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A healthy adult liver is a thing of beauty — a 1.5-kilogram, reddish-brown biochemical processing plant of extraordinary versatility and efficiency. From inside the abdomen, it performs an array of tasks: manufacturing proteins, metabolizing drugs, detoxifying the blood and secreting the bile that is needed for digestion. And especially high on the liver's to-do list is regulating the amounts of sugar, protein and fat that enter the bloodstream.

Unfortunately, the increasing prevalence of obesity in the past few decades has led to a surge in non-alcoholic fatty liver disease (NAFLD), in which liver cells become bloated with droplets of fat. Although NAFLD can often be reversed through exercise and weight loss, for many people it is the start of a more serious condition called non-alcoholic steatohepatitis (NASH). From there, the liver can deteriorate further to fibrosis and cirrhosis (scarring), which can lead to serious illness or even death (see page S92). Diagnosing NAFLD early is essential to halting the progression. That calls for better and less-invasive methods of detection than liver biopsy — and ultrasound and magnetic-resonance-imaging tools are beginning to fulfil this need (S90).

Researchers have found a strong connection between NAFLD and the bacteria that inhabit the intestines (S94). And worryingly, the condition is starting to be seen in children, probably owing to a combination of genetic susceptibility and a high-fat diet (S96). Fortunately, recognition of the increasing prevalence of NAFLD and NASH is spurring the drug industry to get into gear (S86).

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Herb Brody

Chief supplements editor

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