

average according to State Food and Drug Administration 2010 data. Many farmers in China can buy antibiotics from chemists without a prescription from veterinarians.²

Antibiotic pollution in China needs to be reduced. The country needs to improve laws and regulations to control antibiotic pollution in tap water, surface water, and effluent from pharmaceutical companies and hospitals. No requirement currently exists to test for antibiotics in tap water. The Ministry of Environmental Protection, Ministry of Agriculture, National Health and Family Planning Commission, and other departments should strictly enforce relevant laws and regulations. Education of Chinese people, including medical professionals, to reduce antibiotic consumption is also important. Finally, the country should seek international assistance to tackle this issue.

While China is trying to achieve a sustainable development, rather than economic growth at the expense of public health and environmental protection, this antibiotic threat shows that the country still has many difficulties to tackle.

We declare no competing interests.

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Melatonin, the new partner to aspirin?

Aspirin is the most common drug taken for cardioprotection, with the added benefit of anticancer properties. Yet, it causes gastric haemorrhage. An alternative, safer cardioprotective drug than aspirin is needed. Melatonin, commonly taken to induce sleep or counter jet lag, has cerebroprotective and anticancer properties, with no reported side-effects. We hypothesise that melatonin has beneficial preventive properties for various organ diseases through mechanisms not shared by aspirin.

Melatonin is synthesised mainly in the pineal gland. Its secretion into the bloodstream is regulated by the environmental light–dark cycle via the suprachiasmatic nucleus. The initial event is that very sensitive ocular photoreceptors stimulate formation of melanopsin within the basal retinal ganglia, which, in turn, sends signals to the pineal gland, from which release of melatonin, synthesised from serotonin, is either stimulated or inhibited.

Melatonin acts by both inducing sleep and restoring the inherent sleep rhythm that is related to the rise and fall of blood melatonin concentrations. Melatonin treatment helps to restore these human circadian rhythms, resulting in better cognition and less daytime fatigue.¹ Experimental and clinical data have implicated melatonin in reduction of ischaemic-reperfusion injury, as originally studied in isolated rodent hearts.² If melatonin concentrations also affect the occurrence of human infarcts, then the day–night pattern of changes in melatonin blood concentrations² becomes relevant. In patients with ST-elevation myocardial infarction, the normal pattern is reversed, with less melatonin produced at night.³

In the brain, melatonin inhibits the potentially lethal opening of the mitochondrial permeability transition pore in isolated brain mitochondria, albeit at high concentrations.⁴ Finally, melatonin has antidiabetic⁵ and not well studied anticancer properties. Overall, the organ and vascular protective qualities of melatonin at the cost of very few or no side-effects far exceed those of aspirin, which is much more widely used for cardioprotection than melatonin is.

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Department of Error

Liddle AD, Judge A, Pandit H, Murray DW. Adverse outcomes after total and unicompartmental knee replacement in 101 330 matched patients: a study of data from the National Joint Registry for England and Wales. *Lancet* 2014; **384**: 1437–45. In table 1 of this Article (Oct 18), the number of “Cases done by consultant” in the Matched TKR group should have been 64 998, not 34 998; the percentage (86%) remains the same. This correction has been made to the online version as of Feb 27, 2015.

Hill M. Shale gas regulation in the UK and health implications of fracking. *Lancet* 2014; **383**: 2211–12. In this Correspondence (June 28) the disclosure of interests should have read: “I am a nominated expert to the Technical Working Group on the Best Available Techniques Reference for Management of Tailings and Waste Rock under the Joint Research Council for the EU Commission.” This correction has been made to the online version as of Feb 27, 2015.