

A COMPLETE HEALTH JOURNAL



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HEALTH IN PERIL

Air pollution is a contributing factor for the burden of respiratory and cardiovascular illnesses, increased health-care costs, lost worker productivity, as well as reduced life expectancy among local populations



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Advertisements & Marketing
Gautam Gaurav, Abhinav Kumar
Email:sales@doublehelical.com

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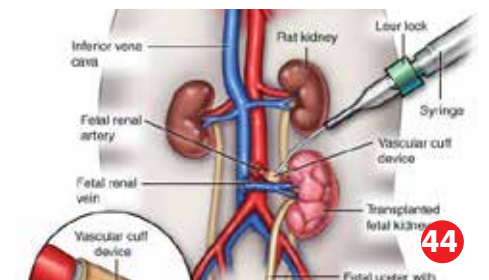


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Stage set for State Health Awards 2016

Dear readers,
Thank you for your continuous support and encouragement to us in carrying out our commitment to bring to light and analyse the latest news and happenings in the healthcare sector. We are glad to inform you that Double Helical is going to hold the Jaipur edition of the event

on November 26, 2016 to honour the healthcare/allied professionals from the state of Rajasthan. More than 400 doctors from Rajasthan and Delhi are likely to witness the State Health Awards 2016 in Jaipur.

Like every month, this time too we have brought out a very comprehensive issue. This issue highlights major life threats points which need to be courageously raised with bold and analytical study. Air pollution is a contributing factor for the burden of respiratory and cardiovascular illnesses, increased health-care costs, lost worker productivity, as well as reduced life expectancy among local populations.

It is a matter of concern that air quality deteriorated alarmingly a day after Diwali as pollution levels spiked more than five times higher than normal badly impacting millions of lives. The Respirable Suspended Particulate Matter (RSPM), which directly affects breathing, has gone up by five times from the national ambient air quality standard, stated scientists from System of Air quality and Weather Forecasting and Research (SAFAR). The 24-hours average of PM10 was recorded at 427mg per cubic metre and PM2.5 was at 278µg/m³, almost five times higher than the prescribed standard of 100µg/m³ and 60µg/m³ respectively.

The health sector can play a central role in the formulation of a multi-sectoral approach to the prevention of exposure to air pollution. It can engage and support other relevant sectors (transport, housing, energy production and industry) in the development and implementation of long-term policies to reduce the risks of air pollution on health.

These pollutants can harm the heart and brain as well. People with existing heart or lung diseases such as asthma, chronic obstructive pulmonary disease, congestive heart disease, or ischemic heart disease are at an increased risk of admission to hospitals based on the severity of already existing problem.

Human eyes are sensitive and prone to irritation from allergies, chemicals and pollutants in the air. Some people might notice their eyes are red and itchy on days air pollution is high. Manifestations of air pollution can range from minimal or no symptoms to a chronic discomfort and irritation in the eyes. There may also be specific situations, in contact lens wearers for example, where the eyes may be adversely affected by air pollution. Despite the presence of air pollution in many indoor and outdoor environments, its effects on our eyes are often overlooked by us. We need to understand the effects of air pollution on eyes and what can be done to mitigate the problems.

As a part of our special issue this time, we also highlight the issue of kidney transplant. Each year, hundreds of people die while waiting for an organ transplant. There is a shortage of organs, and the gap between the number of organs donated and the number of people waiting for a transplant either kidney or liver is getting larger. Transplants, as an option, have successful outcomes, and the number of people needing a transplant is expected to rise steeply due to an ageing population and an increase in organ failure.

Kidney transplantation takes place generally at the end stage renal disease. The donor in kidney transplantation can either be a living person or a deceased person. According to the statistics, the most frequent organ transplantation is the kidney transplantation. It is not an emergency surgery and patients can be managed with dialysis. So, no patient should die because of non availability of organs. The success rate is very high in this type of transplantation as there are many ways in which a human body can be supported for a while through dialysis in order to purify the blood.

Therefore we can say that the criticality of kidney transplantation is comparatively less. With the number of kidney transplants in India averaging in the range of 3,000-3,500 per year whereas about 150,000 patients require kidney replacement, kidney disease is emerging as a major, though silent killer. Transplantations of one organ from one human being to another have always been a rigorous process which needs lot of care.

You will also read our special story on hearing. The ability to hear sounds is closely linked to mental development. The development of vocal skills is dependent on normal hearing. Of late, the problem of hearing loss is on the increase worldwide.

Hearing loss can be present at birth which is called as congenital hearing loss or it can develop after birth when it is called acquired hearing loss. The hearing loss occurring after the speech and language development is termed as post-lingual hearing loss. Having hearing loss since birth and not developing speech and language is termed as pre-lingual deafness. Post-operative speech and rehabilitation programme is the most important part of cochlear implant, a unique method to re-construct audition for patients with severe to profound hearing loss. The success of the cochlear implant depends on good speech hearing rehabilitation. The implanted child needs to understand the auditory signals perceived by his brain to comprehend the speech and communicate using acquired speech and language abilities.

The current issue covers many more interesting stories. Happy reading.

So, happy reading!

