

# Air pollution major contributor to pregnancy loss in South Asia

STAR HEALTH REPORT

Poor air quality is associated with a considerable proportion of pregnancy loss in India, Pakistan, and Bangladesh, according to a modelling study published in The Lancet Planetary Health journal.

Previous studies have suggested a link between air pollution and pregnancy loss in other regions, but this is the first study to quantify the burden in south Asia, which is the most populous region in the world and has the highest rate of pregnancy loss. Therefore, understanding the risk factors for pregnancy loss in south Asia is crucial to improving maternal health regionally and globally.

Lead author on the study, Dr Tao Xue, Peking University, China, says, "South Asia has the highest burden of pregnancy loss globally and is one of the most PM2.5 polluted regions in the world. Our findings suggest that poor air quality could be responsible for a considerable burden of pregnancy loss in the region, providing further justification for urgent action to tackle dangerous levels of pollution."

To carry out their analysis, the authors combined data



from household surveys on health from 1998-2016 (from women who reported at least one pregnancy loss and one or more livebirths) and estimated exposure to PM2.5 during pregnancy through combining satellite with atmospheric modelling outputs. They created a model to examine how exposure to PM2.5 increased women's risk of pregnancy loss, calculating risk for each 10 µg/m³ increase in PM2.5 after adjusting for maternal age, temperature and humidity, seasonal variation, and long-term

trends in pregnancy loss.

Using this association, they calculated the number of pregnancy losses that may have been caused by PM2.5 in the whole region for the period 2000-16 and looked at how many pregnancy losses might have been prevented under India's and World Health Organization's (WHO) air quality standard (40 µg/m³ and 10 µg/m³, respectively).

In the study, they included 34,197 women who had lost a pregnancy, including 27,480 miscarriages and 6,717 stillbirths,

which were compared to livebirth controls. Of the pregnancy loss cases, 77% were from India, 12% from Pakistan, and 11% from Bangladesh.

Gestational exposure to PM2.5 was associated with an increased likelihood of pregnancy loss, and this remained significant after adjusting for other factors. Each increase in 10 µg/m³ was estimated to increase a mother's risk of pregnancy loss by 3%.

The increase in risk was greater for mothers from rural areas or those who became pregnant at an older age, compared to younger

mothers from urban areas.

From 2000 to 2016, 349,681 pregnancy losses per year were associated with ambient exposure to air pollution exceeding India's air quality standard—accounting for 7% of the total annual pregnancy loss burden in this region. For air pollution above WHO air quality guideline, exposure may have contributed to 29% of pregnancy losses.

Although WHO's guidelines aims for a safer level of air pollution, the authors note that India's standard is a more realistic target level, given the high average levels of air pollution in the region and the need to balance practical governance and public health.

The authors note several limitations of their study. In the surveys, they were not able to distinguish between natural pregnancy loss and abortions and there was under-reporting of pregnancy losses because of stigma or ignoring very early pregnancy losses. They also note that the survey data is subject to recall bias, therefore, recommending the causality of the association should be further examined in longitudinal studies.

## BREATHING



### Can you learn to breathe better?

It is an involuntary action, but you can still get better at breathing. When you breathe at a balanced tempo, you maintain healthy levels of oxygen and carbon dioxide in your blood.

**Breathe through your nose:** Tiny hairs and mucus, otherwise known as snot, inside your nose help catch and filter out dust that could irritate your lungs. Your nasal passages also warm and moisten the air you breathe in before it gets to your lungs.

**Deep breathing exercises:** The simple practice of focused breathing can help you lower stress. Just a few minutes of deep, steady inhaling and exhaling trains your vagus nerve, which manages functions like your heart rate.

**Switch sides:** Use your thumb to close one nostril while you breathe through the other, then switch. Close the other nostril with your index finger and breathe again. In between each cycle, briefly squeeze both sides shut. Do this for 5 minutes. This exercise, along with deep breathing, may have healthy effects on blood pressure and heart rate.

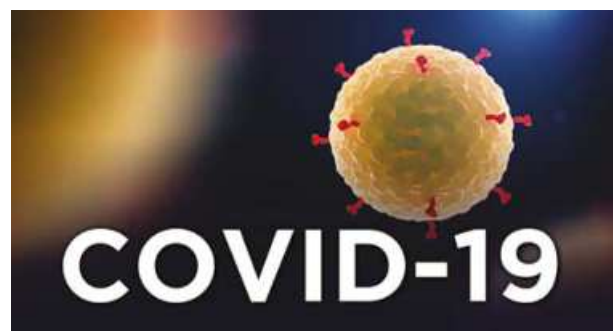
**Improve indoor air quality:** An air purifier in your home can help clean particles from your surroundings to help you breathe better. These small appliances, also called HEPA air filters, are especially helpful if you have asthma. Airborne dust and allergens can worsen your symptoms. But anyone who lives in a big city with pollution may benefit from an air purifier too.

**Drink water:** Stay hydrated to breathe better too. Drinking plenty of water or other fluids throughout the day keeps the mucus membranes that line the insides of your lungs healthy. If the lining is moist and thin, you will breathe easier.

**Breathe easier through your mask:** Wearing a face covering may make breathing feel like it takes more effort. While you are masked, do not slump. Good posture makes breathing easier. Take off your mask when you are alone. If you feel anxious in your mask, pause and take a few deep mouth breaths to calm down.

Source: WebMD

## HEALTH bulletin



### COVID-19 likely lingered longer than reported in Wuhan

Researchers reporting in *PLOS Neglected Tropical Diseases* have tested more than 60,000 healthy individuals in China for SARS-CoV-2 antibodies and concluded that thousands of Wuhan residents were infected with asymptomatic cases of COVID-19 after the infection was believed to be under control in China.

