

## DISEASE

# Hints of cancer tracked

*Pilot projects aim to pin down how benign tumours become malignant.*

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After years of studying advanced cancers, researchers are now training their DNA sequencers on precancerous growths to learn more about how they develop into the full-blown disease.

A three-year pilot project — funded in October by the US National Cancer Institute (NCI) as part of the National Cancer Moonshot Initiative — will take this approach with lung, breast, prostate and pancreatic cancer. Investigators hope to create a ‘precancer genome atlas’ by sequencing DNA from precancerous growths and RNA from individual tumour cells, as well as identifying the immune cells that have infiltrated the lesions.

A second project will bolster the lung-cancer study by sequencing DNA from precancerous growths in the airway and tracking genetic changes in the biopsies over time. The 4-year

study, announced on 26 October, is a part of a US\$5-million project from the charities Stand Up To Cancer, the American Lung Association and LUNGEvity.

The aim is to intervene in cancer earlier, when it may be easier to rein in the disease. “We just don’t understand what’s going on very early,” says pulmonologist Avrum Spira at Boston University in Massachusetts, a lead investigator on both projects.

Technological advances in DNA sequencing have made it possible to extract useful data from tiny tissue samples — a crucial development because physicians tend to take small biopsies of precancerous growths, and there is often little tissue left after pathologists have analysed them.

Spira and his colleagues have been asked to report back in 12 months so that the NCI can decide whether this approach is feasible and warrants expansion. “This is the beginning of a much bigger initiative,” he says.

These genomic analyses are particularly challenging for pancreatic cancer, a relatively rare condition that is often caught only when it has become advanced and difficult to treat, Spira says.

Still, it is worth the extra effort to study pancreatic cancer, which is among the most lethal ones, says Elizabeth Jaffee, who investigates the disease at Johns Hopkins University in Baltimore, Maryland. Many pancreatic tumours seem to be driven by mutations in the same genes — and that commonality may make the disease more predictable, and therefore easier to detect and target at an early stage.

If successful, the projects could herald a change in how researchers approach cancer prevention, says Spira. ■

## CORRECTIONS

The News Feature ‘To stay young, kill zombies’ (*Nature* **550**, 448–450; 2017) omitted the journal name in reference 4. The reference should have been: Schafer, M. J. *et al. Nature Commun.* **8**, 14532 (2017). In addition, the News story ‘New definitions of scientific units are on the horizon’ (*Nature* **550**, 312–313; 2017) incorrectly gave the unit in the definition of a kilogram as  $\text{ms}^{-2}$ . The correct unit is  $\text{m}^{-2}\text{s}$ .