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People go the extra mile for food

In the United States, cardiometabolic diseases are rife — and on the rise. Efforts to understand this trend typically look at how local access to healthy food varies across the country. But a study of 94 million visits to food retailers shows that most people venture beyond their neighbourhoods to buy food, as Xu *et al.* report in *Nature Communications* (R. Xu *et al. Nature Commun.* **14**, 7326; 2023). The authors found that people travel a median distance of 5.95 kilometres each time they buy food.

Using GPS tracking data, Xu *et al.* calculated the percentage of food-buying visits that people from a given area made to retailers selling healthy food. They found that this measure was a better predictor of rates of obesity, high cholesterol and high blood pressure than is the percentage of such retailers in the local area, which is a standard way to measure food-access disparities. The findings could shift policy priorities away from improving local food access, to instead focusing on health education and the affordability of healthy food.

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Artificial intelligence

The deep route to low-field MRI with high potential

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A type of magnetic resonance imaging, known as low-field MRI, could make the technique more widely accessible, but only if the image quality can be improved. A deep-learning protocol might hold the key.

Magnetic resonance imaging (MRI) is an essential tool in medical diagnostics; however, its utility has often been limited by factors such as high costs and the necessity for advanced infrastructure. Conventional MRI is therefore unavailable in many health-care settings, especially in low- and middle-income countries. One approach to counter these challenges is the development of MRI that uses low magnetic-field strengths. However, low-field MRI also introduces its own set of problems — notably, longer scan times and a diminished signal-to-noise ratio compared with conventional MRI. Writing in *Science Advances*, Man *et al.*[1] report a promising solution to these limitations that uses deep-learning techniques to enhance the images obtained with ultra-low-field MRI. The approach is a key contribution to efforts aimed at using deep learning to make MRI affordable and widely accessible.

An MRI system is typically used to help physicians to distinguish one type of tissue from another. In simple terms, this is achieved by sending radio-frequency pulses through the tissue while it is subjected to the system's magnetic field, and then measuring how the magnetic response of the hydrogen nuclei in the tissue varies across the sample. Since the introduction of MRI half a century ago[2], there has been a trend towards using ever higher magnetic field strengths, because they produce inherently stronger signals than do weak fields. Early clinical MRI scanners[3] operated at field strengths of up to 0.5 tesla, whereas scanners with strengths of 1.5 T and 3 T are now widely used, and systems with even higher field strengths are popular in some areas of research.

But interest in low-field MRI is burgeoning, and ultra-low-field systems are now emerging with field strengths of less than 0.1 T (refs 4,5). The system that Man and colleagues used operates at a mere 0.055 T. Ordinarily, such a system would generate noisy, low-resolution images, but the authors showed that they could enhance the image quality using state-of-the-art deep learning, rendering some anatomical details more visible (Fig. 1).

The image protocol involved acquiring two types of 3D image, each with a different contrast, at low spatial resolution and with a low