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Dr Neelam Mohan

Unsafe food poses global health threats, endangering everyone. Monosodium glutamate used as a flavour enhancing agent in many kinds of food products, can result in toxicity, if found beyond the safety limits

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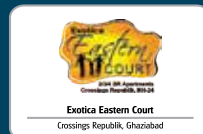
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RAISING THE BAR ON HEALTH AWARENESS

Thanks for your continued support. Like every month, this issue too of your favourite health magazine Double Helical deals with several pertinent health topics to raise the levels of your medical knowledge. Being committed to bringing to the fore newer health concerns, we are highlighting the recent debate on the consumption of fast food as the recent controversy over Maggi noodles hit the headlines.

The cover story “Are you Consuming Poison?” written by Dr Neelam Mohan reveals that unsafe food poses global health threats, endangering everyone. Monosodium glutamate, commonly known as MSG, is used as a flavour enhancing agent in many kinds of food products. But it can result in toxicity, if found beyond the safety limits.

The World Health Organization (WHO) identified the topic of “Food safety” in their World Health Day 2015 celebration on the 7th April, the birthday of the organization. But food safety issues have been long neglected in India. In fact, the inspection of “Maggi” noodles in different batches suggested levels of lead above the limits specified by food regulators. This episode shook the entire country. However, what is important for us is to realize that it's not just one company or one product, but such controversies are cropping up with several products of other companies too. It's time that the government, manufacturers, retailers, and the public of India realize the importance of food safety.

The special story ‘Replacing pain with smile’ brings out that the ailment of joint stiffness and pain is becoming very common amongst the people. More and more cases of osteoarthritis are reported these days affecting knees and hips the most. Knees are primarily weight-bearing joints while hips not only support the weight of the body but also enable movement of your lower body; therefore, they are more commonly affected. With the passage of time, the severity grows leading to surgery for joint replacements. Thankfully, today surgeries help patients lead a normal life as before.

In the June 2015 issue, we also cover International

Yoga Day held all over the country and the world, recently. The reach and spread of Yoga cuts across differences of colour, caste and creed. India led 191 countries to mark the celebration with over 40,000 participants performing various yoga asanas at a mega event in the capital city Delhi. The yoga celebrations were held after the United Nations had in December last year declared June 21 as the International Yoga Day, with 177 countries voting in favour. The proposal had been mooted by the Prime Minister during his first address to the UN General Assembly in September last year. While Prime Minister Narendra Modi addressed the gathering, diplomats from 152 foreign missions were invited to take part in the event. Given the expected large participation at one place, the Ministry of AYUSH which coordinated the event, hopes the event will be registered into the Guinness World Records for the largest yoga demonstration or class at a single venue.

The story ‘Physician, heal thyself’ written by Dr Suneela Garg/Dr Archana Ramalingam highlights that there is an acute shortage of human resources in India in the health sector. The recommended WTO number of doctors is one/per thousand individuals, whereas India has a doctor/population ratio of 1:1700. As the government is steering towards providing universal health coverage, it has to confront severe limitations in health infrastructure, manpower, logistics supply and distribution, poor managerial skills etc, to name a few. Human resources for health are the backbone of any healthcare system. But while trying to increase the numbers, we have become shortsighted about the quality of manpower that is being produced in the country.

In addition to the above-mentioned stories, there are many good articles to inform, delight and educate our esteemed readers. Thank you again, and enjoy reading this information-packed issue that comes to you with good visuals and nice design.

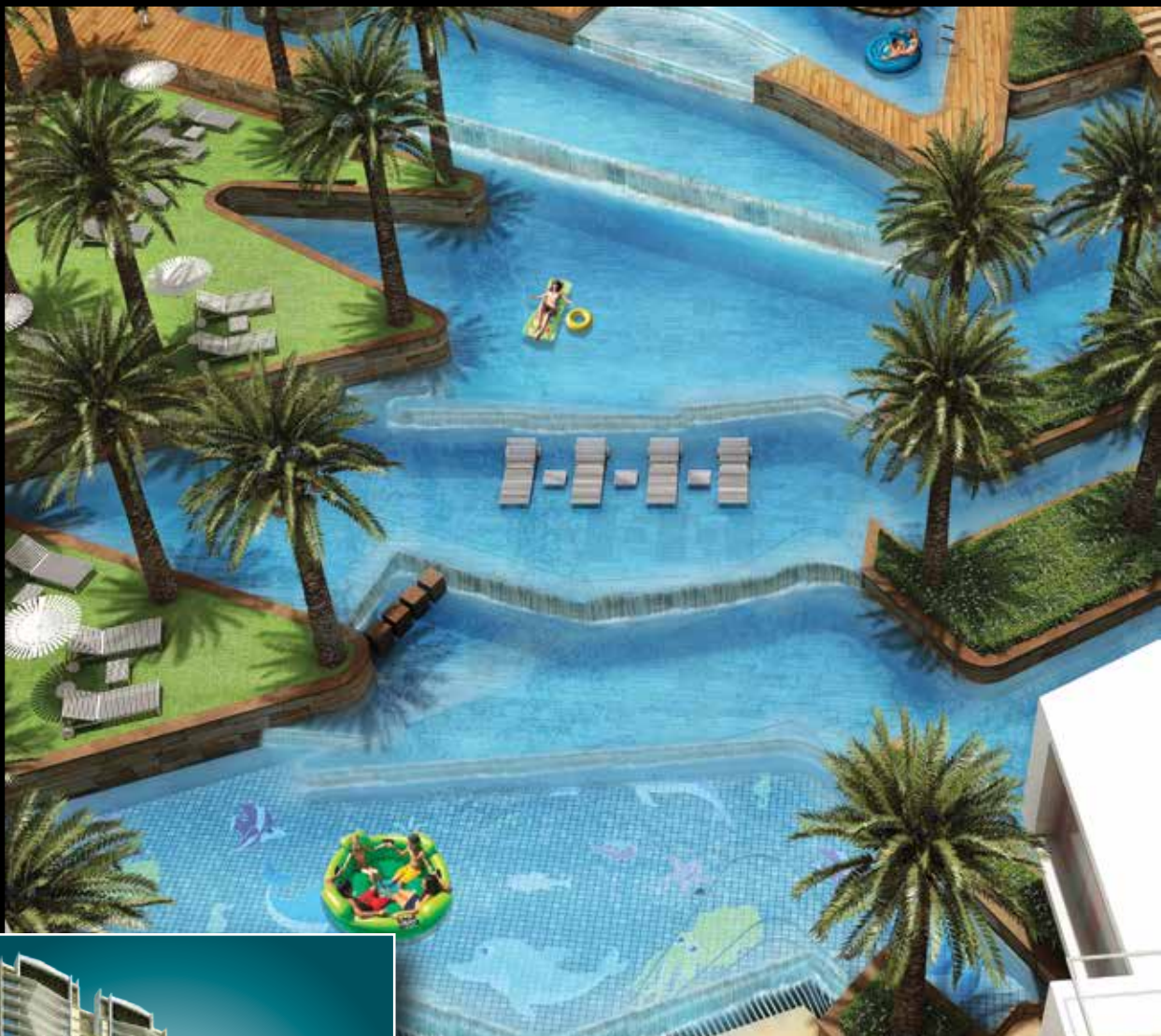
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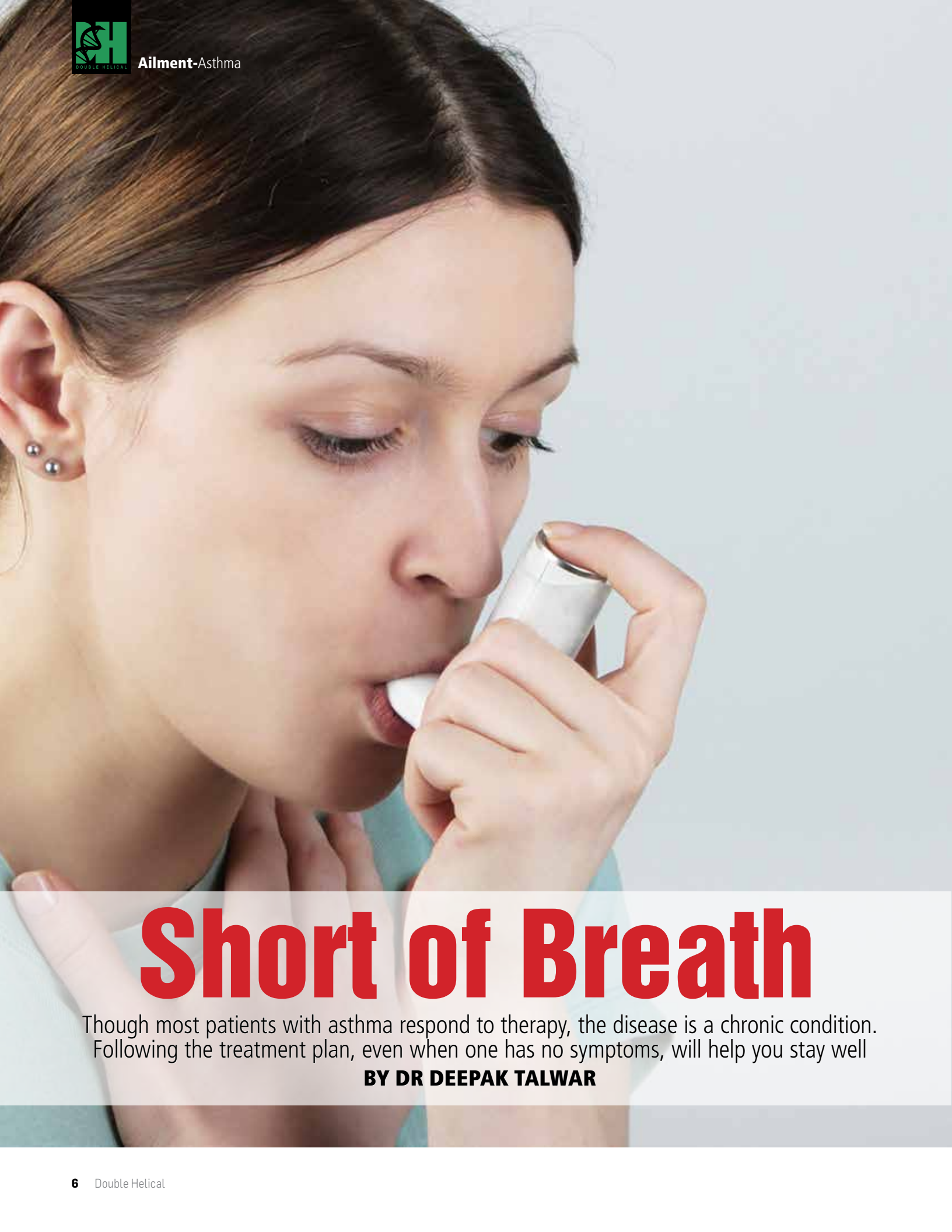
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Short of Breath

Though most patients with asthma respond to therapy, the disease is a chronic condition. Following the treatment plan, even when one has no symptoms, will help you stay well

BY DR DEEPAK TALWAR

Asthma is a chronic, episodic inflammatory disease of the airways that is best viewed as a syndrome consisting of recurrent episodes of respiratory symptoms. These include variable airflow obstruction that is often reversible, either spontaneously or with treatment and presence of airway hyper-reactivity. Also, the disease manifests itself in chronic airway inflammation in which many cells and cellular elements play a role, in particular, eosinophils.

All of these features need not be present in any given asthmatic patient. Usually, the correct diagnosis of asthma is made and most patients with asthma respond to therapy. Approximately 5% to 10% of patients with asthma, however, have disease that is difficult to control despite taking maximal doses of appropriate medications. Such patients require a rigorous and systematic multidisciplinary approach to their diagnosis and treatment.

Signs and symptoms of asthma - There are signs and symptoms like Shortness of breath, wheezing, chest tightness and coughing.

Diagnostic evaluation - It includes test for atopy and allergy: IgE, AEC, RAST, phadia top, FeNO, skin prick test, sputum for eosinophils, aspergillus specific antibody, tests for lung functions: spirometry with bronchodilator response, diffusion capacity, impulse oscillometry and exercise challenge radiology: X-Ray sinus and chest, CT sinus and chest.

Goals of asthma treatment

The general goals of asthma treatment should include making you free from severe symptoms day and night, allowing you to sleep through the night, have the best possible lung function, be able to participate fully in any activities of your choice, not miss work or school because of asthma symptoms, need few or no urgent care visits or hospital stays for asthma, use medicines to control asthma with as few side effects as possible and be satisfied with your asthma care.



Dr Deepak Talwar

Once the diagnosis of asthma is confirmed, patient needs to be made aware of his condition and regular use of reliever medication as well as managing exacerbations

To reach these goals, your personal asthma treatment plan may include avoiding triggers (staying away from things that bother your airways); medicines (know how they work and how

to take them); monitoring your symptom; seeing your doctor regularly; knowing when to get medical and emergency help and peak flow, which is a measurement of air flow monitoring.

There are triggers that worsen asthma like cigarette smoking and cocaine use, medications (aspirin, non steroidal anti-inflammatory medications, beta-blockers), dust mites, pets, insects, occupational agents, premenstrual worsening, stress, upper airway disease and gastro esophageal reflux disease.

Monitoring your symptoms and detecting an attack

It is important to begin treatment early in an asthma attack. Early warning signs include a drop in peak flow rate, coughing, wheezing, chest tightness, and shortness of breath.

When to seek emergency medical care

Asthma can be life-threatening. If you experience any of the following signs, go to a hospital emergency department: Your wheeze, cough, or shortness of breath gets worse, even after you have taken your medicine and it has had time to work. Breathing becomes difficult. You





have trouble walking or talking. You stop playing or working and cannot start again. Your lips or fingernails are blue or gray. If this happens, go to the emergency department.

Asthma education and busting of myths.

Once the diagnosis of asthma is confirmed patient needs to be made aware of his condition and regular use of reliever medication as well as managing exacerbations. Education regarding correct inhaler technique and spacer devices with metered-dose inhalers is essential.

Popular myths which need to be busted include:

Myth 1: It's better to 'tough it out' without taking asthma medication.

The lungs do not get stronger or become better able to deal with asthma if a person tries to work through an attack without medication. In fact, the lung inflammation that goes along with an attack can cause permanent damage to the lungs. Always use medications as prescribed.

Myth 2: Steroids used in asthma are dangerous.

The corticosteroids used to control asthma are not the same as the often illegal steroids used by some athletes,

The corticosteroids used to control asthma are not the same as the often illegal steroids used by some athletes, and have no effect on muscles or athletic performance.

and have no effect on muscles or athletic performance. Scientific studies have shown asthma medications to be safe over long periods of use.

Myth 3: Sports and physical activity make asthma worse

Physical activity, and the conditioning that comes with it, should be part of everyone's life, including those with asthma. Asthma should not interfere with physical activity; however, one may need medication in order to participate fully.

Myth 4: Everybody's asthma is the same.

Asthma severity can vary greatly from one person to another. Treatment for one person may not be the same as another.

Myth 5: Asthma is an emotional illness.

Asthma is caused by inflammation and

constriction in the lungs. It is stressful to have an asthma attack, but emotions do not cause asthma.


Clinical presentation and management

Patients with difficult-to-control or severe asthma have the following symptoms:

Frequent nocturnal awakenings, obstructive defect in PFT with significant post bronchodilator reversibility and PEFV Variability, They are managed as step 3 or higher as per GINA guidelines.

Evaluating the results

Doctor will evaluate on a regular basis to see how well the treatment plan is working. It's very important to stick to treatment plan, even when one feels well. Many people stop taking their medication when they are symptom-free. Remember: asthma is a chronic condition. It doesn't just go away. One will have good and bad periods. Following the treatment plan, even when one has no symptoms, will help stay well:

Write down the treatment plan so you don't forget it; bring the peak flow readings to follow-up visits. These readings will help your doctor adjust your medicines. Keep a Symptom Diary; take it on follow-up visits. Be alert to signs that the asthma is not controlled and tell your doctor. 

