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LYMPHOMA

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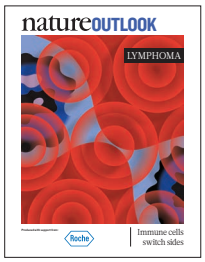

Cover art: Ana Kova

Ordinarily, our immune system protects us from harm. In lymphoma, however, elements of it turn against us and become a malignant force. Therapy for one form of the disease, Hodgkin's lymphoma, can be considered a success story: improvements in treatment mean that about 85% of people now survive for at least five years after diagnosis. For other forms of the disease, such as non-Hodgkin's lymphoma, the outlook for patients is bleaker. But research is deepening our understanding of all forms of this class of cancer, and seeding hopes of more effective therapies.

Before a disease can be treated, it must first be diagnosed. The advent of liquid biopsies that detect small pieces of tumour DNA circulating in the blood is bringing greater precision to this task: circulating DNA can indicate both the tumour's size and the mutations behind it (see page S38).

The standard, reasonably successful treatments for lymphoma are chemo- and radiotherapy. But for some people, these therapies will lead to heart problems and other forms of cancer later in life (S44). Fortunately, an array of new treatments are in development, guided in part by work with a strikingly good animal model of the human disease: dogs (S50).

Researchers are developing a gene-modifying treatment called chimeric antigen receptor T-cell therapy, in which a person's immune system is altered to seek and destroy tumour cells (S42). And drugs known as Bruton's tyrosine kinase inhibitors are emerging: these block a molecule in the signalling pathway that turns some white blood cells cancerous (S46). Work is also under way to craft vaccines against lymphomas (S52), and progress in treating graft-versus-host disease could open the door to more options for stem-cell therapy (S48).

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Herb Brody
Chief supplements editor

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