Rapid antibody tests are used to diagnose present and past infections with the SARS-CoV-2 virus that causes COVID-19; positive IgG antibodies suggests a previous infection while IgM antibodies mean a current or recent infection. Detection of both types of antibodies can give a better understanding of the number of asymptomatic infections in a population over time. In Wuhan, the number of COVID-19 cases peaked in February 2020 and the city was initially declared to be free of disease in late April, although small clusters of cases appeared in later months.

Xue-jie Yu of Wuhan University, China, and colleagues studied the prevalence of IgG and IgM antibodies in blood samples collected between March 6 and May 3, 2020, from 63,107 individuals in China. All people tested were healthy and were undergoing screening before returning to work.

Consistent with a large number of cases having occurred in Wuhan, the percentage of people with positive SARS-CoV-2 antibodies, about 1.68%, was significantly higher than in other regions of China, where antibody positivity averaged 0.38%. Moreover, according to the IgM positive rate of 0.46% in Wuhan, the researchers estimated that thousands of people in Wuhan were infected asymptotically between March and May 2020, when there were no clinically reported cases of COVID-19.

## Innovation in healthcare is must to progress the health of the country

Star Health recently interviewed Mr. Farrukh Alam, Country Director of Medtronic Bangladesh, a global healthcare solutions company. He shares his insights into the healthcare sector of Bangladesh in this interview. Here is a glimpse of the interview for the readers of Star Health.

**Star Health:** How do you consider the healthcare sector in Bangladesh?

**Farrukh Alam:** Since the liberation war, considerable changes took place within the healthcare sector of Bangladesh. The nation's initiatives regarding increasing the number of vaccinations, safe and drinkable water, and improving sanitation solutions have been praiseworthy. Bangladesh became exemplary for the world for its successful campaigns of vaccination for infants. Numerous reports have shown that number of deaths from the transmitted disease has fallen dramatically across the country. Both private and public organizations are tirelessly working towards improving the quality of the healthcare sector of Bangladesh.

**Star Health:** Do you think the growth and transformation in the healthcare sector in Bangladesh are sufficient?

**Farrukh Alam:** Bangladesh's healthcare sector is evolving; however, certain challenges need to be tackled before transcending into a new medical facility era. There is an imbalance in the distribution of healthcare workers such as, according to the World Health Organisation (WHO), there are an estimated 3 physicians and 1 nurse per 10,000 population. This creates a challenge for doctors as they cannot allocate enough time for each patient, leading people to travel abroad for treatment. The issue is



**Farrukh Alam, Country Director of Medtronic Bangladesh**

also creating a loss for the economy. On top of it, most specialised health workers provide services in urban areas, whereas most Bangladesh residents reside in rural places. Thus, to provide better treatment to everyone, it has become mandatory to tackle all these issues.

**Star Health:** How the private, especially the multinational companies can help to develop the healthcare sector in Bangladesh?

**Farrukh Alam:** The private sector plays a vital role in delivering health services across Bangladesh. While the public sector contributes to the development of the health infrastructure, leading hospitals and clinics across the nations are owned by the private sectors. Both multinational and private companies have the power and financial stability to bring innovative technology to provide global standard treatments. On top of it, international companies can also develop research labs, and with the help of emerging technologies, they will be able to explore new opportunities and take preventive measures.

**Star Health:** Is there any innovation by Medtronic which will be introduced in Bangladesh?

**Farrukh Alam:** Medtronic Bangladesh has been bringing innovative technology to the nation and providing global standard treatment and diagnosis. It has brought high-quality biventricular pacemakers to treat heart disease patients by sending electrical signals to the heart's ventricles using the Cardiac resynchronisation therapy (CRT) method. We have been providing numerous therapies and exploring ways to bring more innovative technologies for treatments and diagnosis.

**Star Health:** What are the major initiatives from Medtronic in the future to develop the healthcare sector in Bangladesh?

**Farrukh Alam:** For the last 6 decades, our mission has stayed the same – to alleviate pain, restore health, and extend life for people around the world. But today's healthcare challenges require a new approach – we call it 'Further, Together.' 'Further' because we will continue to put more effort to bring meaningful innovation at the therapy, procedural, and system levels while devising robust solutions with proven clinical and economic value.

'Together' because we will create new and stronger partnerships to help our stakeholders achieve their goal of expanding global access and delivering more seamless, integrated care across the healthcare continuum.

We are committed to bringing the most innovative technologies to all the markets we operate, including Bangladesh.

**Star Health:** Thank you for your time.

**Farrukh Alam:** Thank you.



PHOTO: COURTESY

### Specialised kidney dialysis center inaugurated in the capital

The Holy Family Red Crescent Medical College Hospital, in collaboration with the JMI group, has inaugurated a new state-of-the-art kidney dialysis center equipped with 36 kidney dialysis units recently at the capital, says a press release.

Prof Dr Md. Habibe Millat, MP, the vice-chairman of the Holy Family Red Crescent Medical College Hospital said, "Through this initiative, we will be able to provide advanced medical services to kidney patients."

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## Physical Medicine & Rehabilitation Centre

### Physical Medicine & Rehabilitation Care

### A Patient Centred Approach



**Musculo-Skeletal/Ortho Rehabilitation** for bone/joint pain or dislocation, arthritic conditions and sports injury



**Neuro Rehabilitation** for stroke, trauma and other neurological condition



**ObGyn Rehabilitation** to assist normal delivery for pregnant mother, post delivery get-back to shape and PCOS



**Cardio Respiratory Rehabilitation** Pre and Post-operative cases in heart, lung and abdominal surgery; asthma, chronic bronchitis, COVID and other chronic lung conditions



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