and ultimately even different cell lines in human lung cancer. The findings could pave the way for new ways to test whether people have early-stage lung cancer.



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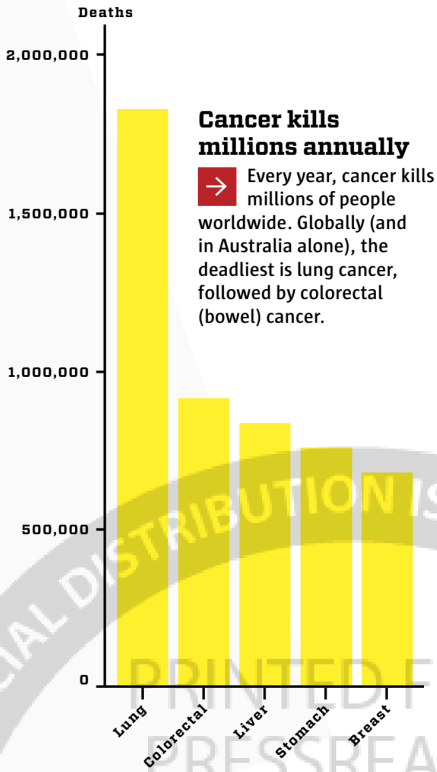

Cancer kills millions annually

Every year, cancer kills millions of people worldwide. Globally (and in Australia alone), the deadliest is lung cancer, followed by colorectal (bowel) cancer.

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