(The author is senior Consultant & Chairman, Metro Centre for Respiratory Medicine, Noida)



Clouding the Vision

Floating strands or flashes experienced in your vision may appear harmless, but if left untreated, these may lead to retinal detachment in future

BY DR RAJEEV JAIN

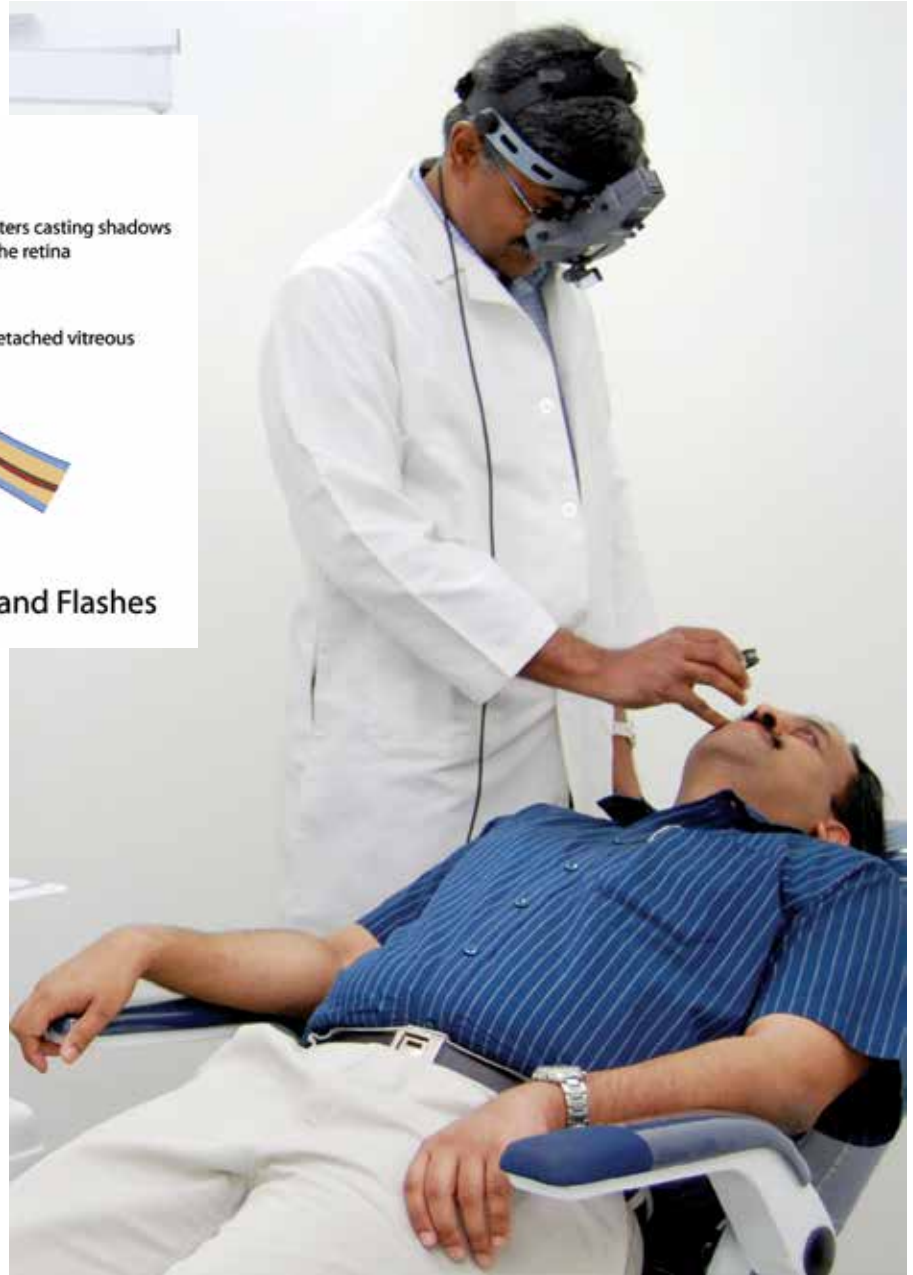
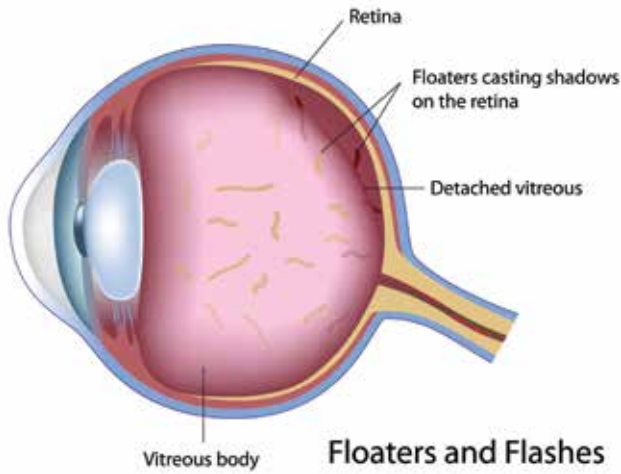


Have you ever noticed certain dark spots or floating strands in your vision, especially while looking at the sky? These floating strands aren't your imagination but an eye problem called floaters.

Floaters are dark specks, strands, spots, dots or cobwebs moving in the field of vision. These are more apparent while looking at a plain background or sky. Although floaters seem to be in front of the eye, they are in fact opacities floating inside the eye. If left

untreated, it can lead to permanent visual impairment within two or three days or even blindness in the eye. They move as your eyes move and seem to dart away when you try to look at them directly. They do not follow your eye movements precisely, and usually drift when your eyes stop moving.

Our eye contains a jelly like substance, called Vitreous, which fills the central cavity of the eye. As one ages, the vitreous shrinks, thickens or becomes more fluid which leads to the formation of clumps or strands inside the eye



called floaters. Apart from aging another factor which leads to occurrence of floaters is Posterior Vitreous Detachment also called PVD. PVD is a condition in which the vitreous gel pulls away from the retina. Floaters can also be related with eye diseases like vitreous hemorrhage or conditions like migraine.

Floaters are often seen along with flashing lights. These flashing lights experienced in the vision are flashes which are seen going on and off, especially on one side of the field of vision. Similar to floaters, flashes too occurs as a result of vitreous gel pulling the retina (PVD). If you ever see jagged lines of light in your vision that lasts for 10 to 20 minutes, this is apparently a migraine caused by blood vessels' spasm in the brain. This can happen in one or both the eyes.

Although, floaters and flashes alone are harmless but the changes they bring inside the eye, can be potentially damaging. These, if remain untreated, may lead to loss of vision. In most cases, the vitreous separates from the retina (PVD) without showing any symptom. But sometimes, if the shrinking vitreous gel pulls away from the eye wall, then it might lead to

Floaters occur when the vitreous, a gel-like substance that fills about 80 percent of the eye and helps it maintain a round shape, slowly shrinks. As the vitreous shrinks, it becomes somewhat stringy, and the strands can cast tiny shadows on the retina

retinal tear. A retinal tear, if not treated, can lead to retinal detachment in future.

In few cases, there is a sudden occurrence of flashing lights with new floaters or a blackout in a part of field of vision. If this happens, make no delay and visit a corneal specialist immediately and to check if you have a retinal tear or detachment.

In the initial examinations, 5-15% of the patients with acute symptoms of PVD have been found to have a retinal

tear, whereas, patients with acute PVD, who have no retinal breaks may have 2-5% chances of developing it in the weeks that follow. People suffering from Vitreous Hemorrhage have 70% chances of having retinal tear. Depending upon the condition, the treatment of floaters and flashes is decided. Though, in most cases they are not harmful but it is very important to get your eyes examined, to make sure there has been no damage to the retina.

Most people have floaters and learn to ignore them; they are usually not noticed until they become numerous or more prominent. Floaters can become apparent when looking at something bright, such as white paper or a blue sky. Sometimes a section of the vitreous pulls the fine fibers away from the retina all at once, rather than gradually, causing many new floaters to appear suddenly. This is called a vitreous detachment, which in most cases is not sight-threatening and requires no treatment.

However, a sudden increase in floaters, possibly accompanied by light flashes or peripheral (side) vision loss, could indicate a retinal detachment. A retinal detachment occurs when any part of the retina, the eye's light-sensitive tissue, is lifted or pulled from its normal position at the back wall of the eye.

Those who experience a sudden increase in floaters, flashes of light in peripheral vision, or a loss of peripheral vision should have an eye care professional examine their eyes as soon as possible. Floaters occur when the vitreous, a gel-like substance that fills about 80 percent of the eye and helps it maintain a round shape, slowly shrinks. As the vitreous shrinks, it becomes somewhat stringy, and the strands can cast tiny shadows on the retina.

In most cases, floaters are part of the natural aging process and simply an annoyance. They can be distracting at first, but eventually tend to "settle" at the bottom of the eye, becoming less

Similar to floaters, flashes too occurs as a result of vitreous gel pulling the retina (PVD). If you ever see jagged lines of light in your vision that lasts for 10 to 20 minutes, this is apparently a migraine caused by blood vessels' spasm in the brain



bothersome. They usually settle below the line of sight and do not go away completely. However, there are other, more serious causes of floaters, including infection, inflammation (uveitis), hemorrhaging, retinal tears, and injury to the eye.


On rare occasions, floaters can be so dense and numerous that they significantly affect vision. In these cases, a vitrectomy, a surgical procedure that removes floaters from the vitreous, may be needed. A vitrectomy removes the vitreous gel, along with its floating debris, from the eye. The vitreous is replaced with a salt solution. Because the vitreous is mostly

water, you will not notice any change between the salt solution and the original vitreous.

This operation carries significant risks to sight because of possible complications, which include retinal detachment, retinal tears, and cataract. Most eye surgeons are reluctant to recommend this surgery unless the floaters seriously interfere with vision.

With time, most floaters fade away and become less bothersome. However, if you are not able to cope up with your daily chores due to floaters, then floater correction surgery can be

considered. In this surgery, vitrectomy is removed from the eyes. In case, retinal tear is found, laser surgery or cryotherapy can be suggested by the doctor.

Not much can be done to prevent the occurrence of flashes and floaters. But having a healthy diet rich in Vitamin A and C can definitely act as a preventive shield against any eye disease. Also, have a disciplined lifestyle and include exercise, especially eye exercises as a part of your daily routine. 

(The author is Eye Surgeon and Director at Save Sight Centre, Adarsh Nagar, Delhi)

Oh My Spine!

Ageing is the main contributory factor for spondylitis but the disease is common these days in people of different age groups, making the youth also vulnerable

BY DR SUDEEP JAIN



When we talk about arthritis, we generally visualise an elderly person with swollen and painful knee joints. Little is known that there are different types of arthritis that can affect our spine and that too at a much younger age. Spondylitis is one such type of arthritis that severely affects our spine and has a damaging impact on our overall body.

Spondylitis is a condition in which there is inflammation in the joints of our backbone. Our spine consists of a large number of complex joints stacked one above the other. In case of swelling in any of these joints, a person suffers from chronic pain of spondylitis. An important joint is the intervertebral disc which, due to the presence of a soft gel, acts as a shock absorber in case of jerks and extensive body movements. But many a times, the discs lose this gel content and leads to stiffness in joints and ultimately cause pain.

Ageing is the main factor that causes spondylitis. In comparison to other joints, ageing process starts at a much younger age in spine which makes even the middle aged people equally vulnerable. Also, there are many other factors that can trigger the problem like wrong body postures, lack of physical exercise, poor lifestyle, obesity, smoking and consuming alcohol, uncontrolled diabetes, thyroid, high uric acid and cholesterol. People, who have to sit for

long hours in the same position, face the risk of developing spondylitis at a much younger age.

The main symptoms of spondylitis are severe pain and stiffness in back and neck. People can also experience tingling sensation, numbness, burning, heaviness or weakness while standing and walking. Severe cramps in thigh and calf region, fever, fatigue, loss of appetite are some other symptoms. In few rare cases, a patient may also suffer from eye inflammation, lung and heart problems.

The problem of spondylitis is common these days in people of different age groups. Lifestyle measures like maintaining correct body posture at work as well as home, taking a healthy diet, avoiding stress and staying positive always helps. All this can help in keeping our blood sugar, uric acid and cholesterol in control which are contributory factors for spondylitis. Adopting an active routine including walking, jogging, cycling, swimming yoga, etc can prevent early degeneration of our back bone.

Spondylitis can be painful but can be treated completely. One method is by physiotherapy, which involves ultrasonic massage, short wave and medium wave diathermy, interferential therapy (IFT), electrical stimulation of the nerves, acupressure and acupuncture, reiki, strengthening and stretching exercises along with various drugs to replenish lubricating grease present in joints.

Certain anti-oxidants are also helpful in avoiding early ageing of backbone. Majority of the patients get a good and

long lasting relief from physiotherapy itself. But there are few who may not get relief from this treatment. For such patients too, there is nothing to worry as there are many non-surgical techniques like use of gamma knife, coablation nucleoplasty and annuloplasty using coablator which can offer relief. All these procedures are painless and can be done in blood-less way without any anaesthesia and complications. Absolutely no bed rest is required. These have high success rate as accuracy of these procedures is ensured by the use of computer navigation and robotics.

There is tiny fraction where surgical intervention is the best option. This too can be performed in a minimally invasive way using endoscopes and special micro-instruments causing tiny incisions and a very few stitches. There is practically no bleeding in such surgeries and recovery is really fast. The keyhole surgery is safe even for a very elderly patient of 80-90 years age and gives very satisfying results.

So, first, we need to prevent spondylitis. But even if we are diagnosed with one, we need not worry much as medical science today is well equipped to give you suitable treatment. Basically the group of diseases in the spondylitis family includes ankylosing spondylitis, undifferentiated spondyloarthritis, psoriatic arthritis, reactive arthritis and enteropathic arthritis. Ankylosing spondylitis (AS) is the primary disease in the spondylitis family of diseases and is a form of chronic arthritis that primarily affects the spine, although other joints can become involved. Occurring primarily in young adults (the age of onset normally before age 35), it

Ankylosing spondylitis (AS) is the primary disease in the spondylitis family of diseases and is a form of chronic arthritis that primarily affects the spine, although other joints can become involved. Occurring primarily in young adults (the age of onset normally before age 35), it causes inflammation of the spinal joints



Dr Sudeep Jain


causes inflammation of the spinal joints (vertebrae) that can lead to severe, chronic pain and discomfort. Undifferentiated spondyloarthritis (USpA) is a term used to describe symptoms and signs of spondylitis in someone who does not meet the criteria for a definitive diagnosis of AS or related disease. Over the time, some people with USpA will develop a well-defined form of spondylitis such as AS.

Juvenile spondyloarthritis is the medical term for a group of childhood rheumatic diseases, which cause arthritis before the age of 16

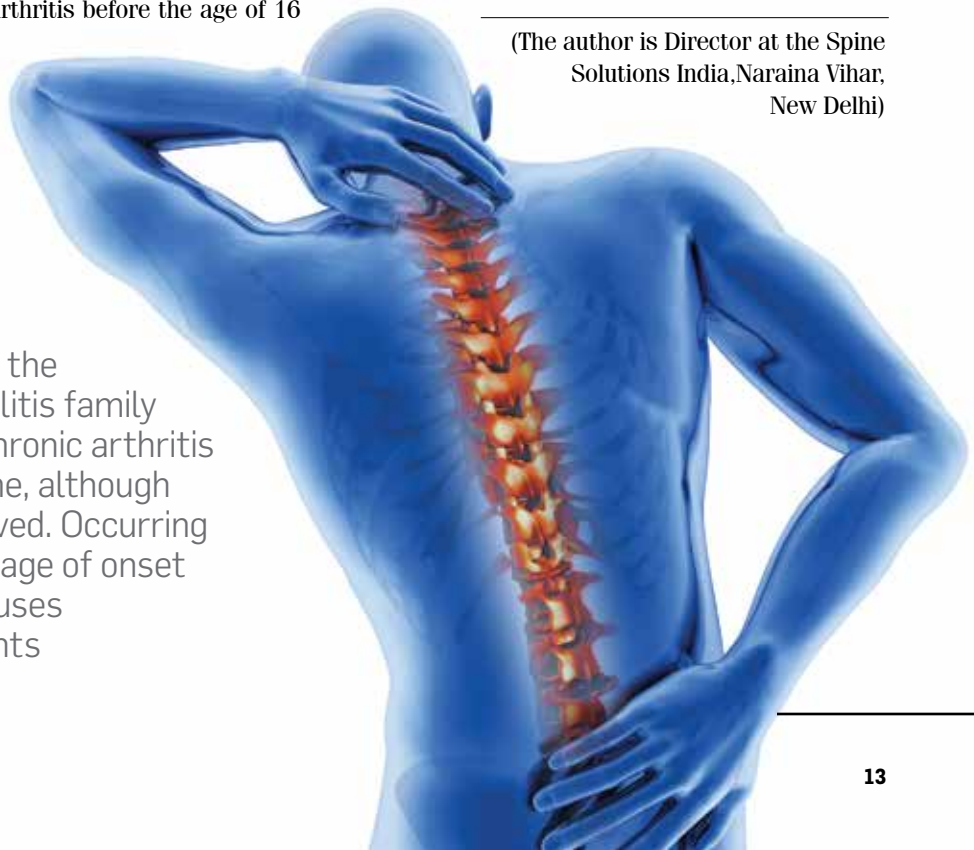
and may span through adult life. This typically causes pain and inflammation in the joints in the lower part of the body, for example, the pelvis, hips, knees and ankles.

The type of physician who primarily diagnoses and treats AS and related diseases is called a rheumatologist. Rheumatologists treat arthritis, certain autoimmune diseases, musculoskeletal pain disorders and osteoporosis. There are more than 100 types of these diseases, including AS, rheumatoid arthritis, and lupus. Other professionals can also help treat AS and related diseases such as physical therapists, occupational therapists, etc.

Before beginning any new exercise program, consult your physician or physical therapist. They can help provide modifications to suit your particular needs. Ask which exercises you should do and then check to see that you are doing them correctly. Water therapy, tai chi, and even walking are common forms of low impact exercises that many find helpful.

Bone fusion does not occur in everyone with spondylitis, yet fusing in a non-upright position is a valid patient concern. It is encouraging to know that we can influence the pattern of fusion through good postural habits. 

(The author is Director at the Spine Solutions India, Naraina Vihar, New Delhi)



Women at Risk



HPV vaccine is fast emerging as a feasible option for the prevention of cervical cancer, the second most common cancer in females after breast cancer. But we need to create awareness about the disease and its prevention

BY DR SUNEELA GARG/ DR AKANKSHA RATHI/DR G.S MEENA



Dr Suneela Garg

Preventive health has been long neglected in our country and we still believe in rectifying what's broken rather than protecting what can be saved. Diseases don't just claim time but also physical efforts, mental peace, loss of work, distress of loved ones and financial loss. Through preventive measures, majority of the chronic diseases like cancer can be prevented. People need to be made aware of the risk factors and modes of prevention for cancer and this

knowledge can remove a big burden from the healthcare system of the country. On an individual level too, it will help a great deal as people will be empowered to lead a healthy life.