Amresh K Tiwary, Editor-in-Chief

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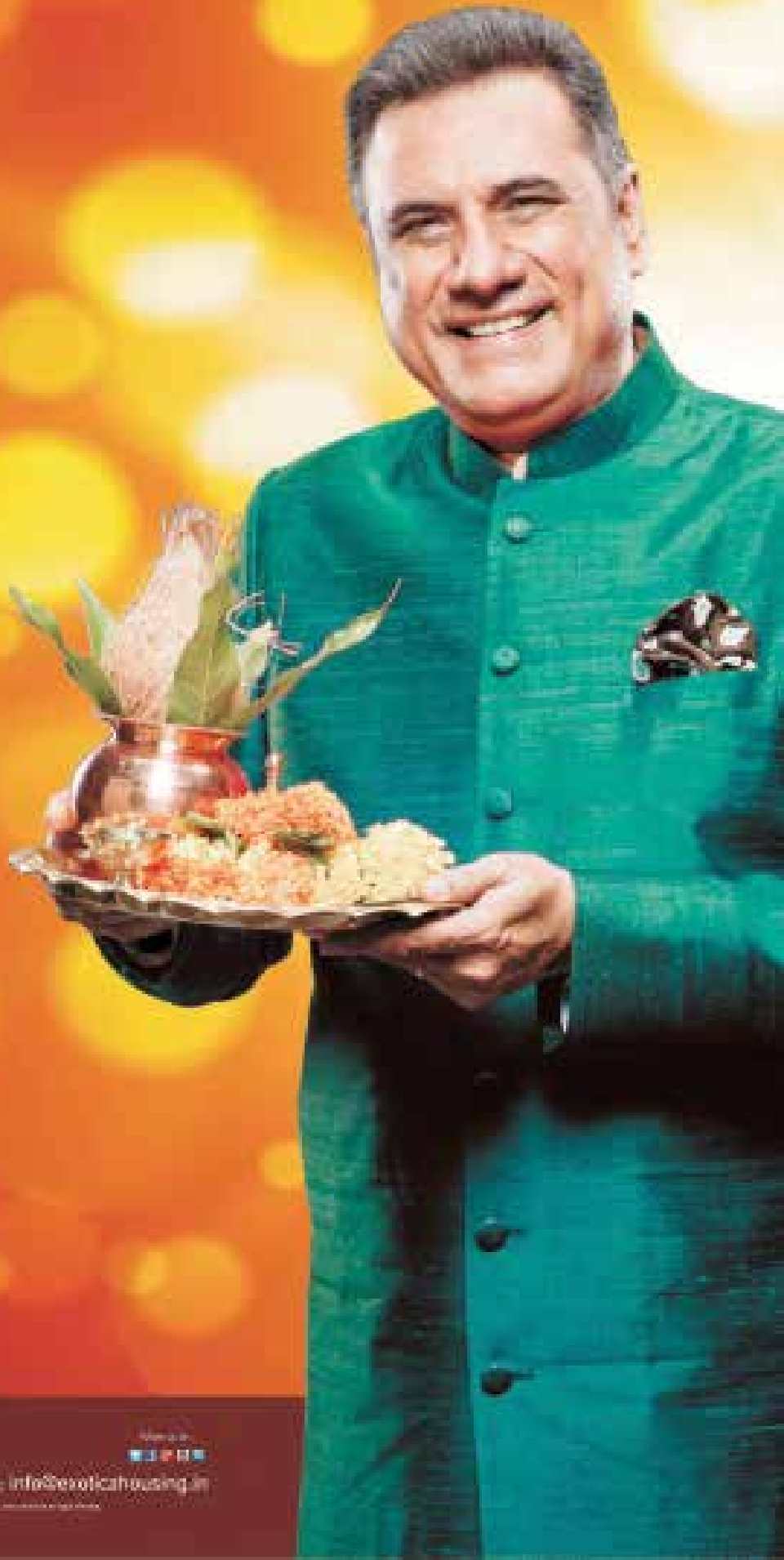
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Bill Gates and J P Nadda discuss initiatives for strengthening the health systems in India



Bill Gates, Co-Chair & Trustee, Bill and Melinda Gates Foundation recently called on Union Minister for Health and Family Welfare, J P Nadda and discussed various issues relating to the health sector in India. During the meeting, Gates expressed appreciation for the initiatives taken by the ministry towards strengthening the health systems, particularly in expanding the coverage of immunisation through Mission Indradhanush, increasing the basket of vaccines and the choices for women in reproductive healthcare.


The Gates Foundation reinforced their commitment in supporting the Government and Ministry of Health & Family Welfare (MoHFW) on shared health priorities, including the National health Protection Scheme (NHPS). Faggan Singh Kulaste and Anupriya Patel, Ministers of State for Health and Family Welfare were also present in the meeting.

Health Minister J P Nadda stated that the Government is committed to providing universal health coverage to all citizens. He added that the Government understands the significance of improving the delivery of public health provisions including vaccination, family planning and maternal health outcomes, in promoting all-round growth and development of women and children who form the bedrock of a healthy nation.

The Health Minister appreciated the efforts of Gates Foundation in complementing the efforts of the Government in the health sector, which has enhanced the capacity of the health workers for more effective implementation of the projects. “We acknowledge that the cooperation is mutually beneficial, desirable and necessary for achieving our vision of a Healthy India and look forward to working with the Gates Foundation and leveraging their expertise to support our efforts in strengthening our health systems,” Nadda said.

The Health Minister elaborated on the success of Mission Indradhanush aimed to cover all missed-out and left-out children and pregnant women with cover of full immunization.

In addition to the electronic Vaccine Intelligence Network (eVIN), Mr. Bill Gates also appreciated the steps taken in reproductive health where women have now more choices to plan their family.

Also present in the meeting were, C K Mishra, Secretary (HFW) Dr. (Prof) Jagdish Prasad, DGHS, and other senior officers of the Health Ministry and representatives of Gates Foundation. 

ives towards
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India embarks on a mission mode to end TB

By Team Double Helical

Tuberculosis (TB) is one of India's severest health crises. It kills two Indians every three minutes and more than 1,000 people every day. India has the highest TB burden in the world.

The Global Tuberculosis Report 2016 released in October 2016 by the World Health Organization (WHO) has updated the estimate of incidence – that is, the number of new tuberculosis cases in a year – to 2.8 million in 2015. The updated estimate of tuberculosis deaths, excluding deaths of HIV-positive people, is 478,000 in 2015 and 483,000 in 2014.

The India TB Research and Development Corporation (ITRDC), a flagship initiative by the Indian Council of Medical Research (ICMR), aims to bring together all major national and international stakeholders to develop new tools (drug, diagnostics, vaccines) for TB. The vision of the corporation is “to achieve Elimination of TB from India by investing in new tools (drugs, diagnostics, vaccines) as well as provide these solutions to the world.”

Elaborating on the initiative, Dr Soumya Swaminathan, Director General, ICMR, stated that under the guidance of the Prime Minister, TB has been taken as a national priority. The aim is to reduce the incidence of new TB cases by 95% and reduce mortality by 95%. She also stated that research will be expedited to improve cure rates and to accelerate decline in new cases. She added that implementation research will focus on finding and framing strategies to treat TB patients by involving all stakeholders. The aim is to ensure that all TB patients get assured quality diagnosis and treatment.

