

Multiple myeloma



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Multiple myeloma is a blood cancer that affects plasma cells. Malignant cells accumulate in the bone marrow and crowd out healthy blood cells, resulting in lower numbers of red blood cells, white blood cells and platelets. Multiple myeloma is the second most common blood cancer after leukaemia, and the incidence worldwide has been increasing steadily for the past 30 years.

Until around ten years ago, the prognosis for people with the disease was poor, but a better understanding of multiple myeloma, alongside new treatments, means that the situation is improving.

Scientists are realizing that multiple myeloma is not a single disease, but rather a diverse array of conditions. A variety of genetic differences affects how it progresses. This insight could lead to innovative ways of personalizing treatments (see page S56).

That diversity extends to people as well. For years it has been clear that Black people are both more likely to have the disease and to have worse outcomes than white people. Researchers are working to untangle the genetic and social factors – including structural racism in health care – that lead to this disparity (S64).

Discoveries about the disease's precursor conditions – monoclonal gammopathy of undetermined significance and smouldering multiple myeloma – are helping physicians to determine who is at the greatest risk of the disease progressing, and who might benefit from early treatment (S58). Some physicians suggest that now is the time to introduce screening to catch the disease before it develops (S63).

New treatments are also coming to the fore, raising hopes that this cancer can be beaten. Therapies that use viruses to attack tumour cells are showing promise again after early disappointments (S60), and immunotherapy – which has shown great success against many other forms of cancer – is also making headway against the disease (S66).

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Brian Owens

Contributing editor

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A person observes malignant plasma cells in the bloodstream. Credit: Sandro Rybak for *Nature*

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