The same principal of "prevention is better than cure" applies to cervical cancer too. If we look at statistics, cervical cancer is the second most common cancer in females after breast cancer. Out of all those who develop cervical cancer, more than half of the women die within five years. The disease toll is around 70,000 deaths

each year. The disease causes not just deaths but a lot of suffering, loss of working hours and big expenses on its treatment. The financial burden that this disease poses over the Indian economy is more than any other chronic ailment with the exception of cardiovascular problem. Due to high number of cervical cancer cases in the country, it has the highest total cost of secondary care (Rs 100,000 per 100,000 population), compared to all other types of cancer.

India shares one-fifth of the cervical cancer burden of the world. The reason for such a high incidence is that the various risk factors for the disease are prevalent in our country like early marriage, early child bearing, poor genital hygiene, multiple sexual partners, high parity, smoking, low socio-economic status, infection with *Chlamydia trachomatis*, micronutrient deficiency and use of long-term birth control pills. The most important causative organism is Human Papilloma Virus (HPV). It has been stated that HPV is the key cause of cervical cancer and it will not develop in the absence of the persistent presence of HPV DNA. The association of cervical cancer and HPV is well studied and documented. The most common HPV strains contributing to cervical cancer are: HPV 16 & 18. In India, these two strains are associated with more than 80% of cervical cancer cases. It is seen that 70% of sexually active individuals will attain one of the HPV genotypes at some point in their lives.

The recognition of the importance of HPV in etiology of cervical cancer has led to the development of vaccines against HPV. Two different vaccines have been developed to prevent infection from HPV 16 and 18 and one of these offers added protection against HPV 6 and 11 (which cause genital warts). The quadrivalent and bivalent vaccines have been licensed for use in over 100 countries.

Studies have shown these vaccines to be highly effective (90-100%) in preventing HPV infection and thus play a role in reducing the burden of cervical

cancer. The World Health Organization (WHO) has stated that these vaccines have excellent safety profile. Both vaccines need to be administered with 3 doses over a 6 month period, can be given to females aged 9-26 years (catch-up vaccination up to 45 years), and are most effective if given before the female's first sexual encounter. Since the vaccines should preferably be given in adolescence or pre-adolescence phase, more than 50 countries have introduced this vaccine in their national immunization programme for girls. Australia, being the first country to introduce the vaccine, now has lowest cervical cancer incidence in the world.

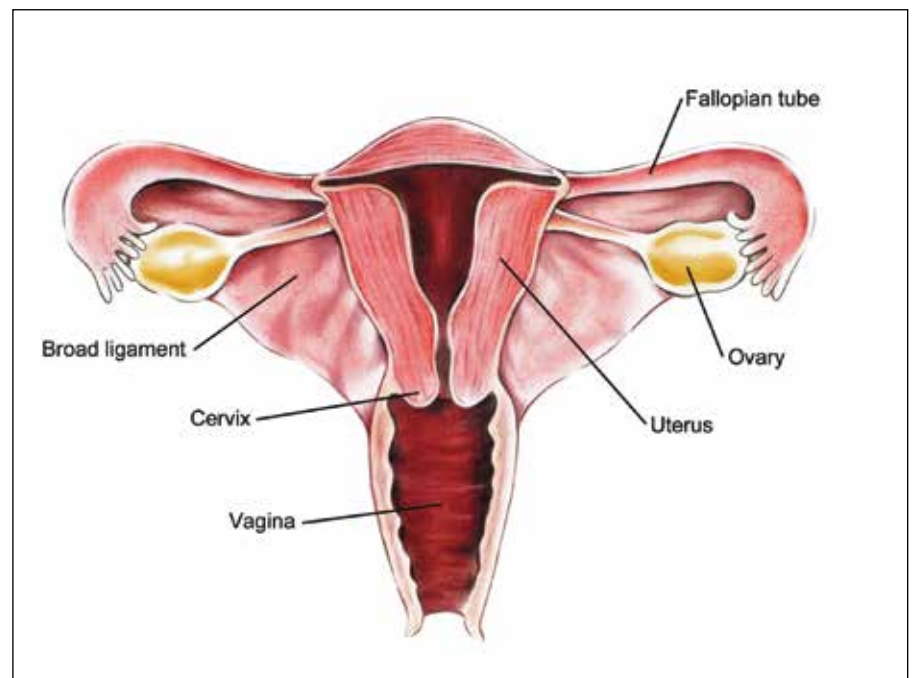
Despite the high incidence of cervical cancer and effectiveness of the vaccine against it, there is little awareness about the disease, its screening and its



Dr Akanksha Rathi

Out of all those who develop cervical cancer, more than half of the women die within five years. The disease toll is around 70,000 deaths each year

vaccine. Lately, the advisory bodies in India like the Indian Academy of Paediatrics (IAP) and Federation of Obstetric and Gynaecological Societies of India (FOGSI) have recommended HPV vaccines to females of 9 to 45 years of age for prevention of cervical cancer. However, few young girls have access to the vaccine. The vaccine is costly and primarily available with the private sector. It is presumed that the





cost of the vaccine along with the operational costs will be humongous (\$120 per dose). The Indian government is still struggling to improve the immunization status of under-5 children and vaccination of adolescent girls is nowhere on its priority list.

The awareness about the vaccine even among high socio-economic groups is quite low. A survey in Eastern India among educated urban men and women, with at least one girl child belonging to middle or high socio-economic group, revealed that 72% had never heard of HPV. Only 46% of parents were in favour of vaccinating their daughters against sexually transmitted infections (STIs). However, after going through a brief information

Unfortunately, though cervical cancer is the number one cause of death in middle aged Indian females, its control is not yet among the top ten national health priorities in India. Women in India have long suffered from cervical cancer due to inadequate screening and treatment

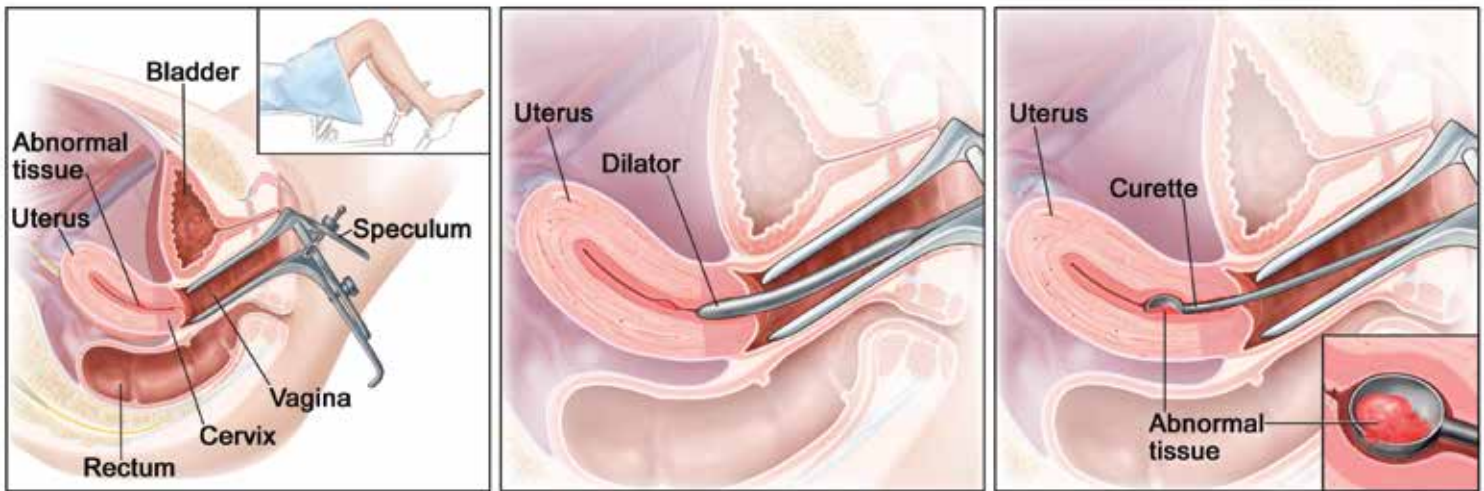
sheet about the HPV vaccine, 80% agreed to vaccination.

The most common reason for not

accepting the vaccine was uncertainty about its safety. The physician's recommendation was found to be the most important factor influencing their decision. The major determinants of social acceptance of vaccine in India are parental awareness and attitude. A study done in college girls in Kolkata revealed that though the knowledge of girls about screening methods was low but a majority desired to have protective vaccination against cervical cancer.

HPV vaccine has one of the highest per-person impacts. In the longer-term, high HPV vaccine coverage will reduce the economic and human costs of cervical cancer. Moreover, in Indian settings where women have less access

Dilatation and Curettage



to cervical cancer screening, the vaccine is particularly beneficial. Public sector spending on health is very low in India (India spent 3.9% of its GDP on health and related areas in 2011), making it difficult for government to independently take up the task of introducing the vaccine in the national immunization programme, without external support. Unfortunately, though cervical cancer is the number one cause of death in middle aged Indian females, its control is not yet among the top ten National health priorities in India. Women in India have long suffered from cervical cancer due to inadequate screening and treatment, so it is important that we nip this disease in the bud through vaccination.


The responsibility of increasing the access of HPV vaccine currently lies on the private sector. If awareness is increased, at least people will start seeking the vaccine from private sector till it is made available with the government. If majority of the adolescent girls receive these vaccine then the prevalence and incidence will come down by at least 80%, and that will be a huge achievement. The easiest way to reach adolescent girls is through schools. Thus, private practitioners and Non-Governmental Organizations (NGOs) should tap this segment and provide the parents of these girls with the option of vaccination. Vaccines can

be provided at subsidized rates to children with the help of various international NGOs. Recently, the WHO has confirmed that 2 doses of HPV induce non-inferior immunogenicity compared to three doses in HPV schedule. Thus, it can greatly reduce the cost of the schedule and can be considered in case of resource constraint settings. Other factors affecting an immunization programme are the attitude of public and media. A vaccine program cannot be successful without the support and approval of the general public, so media should be very responsible. Role of the press should be supportive & Adverse Effects Following Immunization (AEFI) should not be misreported & blown out of proportion.

Schools are also a great platform for raising awareness about cervical cancer. Parents can be made aware of the importance of screening and the various screening modalities like Pap smear test, HPV DNA test, and VIA etc. Screening leads to early detection and the treatment is effective and cheaper if this cancer is detected at early stages. However, if detected late, treatment is more expensive (can even lead to bankruptcy) and the chances of survival are reduced.

The main reason for the high mortality from cervical cancer in India is late detection of this disease. Government

and private health care providers can join in this effort and offer these services. It is extremely important for sexually active women over 30 years of age to get screened every 3-5 years. The age of developing this disease is reducing and now it is recommended that the screening should start at 25 years of age. Screening approaches in India can reduce the lifetime risk of cancer by approximately 25–36%. Thus, screening is imperative if we want to bring down the mortality rates of this disease.

A bimodal approach is always ideal in tackling cervical cancer where one important modality is vaccination of the pre-adolescents and adolescent girls and the other important part is screening of the reproductive age females. Both these approaches have to be introduced sooner or later. Since we have to start with one, then vaccination can be opted first, as the machinery needed to vaccinate is already present at all the levels of healthcare system. The major sector that caters to India's healthcare needs is private sector and thus it has an even greater role in converting the cause of vaccinating against HPV into a priority for the society. 

(The authors are from Department of Community Medicine, Maulana Azad Medical College, New Delhi)

Untapped Potential

The glaring inadequacies in the healthcare system in India present themselves as a challenging journey replete with inspiring opportunities for the private sector

BY DR SWAPNIL SHIKHA



The World health report of the World Health Organization (WHO) has ranked India's healthcare system at 112 out of 190 countries. According to National Family Health Survey-III, the private medical sector dominates the healthcare system in India; serving 70% of households in urban areas and 63% of households in rural areas.

India spends only around 4.2% of its GDP towards healthcare goods and services compared to 18% by the United States. Wide gaps between the rural and urban populations in its healthcare system have been worsening the problem. A staggering 70% of the population still lives in rural areas and has no or limited access to hospitals and clinics. Besides the rural-urban divide, another key driver of India's healthcare landscape is the high out-of-pocket expenditure. Only 5% of Indians are covered by health insurance policies. There's an increasing demand for basic primary healthcare and infrastructure. India faces a growing need to fix its basic health concerns in the areas of HIV, malaria, TB, diarrhoea etc.

Underdeveloped medical devices sector is the smallest piece of India's healthcare pie. Despite the articulation of various health programmes and schemes by the government, India's healthcare tart is still devoid of its flavour. India has a very low hospital bed density of 0.9 per thousand people which is less than the WHO norms of 3 beds per 1000 people. There is only one doctor per 1700 citizens in India; the WHO stipulates a minimum ratio of 1:1000.

Mission

In view of the glaring inadequacies in the healthcare system in India, the Amrapali Group has embarked on a mission to contribute its bit in bringing healthcare facilities within the reach of people of all social and economic strata. The next decade holds inspiring possibilities while likely to be a challenging journey for the healthcare sector in the country. Amrapali healthcare intends to expand its foray into the medical sector and provide quality healthcare to



In view of the gaps in the healthcare system in India, the Amrapali Group has embarked on a mission to contribute its bit in bringing healthcare facilities within the reach of people of all social and economic strata

all at affordable prices.

The plethora of upcoming residential and commercial projects in NCR and a dearth of healthcare units in the region have not only created an indispensable need for hospitals but also a potential market that can be tapped by the private sector. Amrapali group's first target zone is Greater Noida and Noida Extension along with the adjacent villages – poised to be big residential hubs in Delhi-NCR, owing to affordable property values and rapid and steady infrastructural development. We aim to establish six to seven specialised secondary and tertiary care hospitals in the region in the form of trauma centres, mother and child care centres, oncology centres, eye care units, dental and cosmetic centres.

We are planning to set up 20-25 primary care centres in all our projects at Noida, Greater Noida and Extension which will provide basic consultation and diagnostic services and will serve as referral units to the secondary and tertiary centres. All the primary healthcare units will have access to 24x7 ambulance services for immediate connectivity with the secondary and tertiary care centres. The advent of advanced pathological and radiologic diagnostic facilities inspires us to open diagnostic centres with skilled equipment, personnel and rapid reporting services at pocket-friendly prices.


We also aim to target the 2 tier cities/towns of Bihar, Uttar Pradesh, Rajasthan, Madhya Pradesh, Chhattisgarh etc. that are starving of healthcare amenities due to a high population density.

We also plan to indulge into charitable services through our wing Amrapali Foundation by delivering free healthcare services to the underprivileged and conduct health screening

campus in the peripheries. We would also like to explore other areas like paramedical/nursing training centres and biomedical equipment sector which are still untapped.

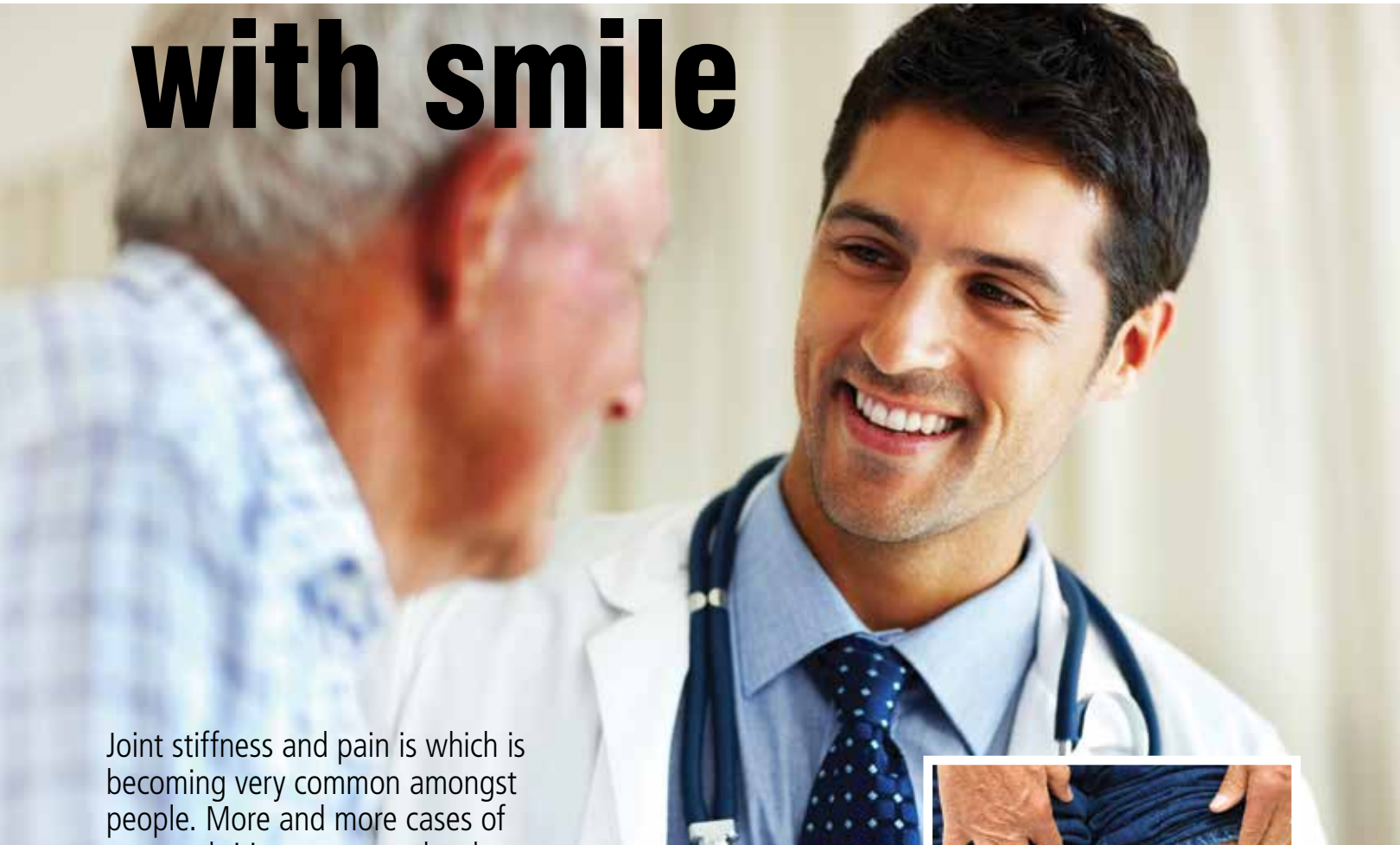
To conclude, Amrapali healthcare experience will be an amalgamation of luxury with economy; skill with affection and provide solace to the suffering humanity. We aspire to enter the vast unexplored ocean of healthcare industry... not just swim into but completely delve into it...not just create ripples but make waves into it. Amrapali group, the gigantic conglomerate after cementing its clout in the field of real estate, hospitality, food processing, media and education, is all set to make its presence felt in the healthcare sector of India. The group has already taken the initial strides by opening a 100-bedded multispecialty hospital in the NCR satellite town of Greater Noida under Amrapali healthcare.