The initiative has been undertaken after a consensus from the various government, non-government and international research organizations in a high level meeting with officials from MOH&FW, DBT, CSIR, DST, TDB, WHO,



Members of International Scientific Advisory Group


1. Dr. Barry Bloom, Distinguished Service Professor, Harvard University, USA, Chair ITRDC
2. Dr. Madhukar Pai, Director, McGill Global Health Programs, Canada (via skype)
3. Dr. Samir K. Brahmachari, Founder Director, CSIR - IGIB, & Chief Mentor OSDD, Delhi
4. Dr. Christian Lienhardt, Senior Research Adviser, Global TB Program, Geneva
5. Dr. K. Srinath Reddy, President, Public Health Foundation of India, New Delhi
6. Dr. Stefen H. E. Kaufmann*, Professor, Max Planck Institute, Germany (via Skype)
7. Dr. Peter Small, Founding Director, Global Health Institute, USA
8. Dr. P. R. Narayanan, Former Director, NIRT, Chennai
9. Dr. Lalitha Ramakrishnan, Professor of Infectious diseases, University of Cambridge, UK
10. Dr. Abdool Karim, Caprissa Professor, Epidemiology & Public Health, Columbia University, US

Gates Foundation in Feb 2016 wherein all the members agreed to support the Corporation.

The concept also has an in-principle by PMO for setting up a new entity. In a few months' time, the detailed landscape analysis of the national and global leads in four thematic areas namely diagnostics, vaccines, therapeutics and implementation research has been done and most advanced leads have been identified for taking forward. The first International Scientific Advisory Group (ISAG) meeting was convened on 9th and 10th November in New Delhi bringing together the eminent international and national TB experts from four thematic areas. The ISAG consisted of 6 international experts and 3 experts from

India.

The members of ISAG were highly appreciative of this unique initiative bringing together most of the organizations working to fight TB in line with the PM's mission of 'SabkaSathSabkaVikas'. The ISAG members were also appreciative of the tremendous progress made in a short span of time and the efforts put in by all the working group members in preparing a consolidated landscape analysis of all national and international leads in each area and short listing the leads along with their plan of action.

The leads identified for taking ahead, the way forward & timelines were critically analysed by the Group and they identified core areas and the strategy to fight TB. 

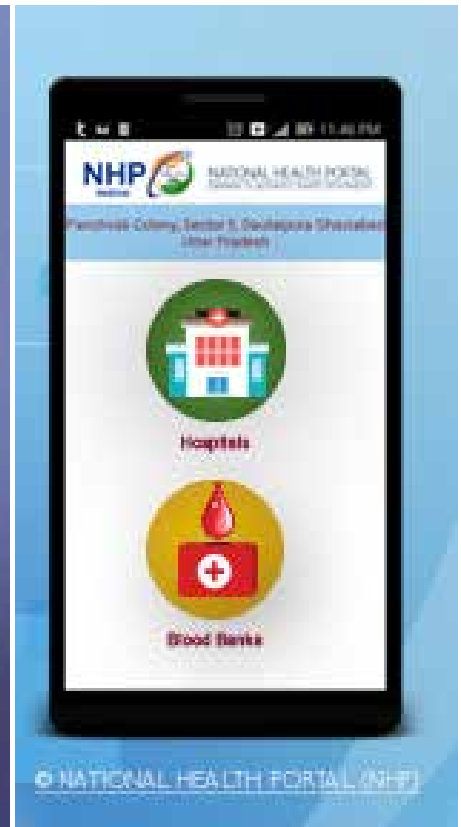
All Health Ministry Mobile Apps to be downloaded from NHP portal soon

“There is a heightened focus on preventive health along with curative health now. Awareness is very important to keep away non-communicable diseases (NCDs)”, said J P Nadda, Union Minister of Health and Family Welfare, while releasing the “Healthy India Initiative/Swastha Bharat-ekpehal” magazine and launched the “No More Tension” Mobile Application.

The eBook versions of the magazine were also released. This launch, which is part of the Government’s Digital India programme, is in line with its commitment to prioritize public health and strengthen citizen-centric health services by leveraging India’s expanding mobile phone penetration.

Speaking on the occasion, Nadda emphasized on the importance of stress management in the life of an individual and how stress affects everyone irrespective of age, gender, financial status, etc. The Health Minister said that people suffer from stress related problems due to their busy work life and hectic schedule, which in turn results in loss of productivity. “NCDs are acquired lifestyle ailments, which place a very high burden through the healthcare cost,” Nadda added. The Health Ministry is working on the theme of “Catch them Young” and is working on effecting behaviour change among the young to keep away from such habits that cause NCDs, the Minister informed. He added that through pictorial books, health messages shall be brought out that will educate the children and youth about healthy living habits and activities.

Highlighting the importance of such initiatives, J P Nadda, further added, “These initiatives will strengthen our health communications initiatives and will bring us closer to people who need our services the most.” He said that soon all Health Mobile Apps launched by the




Health Ministry shall be available at one click on the National Health Portal (NHP)

The “Healthy India Initiative/Swastha Bharat-ekpehal”, a quarterly magazine, will cater to health related information and will raise awareness about healthy living. The magazine will cover different aspect of health: women and child health, elderly health, seasonal ailments, daily nutritional needs, safe medication practices, home remedies healthy living and many more. The magazine will be made available at all the government facilities up to the sub-centre and will be available free of cost. The e-version of this magazine is also available for download. The current issue is in Hindi and English and the next version will be available in 13 other languages.

Stress management mobile application

“No More Tension” helps users to manage stress. The main objective of ‘No More Tension’ is to provide information to users regarding stress such as, what is stress, its effects, symptoms and management. The application allows the user to measure their stress level and learn various techniques like yoga and meditation to reduce stress. Currently, the application is available for download on Google Play Store and App Store and will be available shortly on Windows.

Also present during the function were Dr. (Prof) Jagdish Prasad, DGHS, Shri K B Agarwal, AS (HFW), Dr. NirajKulshrestha, Director, Central Health Education Bureau (CHEB), Dr. Nimesh Desai, Director, Institute of Human Behaviour & Allied Sciences (IHBAS) and other senior officers of the Ministry. 

