

Cases of childhood diarrhoea significantly underestimated

STAR HEALTH REPORT

The numbers of cases of childhood diarrhoea attributable to pathogens (bacteria, parasites, viruses or other infections) have been substantially underestimated and may be nearly twice as high as previous analysis suggests, according to new research published in *The Lancet*.

The analysis of over 10,000 samples from Bangladesh, India, Pakistan, The Gambia, Kenya, Mali, and Mozambique finds that *Shigella* and rotavirus were the most common infections among children under 5 years old, followed by Adenovirus, enterotoxin-producing *E coli* (EPEC), *Cryptosporidium* and *Campylobacter*. While an oral vaccine for rotavirus exists, the authors say that the findings highlight the need for prioritisation of *Shigella* and ETEC vaccines.

Worldwide, diarrhoea remains the second leading cause of death in children under 5 years old, and is associated with approximately half a million deaths per year. Management of diarrhoea usually involves supportive care with rehydration and Zinc supplementation. Antibiotics are



not usually recommended unless there are signs of dysentery (severe diarrhoea with the presence of blood and mucus in the stools) or if cholera is suspected.

The findings come from a re-analysis of samples from the Global Enteric Multicenter Study (GEMS). Previous estimates of the infectious causes of diarrhoea were based on a variety of different detection methods, but this study, for the first time, uses a

molecular diagnostic testing method called quantitative real-time PCR (qPCR) to test for 32 pathogens.

The original GEMS study, published in 2013, estimated that 51.5% of childhood diarrhoea cases could be attributed to pathogens, but the new re-analysis finds the proportion is much higher at 89.3%.

The original study identified four major pathogens: Rotavirus,

Shigella spp, *Cryptosporidium* spp, and heat-stable enterotoxin-producing *E coli* (ST-EPEC). This re-analysis reaffirmed these four and added two others: adenovirus 40/41 and *Campylobacter jejuni/coli*. Together, these six pathogens accounted for 77.8% of all diarrhoea. Among the children who had a diarrhoea-causing pathogen, about half had more than one infection, highlighting the

challenges of treating multiple infections.

"Childhood diarrhoea remains an enormous problem, made more confusing by the long list of possible infections, the difficulties in diagnosis, and the large number of undiagnosed cases," says lead author Professor Eric R Houpt, University of Virginia, Charlottesville, USA.

The authors say that the study sites were carefully selected to be broadly representative of countries with moderate to high child mortality, but some differences in the hierarchy of pathogens were observed between countries.

Writing in a linked Comment, Dr Karen Keddy, Centre for Enteric Diseases, National Institute for Communicable Diseases, Johannesburg, South Africa and co-authors write: "These results imply that prioritising vaccine development for these six pathogens could lead to a substantial decrease in diarrhoea burden among children younger than 5 years over the next few decades, as has been seen for rotavirus. Follow-up studies will indicate which molecular diagnostics complement traditional methods."

WORLD CML DAY



Leukemia patients stand strong

Bangladesh Chronic Myeloid Leukemia (CML) Supporting Group celebrated the World CML Day on September 22, 2016 in Dhaka in association with Max Foundation, CML Advocate Networks and *What is My PCR* campaign.

This campaign was aimed to raise awareness among physicians about the importance of PCR testing in CML by meeting the physicians of Hematology. The CML survivors stood together to raise awareness about one life changing reality — living with CML. The CML supporting group met physicians and held banners at major hospitals in the city to raise awareness about CML.

The Head of Hematology at the National Institute of Cancer Research and Hospital said that advances in treatment and care have transformed CML into a disease where patients, if treated effectively, can live a usual life for years.

Dr E H M Shofur Rahman Sohag, a CML Survivor for 15 years and the chairman of Bangladesh CML Supporting Group said that CML is caused by the change of chromosomes 9 and 22, which is why World CML Day 9/22 carries a symbolic significance for the patient community and requested physicians to come forward and support the CML affected and give significant emphasis to have the PCR test done regularly to manage CML and maximise life.

HEALTH bulletin

How city design and transport planning can improve health

STAR HEALTH DESK

A new series, published in *The Lancet* quantifies the health gains that could be achieved if cities incentivised a shift from private car use to cycling and walking, and promoted a compact city model where distances to shops and facilities, including public transport, are shorter and within walking distance.

These changes could achieve significant reductions in non-communicable diseases such as cardiovascular disease and diabetes as well as increasing physical activity and reducing pollution. Importantly, in cities with high levels of private car use such as Melbourne, London and Boston, the authors say that promoting walking and cycling must be matched by improvements to infrastructure that separate motorised

transport to protect cyclists and pedestrians from road injuries.