REACHING OUT TO A BILLION

Amrapali hospital is a state-of-the-art multispecialty hospital, providing a complete spectrum of advanced medical and surgical care. It offers a comprehensive mix of both inpatient and outpatient services. It is committed to provide competitive, accessible and affordable healthcare services with international standards to all. It is equipped with the latest diagnostic and surgical equipment, operation theatres, ICU, nursery, 24x7 pathology laboratory, pharmacy and free ambulance services. It is being managed by a highly qualified and dedicated team of doctors and administrators who regard providing healthcare as a "service" to the humanity. 

(The author is Director at Amrapali Healthcare)

Replacing pain with smile



Joint stiffness and pain is which is becoming very common amongst people. More and more cases of osteoarthritis are reported today; affecting knees and hips the most. Knees are primarily weight-bearing joints while hips not only support the weight of the body but also enable movement of your lower body; and therefore more commonly affected. With time the severity grows leading to surgery for joint replacements, such surgeries help patients lead a normal life as before.

BY TEAM DOUBLE HELICAL



We all need some quality time for ourselves, some quality moments we want to spend with our families. We love to play around with our kids, go trekking with friends or enjoy long walks with our partners. We enjoy running around like never to be stopped; thank god we don't have wings. But have you ever thought that what happens if something stops us from doing all these things. Yes there are people who are missing these small joys of life and not because they don't want to enjoy them but because they can't. They suffer with pain, not only of joints but also of some special moment they have to miss.

Dr. Ashok Rajgopal, Chairman - Medanta Bone and Joint Institute. said, "Apart

from osteoarthritis, natural wearing out, rheumatoid arthritis, tumors involving or around joints and trauma with joint destructions due to road accidents, sports injury and injury of other forms leads to such processes.”

Knee pain usually occurs due to activities which are done often and it can also occur regardless of activity level, and is part of aging process; on the other hand problem related to hip, usually caused due to irregular activities. Severity becomes many folds because of unusual posture or sitting in one single position for long in office. There are several medicinal management processes available for joints related problems, which doctors prescribe; one has to take these pills regularly to subside pain and to support movements.

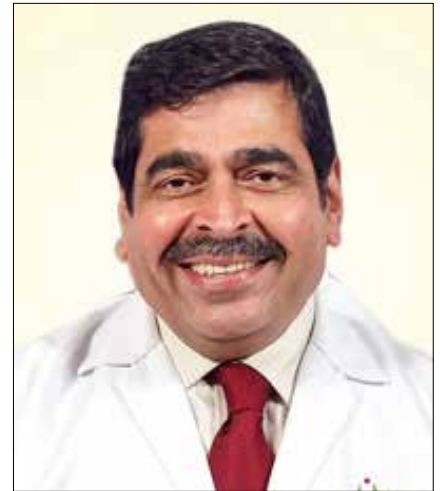
Saying, Dr SKS Marya, Chairman, Max Institute of Musculoskeletal Sciences, New Delhi, “Once the joint is damaged and the cartilage is lost the only way to recreate a painless situation is a joint replacement surgery. Medicines, physiotherapy, intra articular injections and arthroscopic debridement can be of limited assistance.”

Dr Ramneek Mahajan, Director



“Apart from osteoarthritis, natural wearing out, rheumatoid arthritis, tumours involving or around joints and trauma with joint destructions due to road accidents, sports injury and injury of other forms lead to such processes.”

Dr. Ashok Rajgopal,
Chairman - Medanta Bone & Joint Institute



“We recommend joint replacement only when the architecture of the joint gets distorted and pain becomes constant; this may be the sequel to degenerative changes that are commonly seen secondary to aging, usage, lack of exercises, osteoporosis, deficiency in Vit D3, smoking etc. or to joint related diseases

Dr. Harshavardhan Hegde,
Executive Director, Bone and Spine
Fortis Escorts Heart Institute and
Research Centre



Orthopedic and Replacement Surgery, Saket City Hospital, said, “Joint replacement surgery is removing a damaged joint and putting in a new one. The doctor usually suggests a joint replacement to improve how you live as replacing a joint can relieve pain and help you move and feel better. Hips and knees are replaced most often while other joints that can be replaced include the shoulders, fingers, ankles, and elbows. These replacements are performed in different formats usually known as partial and total replacement, depending on the condition of the patient.”

Explains Dr. Ashok Goel, Sr. Consultant, Sri Balaji Action Medical Institute, The baby boomer generation is getting older



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Dr SKS Marya, Chairman,
Max Institute of Musculoskeletal
Sciences, New Delhi

and heavier which means that over the coming decades a lot of person in the young age are developing knee and hip problem. "A huge number of young people are either Obese or overweight, which causes more wear and tear (than normal weighing people) of bones making them osteoporotic; this can be attributed largely to today's sedentary lifestyle. Another big reason behind bone and joint disorders largely seen in India is Indoor lifestyle; a large number of Indians are vegetarians which limit their Vitamin D intake, less exposure to sunlight further reduces Vitamin D in the body hindering proper calcium deposition and making us Indian more vulnerable to bone related ailments."

According to Dr. Harshvardhan Hegde Executive Director, Bone and Spine, Fortis Escorts Heart Institute and Research Centre, in today's mechanical world, we tend to put ourselves in



tremendous mental and physical pressure. Our ambitions make us see every possible extremity; we want to achieve everything and nothing can stop us. Long working hours, extended travels, quick or skipped meals and extreme mental pressure are part of our daily routine. While we walk on swords edge with such things, falling for sedentary lifestyle makes it more dangerous and our body starts wearing out. "We recommend joint replacement only when

the architecture of the joint gets distorted and pain becomes constant; this may be the sequel to degenerative changes that are commonly seen secondary to aging, usage, lack of exercises, osteoporosis, deficiency in Vit D3, smoking etc. or to joint related diseases".

With knee or hip surgery, a patient probably needs to stay in the hospital for a few days. If the person is elderly or have additional disabilities, he or she may then need to spend several weeks in an



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Dr Ramneek Mahajan,

Director Orthopedic and Replacement Surgery, Saket City Hospital

intermediate-care facility before going home.

According to Dr. Ashok Rajgopal, in most knee cases good amount of bending is seen on the first day itself and patients are able to walk with support within a day or two; with an approximate period of recovery being 4-6 weeks." One is mobilised with support after surgery within 24 hours. A walker or crutches are used for two to three weeks. Following this a cane is advised for a month. There may be some temporary pain in the new joint as muscles are weak from not being used and also as the body is healing. The pain can be helped with medicines and should end in a few weeks.

"Conventionally the joint replacement is carried out in the elderly. Earlier it was preferred only in patients past sixty years



Another big reason behind bone and joint disorders largely seen in India is Indoor lifestyle; a large number of Indians are vegetarians which limit their Vitamin D intake, less exposure to sunlight further reduces Vitamin D in the body hindering proper calcium deposition and making us Indians more vulnerable to bone related ailments.

Dr. Ashok Goel,

Sr. Consultant, Sri Balaji Action Medical Institute

of age because the average life span of the prosthesis was ten to fifteen years. With more people wanting to live for the present rather than suffer with the hope for a better tomorrow younger age groups are now opting for joint replacement surgeries" Replacements are possible for both knee as well as hips; technology has also taken away the age constraints, now it can be done for the patients in their eighties also," Dr. Hegde, said.


Says Dr. Marya "It depends on the extent of suffering and disability of the patient however as there is a limit to the survival of an artificial joint a young patient undergoing joint replacement may have to undergo a revision surgery again."

"People usually are scared of such surgeries and it makes sense as joint replacement is counted amongst the

major surgeries. Technology today has provided us with multiple options enhancing both quality as well as life of the implants. "Technology has enabled us today with implants which are sturdy and flexible, recent advancement has increased the life of implant up to three times. The earlier implants use to last up to ten years and now there are implants available which last for around thirty years," Dr. Mahajan, added

Elaborating on the seriousness of the surgery Dr. Goel, said, "Any short coming can lead to serious problems like joint infection. It is therefore suggested that these surgeries should be performed by experts with a lot of experience. Patients have all the right to check the details like experience, training, education of any doctor they are getting treated with. Hospitals environment, upkeep and equipments also play a major role in such surgeries".

Says, Dr Mahajan "People usually ask me, how successful these surgeries are. It's a doubt I have seen in every patient and nothing is better to address such doubts than live examples. Rakesh, chauffeur by profession lost his job and happiness because of severe arthritis. He was very depressed when he came to me. With god's grace I was able to give him back both, his happiness and job. We performed total knee replacement for his both knees and he is perfectly fit to do anything he wants; and now drives me to work every day. Similarly, we came across a cycling enthusiast couple, they loved the sport but as wife was suffering from severe joint disorder, they were restricted not to pursue their interest. We operated her for knee replacement and since then they have been breaking many records and setting new milestones riding their cycles."

Most of these surgeries are available in India now, along with the international quality implants and that too in a reasonable cost. "India is a hub of such surgeries now, we are in the age of internet and technology is not confined to any boundaries anymore. All the technology and implants are now available in India and such surgeries are performed with high standard here" added Dr. Mahajan. 



Unsafe food poses global health threats, endangering everyone. Monosodium glutamate, commonly known as MSG, is used as a flavour enhancing agent in many kinds of food products. But it can result in toxicity, if found beyond the safety limits

BY DR NEELAM MOHAN

Are you Consuming Poison?



Children are more prone to lead poisoning; their smaller bodies are in a continuous stage of growth and development. Lead is absorbed at a faster rate in children compared to adults, which causes more physical harm than to older people.

Food safety issues have been long neglected in India. Recently, the inspection of “Maggi” noodles in different batches suggested levels of lead above the limits specified by food regulators. This episode shook the entire country. However, what is important for us is to realize that it’s not just one company or one product, but such controversies are cropping up with several products. It’s time that the Government, manufacturers, retailers, and the public of India realize the importance for food safety. In fact, the World Health Organization (WHO)

identified the topic of “Food safety” on their World Health Day 2015 celebration on the 7th April, the birthday of the organization.

The Food Safety and Standards Authority of India (FSSAI) was established in India in 2006, which is supposed to consolidate the various Acts and orders related to food safety and regulate their manufacture, storage, distribution, sale and import to ensure the availability of safe food for human consumption in India. The FSSAI was thus created to assist the government in framing the regulations to lay down the standards and

guidelines in relation to articles of food, guidelines for certification of food safety management and accreditation of laboratories and notification of the accredited laboratories. Besides the above, it has to provide scientific advice and technical support to the Government in framing the policy and rules. It provides training programmes for persons who are involved in food businesses and contributes to the development of international technical standards for food safety.

The Ministry of Health and Family Welfare, Government of India is the administrative ministry for the

implementation of FSSAI. The food borne illnesses could be secondary to infections caused by bacteria, viruses, parasites or due to chemical substances which enter the body through contaminated food and water. The common bacterial infections that are seen due to contaminated food and water are Salmonella, Campylobacter, Escherichia coli and Cholera. These



could lead to various symptoms ranging from fever, headache, nausea, vomiting, abdominal pain, diarrhoea, dehydration and could occasionally be life threatening. Besides the bacterial infections several viruses like norovirus and parasites like Cryptosporidium, endamoebahistolytica, Giardia or Ascaris, could also result from contaminated food and water.

The commonly talked about toxins are naturally occurring toxins such as mycotoxins (aflatoxin) or organic pollutants due to contamination of industrial waste in water such as dioxins which affect the immune system, interfere with hormones and cause cancer. The poisonous effect of heavy metals such as lead, cadmium, mercury could results

The amount of glutamate used in foods is usually within the range of 0.1% to 0.8% of the food as it is served. However, when monosodium glutamate exceeds the safety limits then it results in various symptoms such as headaches, asthma attacks, dizziness and other neurological symptoms

through pollution of air, water and soil. Some chemicals such as monosodium

glutamate can also result in toxicity if they exceed the safety limit of the dose specified.

So, unsafe food poses global health threats, endangering everyone. Infants, young children, pregnant women, and elderly and those with an underlying illness are particularly vulnerable to them.

Foodborne and waterborne diarrhoeal disease kill an estimated 2 million people annually, including many children. India contributes to a significant proportion of these deaths.

Early symptoms of lead poisoning includes loss of appetite, abdominal pain, nausea, diarrhoea, constipation, muscles pain, tingling sensation in the extremities and sleep problems. They could even lead to kidney failure,

Ensuring Food Safety

Unsafe food is linked to the deaths of an estimated two million people in India annually. As our food supply becomes increasingly globalised, new threats are constantly emerging. Food containing harmful bacteria, viruses, parasites or chemical substances is responsible for more than 200 diseases, ranging from diarrhea to cancers. Be informed to ensure that the food on your plate is safe to eat.

Food safety is an important issue in India with grave public health implications. Food safety refers to all those hazards which make food unsafe to health. Hazards can arise at many points from food production to consumption. It can be agricultural practices for crop production, poor hygiene for transportation and handling, food processing, adulteration, distribution, preparation and serving. Food borne illnesses are global public health problems. Over 200 diseases are caused by unsafe food containing harmful bacteria, parasites, viruses, chemical substances. India is yet to take adequate measures to meet the growing concerns for food safety. Food-borne illnesses occur as frequent outbreaks in different areas. A number of outbreaks have been reported like an outbreak in 1998 in Delhi, India, due to consumption of contaminated mustard oil. Looking at the dismal status of food safety in the world, the World Health Organization (WHO) marked the theme for World Health day for the year 2015 as "How safe is your food: From farm to plate, make food safe".

India does have adequate legislative framework for food safety. The Indian food industry is regulated by number of legislations covering sanitation, licensing and permits. There is Food Safety and Standards Authority of India (FSSAI) established by Government of India to develop standards for food and to regulate and monitor the manufacture, processing, storage, distribution, sale and import of food so as to ensure the availability of safe and wholesome food for human consumption. FSSAI has laid down separate regulations for different aspects like packaging and labeling, information to be given on food

items for consumers etc. Food adulteration is also one important aspect to deal with. Prevention of Food Adulteration Act (PFA Act) has been enacted. The Act provides protection against food adulteration/contamination.

A disheartening picture emerges from the researches conducted in the field of foods safety in India. Studies conducted among food handlers shows them suffering from many infectious diseases, with poor personal hygiene, addiction and substance abuse etc. Microbes were also reported in samples collected from stools of food handlers and food prepared. Public eating establishments are also reported to be in poor conditions. In the above context, consumer awareness plays a very important role. Consumer awareness is very low at present in India as stated by a number of studies. People don't know about safe practices for storing food items, preservation techniques at household levels, hazards of food preservatives and additives for health. They do not know meaning of agmark, ISI mark and they don't check expiry date on food items etc.

In order to improve the current situation of food safety in India, important measures need to be taken immediately. First of all, public health surveillance system needs to define the magnitude and burden of food-borne disease, identify the causative factors, predisposing factors and investigate outbreaks so that control measures can be rapidly implemented and prevention efforts need to be in place. Standardised reporting formats should be prepared for personnel. Second, raising awareness of community regarding safe food and hygiene is an important initiative. All efforts should be made to involve school children, parents, college students and others in joining hands to fight food adulteration and promoting safe and hygienic food. Third, legislations related to food safety should be enforced strictly and lastly, research should be promoted in this field so that reliable, timely and accurate data is available for policy making.



a salt of glutamic acid which is one of the 20 amino acids making up proteins. It is not an essential amino acid suggesting that it is not manufactured in our body. Only free glutamate plays an important role in food flavour. The amount of glutamate used in foods is usually within the range of 0.1% to 0.8% of the food as it is served. This is similar to levels of naturally occurring glutamate found in traditional dishes. However, when monosodium glutamate



memory loss, reproductive problems and serious neurological symptoms such as wrist and foot drops and encephalopathy.


Children are more prone to lead poisoning; their smaller bodies are in a continuous stage of growth and development. Lead is absorbed at a faster rate in children compared to adults, which causes more physical harm than to older people. Furthermore, toddlers and young children, especially as they are learning to crawl and walk, are constantly on the floor and therefore more prone to ingesting and inhaling dust that are contaminated with lead. The unsafe toys with high lead level and paints are a major threat to children. The classic signs and symptoms in children are loss of appetite, abdominal pain, vomiting, weight loss, constipation, anaemia, kidney failure, irritability, lethargy, learning disabilities and behavioural problems. Slow development of normal childhood behaviours, such as talking and use of words, and permanent intellectual disability are both commonly seen. Although less common, it is possible for fingernails to develop leukonychia striata and cancer if exposed to abnormally high lead concentration.