MoS Health visit to Health Pavilion at IITF 2016 pargati madain New Delhi





Take care of **Your Heart**

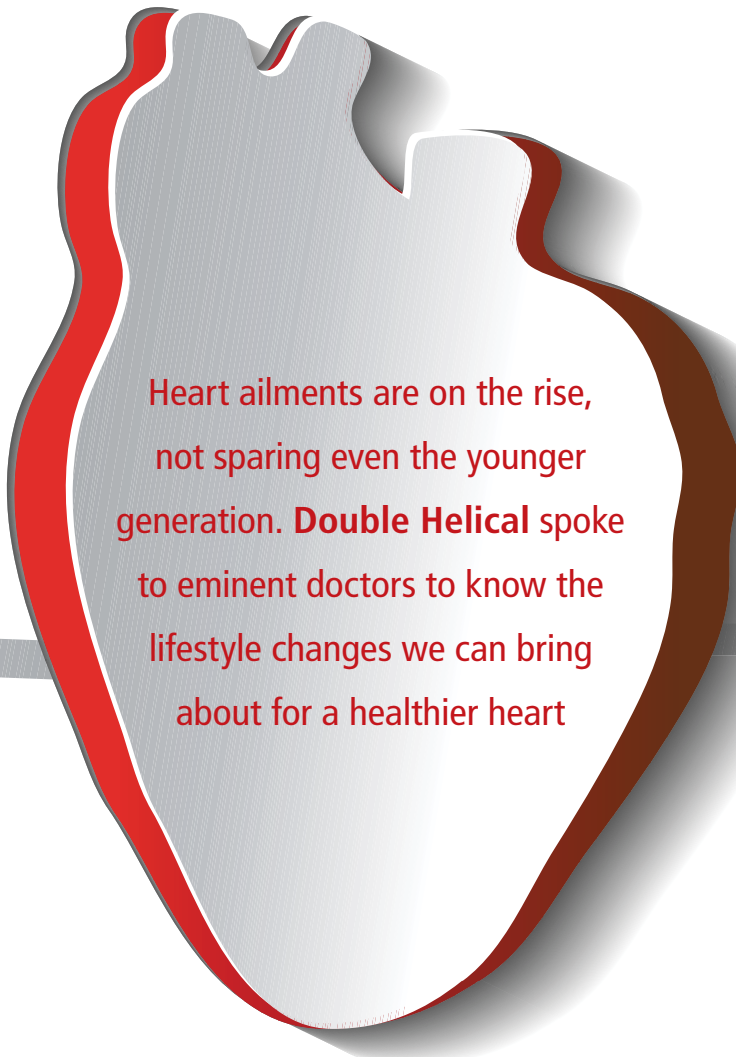
Heart is undoubtedly the most important part of our body, and believe it or not, our everyday activities have a direct impact on our heart's health. Recently, there has been a sudden increase in the number of heart patients, and shockingly, the heart diseases is spreading in the younger generation as well.

Heart disease is the leading cause of death in both men and women. With over 30 million heart patients in India, men account for more than 50% deaths. However, heart problems are increasing

tremendously in women as well. Out of the 30 million patients, 14 million reside in urban areas, while the other 16 million live in rural areas. The disease usually surfaces in people of 45 years or more. However, people in their late twenties and early thirties are also facing heart problems.

Fortunately, a number of treatment options are today available for heart ailments. Also, you can keep your heart healthy, if you keep certain safeguards. Most of the people develop heart disease at an early age because of their unhealthy eating habits.

Dr. Amar Singhal, Senior Interventional Cardiologist and Head Department of Cardiology, Sri Balaji Action Medical Institute, said, "Nowadays heart disease has escalated more among the younger generation with a significant risk in both genders. Five years ago, we hardly saw young patients with heart problems. But now, we get many cases where people in the 25-35 age groups are diagnosed with heart disease. According to a study over 70 per cent of the urban Indian population is at a risk of being diagnosed with some or the other heart disease. This is



Heart ailments are on the rise, not sparing even the younger generation. **Double Helical** spoke to eminent doctors to know the lifestyle changes we can bring about for a healthier heart

mainly due to unhealthy eating habits, lack of physical activity and stress.”

Food, however, is one of the main reasons why people develop heart problems. Foods that cause digestion problems should be avoided. There are people who frequently overeat, this doesn't only develop obesity in them, but also causes heart problems in the long run. The easy availability of junk food is making people lazy, and taking them towards heart diseases. One must always try to find the healthier alternative to junk food for a healthier heart. Here are some healthy tips.

YOU MUST AVOID:

- **Fried Food**
- **Milk Products**
- **Acidic Foods**
- **Cold/Frozen Food**
- **White Flour**
- **Red Meat**

YOU MUST EAT:

- **Seasonal fruits and vegetables**
- **Whole meal bread**
- **Salad**
- **Sprouts**
- **Buttermilk**
- **Cottage Cheese**
- **Indian Gooseberry or Amla**

Another major reason behind cardiac diseases is stress. Stress can have a direct and significant effect on the heart and can cause severe heart diseases in the long run. It is one of the most common causes, and one should indulge into some activity or the other to control stress. The busy life schedules of the people have brought them close to unnecessary stress, some start considering smoking to let out stress, some using pills to relax or consuming alcohol but instead of reducing stress, these silently affect their body adversely.

Dr. Viveka Kumar, Sr. Consultant



- Interventional Cardiology & Electrophysiology, Max Super Speciality Hospital, said, “Yoga is the most proven methods to control stress. Meditation has also been scientifically proven to prevent heart diseases. It calms your body and de-stresses you completely. Playing some sport, jogging, reading etc. are some other ways to release stress. You must note that suppressed stress for a long period of time weakens the heart, and makes it prone to several heart problems in the long run”.

People who smoke regularly are most likely to have heart problems as compared to non-smokers. Smoking is getting really popular these days, even among the younger generation, and they do not realize the harmful effect of the same. Smoking slowly and gradually affects the heart and leads to blockage and strokes. Heavy and regular drinkers

are also vulnerable to heart diseases. Smoking and drinking weakens the liver and the entire digestive system, producing gama, a toxic material that causes heart problems. Many doctors and experts even suggest limiting the intake of tea or coffee. Tea and Coffee is highly consumed these days, and people start their day with it. However, there are some who consume multiple cups of tea/coffee, which has a direct impact on blood pressure.

Ayurvedacharya Dr. Partap Chauhan, Director Jiva Ayurveda, said, “Limiting the consumption of tea/coffee keeps the heart problems at bay. You can make tea with Terminalia Arjuna – it’s a scientifically proven herb, easily available these days. You can also powder it and consume it directly. Also you should keep water in a copper pot overnight and then drink for a stronger heart. Wearing





People who smoke regularly are most likely to have heart problems as compared to non-smokers. Smoking is getting really popular these days, even among the younger generation



Rudraksha seeds has also been proved to benefit the heart.”

