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Kidney cancer has long flown under the radar despite being one of the top-ten cancer killers — it lacks the research spotlight and public awareness that can help to drive new discoveries for other cancers. The disease remains hard to detect, difficult to treat and poorly understood.

But that is beginning to change. Researchers are digging into some of the mysteries surrounding the disease — such as why obesity seems to be a risk factor, but also offers some protection against its worst effects (see page S100), and why alcohol consumption, which predisposes people to many cancers, seems to help defend against kidney cancer (S103).

Genetics and the hunt for biochemical markers are bringing researchers closer to understanding the causes of kidney cancer, but some say that scientists need to look beyond the genome, and consider environmental and lifestyle factors to truly understand why people develop the disease (S105).

For years, people with kidney cancer had few options for treatment beyond surgery, and survival times rarely exceeded one year. But in the past decade there has been an explosion of therapies, which target pathways such as the genes and proteins that control tumour growth and the creation of blood vessels. These drugs are effective against advanced cancer, but they fail to stop the tumours returning (S106). Another set of drugs, which turns the body's immune system against the tumours, is also offering hope (S109).

Even with all this progress, there are many unanswered questions and unexplored avenues of research. Researchers still need to find new ways to predict and detect the disease, reduce the harmful side effects of drugs and make treatments last longer (S111). Only then will this disease be beaten.

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Brian Owens

Contributing editor

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