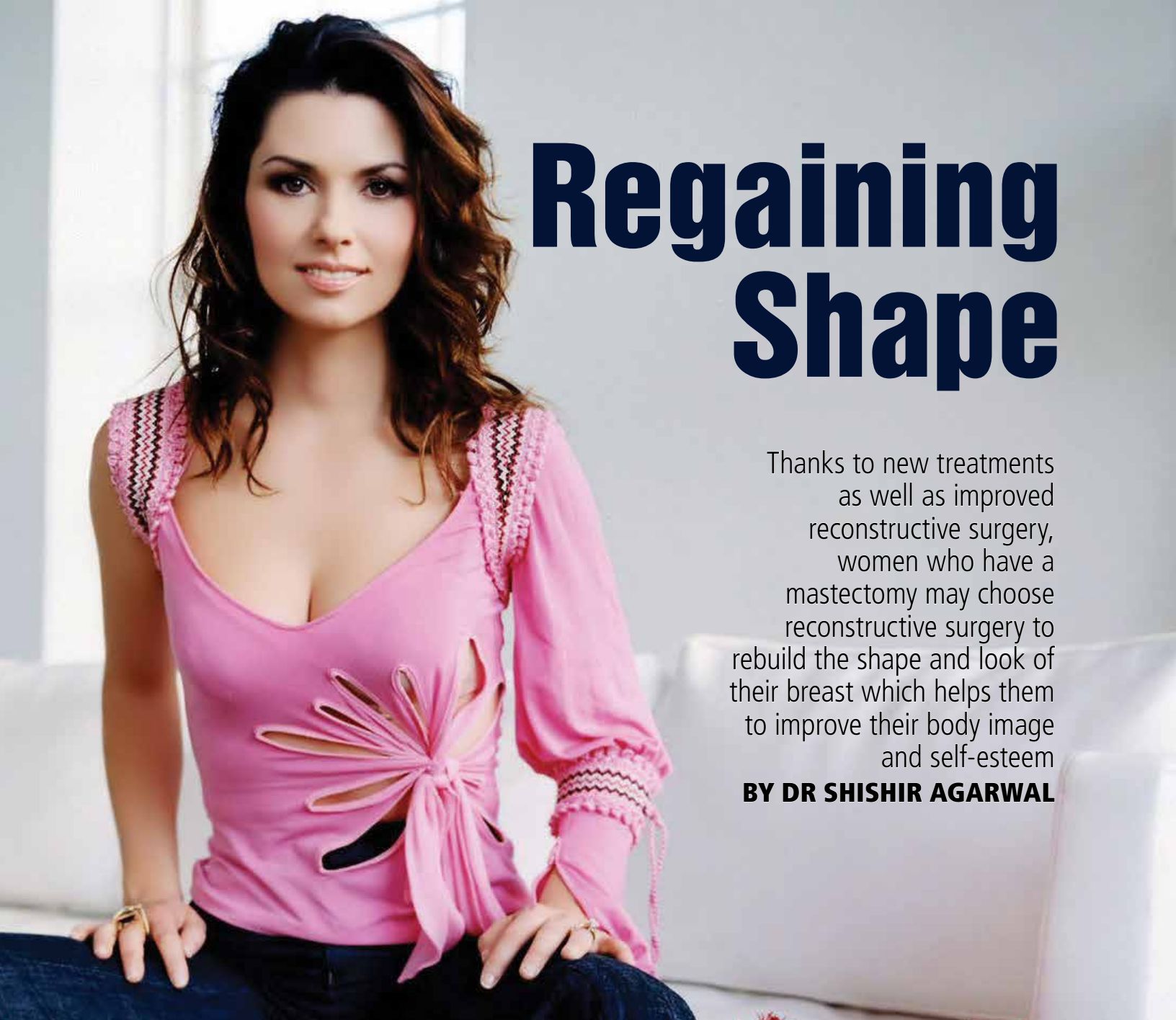
The current reference range of acceptable blood lead concentrations in healthy person without excessive exposure to environmental sources of lead is less than $5\mu\text{g/dL}$ for children and less than $25\mu\text{g/dL}$ for adults.

Monosodium glutamate, commonly known as MSG, is used as a flavour enhancing agent, in many kinds of food products. It is more commonly used in Chinese food products. In the past; there were some anecdotal reports indicating glutamate leading to symptoms such as numbness, weakness and palpitation, popularly called as the 'Chinese-restaurant-syndrome'. Monosodium glutamate is

exceeds the safety limits then it results in various symptoms such as headaches, asthma attacks, dizziness and other neurological symptoms. The proper labelling is important to avoid excess use of these products.

It is time that the Government of India, manufacturers, distributors and public get aware of the above-mentioned facts and the various norms led by WHO and FSSAI are strictly implemented. 

(The author is Director, Department of Paediatric Gastroenterology, Hepatology and Liver Transplantation at the Medanta Hospital, Gurgaon)



Regaining Shape

Thanks to new treatments as well as improved reconstructive surgery, women who have a mastectomy may choose reconstructive surgery to rebuild the shape and look of their breast which helps them to improve their body image and self-esteem

BY DR SHISHIR AGARWAL

If you are thinking about having reconstructive surgery, it is a good idea to talk about it with your surgeon and a plastic surgeon experienced in breast reconstruction before going for the surgery to remove the tumour or breast.

Many women believe that breast

reconstruction not only improves physical appearance, but has psychological benefits, as well. It has thought to promote a sense of wellness for the woman and her family. Improvements in plastic surgery techniques offer better results today than ever before and make breast reconstruction an option for most

women facing a mastectomy.

Breast reconstruction is the creation of a new breast shape (mound) using surgery. It may be done after removal of a whole breast or part of the breast. There are usually different options available for breast reconstruction and your breast surgeon will explain which one is likely to suit you best.



Dr Shishir Agarwal

Women choose breast reconstruction for many reasons such as to make their chest look balanced when they are wearing a bra or swimsuit and permanently regain their breast shape. So they don't have to use a form that fits inside the bra. They want to be happier with their bodies and how they feel about themselves

There are three main types of breast reconstruction like reconstruction using only a breast implant, reconstruction using your own tissue (a tissue flap) and reconstruction using a combination of tissue and an implant. In reconstruction using only a breast implant tissue can be taken from a number of places in the body, although the most common sites are the back or the lower part of the abdomen

Breast reconstruction often leaves scars that can be seen when you are naked, but they often fade over time. Newer techniques have also reduced the amount of scarring. When you are wearing a bra, the breasts should be alike enough in size and shape to let you feel comfortable about how you look in most types of clothes.

The emotional and physical results of breast cancer are very different now from what they were in the past. Much more is known about breast cancer and its treatment. New treatments, as well as improved reconstructive surgery, mean that women who have breast



cancer today have more choices and better outcomes.

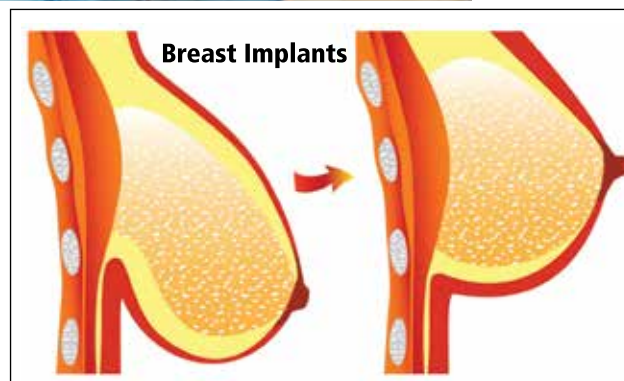
Breast reconstruction has been shown to improve body image and self-esteem when compared to no reconstruction. Still, some women are not happy with how the reconstructed breast looks and feels after surgery, and there may be concerns about the flap or donor sites, too. Learn as much as you can so that you know what you can expect from reconstruction.

There are often many options to think about as you and your doctors talk about what is best for you. The reconstruction process sometimes means more than one operation. Talk about the benefits and risks of reconstruction with your doctors before the surgery is planned. Give yourself plenty of time to make the best decision for you. You should make your decision about breast reconstruction only after

you are fully informed.

Today, many women with breast cancer choose surgery that removes only the tumour and an edge or margin of healthy tissue around it. This is called breast conservation surgery. But some women aren't able to have breast conservation surgery, or they prefer to have the entire breast removed. There are different types of mastectomies, some of which save the skin and even the nipple and areola. Women who have a mastectomy may choose reconstructive surgery to rebuild the shape and look of the breast.

Immediate breast reconstruction is done, or at least started, at the same time as the mastectomy. The benefit of this is that breast skin is often preserved, which can produce thus better-looking results. Women also do not have to go without the shape of a breast.



for breast augmentation but has higher rates of capsular contracture (tightening or hardening of the scar tissue around the implant) and revisional surgeries.

There are many methods for breast reconstruction. Tissue Expander is the most common technique used worldwide. The surgeon inserts a tissue expander, a temporary silastic implant, beneath a pocket under the pectoralis major muscle of the chest wall. The pectoral muscles may be released along its inferior edge to allow a larger, suppler pocket for the expander at the expense of thinner lower pole soft tissue coverage. The use of a cellular human or animal dermal grafts is done

to increase the coverage of the implant when the pectoral muscle is released, which purports to improve both functional and aesthetic outcomes of implant-expander breast reconstruction.

In a process that can take weeks to months, saline solution is injected to progressively expand the overlying tissue.

While the first step in reconstruction is often the major one, many steps are often needed to get the final shape. If you're planning to have immediate reconstruction, be sure to ask what will need to be done afterward and how long it will take.

Delayed breast reconstruction means that the rebuilding is started later. This may be a better choice for some women who need radiation to the chest area after the mastectomy. Radiation therapy given after breast reconstruction surgery can cause problems like delayed healing and scarring.


Decisions about reconstructive surgery also depend on many personal factors like overall health, the stage of breast cancer how much there is and if it has spread, the size of your natural breast. The amount of tissue available (for example, very thin women may not

have enough extra body tissue to make flap grafts).

Delayed breast reconstruction is considered more challenging than immediate reconstruction. Frequently not just breast volume, but also skin surface area needs to be restored. Many patients undergoing delayed breast reconstruction have been previously treated with radiation or have had a reconstruction failure with immediate breast reconstruction. In nearly all cases of delayed breast reconstruction, tissue must be borrowed from another part of the body to make the new breast.

Breast reconstruction is a large undertaking that usually takes multiple operations. Sometimes these follow-up surgeries are spread out over weeks or months. If an implant is used, the individual runs the same risks and complications as those who use them

Once the expander has reached an acceptable size, it may be removed and replaced with a more permanent implant. Reconstruction of the areola and nipple are usually performed in a separate operation after the skin has stretched to its final size.

The second most common procedure – flap reconstruction – uses tissue from other parts of the patient's body, such as the back, buttocks, thigh or abdomen. This procedure may be performed by leaving the donor tissue connected to the original site to retain its blood supply (the vessels are tunneled beneath the skin surface to the new site) or it may be cut off and new blood supply may be connected. 

(The author is Senior Consulting Plastic and Cosmetic Surgeon at Balaji Action Cancer Hospital, New Delhi)

Alleviating Agony



Radio frequency neurotomy is fast emerging as a new ray of hope for people suffering from long standing spinal pain

BY DR SUDEEP JAIN



Incidences of musculoskeletal disorders are increasing, with a lot of people being diagnosed with ailments like osteoarthritis, rheumatoid arthritis, cervical, spinal stenosis etc. But despite the awareness about these diseases, little information is available on their possible cures and that too the latest one. Conventional treatment involves use of physiotherapy, pain killers and, if no relief, ultimately surgery. Adding to the doctors' arsenal is radio frequency neurotomy, a form of treatment which can provide almost magical relief from

the acute pain.

Spine and how it functions

Our spine is made up of 24 bones known as vertebrae, which are stacked into a column. Between each vertebra lies a cushiony part called disc which acts as a shock absorber. Each vertebra has two sets of bony knobs that meet each other. The point where they meet each other is called the facet joint. These facet joints are responsible for motion of bending, flexing (flex forward or extend backward) and twisting (from side to side). These facet joints are protected

by soft tissue consisting of synovial fluid which acts as a lubricant between these joints. A layer of thick white cartilage covers the joint, helping it to glide smoothly when the body moves. Over the time due to ageing/injuries, this cartilage gets damaged or gets worn out. Inflammation of these joints leads to what we know as arthritis. A number of spinal conditions such as osteoarthritis and spinal stenosis, or from an injury to the back, such as caused in car accident, all lead to facet joint pain.

Treatment for Spinal pains

Generally, the first line of treatment for such disorders involves medicines to relieve the pain depending upon the condition of the patient. But today, a new state of the art technique using radiofrequency has emerged to treat difficult and long standing spinal pain.

A radiofrequency neurotomy is a simple day care minimally invasive non surgical procedure where the patient can go home the same day. Radiofrequency waves are electromagnetic waves which travel at the speed of light, or 186,000 miles per second (300,000 km/s). In this procedure, Radiofrequency energy (a type of heat energy) is created by a special generator at very high or super high frequencies. With the use of this specialized generator, heat energy is created and delivered with precision to target nerves that carry pain impulses to brain. It involves numbing of the skin and tissue over the procedure site with an injection of local anesthetic. Next, the physician uses x-ray guidance, to direct a special radiofrequency needle alongside the medial nerves. Often, a small amount of electrical current is carefully passed through the needle to assure it is next to the target nerve and a safe distance from other nerves. This current briefly recreates the usual pain and causes a muscle twitch in the back. Then the targeted nerves are numbed with a local anesthetic to minimize pain.

At this stage radiofrequency waves are introduced to heat the tip of the needle and a heat lesion is created on the nerve



Radiofrequency energy (a type of heat energy) is created by a special generator at very high or super high frequencies. With the use of this specialized generator, heat energy is created and delivered with precision to target nerves that carry pain impulses to brain


to disrupt the nerve's ability to send pain signals to the brain.

There are two primary types of radiofrequency treatment: A medial branch neurotomy (ablation) affects the nerves carrying pain from the facet joints. Another one is a lateral branch neurotomy (ablation); this affects nerves that carry pain from the sacroiliac joints.

Radiofrequency neurotomy responds well to multiple chronic pain conditions such as spinal arthritis (spondylosis), facetogenic low back pain, spinal stenosis, grade I spondylosis, post-traumatic pain (whiplash), cervical spine, pain after spine surgery, failed

back surgery syndrome (FBSS), and other spinal pain conditions. It also works well in certain neuropathic pain conditions (like Complex Regional Pain Syndrome), and some other assorted chronic pain conditions. A patient's candidacy for this treatment is usually determined by the performance of a Diagnostic Nerve Block.

Radiofrequency neurotomy offers significant and long lasting pain relief as compared to steroid injections. Almost all patients undergoing this procedure will experience significant pain relief for a long period of time so that many patients often find a long term remission or cure for their back or neck pain. As a general rule, if effective, the ablation will often provide pain relief lasting at least 24 months and often for longer period which is very significant as patient is relieved of acute pain which no other procedure is able to provide.

This procedure being less complicated & minimally invasive without any open surgery provides low morbidity rates, appreciable pain relief compared to surgery, greater range of motion, lower use of analgesics, improved quality of life, and short recovery time. 

(The author is Director at Spine Solutions India, New Delhi)

Physician, heal thyself



There is crying need to overhaul the existing system of medical education that largely focuses on theory and does not provide the requisite skill-based training to medical students. Instead, we need to empower the medical graduate to practically apply their knowledge to clinical situations

BY DR SUNEELA GARG/DR ARCHANA RAMALINGAM

In India, there is an acute shortage of human resources in the health sector, especially doctors. The recommended WHO number of doctors is one/per thousand individuals, whereas India has a doctor/population ratio of 1:1700. As the government is steering towards providing universal health coverage, it has to confront severe limitations in health infrastructure, manpower, logistics supply and distribution, poor managerial skills etc, to name a few.

Human resources for health are the backbone of any healthcare system. While trying to increase the numbers we have become shortsighted about the quality of the manpower that is being produced in the country.

The results from a study conducted by World Bank using standardised patients showed that only dismal differences exist between trained medical providers and quacks in terms of likelihood of providing appropriate diagnosis and adherence to standard treatment protocols. This study

proved to be an eye opener to the quality of medical education in the country.

The existing system of medical education largely focuses on theory and does not provide the requisite skill based training to the medical students. The compartmentalization of the pre, para and clinical teachings leaves a medical student with a lot of information but does not empower him/her to put such knowledge to practical use.

Furthermore, the neo liberalization of medical education has led to an

exorbitant increase in number of private colleges that provide medical education. Lack of regulation of the selection process, the teaching learning methods and assessments conducted in such institutions have further decreased the quality of an average Indian medical graduate. This is one of the reasons why medical degrees from Indian institutes are not recognized in many countries worldwide. With malaises like corruption polluting the regulatory bodies, there is a serious lack of political will to take up the matter and provide a logical solution.