According to a report, there are a lot of people who are diagnosed with heart problems which they have had since years. The disease which could have been cured remains undiagnosed and increases over the years. This puts the patients at a heavy risk of heart attacks and strokes. One must get a complete body checkup every 6-12 months to avoid the possibility of any serious disease. Regular checkups also tell you if you are deficient in any nutrition. You can have supplements, or add things to your diet to maintain the nutritional balance. Nutritional deficiencies often put your heart at a risk of stroke.

Dr. Rakesh Kumar Tandon, Medical Director at Pushpawati Singhania Research Institute (PSRI), Delhi, said, “If your family history puts you at a risk of heart disease, you must be careful from

the very beginning. Doing small lifestyle changes and stopping unhealthy eating habits can help you in avoiding heart problems. Apart from this, being physically active is very important. “I have seen so many patients, who have developed heart problems just because of lack of physical activity. People prefer easy life, avoid exercise and continue taking high fat and high carbohydrate diet. That results in excess fat deposition all over the body including arteries supplying the heart muscles. Mental stress and hectic lifestyle with little relaxation further add on to heart problems.”

You must contribute to protecting your heart’s health at all times. Your heart plays a very important role in keeping you up and running, any problem with the heart can endanger your life. 🚫



Coping With **ABORTION**



Abortion is not an easy decision as it has profound emotional and psychological effects on women, in general
BY DR MANISHA YADAV



Do you know that whatever the cause, an abortion can affect both woman's psychology and physiology? Frankly speaking abortion is not safer than full-term pregnancy and childbirth (when pregnancy is safe).

In some studies it is seen that some women report to have a sense of relief after having an abortion and others tend to become depressed due to unwanted abortion or miscarriage. The reasons for relief and depression may also vary from woman to woman.

A woman may need abortion or termination of pregnancy due to multiple reasons. Sometimes, unwanted pregnancies may force such a step, at other times a couple may decide on termination due to other reasons such as severe congenital defects in the foetus or potentially dangerous health complications of the pregnancy.

Psychological side effects of having an abortion are as real as physical side effects. Emotional and psychological

effects following abortion are more common than physical side effects and can range from mild regret to more serious complications such as depression. Post abortion, it is very much necessary to discuss all the risks in detail with an experienced professional who can address all the queries and related concerns.

One of the most important factors related to the negative emotional or psychological effects has to do with your belief about the baby inside of you. Some of the females experience less chance of negative emotional consequences as they have a more detached view of the pregnancy and consider the foetus as an undeveloped life. However, some other women might have a more emotional outlook towards the pregnancy and strongly look at the life inside as a baby. Such women tend to have negative consequences after an abortion or miscarriage.

Following are the possible emotional and psychological risks of having an abortion. The intensity or duration of

these effects will vary from one person to another. Potential side effects include eating disorders, anxiety, regret, anger, guilt, shame, relationship issues, sense of loneliness or isolation, loss of self confidence, insomnia or nightmares, suicidal thoughts and feelings and depression.

Following abortion it is possible for anyone to experience unexpected emotional or psychological side effects. Women generally report that the abortion procedure affected them more than they expected. However, it is often noticed that some individuals are more prone to experiencing some kind of emotional or psychological struggle.

Women with a higher probability of having a negative emotional or psychological side effect include:

- Individuals who obtain an abortion in the later stages of pregnancy
- Individuals with previous emotional or psychological concerns
- Individuals who have been coerced, forced or persuaded to get an



abortion

- Individuals with religious beliefs that conflict with abortion
- Individuals with moral or ethical views that conflict with abortion
- Individuals without support from significant others or their partner
- Women obtaining an abortion for genetic or fetal abnormalities

ADVICE REGARDING ABORTION

- Get Help – Probably, the most important thing you can do when facing an unplanned pregnancy is to communicate with trained professionals who can answer your questions and discuss your individual circumstances with you. You can even consult a psychologist if you are going through anxiety.
- Avoid Isolation – If you are experiencing an unplanned pregnancy, you might have the

tendency to withdraw from others to keep the matter a secret and/or to face the issue alone. Although it can be difficult, try to stay connected with family and friends who can support you. Too much isolation under these circumstances can lead to depression. Feel free to discuss your problem with your loved ones and take them into confidence before arriving at a decision. This will reduce your guilt or anxiety.

- Evaluate Your Circumstances – See the situations listed previously regarding individuals who are more likely to experience one or more side effects. Discuss your situation with someone who can help you give your perspective and understanding.
- Avoid Pressure – Avoid people who are pressuring you to do what

they think is best. Whether you opt to be parent, choose adoption, or have an abortion, you are the one who is going to have to live with your choice. So, the decision has to be 100% your own.

- Talk to Others – See if you can find someone who has gone through an unplanned pregnancy or had an abortion to find out what it was like for them.


Physical side effects after an abortion can vary from woman to woman. It is important to know about the possible detailed side effects of abortion from experienced health professional as well as the doctor. It is mandatory that your period should return about 4- 6 weeks after abortion and you can conceive again after the abortion. It is important to take prescribed antibiotics as directed by your doctor in order to help prevent infection.

Following are the physical side effects that are frequently experienced after an abortion. The possible duration to experience these side effects are 2 to 4 weeks following procedure.

- Abdominal pain and cramping
- Spotting and bleeding

About 5-10% of women suffer from immediate complication. It is important to be aware of the following risks:

- Heavy or persistent bleeding
- Infection or sepsis/PID/ Endometriosis
- Damage to the cervix
- Scarring of the uterine lining (Asherman’s syndrome)
- Damage to other organs
- Perforation of the uterus
- Endotoxic shock and death

It is necessary to have abortion done by a qualified and trained professional. Also, if you have an abortion, you should continue to meet doctor and seek medical attention in order to get healthy and fit as soon as possible. 

(The author is a Medical Practitioner, New Delhi)

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Contact us
Email: editor@doublehelical.com, doublehelicaldesign@gmail.com
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Carrying a life inside of you



Pregnancy is a very crucial period in a woman's life. It requires utmost care in all aspects related to an expecting mother's daily routine, even how you lie down and wake up from bed. So, stay alert and take all safeguards.

BY DR SWAPNIL SHIKHA

The Child is the father of Man" remarked William Wordsworth in a poem 'My heart Leaps Up.' Since 1802, this phrase has appeared in many references and indicates an adult is the product of his habits, manners and behavior that he inculcated during his childhood.

