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Perhaps more than any other part of the body, blood signifies life. This rich fluid carries energy, nutrients and essential biomolecules to all of our tissues. No wonder that a bouquet of metaphors has fixated on the substance. Our kin are our blood. Our fights are bad blood. The word 'bloody' can be an emphatic marker of intensity.

The stories in this Outlook give a sense of how broadly salient issues relating to blood are. Biomedical engineers, who always look to improve on nature, are working on artificial fluids that can replace the real thing — and eliminate the need for transfusion (see page S12). Impressive progress has been made — especially with stem cells — but we are still years from removing the need for donors altogether. The sooner such substitutes are viable, the better, because it is increasingly hard to keep the blood supply free from pathogens (S19). And the medical community is becoming more cautious about transfusion as a default course of action (S22).

The meeting of blood and disease is always eventful. Gene editing shows great promise as a potential cure for sickle-cell disease (S28). And an infusion of a special blood plasma may well work as a treatment for Alzheimer's disease (S26).

Then there are the tales told by blood itself. Sophisticated analyses promise to wring more biological information from blood than ever before — such as whether someone has a brain injury, an infection or (through liquid biopsy) cancer (S16). And blood can provide revelations in other ways — forensic scientists are perfecting methods to extract details of gruesome crimes from blood-spatter patterns. This practice does not always match our TV-show-driven expectations, with grim consequences (S24).

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### Herb Brody

*Chief supplements editor*

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