The Vision 2015 document prepared by the recently appointed Board of Governors of the Medical Council of India (MCI) provides direction towards mitigating some of the issues that hinder quality medical education in India. The National Eligibility Entrance Test (NEET) was prescribed as a solution for lack of uniformity in the selection process. The idea to introduce a foundation course in the first year would help sensitize students not only to the subjects but also to issues of medical ethics and professionalism. Introduction of horizontal and vertical integration of teaching would bridge the disconnect in the system of instruction. Provision of competency-based learning through introduction of case/scenario based learning, Objective structured practical examination (OSPE) and Objective structured clinical examination (OSCE)

The neo liberalization of medical education has led to an exorbitant increase in number of private colleges that provide medical education. Lack of regulation of the selection process, the teaching learning methods and assessments conducted in such institutions have further decreased the quality of an average Indian medical graduate.

would empower the medical graduate to practically apply the knowledge to clinical situations. A greater emphasis on self directed and student centered learning would build ownership and interest among the learners.

There is also a proposal to prescribe a common exit exam at the end of the Third Professional year of MBBS and a licentiate exam post internship to assess the skills of the medical graduate. These would ensure that each medical licentiate has the requisite skills to practice medicine. The marks obtained from these exams would be used for ranking the students for PG courses. This would ensure that apart from theory, skills also




Dr Suneela Garg

are essential and would be tested for selection to PG courses.

However, most of the recommendations are yet to be implemented. The NEET entrance test, though implemented, was subject to a lot of controversy and finally ended with a Supreme Court interim order making NEET voluntary and permitting private colleges to go ahead with admissions based on their own examinations.

The common exit and licentiate exams are yet to see the light of the day. Some of the institutions have included OSPE, OSCE and case based learning in their system of instruction, while some have tried horizontal and vertical integration.

Nevertheless, much needs to be done and needs to be done to redress the ills facing the medical education in the country. The recommendations of the Board of Governors need to be seriously looked into and acted upon. Otherwise, we would be left with medical graduates who are unsure of themselves and who would compromise the quality of healthcare available in the country. There is an urgent need for skill-based training for medical students keeping in view the health priorities in the Indian context. 



(The authors are from Department of Community Medicine, Maulana Azad Medical College, New Delhi)



Mitigating Pain

Minimally invasive techniques are fast replacing standard surgery in the treatment of various types of cancer. The new advancements minimize trauma and maximize treatment outcomes

BY DR RAKESH CHUGH



Dr Rakesh Chugh

With newer approaches to pain control by introduction of techniques that reduce the preoperative stress response, the use of minimally invasive operations surgery is slowly undergoing revolutionary changes. Minimally invasive surgery is a surgical approach to cancer management designed to minimize trauma, maximize outcomes and enable patients to quickly return to their normal life.

A report says that when these newer approaches are used in patients undergoing more complex elective surgical procedures, postoperative complications can be reduced, length of hospital stay decreased, and time to recovery shortened. This review of recent advances made in this newly developing specialty of fast track surgery emphasizes techniques that facilitate early recovery after major surgical procedures. Subsequently, many surgical procedures like arthroscopic surgery, laparoscopic cholecystectomy, eye surgery, sterilization procedures, herniorrhaphy, and cosmetic operations are routinely performed on an outpatient basis.

The surgeons use staging studies to determine the best cancer treatment plan. In some cases, they use a state-

of-the-art robotic device to assist in minimally invasive cancer operations.

Minimally invasive laparoscopically assisted surgery was first considered in 1990 for patients undergoing

Minimal invasive surgical techniques have been offered for several years, advances in robotic technology are providing even better results for both patients and surgeons

colectomy for cancer. Concern that this approach would compromise survival by failing to achieve a proper oncologic resection or adequate staging or by altering patterns of recurrence (based on frequent reports of tumour recurrences within surgical wounds) prompted a controlled trial evaluation.

Minimally invasive surgery is an effective approach to removing some cancerous tumours and lymph nodes – all the while sparing the patient from unnecessary tissue damage, pain, and scarring.

The surgeons are also using minimally invasive techniques to collect tissue for biopsy and to perform accurate

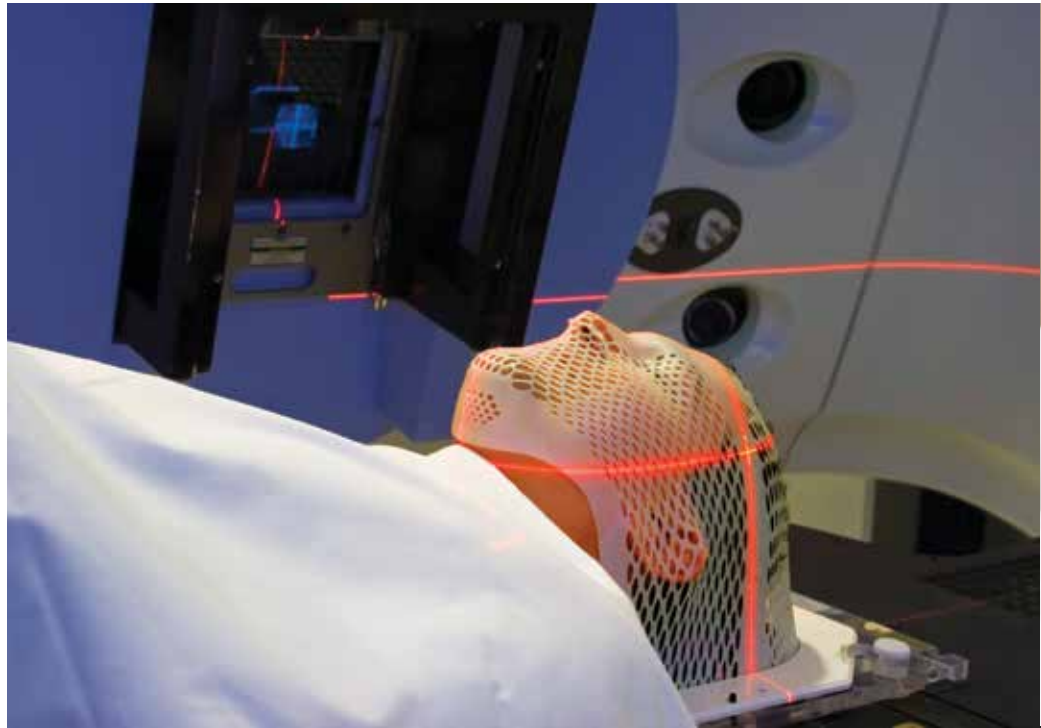


“staging” studies to determine the best cancer treatment plan. In some cases, University of Chicago surgeons use a state-of-the-art robotic device. Here, world-renowned multidisciplinary team of specialists in surgical, medical, and radiation oncology work side-by-side to create individualized treatments plans for each patient. They are also conducting advanced clinical and laboratory research to further the treatment of cancer.

Traditional or, open surgery calls for large incisions and longer recovery times for patients. However, advances in computer imaging have paved the way for less invasive techniques. From tiny, tube-like cameras that can look inside the body to imaging machines that provide real-time views in the operating room, cancer surgeons have many tools to provide effective cancer treatment. As these minimally invasive techniques advance, many are replacing standard surgery for a variety of cancers.

Minimal invasive surgical techniques have been offered for several years, advances in robotic technology are providing even better results for both patients and surgeons. Although the robotic arms are doing the actual surgery, they still require direct input from the surgeon and cannot be merely programmed to operate without human intervention. Candidates for robotic-assisted surgery include patients undergoing prostatectomy, hysterectomy, thoracic procedures and some general surgeries. Benefits of robotic-assisted surgery are smaller incisions less blood loss and need for transfusion, decreased pain, discomfort and recovery time, shorter hospital stay and less scarring and improved cosmetic appearance

Video Assisted Thoracic Surgery (VATS) is offered for select patients as treatment of early-stage lung cancer. In most VATS procedures, surgeons operate using special instruments through two to four small openings between the ribs while viewing a patient’s anatomy on a TV monitor.



VATS reduces hospital stays to about three to four days and patients experience a faster recovery with less pain afterward as compared with a traditional thoracotomy. Not all surgeons can perform these complex surgeries or VATS lobectomy, since limited access requires specialized

training in minimally invasive surgery and a large experience in lung surgery. Minimally invasive surgery is performed on an inpatient and outpatient basis.

Laparoscopy is a surgical procedure that allows surgeons to examine the abdominal organs or the female pelvic




Video Assisted Thoracic Surgery (VATS) is offered for select patients as treatment of early-stage lung cancer. In most VATS procedures, surgeons operate using special instruments through two to four small openings between the ribs



telescopic lighted instrument, called a hysteroscope, is inserted through the vagina and cervix and into the uterus.

Plastic and Reconstructive Surgery

Preserving a positive self-image during or after cancer treatment is an important part of cancer survivorship. That is why the Plastic and Reconstructive Surgery is in increasing demand.

Fast track surgery combines various techniques used in the care of patients undergoing elective operations. The methods used include epidural or regional anaesthesia, minimally invasive techniques, optimal pain control, and aggressive postoperative rehabilitation, including early enteral (oral) nutrition and ambulation. The combination of these approaches reduces the stress response and organ dysfunction and therefore greatly shortens the time required for the full recovery. 

organs through a small incision in the abdominal wall. A thin, lighted tube, called a laparoscope, is inserted through the incision to examine the surgical area. Surgeons are then able to view tumours and surrounding structures in order to diagnose problems, such as cysts, adhesions, fibroids, and infections. Tissue samples

can be collected for biopsy through the scope.

Hysteroscopy can be used to diagnose and treat many intrauterine and endocervical problems. It is a diagnostic and surgical procedure that enables surgeons to examine the inside of the uterus without making an incision. During the procedure, a thin,

(The author is Onco Surgeon at the Balaji Action Cancer Hospital, New Delhi)



Gasping for Air

Increasing pollution levels in the country raise acute health concerns. India has slipped 32 ranks in the global Environment Performance Index (EPI) 2014 to figure a lowly 155 and Delhi has earned the dubious tag of being the world's most polluted city

BY ABHIGYAN

With the increasing incidence of number of vehicles, rising pollution levels in urban areas especially in the Delhi/NCR region and other metro cities are playing havoc with the health of citizens. Pollution leads to contamination of the earth's environment with materials that interfere with human health, quality of life or the natural functioning of the ecosystems.

The major forms of pollution include water pollution, air pollution, noise

pollution and soil contamination. A recent study describes India's air pollution as the worst in the world, competing with China in terms of the proportion of population exposed to average air pollution levels exceeding World Health Organization (WHO) thresholds.

A deeper look at the data gathered by a NASA satellite showed that Delhi had the highest particulate matter 2.5 pollution levels followed by Beijing. Delhi, with 8.1 million registered vehicles, has repeatedly beaten the Chinese capital on particulate matter

pollution.

According to a study by the Harvard International Review, every two in five persons in Delhi suffer from respiratory ailments. The Lancet's Global Health Burden 2013 report termed air pollution as the sixth biggest human killer in India.

Of late, the air pollution status in Delhi has undergone many changes in terms of the levels of pollutants and the control measures taken to reduce them. This article provides an evidence-based insight into the status of air pollution in Delhi and its effects on



A recent study describes India's air pollution as the worst in the world, competing with China in terms of the proportion of population exposed to average air pollution levels exceeding World Health Organization (WHO) thresholds



health and control measures instituted.

There is an increase in asthma and allergic tendencies in the city owing to the increase in population and air pollution. The causes of asthma are not completely understood. However, risk factors for developing asthma include inhaling asthma "triggers", such as allergens, tobacco smoke and chemical irritants.

The problems of overloading trucks contributing majorly to air pollution while crossing Delhi late night will be specially looked into by the Delhi government. Construction and demolition waste disposal plants will be built one in East and two in South Delhi by the municipal corporations. The Corporations have issued new directions against 'no-burning at all' and will also appoint ward-wise nodal officer who will register complaints against burning waste across Delhi.

Air Pollutants means any solid, liquid or gaseous substance (including noise) present in the atmosphere in such concentration as may be or tend to be injurious to human beings or other living creatures or plants or property or environment. Environment: includes water, air and land and the interrelationship which exists among and between water, air and land, and human beings, other living creatures, plants, micro-organisms and properties. Air pollution is basically the presence of air pollutants in the atmosphere. The air has a relative constant composition of gases and is utilized by most of the living organisms in respiration to liberate chemical energy for their survival.

This composition determines its quality and is being changed in the recent past due to emission of large amount of un-natural materials in the

atmosphere by industries and automobiles. This changed quality became a great threat to survival of life, properties, materials and ecosystem as a whole. In order to arrest the deterioration in air quality, Govt. of India has enacted Air (Prevention & Control of Pollution) Act in 1981. The responsibility has been further emphasized under Environment (Protection) Act, 1986. It is necessary to assess the present and anticipated air pollution through continuous air quality survey/monitoring programs. Therefore, Central Pollution Control Board had started National Ambient Air Quality Monitoring (NAAQM) Network during 1984 - 85 at national level.

The programme was later renamed as National Air Monitoring Programme. An inventory of air pollutants is a necessary first step towards control of air pollution. Air pollutants can be



natural or may be the result of various anthropogenic activities like industrial emissions. Further the air pollutants can be primary or secondary depending upon their formation mechanism. Primary pollutants are directly emitted from the source and secondary pollutants are formed in the atmosphere.

Meteorological factors play a critical role in ambient concentrations of air pollutants. Even though the total discharge of air pollutants into the atmosphere may remain constant, the ambient concentrations of air pollutants may vary depending upon the meteorological conditions.

Keeping all these factors in mind, an attempt is made to address the problem of air pollution in seventeen cities in India identified by the Supreme Court as polluted cities. These cities are Agra, Ahmedabad, Bangalore, Chennai, Delhi, Hyderabad, Kolkata, Lucknow, Kanpur, Faridabad, Jodhpur, Patna, Pune, Solapur, Varanasi, Jharia, and Mumbai. An action plan being

implemented in these seventeen cities for controlling air pollution.


Also the action plan proposed for controlling air pollution is detailed. 1.1.1 Air (Prevention and Control of Pollution) Act 1981 Government of India enacted the Air (Prevention and Control of Pollution) Act 1981 to arrest the deterioration in the air quality. The Act prescribes various functions for the Central Pollution Control Board at the

There is an increase in asthma and allergic tendencies in the city owing to the increase in population and air pollution. The risk factors for developing asthma include inhaling asthma “triggers”, such as allergens, tobacco smoke and chemical irritants

apex level and State Pollution Control Board at the state level.

The main functions of the Central Pollution Control Board are as follows:

- To advise the Central Government on any matter concerning the improvement of the quality of the air and the prevention, control and abatement of air pollution.
- To plan and cause to be executed a nation-wide programme for the prevention, control and abatement of air pollution.

The emissions from power plants include sulphur dioxide, oxides of nitrogen and suspended particulate matter. The industrial pollution load has been estimated for thermal power plants and cement plant in Delhi. It's no surprise that pollution is a perpetual problem in India. But it's definitely disheartening to hear that India has slipped 32 ranks in the global Environment Performance Index (EPI) 2014 to rank a lowly 155 and its capital Delhi has earned the dubious tag of being the world's most polluted city. 

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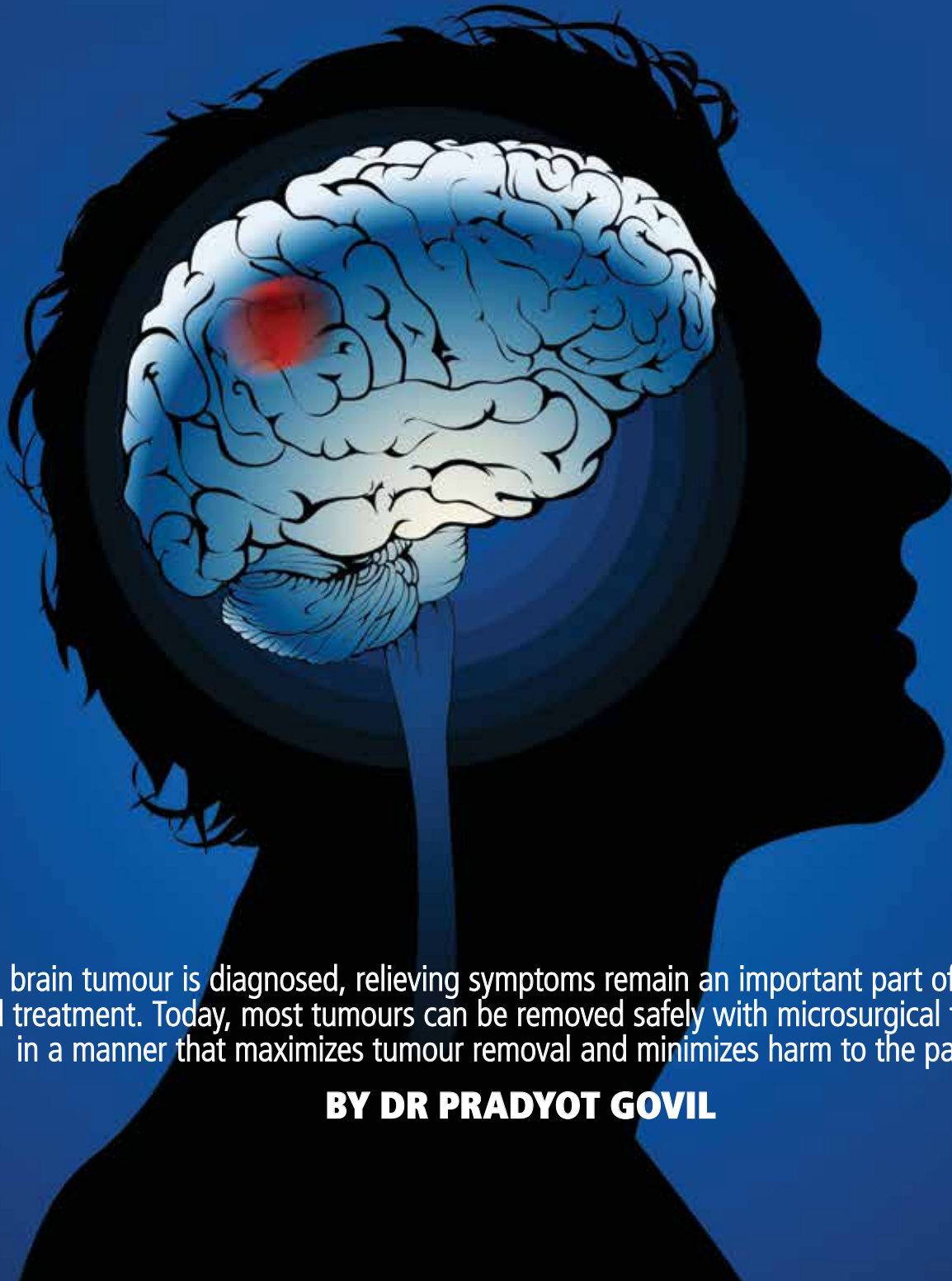
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The Enemy Within



If a brain tumour is diagnosed, relieving symptoms remain an important part of your care and treatment. Today, most tumours can be removed safely with microsurgical techniques in a manner that maximizes tumour removal and minimizes harm to the patients

BY DR PRADYOT GOVIL



Headaches, nausea, vomiting, and dizziness are all possible symptoms of a brain tumour. Early symptoms can be subtle or obvious, depending on the type, size, and location of the tumour. However, just because a person has these problems, doesn't mean he or she has a brain tumour. Although such growths are popularly called brain tumours, not all brain tumours are cancerous. Cancer is a term reserved for malignant tumours. Malignant tumours can grow and spread aggressively, overpowering healthy cells by taking their space, blood, and nutrients. They can also spread to distant parts of the body.