Pregnancy produces many physical changes. Aside from weight and body shape, other alterations in your body chemistry and function take place. The heart works harder, your temperature registers slightly higher, body secretions increase, joints and ligaments are more flexible and hormones are altered.

Mood changes are common, resulting from a combination of hormonal changes and greater fatigue, as well as normal anxiety over body image, sexuality, finances, marriage roles and impending parenthood.

Most women may not experience symptoms of pregnancy on their own. But they may crop up well before you even miss a period. If you are the impatient type, there are many common early-pregnancy clues to look for.

The breasts of pregnant woman may be extra tender as early as a week or two after conception.

The pregnant woman is making so much estrogen and progesterone in early pregnancy that the glands in the breasts start growing, this hormone surge causes breasts to retain more fluids and feel heavy, sore or more sensitive than normal PMS(Premenstrual syndrome) tenderness.

When the fertilized egg implants into the plush lining of the uterus about six to 12 days after conception, spotting (light vaginal bleeding) may occur. "This is harmless, but if any one suspects she is pregnant, let her doctor know, just in case it is something else. In the first trimester, bleeding should be evaluated for three things in particular—miscarriage, an ectopic pregnancy or certain types of infections. Implantation bleeding is sort of a diagnosis of exclusion. That means we rule out the bad things before we can determine this is what it is.

During the first few weeks, your body is working 24/7 behind the scenes to support the pregnancy, and fatigue is a normal response. The extra progesterone produced after conception causes your basal body temperature to rise, which in turn contributes to a lack of energy.

Dr Suman Yadav, Senior Gynaecologist, Pushpanjali Hospital, Gurgaon, said, "In this stage it is advised to take prenatal vitamins early on, eat a healthful diet, drink plenty of fluids to keep your blood pressure high



enough, and rest when you can”.

The pregnant woman might think this comes later, when the baby presses on her bladder, but frequent peeing sometimes starts early. Not only can the swelling uterus put pressure on her bladder, but the extra blood flow to the kidneys also causes them to produce more urine. Nothing, unless the frequent urination is accompanied by burning, urgency or other signs of infection. Do not cut back on fluid intake.

Food aversions and nausea can start as early as two weeks after conception. Progesterone causes a lot of things to slow down include digestive processes, sometimes resulting in constipation or

indigestion. Since stomach does not empty as quickly as it normally does, it thinks there is too much going on in there and wants to purge in some way—either into the gut or out through the mouth. Nausea also is related to human chorionic gonadotropin (HCG), a hormone that can be detected in the mother’s blood or urine even before a missed period. The higher the HCG level (as with twins), the sicker one may feel. Another theory is that nausea and food aversions are a protective effect the body has toward the foetus. If things like free radicals or nitrates in some foods could hurt a growing baby, you may naturally develop a distaste to steer clear of them.

Many women find ginger and lemons soothing. Take advice from doctor about special vitamin B6 supplements that may alleviate nausea. Acupressure wristbands also can help. If you are vomiting frequently or cannot hold down any liquids, see your OB for possible IV hydration and medication.

Many women mistake about bloating, cramps and backache, the common early signs of pregnancy, for PMS symptoms, but actually they are caused by hormonal changes and the growth of the uterus. Nothing, unless the pain is severe or symptoms are accompanied by bleeding, the woman always faints before she finds out she is pregnant. Progesterone can contribute to lightheadedness by making your body run hotter and causing blood vessels to dilate, which lowers blood pressure. In addition, it takes a little longer than normal for blood that’s been diverted to the uterus to make its way back to your brain when you stand up. Dizziness also can stem from low blood sugar. If one is not eating properly, she can feel light headed.

Move slowly, and do not leap out of bed or off the couch abruptly. Keep blood sugar stable by eating every three to four hours, and drink plenty of water to keep your blood pressure steady. Avoid overheating, and if you do feel faint, sit down with your head between your knees. Some women have more headaches early in pregnancy. They are related to the increased progesterone levels; plus, headaches can result if you don’t drink enough fluids or if you are anemic.

Migraines become less frequent as pregnancy progresses. Fluctuating hormones tend to make headaches worse, and estrogen levels are more stable during pregnancy.

The following is a list of the most common discomforts of pregnancy and some guidelines for coping with them.

NAUSEA AND VOMITING

- Eat small frequent meals. Going too long without eating during pregnancy can cause nausea or

make it worse. If you experience continuous nausea, eat every one to two hours.

- Avoid greasy, high-fat foods. They are more difficult to digest.
- Consume dry starch foods, such as crackers, toast or cereal, in the morning before you get out of bed. Also, it helps if you stay in bed for 20 minutes or so after eating and get up slowly from the bed for a sudden change of position can aggravate nausea.
- Drinking carbonated beverages as well as peppermint, spearmint and chamomile teas may help.
- Eat plenty of carbohydrate-rich foods such as cereal, fruit, bread and rice. They are easy to digest and provide energy.
- Take prenatal vitamins only as directed. If they cause stomach upset, ask your practitioner if you can delay taking them for a few weeks.
- Some foods, such as milk or tea that are soothing to one woman may be upsetting to another. However, most women find cold foods and beverages easier to tolerate than hot ones.
- Eat a high-protein snack before bed to stabilize blood sugar.
- Limit your consumption of coffee. It stimulates acid secretion, which can make the nausea worse.
- Consume liquids separately from meals, waiting about 20 to 30 minutes.
- Wear sea sickness wrist bands. These can be found at most pharmacies.

CONSTIPATION

- Increase the amount of fiber in your diet, eating foods high in fiber such as fruits, raw vegetables, whole grain products, nuts and dried fruits. Choose a breakfast cereal that has at least 5 grams of fiber per serving. These foods help soften the stool and promote natural bowel activity.
- Drink a lot of fluids.
- Exercise, even walking, will help

Psychologically, holding children responsible for one's failure and unfulfilled desires can often result in harsh and unreasonable criticism of children which will in turn affect children's perceptions about self, society and life in general.

relieve constipation.

- Eat prunes or figs, or drink prune juice. These fruits contain a natural laxative.
- Avoid laxatives. If the problem is not resolved with the above suggestions, let your health care practitioner know. Stool softeners that are safe during pregnancy can be prescribed.
- Iron supplements can aggravate constipation — the prescription for iron can be adjusted if it becomes a problem.

