

Asthma: altering diet may ease symptoms

Fruits, vegetables, and whole-grains might be an unlikely treatment for asthma according to animal studies.

Tests on mice, published in the journal *Nature Medicine*, showed that a high-fibre diet could reduce inflammation in the lungs. The extra fibre changed the nutrients being absorbed from the gut, which in turn altered the immune system. The researchers argue the shift to processed foods may explain why more people are developing asthma.

The airways are more sensitive to irritation and more likely to become inflamed in people with asthma. It leads to a narrowing of the airways that make it harder to breathe. However, a possible solution may lie in another organ, the gut, and the bacteria which live there. The cells of the human body are vastly outnumbered by the trillions of microbes that live in and on it. There is growing evidence that these bacteria have a significant impact on health.

A team at the University of Lausanne in Switzerland showed that the high and low fibre diets altered the types of bacteria living in the guts of the mice.

Indoor air pollution puts three billion at risk of early death and poor health

Indoor air pollution arising from burning solid fuels like wood or charcoal is putting nearly 3 billion at risk of ill health and early death, according to a new commission looking into the problem.

In India, where 85% of rural households still use firewood for cooking, indoor air pollution is so high that it influences outdoor pollution, and places it at three times higher than a typical London street, says the study published in *The Lancet Respiratory Medicine* journal.

An estimated 600-800 million families worldwide are at increased risk of illnesses such as respiratory tract infections, pneumonia, chronic obstructive pulmonary disease, asthma, and lung cancer, the commission has warned.

According to the World Health Organization, 4.3 million people a year die from the exposure to household air pollution. Asian and African nations are the worst affected. A global agency, International Centre for Energy, Environment and Development had announced that 93 000 Nigerians die annually as a result of smoke inhaled while cooking with firewood.

Despite the huge toll, efforts to tackle indoor pollution have not been adequate while the public awareness programmes have not been able to educate the masses.

Many corporate players and non-profit organisations have entered the space to provide efficient, smokeless stoves, but they have not been successful largely due to the cost factor.

The new alternatives have to be affordable, efficient, and long-lasting as the traditional style methods they replace, the commission members said.

The commission has underlined a serious need for improved commitment to tackling the problem of household air pollution. The first step towards this

is that the global community recognise the scale of the problem and commits to coordinated and concerted action.

Antibiotics do not shorten tuberculosis treatment, finds Phase 3 trial

The results of a Phase 3 clinical trial involving UCL researchers, called REMoxTB, has found that replacing one of the drugs with the antibiotic moxifloxacin in the standard six-month treatment regimen did not allow the treatment time for tuberculosis (TB) patients to be shortened to four months.

The results were published in the *New England Journal of Medicine*. The trial confirmed the safety of daily moxifloxacin over four months of therapy. Researchers concluded that the safety of moxifloxacin, combined with its activity against TB, supports the continued clinical testing of moxifloxacin as a component of other novel regimens.

'Shorter and simpler TB cures are urgently needed - the present first-line treatment is nearly 50 years old, too complicated, and interacts with common HIV medications,' said Mel Spigelman, MD, president, and CEO of TB Alliance, the sponsor of the trial. 'REMoxTB paved the way for future progress by showing us that effective, markedly shorter and safer treatments will most likely require developing novel regimens that combine multiple novel agents.'

The trial enrolled 1931 patients at 50 sites in nine countries including Kenya, Tanzania, South Africa, and Zambia. The three-arm study substituted moxifloxacin for either isoniazid or ethambutol in the first-line treatment for drug-sensitive TB. The study found that, while the experimental regimens initially killed more TB bacteria than the standard regimen, patients receiving those shortened regimens were more likely to relapse than those taking the standard treatment.

'The REMox trial was among the most rigorous TB drug trials ever conducted in the modern era of TB treatment and among the largest ever conducted for a new TB treatment. Although the regimen we studied wasn't quite sufficient to reduce TB treatment time by our two month target, the trial brought us a significant step closer,' said Professor Stephen Gillespie, the Sir James Black Chair of Medicine at the University of St. Andrews, and the REMox study's chief investigator.

The current treatment for the nearly nine million people newly diagnosed with TB each year is highly inadequate and requires a minimum of six months of therapy, which often has significant side effects. The length of today's TB treatment makes it difficult for many patients to complete therapy. Failure to complete treatment is a major driver of the emergence of multi-drug resistant TB (MDR-TB), which requires substantially longer, more complicated and expensive treatment.

The REMoxTB study was a collaboration between the TB Alliance, Bayer HealthCare AG, the University College London (UCL) Centre for Clinical Microbiology, the Medical Research Council Clinical Trials Unit at UCL, and the University of St. Andrews.