Over half of the world's population lives in cities, and rapid urbanisation is only expected to increase in the coming years. By 2050, large cities in the USA, China and India are predicted to see their populations increase by 33%, 38% and 96% respectively.

Population growth in cities means increasing demands on transport systems. Sprawling residential developments in the USA, Australia and New Zealand limit the ability of people to walk or cycle in their daily commute and make public transport expensive to deliver.

Private car use has increased dramatically in Brazil, China and India leading to declines in physical activity, increases in air pollution and increased rates of road death and serious injury, all of which

combine to increase overall levels of chronic disease and injury.

The authors of the Series identify key interventions that, when combined, encourage walking, cycling and public transport use, while reducing private car use. These include having shops and services within walking distance, a mix of employment and housing across the city, reducing the availability and increasing the cost of parking, infrastructure that supports safe walking and bicycling, open spaces, reducing distance to public transport, and making neighbourhoods safe, attractive and convenient for public transport.

Series lead Professor Mark Stevenson, University of Melbourne, and colleagues designed a 'compact cities model' where land-use density was increased by 30%, average distance to public transport reduced by 30%, and diversity of land-use increased by 30%. They also factored in a 10% shift from private cars to either cycling or walking - a target similar to that of policies in many European cities such as Zurich.

"City planning policies can affect health, both positively and negatively. A major incentive is that designing cities for health and active transport, rather than automobile-dependence, also makes the cities more environmentally sustainable helping cities to achieve the UN's Sustainable Development Goals," says series author Professor James Sallis, University of California, San Diego, USA.



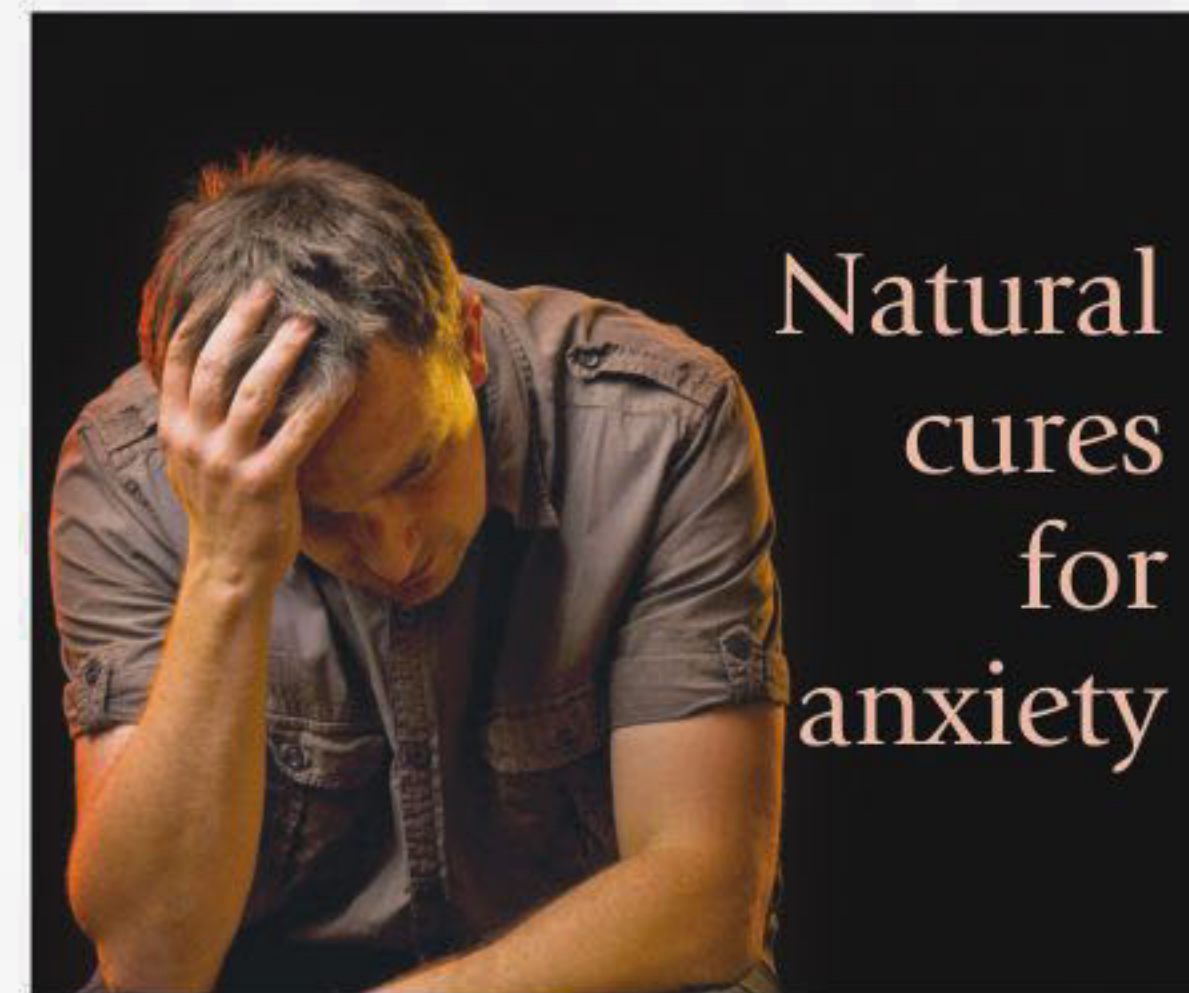
83% of cervical cancer deaths could be prevented