HEMORRHOIDS

- To help avoid hemorrhoids, prevent constipation by maintaining a diet that is high in fluids and fiber.
- Witch hazel or Tucks pads can be applied to the hemorrhoid area to relieve symptoms.
- Avoid over-the-counter laxatives. If hard stools are aggravating hemorrhoids, stool softeners can be used, but first consult your practitioner for specific suggestions.

FATIGUE

This is very common during the first trimester. Get as much sleep or rest as you can — even short naps will help. Your energy level will pick up after the first three months. However, fatigue and insomnia tend to recur in the last months of pregnancy. A warm bath,

massage or hot drink before bed often helps you relax and get ready to sleep.

HEARTBURN

Try eating smaller but more frequent meals. Avoid highly seasoned, rich and fatty foods. Do not lie down flat after eating. If you must lie down, elevate your head and shoulders with pillows. Carbonated beverages and milk often can help alleviate heartburn. Certain antacids are not recommended during pregnancy. Check with your health care provider before using over-the-counter antacid preparations.


BACKACHE

Lower back pain is common during pregnancy. It is caused by the shift in posture necessitated by carrying extra weight in front. Try not to stand in one position for too long. An exercise called the pelvic rock will help alleviate back pain and strengthen the lower back muscles that experience the most stress. Elevating the feet onto a stool while sitting will help.

DIZZINESS

Dizziness or lightheadedness can be caused by low blood sugar or a sudden change of position. To help avoid this feeling, move slowly when getting up from a sitting or lying position. Eat well and frequently. Women who are prone to low blood sugar should carry snacks at all times. Juices and fruit are particularly good choices.

SWELLING OF THE HANDS AND FEET

Slight swelling of the hands and feet are common in the later stages of pregnancy. Adequate fluid intake is always important. Improve the circulation in your legs and feet by elevating them as often as possible. Lie on a bed or floor and raise your legs up on the wall keeping your knees bent. If you are wearing elastic hose, drain your legs this way before putting them on. 

(The author is Director, Amrapali Healthcare Ltd, New Delhi)



Determining Candidacy

The improvement in performance outcomes of cochlear implants is leading towards a gradual change in candidacy criteria

BY DR DIVYA GUPTA

With advances in the implant technology and improvement in surgical techniques, cochlear candidacy criteria has become more broad-based. Largely, it depends on the feasibility of surgical implantation, weighing the benefits of an implant over hearing aid. Other factors include availability of a supportive family and psychological, educational and rehabilitative situation to keep a cochlear implant working.

AUDIOLOGICAL EVALUATION

For both adults and children, certain hearing and speech tests are done to screen likely candidates. Pure Tone Audiometry (PTA), Brainstem Evoked Response Audiometry (BERA) and Auditory Steady State Response (ASSR) are the tests for hearing evaluation which determine the hearing thresholds. Whereas PTA depends on active cooperation of the subject, thereby only proving utility in people more than 5 years of age, both BERA and ASSR are objective tests which can reliably assess hearing status even in a newborn. For children aged 12-23 months, profound hearing loss, that is, PTA for both ears equalling or exceeding 90 dB is the criteria. Individuals older than 24 months are permitted cochlear implantation when they have severe to profound deafness (cut off PTA threshold value of 70 dB). In either case, the candidate should be fitted with a hearing aid at least for three months prior to the procedure and the benefits should be weighed.

Whenever possible, outcomes from word and sentence recognition testing are also used to determine candidacy. Current guidelines permit implantation in adults with approximately 50-60% words correct on open-set sentence recognition tests.




RADIOLOGICAL EVALUATION

Imaging with High resolution Computed Tomography (CT) of temporal bone and Magnetic Resonance Imaging (MRI) form an indispensable part prior to implantation procedure. They are used to evaluate the temporal bone anatomy of an individual, viz, the inner ear where electrodes are finally inserted, facial nerve which may be accidentally injured during the surgery, cochleovestibular nerve, brain and brainstem.

The latter three are best assessed on MRI and the presence of the nerve and the normality of brain are essential for taking up a patient for cochlear implantation. Absence of cochlear nerve is a contraindication for cochlear implant surgery. CT helps in estimating cochlear patency and may identify any abnormal variations that may affect electrode insertion or may warrant a change in the choice of side of implantation or a different surgical approach.

PSYCHOLOGICAL EVALUATION

The child must have normal IQ for maximal possible benefits of cochlear implant. A much harder to define candidacy criteria involves assessing whether the overall circumstances gyrating around a candidate is able to justify and promote the use of a cochlear implant. It is important to address the patient's and the family's expectations for life after implantation to wade away any unrealistic supposition with the surgery and to make them prepared for alternative pathways if the post-implant performance is not as expected. Postoperative speech and hearing rehabilitation is an equally significant task, which may continue extensively for two years and relies totally on the patient's (in case of post-lingual deafness) and family's motivation. 

(The author is Senior Research Associate, Department of ENT & Head Neck Surgery, Maulana Azad Medical College)



Crucial Aftercare

Post-operative speech and rehabilitation programme is the most important part of Cochlear Implant, a unique method to re-construct audition for patients with severe to profound hearing loss

BY SANJEEV KUMAR

The success of the cochlear implant depends on good speech hearing rehabilitation. The implanted child needs to understand the auditory signals perceived by his brain to comprehend the speech and communicate using acquired speech and language abilities.

After six weeks of the operation, the audiologist fits the external speech

processor and switch on the device. Thereafter, he connects it to the computer and adjusts the settings on the device. As soon as, the device gets switched on, the speech processor starts sending signals to the electrodes in the cochlea for the first time. After this, the speech microphone of the processor is activated and the patient starts hearing for the first time and it is usually like buzzing sound or

mechanical sounds.

Speech and Hearing rehabilitation sessions after Mapping

Mapping or MAPping is the term used for programming a cochlear implant according to the needs of its user. The program actually stimulates the electrodes of the implant and thereby determines the exact amount of signal (electric activity) required for the patient to optimize the cochlear




implant to any sound. This is done by connecting the cochlear implant processor to a computer. The computer then makes changes in the input to the electrodes array that is implanted into the cochlea. By giving series of acoustic signals in the form of “beeps” and measuring the patient response, the audiologist adjusts the T- and C-levels for each electrode. T-Levels, or Thresholds, are the softest sounds the cochlear implant users can detect while C-Levels are Comfortable loudness levels that are tolerable for the implant users.

The audiologist also adjusts the stimulation rate or programming strategy that is used to translate acoustic sound into the correct combination of electrode stimulations to give the cochlear implant user the same sensation of sound which a normal person would have.