Early symptoms of brain tumours can be vague or dramatic, depending on the tumour size, type, and location. No one knows what causes brain tumours; there are only a few known risk factors that have been established by research. Children who receive radiation to the head have a higher risk of developing a brain tumour as adults, as do people who have certain rare genetic conditions such as neurofibromatosis or Li-Fraumeni syndrome. But those cases represent a fraction of the approximately 35,000 new primary brain tumours diagnosed each

Not all benign tumours need treatment. If your tumour is small and is not causing any symptoms, your doctor may recommend taking only a watch-and-wait approach

year. Age is also a risk factor – people over the age of 65 are diagnosed with brain cancer at a rate four times higher than younger people.

A primary brain tumour is one that originates in the brain, and not all primary brain tumours are cancerous; benign tumours are not aggressive and normally do not spread to surrounding tissues, although they can be serious and even life threatening.

A tumour is a mass of tissues formed by an accumulation of abnormal cells. Normally, the cells in your body age, die, and are replaced by new cells. With cancer and other tumours, something disrupts this cycle. Tumour cells grow, even though the body does not need them, and unlike normal old cells, they don't die. As this process goes on, the tumour continues to grow as more and

more cells are added to the mass.

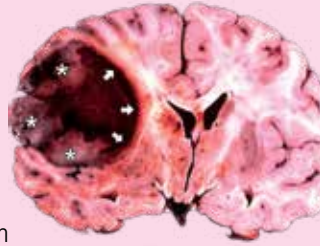
Primary brain tumours emerge from the various cells that make up the brain and central nervous system and are named for the kind of cell in which they first form. The most common types of adult brain tumours are gliomas and astrocytic tumours. These tumours form from astrocytes and other types of glial cells, which are cells that help keep nerves healthy.

The second most common type of adult brain tumours are meningeal tumours. These form in the meninges, the thin layer of tissue that covers the brain and spinal cord.

Symptoms of a brain tumour can be general or specific. A general symptom is caused by the pressure of the tumour on the brain or spinal cord. Specific symptoms are caused when a specific part of the brain is not working normally because of the tumour. For many people with a brain tumour, they were diagnosed when they went to the doctor after experiencing a problem, such as a headache or other changes.

If you are concerned about one or more of the symptoms or signs on this list, please talk with your doctor. Your doctor will ask how long and how often you've been experiencing the symptom, in

Symptoms of Brain Cancer



Brain cancer symptoms vary from patient to patient, and most of these symptoms can also be found in people who do not have brain cancers. Therefore, the only sure way to tell if you have a brain cancer or not is to see your doctor and get a brain scan.

Headaches: This was the most common symptom, with 46% of the patients reporting having headaches. They described the headaches in many different ways, with no one pattern being a sure sign of brain cancer. Many - perhaps most - people get headaches at some point in their life, so this is not a definite sign of brain cancers. You should mention it to your doctors if the headaches are: different from those you ever had before, are accompanied by nausea/vomiting, are made worse by bending over or straining when going to the bathroom.

Seizures: This was the second most common symptom reported, with 33% of the patients reporting a seizure before the diagnosis was made. Seizures can also be caused by other things, like epilepsy, high fevers, stroke, trauma, and other disorders. This is a symptom that should never be ignored, whatever the cause. In a person who never had a seizure before, it usually indicates something serious and you must get a brain scan.

A seizure is a sudden, involuntary change in behaviour, muscle control, consciousness, and/or sensation. Symptoms of a seizure can range from sudden, violent shaking and total loss of consciousness to muscle twitching or slight shaking of a limb. Staring into space, altered vision, and difficulty in speaking are some of the other behaviors that a person may exhibit while having a seizure.

Nausea and Vomiting: As with headaches, these are non-specific symptoms - which mean that most people who have nausea and vomiting do not have a brain cancer. Nausea and/or vomiting is more likely to point towards a brain cancer if it is accompanied by the other symptoms mentioned here.

Vision or hearing problems: If you notice any problem with your hearing or vision, it must be checked out. The eye doctors are the first to make the diagnosis - because when they look in your eyes, they can sometimes see signs of increased intracranial pressure. This must be investigated.

Problems with weakness of the arms, legs or face muscles, and strange sensations in your head or hands: This may result in an altered gait, dropping objects, falling, or an asymmetric facial expression. These could also be symptoms of a stroke. Sudden onset of these symptoms is an emergency. If you notice a gradual change over time, you must report it to your doctor.

Behavioural and cognitive problems: Many report behavioural and cognitive changes, such as: problems with recent memory, inability to concentrate or finding the right words, acting out - no patience or tolerance, and loss of inhibitions - saying or doing things that are not appropriate for the situation.

addition to other questions. This is to help find out the cause of the problem, called a diagnosis.

If a brain tumour is diagnosed, relieving symptoms remain an important part of your care and treatment. This may also be called symptom management, palliative care, or supportive care. Be sure to talk with your health care team about symptoms you experience, including any new symptoms or a change in symptoms.

Treatment Options

Not all benign tumours need treatment. If your tumour is small and is not causing any symptoms, your doctor may recommend taking a watch-and-wait approach. In these cases, treatment could be more risky than letting the tumour be. If your doctor decides to pursue treatment, the specific treatment will depend on the location of the benign tumour.


Nowadays, with precise guiding technologies such as navigation, small precise incisions can be made. Most tumours can be removed very safely with microsurgical techniques in a manner that maximizes tumour removal and minimizes harm. Depending on the nature of the tumour, there may be a need for adjuvant treatment such as radiation or chemotherapy.

Often the cause of brain tumour is unknown. But the growth of a benign tumour might be linked to environmental toxins (radiation), genetics, diet, stress, local trauma or injury and inflammation or infection. Some malignant brain tumours are caused by a cancer that started somewhere else in the body and spread to the brain through the bloodstream.

Under diagnosis the doctors may begin by performing a physical examination and collecting your medical history. The first diagnostic steps your doctor may take include ordering various tests: Magnetic Resonance Imaging (MRI) - It is the most important diagnostic tool for brain tumours. Usually, a contrast MRI is performed to determine the nature of the tumour, its exact location and its relation to surrounding structures.

Angiography

This test is used in tumour with increased blood flow or in tumour like conditions such as AVMs and giant aneurysms, computed Tomography (CT) scan: CT scans use a series of X-rays from different angles, ultrasound (used very rarely): This test uses sound waves to determine if a mass is solid or liquid.

Cutting-edge technology and the very latest surgical techniques are used to perform complex procedures ranging from awake craniotomies to transnasal endoscopic pituitary surgery. The technologies such as neuronavigation and intra-operative nerve monitoring enhance patient safety and ensure excellent surgical outcomes. The neurosurgical team uses all resources at its disposal to maximize treatment with the most minimal morbidity. 

(The author is senior Onco Surgeon Pushpanjali Crosslay Hospital Vaishali, Ghaziabad)

Destination India

India offers overseas patients quality dental treatments at comparatively low prices. Millions of people every year fly from USA and Europe to tourist places in India for a grand holiday and dental care

**BY DR SURESH
AHLAWAT**



DR SURESH AHLAWAT

Dental Tourism has a huge potential in India, the reason being that a person while undergoing dental treatment of world standards can get to enjoy the exotic locales that India has to offer. The dentists at their clinics strive to offer treatment that parallels the best in the world, while ensuring that the overall experience of the patient is a pleasurable one.

India is favoured as one of the best dental tourism destinations for its quality dental treatments at comparatively low price. People visiting the country for their dental needs also relish the benefits of India as a cheap tourist destination. The total cost of travel to India along with the cost of treatment and sightseeing for dental tourists is far less than what it would have cost them for a treatment in their own country.

Dental tourism is a subset of the sector known as medical tourism. It involves individuals seeking dental care outside of their local healthcare systems and may be accompanied by a vacation. Dental tourism is growing worldwide as the world becomes ever more interdependent and competitive, technique, material, and technological advances spread rapidly, enabling providers in developing countries to provide dental care at a low cost.

Additionally, in many countries, the dental insurance does not cover anything other than basic treatment procedures.



So, if someone is facing such a situation then try being a medical traveller and plan for a dental tourism to India and say good-bye to your dental problems without worrying about your budgetary constraints.

Under the dental tourism package dental clinics provide complete dental care covering dental surgery and dental care. Millions of people every year fly from USA and Europe to tourist places in India for a grand holiday and dental care. The costs of dental care in the western countries are approximately 10 times more than that in India.

In India, dental care can be clubbed with a grand holiday in India which comes for free as the cost of dental treatment in India is nearly a tenth compared to Western and European countries. In India, the dentists have their own clinics with state of the art equipment and well trained experienced doctors to match the best of international standards.

In today's world with a multitude of infections, one of the prime concerns of a person visiting a dental clinic is the level of sterilization. The dentists ensure that all times strict asepsis is maintained thereby keeping the patients safety at top priority. They do not compromise on the quality of treatment even though it remains cost effective

While dental tourists may travel for a variety of reasons, their choices are usually driven by price considerations.

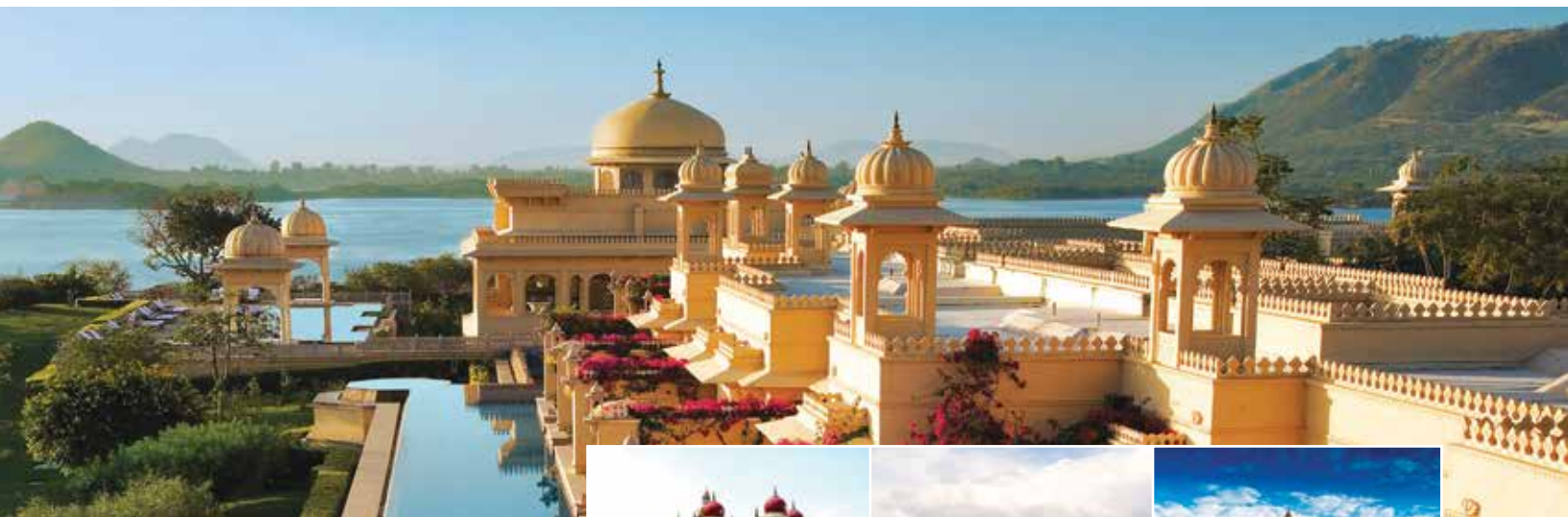
Wide variations in the economics of countries with shared borders have been the historical mainstay of the sector. Examples include travel from Austria to Hungary, Slovakia, Slovenia and Romania, from the US and Canada to Mexico, Costa Rica and Peru, from the

Republic of Ireland to Northern Ireland, Hungary, Poland, Turkey and Ukraine, and from Australia to Thailand and other countries of South-East Asia. While medical tourism is often generalized to travel from high-income countries to low-cost developing economies, other factors can influence a decision to travel, including differences between the funding of public healthcare or general access to healthcare.

For countries within the European Union, dental qualifications are required to reach a minimum approved by each country's government. Thus a dentist qualified in one country can apply to any other EU country to practise in that country, allowing for greater mobility of labour for dentists. The Association for Dental Education in Europe (ADEE) has standardization efforts to harmonize European standards.

The proposals from the ADEE's Quality Assurance and Benchmarking taskforce cover the introduction of accreditation procedures for EU dentistry universities as well as programmes to facilitate dental

students completing part of their



education in foreign dentistry schools. Standardization of qualification in a region reciprocally removes one of the perceptual barriers for the development of patient mobility within that region.

Dental tourists travel chiefly to take advantage of lower prices. Reasons for lower prices are many: dentists outside the developed world are able to take advantage of much lower fixed costs, lower labour costs, less government intervention, lower education fees and expenses, and lower insurance costs. Much of the bureaucratic red-tape that engulfs businesses in the developed world is eliminated abroad, and dentists are free to focus on their trade, dentistry. The flip-side of this is less legal recourse for patients when something goes wrong, but the result is that procedures, such as dental implants and porcelain veneers, which are simply financially out of reach for many people in the developed world, are made affordable overseas.

Much of the debate about dental tourism and medical tourism in general centres on the question of whether or not price differentials imply quality differentials. Another concern is whether or not large scale dental procedures can be safely completed abroad in a relatively short, "holiday-sized" time period. An instructive case study provides an analysis of patient outflows from the United Kingdom and Ireland, two large sources of dental tourists. Both countries were the subject of a report from the Irish Competition Authority to determine




whether consumers were receiving value for money from their dentists. Both countries' professions were criticised for a lack of pricing transparency. A response to this is that dentistry is unsuitable for transparent pricing: each treatment will vary, an accurate quote is impossible until an examination has occurred. Thus price lists are no guarantee of final costs. Though they may encourage a level of competition between dentists, this will only happen in a competitive environment where supply and demand are closely matched.

The 2007 Competition Authority report in the Irish Republic criticised the profession on its approach to increasing numbers of dentists and the training of dental specialties – orthodontics was a particular area for concern with training being irregular and limited in number of places. Supply is further limited as new dental specialties develop and dentists react to consumer demand for new dental products, further diluting the pool of dentists available for any given procedure.

Aside from the above issues, it is possible to compare the prices of treatment in different countries. With the international nature of some products and brands it is possible to make a valid comparison. Clearly, undergoing

extensive dental procedures abroad, even when allowing for travel expenses, can be significantly cheaper than the same procedures at home. Pricing and qualifications of the dentists may be researched through websites or by contacting the dentists. Another important consideration is location: if one travels far for a dental procedure and something goes wrong, it is a long way to return to fix it as well.

Since procedures often require multiple steps, or subsequent check-ups, the patient may have to return to the same doctor for those reasons. Typically, a patient takes two trips to have implants. The first trip is to set the base and the provisional crown. The second trip is typically 4–6 months later after the implant has stabilized in the bone. One Day Implants are not recommended for dental tourists due to the higher failure rate of the system. When combined with a holiday, as the name implies, dental tourism can be an opportunity to receive low-cost, quality dental care. Dental tourism in India is expected to continue growing, as consumers continue to seek out lower-cost options. 

(The author is senior Dental Surgeon,
Muskan Dental Care Centre,
DLF Phase 2, Gurgaon)

A silhouette of a person performing a yoga pose (Vrikshasana or Tree Pose) against a vibrant sunset background. The person is standing on one leg with the other leg bent and foot resting on the inner thigh. Their arms are raised, with hands joined at the tips above their head. The background is a bright orange and yellow sky with a sun low on the horizon, creating a dramatic silhouette effect.