A study published in the *British Journal of Cancer* states that many more lives of cervical cancer patients could possibly be saved if all the women who are eligible went for the screening. Researchers said the largest impact of screening was among women aged 50-64 years.

Cervical screening already prevents thousands of cervical cancers every year and as it continues to improve, even more women are expected to avoid this disease by testing all samples for the human papilloma virus (HPV).

The screening consists of a smear test which searches the entrance of the womb for any abnormal cells. This gives the doctors a chance to eliminate the tissues that might become cancerous. It is important for everyone to remember that cervical cancer screening is for women without symptoms. Women who have any unusual or persistent bleeding, pain, or change in vaginal discharge — even if they have been screened recently irrespective of their age should get it checked by doctors.

The researchers concluded that screening has an even larger impact on cervical cancer mortality than it has on incidence, and that if everyone attended screening regularly, 83% of cervical cancer deaths could be prevented. Screening is more effective at preventing death from cancer than preventing cancer itself.



Natural cures for anxiety

There are many safe non-drug remedies for anxiety, from mind-body techniques to supplements to calming teas. Some start working right away, while others may help lessen anxiety over time.

L-theanine (or green tea): Research shows that L-theanine found in green tea helps curb a rising heart rate and blood pressure, and a few small human studies have found that it reduces anxiety.

Exercise: Exercise is safe, good for the brain, and a powerful antidote to depression and anxiety, both immediately and in the long term.

Eat something, quick: Almost universally, people get more anxious and irritable when they are hungry. When you get an anxiety attack, it may mean your blood sugar is dropping. The best thing to do is to have a quick sustaining snack, like a handful of almonds along with a glass of water or a nice cup of hot tea.

Eat breakfast: Stop starving yourself. Source of Choline which is found in egg should be taken in breakfast as low levels of choline are associated with increased anxiety.

Eat omega-3s: Fish oils are good for the heart, and perhaps they protect against depression. In one study, students who took 2.5 milligrams a day of mixed omega-3 fatty acids for 12 weeks had less anxiety before an exam.



The seventh annual National Eye Health Week (NEHW) will take place 19 - 25 September 2016

10 Amazing eye fact

1. We produce over 1 litre of tears every year to keep our eyes lubricated. This doesn't include the emotional tears produced when we cry.
2. Your pupils dilate when you find a person attractive. Some studies suggest women's pupils are widest during ovulation & this may be why men find partners with wide dilated pupils more attractive.
3. Our eyes are equivalent to a 74 mega pixel camera, but after our brains have processed the image, we can see at a level of detail equivalent to a 576 mega pixel camera, if one existed.
4. The surface of the cornea is the quickest healing part of the body.
5. On average, we blink 13,662 times each day. Using a computer for 5 hours a day can reduce this to around 10,350, which may make your eyes feel dry and tired.
6. Our iris is unique, just like a fingerprint.



7. The human eye can see at least 2.3 million colours. Some research suggests we can actually see up to 7 million!
8. We have around 4.6 million colour photoreceptors in the eye called cones that enable us to see colour and detail, and over 92 million black and white photoreceptors called rods that help us see in low light.
9. About 8 per cent of all males are colour deficient and perceive colours slightly differently to the majority of us.
10. Your retina is one of the highest oxygen-consuming tissues in your body.

Ref: The College of Optometrists