Balancing mind, body and spirit

In the last one decade, yoga has become popular among not just general public but also among doctors. Yoga brings positive changes in patients suffering from chronic problems. It is not just a physical bending or stretching exercise but has a scientific side too

BY AMRESH KUMAR TIWARY

Taking about yoga has become a fashion of late, but practitioners of yoga have been exhorting about the health benefits of yoga for years now. Though the allopathic doctors and hospitals have neglected this ancient discipline earlier, now even they are referring their patients to practise yoga for recuperating after serious illnesses. It is mostly in the last decade that yoga has become popular among not just general public but also among doctors. Many corporate hospitals in the city also have a dedicated wing for yoga and hire the services of yoga practitioners who provide beneficial effects of yoga in people suffering with serious health problems.

According to Dr A K Agarwal, Professor of Excellency, Maulana Azad Institute of Medical Science New Delhi “Most of the serious health problems plaguing society today like cardiac diseases, cancers, diabetes, obesity, blood pressure, among others are either directly or indirectly caused by unhealthy lifestyle. Yoga which propagates unity of body, mind and heart can help us greatly in maintaining a balanced lifestyle thereby decreasing the chance of contacting diseases.”

Says Dr Vinay Aggarwal, Former President, Indian Medical Association, and CMD, Crosslay Pushpanjali Hospital, Vaishali “In spite of wide reaching advances in medical technology and inventions in health care, still many health problems cannot be addressed. Just by undergoing surgeries and taking medicines a person cannot regain complete health. Practices like yoga and meditation can address these problems. Studies have revealed that yoga brings positive changes in patients suffering with chronic problems like heart ailments, hypertension, and

cancers, among others. We compulsorily prescribe yoga for our patients in our hospital. I feel it will not be too far when yoga will be made mandatory.”

Rajan Narayanan is one of the founders of Life In Yoga, a non-profit organization that seeks to educate people on the benefits of this ancient Indian practice. A major part of this effort, however, is directed at integrating yoga therapy in the mainstream health care system by training medical providers to use yogic breathing and techniques to treat various maladies.

Since starting this push in 2010, Life in Yoga has trained 145 doctors. Its programmes, jointly sponsored by Howard University College of Medicine, are recognized by the Accreditation Council for Continuing Medical Education. That means doctors can earn credits they need to keep their licenses current by learning about yoga.

For Narayanan, the ability to hone in on a specific disease and have evidence of a proven outcome is the crux of his work with health care providers. He said psychiatrists often see the most powerful results of the



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Dr Vinay Aggarwal,

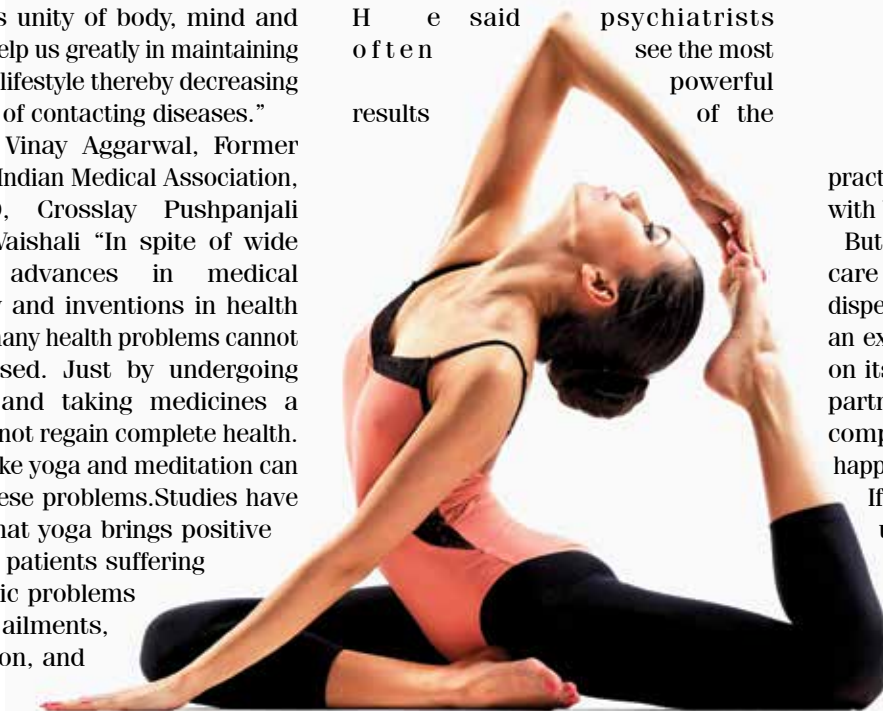
Former President, Indian Medical Association, and CMD, Crosslay Pushpanjali Hospital, Vaishali

practice — sometimes replacing drugs with breathing exercises.

But to make an impact on the health care system, Narayanan wants to dispel the popular image of yoga as just an exercise or good stretch and focus on its scientific side. And he and his partners forgo any salary or compensation to make sure that happens. Yoga is being misrepresented.

If thinking doesn't change, if it's not useful in a doctors' practice, it cannot work.

Says Dr Vinay Aggarwal “At a deeper level, yoga is a state of mental silence or rest, where our attention is aware, but not





Many corporate hospitals in the city also have a dedicated wing for yoga and hire the services of yoga practitioners who provide beneficial effects of yoga in people suffering with serious health problems

Dr A K Aggarwal,

Professor of Excellency, Maulana Azad Institute of Medical Science

engrossed in thinking. It is known as 'thoughtless awareness'. It is achieved when the indwelling Kundalini energy awakens and carries the individual attention beyond the level of the 6th chakra, into the seventh chakra, known as Sahasrara." As the mind finds rest and silence, we become able to feel our inner Self (Spirit). This can be tangibly felt, it actually manifests, as a cool wind, breath or breeze, often experienced on the palms of the hands or at the top (crown) of the head. It is a spontaneous, effortless natural happening.

With the slogan "the reach and spread of Yoga cuts across differences of colour, caste and creed", India led 191 countries to mark the International Yoga Day celebrations recently with over 40,000 participants performing



various yoga asanas at a mega event in the capital city Delhi. The yoga celebrations were held in the national capital after the United Nations had in December last year declared June 21 as International Yoga Day, with 177 countries voting in favour. The proposal had been mooted by the Prime Minister during his first address to the UN General Assembly in September last year.

Says Dr A K Agarwal "While Prime Minister Narendra Modi addressed the gathering, diplomats from 152 foreign

missions were invited to take part in the event". Given the expected large participation at one place, the Ministry of AYUSH which coordinated the event, aims at registering the event into the Guinness World Records for the "largest yoga demonstration or class at a single venue".

On this occasion PM Modi said, "Did anyone imagine Rajpath would ever become Yogpath? We are not only celebrating a day but we are training the human mind to begin a new era of peace and goodwill. "He further said, "I



thank the United Nations and other countries of the world who co-sponsored the resolution to mark this day as International Day of Yoga.”

At the event, PM Modi said, “Today we celebrated the very first International Yoga Day. When I spoke at UN General Assembly, little did I know about the kind of unprecedented response our proposal would receive? As I stand here today, the International Yoga Day is being celebrated across the World.”

He further added, “This coming together with our brothers of sisters in

other countries brings our hearts and minds together...” “I’m grateful to international community for support, this support is not just for India, it’s for the great tradition of Yoga. He added, “A Yogi is a person who is in harmony with himself, his body, surroundings and nature. Yoga is a way to achieve that harmony.”

Talking about the benefits Yoga, PM Modi said, “In a world suffering from stress, yoga promises calmness. Yoga creates concentration. In a world of fear, Yoga provides strength and

courage. A healthy body and disciplined mind are foundations for the World free from fear, through Yoga we create a new World”

He also said, “Yoga helps in opening and refining of hearts, emotions leading to greater compassion, mutual understanding and sensitivity to needs of others. There is ample evidence that practicing yoga help combat stress.”

The Government set up 2,000 huge digital ‘cinema screens’ across Rajpath for people to witness the live streaming of the performance of yoga asanas on Sunday. Besides Delhi, the yoga event was held on a large scale in Lucknow, Kolkata and Patna which was streamed live on Doordarshan and through webcast.

Similarly, all the states have been requested to celebrate IYD simultaneously and to organise similar events at district and panchayat headquarters. Over 11 lakh NCC cadets will perform according to Common Yoga Protocol and about 9 lakh members of armed police forces in their respective field units.

Stamps brought out by Department of Post on IYD as well as coins of Rs 10 and Rs 100 denominations brought out by the Finance Ministry were be released during the mega event at Rajpath. Apart from the government, several organisations and personalities also held similar yoga events as per their capacity including famous Yoga gurus Ramdev and Sri Ravi Shankar.

The government also roped in celebrities like Amitabh Bachchan, cricketer Virat Kohli and wrestler Susheel Kumar while other stars in various countries were also roped in for the event.

The Health Department held early morning yoga workshops at all its community health centres, primary health centres and civil hospitals. Instructions were issued to all senior medical officers and International Yoga Day was celebrated at all health centres and civil hospitals.

Confederation of Indian Industry (CII) organised yoga sessions for the



industry on June 21. Several industry representatives, including CEOs, employees and family members could be seen rolling out their yoga mats to practice this ancient Indian exercise.

More than a thousand people took part in several events across Australia to mark the day, with Prime Minister Tony Abott appreciating Yoga's universal appeal. "For thousands of years, yoga has provided its followers with a guide to bringing their mind, body and spirit into balance," Abott said.

Melbourne saw over 500 people gathered at the Springers Leisure Centre to kick off the day with 'Surya Namaskar' and performance of various asanas.

Several MPs including Victoria's speaker Telmo Languiller, Inga Peulich, Anthony Byrne attended the ceremony




by lighting the lamp in the presence of Indian consul-general in Melbourne Manika Jain. Yoga events were also held at Sydney's popular Bondi beach and in the Australian capital Canberra.

In the UK, hundreds gathered across cities to celebrate the day with the main event on the bank of the river Thames in London. It was held at

Bernie-Spain Garden, on the South Bank of Thames.

Urging Pakistan to reconsider its stand of not observing International Yoga Day, Union Minister for Communications and Information Technology, Ravi Shankar Prasad said yoga would have helped in "bringing peace" in that country.

"It is very important to know that more than 190 countries agreed that yoga is important for mankind and out of those 190 countries nearly 44 were Islamic countries. Never ever there has been such massive response on a proposal. You can see that yoga is taking place in New York, China, London also," Prasad said in Kolkata. The day was observed in over 251 cities in 191 countries across the world and the Indian missions and diplomatic posts made arrangements for the celebrations and other related events. 

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Consume with Caution



As per a research study presented at the Indian Science Congress, pregnant women who consume traditional medicines or herbs probably may end up damaging the genetic make-up of their newborns leading to possible birth defects

BY TEAM DOUBLE HELICAL

If you are pregnant or plan to become pregnant, you should be aware about the medications and herbal remedies that are safe for you to take. Ideally, it would be best to discuss your current medications with your doctor before you conceive. In any case, as soon as you know you are pregnant, inform your health care providers and discuss what medicines are safe for you to take.

The research says that passing of any medication into your breast while feeding your child may be risky, so check with your health care provider about taking medications after your child is born.

Taking medication for a problem like epilepsy, high blood pressure, asthma, or depression during pregnancy is also risky. In this case don't assume you should stop taking the medicine because

it becomes your habit. Always check with your doctor to determine the recommendation for you. You may also be able to switch to another medication that treats your problem with less risk to your developing baby.

The research claims that some medicines have been shown to cause possible birth defects or other problems in unborn children. For other medicines, there is no sufficient information as to

whether they are safe or unsafe during pregnancy.

A recent study on 104 mentally challenged children has once again ignited the debate about the extent of damage inappropriate traditional medicines can cause during pregnancy. Presented in Indian Science Congress, the study claimed pregnant women who consumed traditional medicines or herbs probably ended up damaging the genetic make-up of their newborns.

The research paper found out that chromosomal abnormalities were present in 69 (66 per cent) of the 104 children who were born with mental challenges. Further, parents of 14 of these children revealed that the mothers had consumed traditional herbs and medicines, collectively called sex selection drugs (SSDs), for a period of up to two months during the first trimester of pregnancy. Incidentally, all 14 were male children whose parents did not have any chromosomal abnormality.

Renowned geneticist Archana Verma, who presented the paper in the Women's Congress, claimed that mothers of 14 children admitted to consuming sex selection drugs during pregnancy. She says, "We have excluded all other factors such as parental age, mode of delivery, medications taken during pregnancy, exposure to radiation, eating habits and even genetic profile of parents before deducing SSDs as the cause for these 14 children." In the remaining children, we could identify other factors. But in these 14 children, consumption of SSDs emerged as the pre-dominant reason."

The anomalies ranged from chromosomes having extra copies, getting transpositioned, breaking or simply deleting. Chromosomes form the centre of a cell and each cell contains 46 chromosomes or 23 sets. These drugs were procured from babas, sadhus or some elderly people in the villages of Haryana, where the study was based. Women were strictly prohibited to reveal this to anyone during the course of intake. Names of medicinal plants Shivalingi and Majuphal

often cropped during interviews with patients. Others were using SSDs loaded with testosterone, progesterone, natural steroids and several other combinations without knowing their composition or consequences.

It is common knowledge that SSDs are freely available in grocery stores and chemist shops in north Indian villages. A previous study published in the Indian Journal of Community Medicine had found the use rate was as high as 30 per cent to 46 per cent. The SSDs resulting in children with abnormal chromosomes also put a load of genetic burden on society.

Some experts in the field, however, remained skeptical of Verma's findings. "There have been studies to look into the relation of traditional drugs with pregnancy but we need more samples to establish the cause and effect with certainty," said cytogenetics expert Dr Swarna Mandava of SRL Diagnostics. "Some of the herbs used in first trimester may cause harm but whether they can affect the genetic makeup will need more detailed research," she said.

Any pregnant women are not recommended anything apart from folic

The research found out that chromosomal abnormalities were present in 69 (66 per cent) of the 104 children who were born with mental challenges. Further, parents of 14 of these children revealed that the mothers had consumed traditional herbs and medicines



acid during the first trimester of pregnancy. Unnecessary intake of medicines or hormones can cause anything from incorrect embryo formation to miscarriage."

Lead poisoning still occurs in the United States despite extensive prevention efforts and strict regulations. Exposure to lead can damage the brain, kidneys, and nervous and reproductive systems. Fetal exposure to lead can adversely affect neurodevelopment, decrease fetal growth, and increase the risk for premature birth and miscarriage. Lead concentrations of the medications were as high as 2.4 per cent; several medications also contained mercury or arsenic, which also can have adverse health effects. Health-care providers should ask patients, especially foreign-born or pregnant patients, about any use of foreign health products, supplements, and remedies such as Ayurvedic medications. Public health professionals should consider these types of products when investigating heavy metal exposures and raise awareness among health-care providers and the public regarding the health risks posed by such products.

The six patients in this report all were asymptomatic pregnant women whose health-care providers assessed them to be at risk for lead exposure. During 2004–2012, through case investigations and agency sweeps of local stores



triggered by investigations or published reports, a health wing identified 22 oral medications, supplements, or remedies containing high levels of heavy metals. The health wing identified 10 of these 22 products during investigations of the three pregnant women with lead poisoning described in this report.

Overall findings say that pregnant women might be at increased risk for lead poisoning. Reasons include use of certain foreign products and increased bone stores of lead from past exposures. The body's demand for calcium increases during pregnancy to support fetal bone development, which might release these bone stores.

The pregnant women present a unique concern, because lead exposure can adversely affect the health of both mother and child. Fetal lead exposure increases the risks for low birth weight, developmental delay, reduced intelligence, and behavioural problems. Pregnant women exposed to lead might be at increased risk for gestational hypertension and spontaneous abortion. Exposure to other heavy metals, such

as arsenic and mercury, also can have adverse health effects. Two of the six patients miscarried before 20 weeks' gestation. Both patients were taking Ayurvedic medications to promote fertility, and it is unknown whether underlying reproductive problems or heavy metal exposures contributed to the miscarriages.

Numerous cases of heavy metal poisonings associated with the use of foreign medications, supplements, traditional remedies, or other health products have been documented. In one study, 20 per cent of South Asian herbal medications purchased in contained heavy metals. Heavy metals might not

Numerous cases of heavy metal poisonings associated with the use of foreign medications, supplements, traditional remedies, or other health products have been documented

be listed as ingredients and might only be identified by testing. Some heavy metal inclusion might result from incidental contamination during production (e.g., the use of contaminated raw ingredients or poor manufacturing equipment), whereas other inclusion might be intentional for perceived therapeutic benefits.

The cases of lead poisoning described in this report were associated with the use of Ayurvedic medications. Ayurveda is a millennia-old medical system closely connected to traditional culture and religion. Most Ayurvedic medications are marketed either as dietary supplements or for drug uses not approved by the Medical Council. Although not all Ayurvedic medications include heavy metals intentionally, all mentioned three patients in this report used "rasa shastra" medications. Rasa shastra is a type of Ayurvedic medication that is intentionally prepared with metal, mineral, or gem compounds. These compounds called bhasmas that are sometimes indicated on product labels. 



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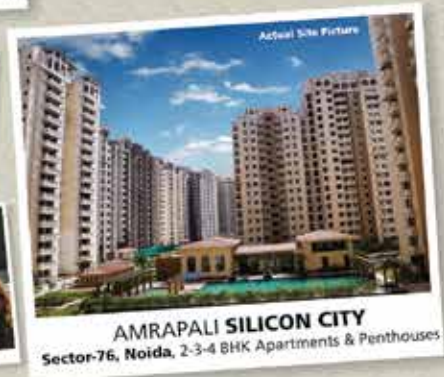
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