After the implant is ‘switched on’, the patient usually takes few weeks to get used to hearing with the implant. At the same time, the audiologists keep on making adjustments to the computer settings as per the requirement and the performance of the child. Simultaneously the implanted child receives lessons from a Speech & Hearing Therapist who helps in identifying different sounds and distinguishes vowels and consonants.

Overall, rehabilitation is an important stage of cochlear implant where the patient learns to make meaningful response to various sound stimuli coming to the brain. Speech therapy is an important part of rehabilitation process where the child learns about motor control to produce meaningful words and sentences.

The training is usually longer and more complicated in the case of children who are born deaf. While later deafened adults generally adapt faster to the use of their implant. 



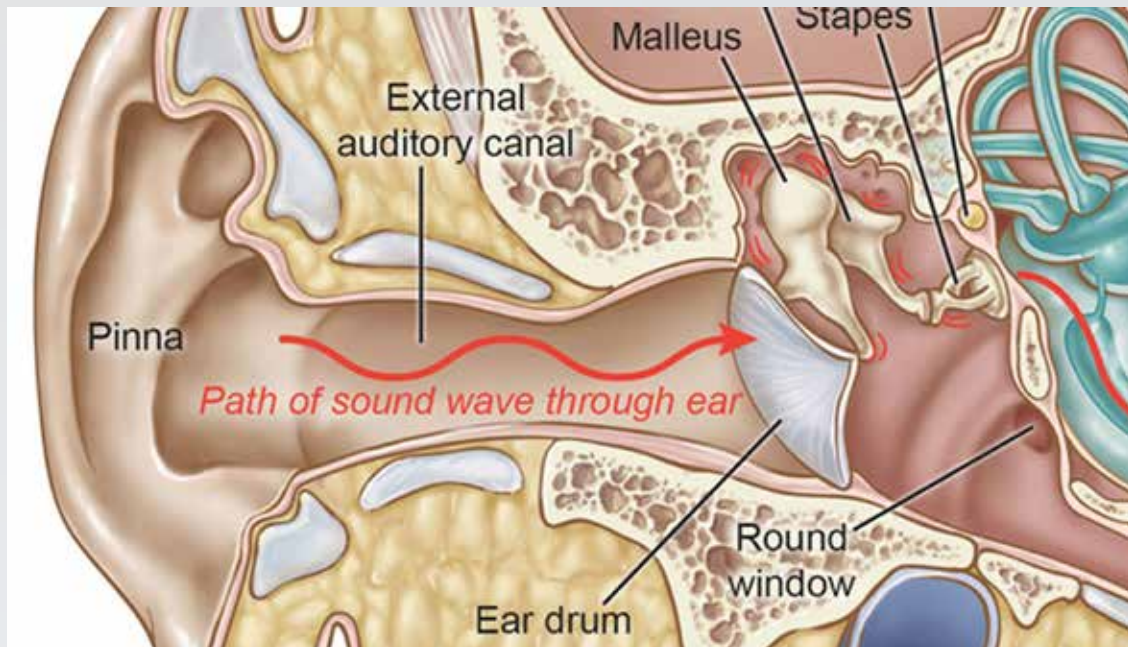
(The author is Audiologist, Cochlear Implant Program, Lok Nayak Hospital, New Delhi)

Lend them a Patient Ear

Hearing loss calls for sustainable community ear and hearing care. Persons with hearing disorders, especially children, should not face exclusion from communication as it can lead to feelings of isolation, loneliness and depression.

BY DR A K AGARWAL





Hearing loss is one of the most common sensory impairments affecting the population worldwide. In developing countries, children with hearing loss or deafness rarely receive schooling. Persons living with disabilities, including hearing loss, also have a much higher unemployment rate. Exclusion from communication can lead to feelings of isolation, loneliness and depression. Besides these, hearing loss affects social and economic development in communities and countries

Childhood onset hearing loss can be congenital or as a sequel to infections such as otitis media, meningitis, rubella etc. Adult onset hearing loss can be a result of age (presbycusis) and noise induced hearing loss. WHO classification classifies hearing impairment according to pure tone averages in the better hearing ear. The following table shows the WHO grades in hearing impairment

There are over 360 million persons in the world living with disabling hearing loss. Out of these 32 million are children. Many more suffer with lesser degrees of hearing loss. Most of those with hearing loss live in developing countries.

Amongst the countries of the WHO South-East Asia region, the prevalence of disabling hearing loss varies from 4.2% to 16.6%. The reported prevalence in India is 6%. Based on this, it is estimated that over 70 million persons in India are living with hearing loss equal to or greater than moderate degree.

Morbidities which are associated with hearing loss, such as impacted wax and chronic otitis media are frequently encountered in the community. Chronic suppurative otitis media (CSOM) is one of the most common infectious diseases of childhood. It is characterized by presence of persistent discharge from the ear. The prevalence of this condition varies from 1% to 46% across the world.

As per WHO, 65–330 million individuals across the world are suffering with 'draining ears.' More than half of those of those affected with CSOM develop significant hearing loss. Not only does this cause long-term effects on the development of language, auditory and cognitive skills, but it is also associated with many dangerous and life-threatening complications. This morbidity accounts for 28,000 deaths (in one year) and a disease burden of over 2 million DALYs. Over



90% of the burden is borne by countries of South-east Asia and Western Pacific regions, Africa, and ethnic minorities in the Pacific Rim.

Another clinical entity commonly encountered in the community is impacted wax. Wax is a normal secretion of the ear, but its impaction in the ear canal can lead to unpleasant symptoms and is occasionally associated with serious squeal, including hearing loss, social withdrawal, poor work function and perforated eardrums. This is a major cause of primary care consultations and treating impacted wax can pose a significant financial burden on governments.

As per WHO, 50% of all cases of hearing loss can be prevented. Based on the population strategy for prevention of diseases, it is essential that causative morbidities with high or moderate frequency of occurrence in the community and effective means of prevention and control should be targeted. In terms of hearing loss, this refers to common conditions such as chronic otitis media, ante-natal and peri-natal problems, wax, excessive noise, ototoxicity, meningitis, measles and mumps.

Prevention can take place at the primordial level through changes in behavior and improved healthcare and at primary level through strategies for improved immunization, improved birth practices, prompt treatment of acute ear infections, avoidance of noise and judicious use of ototoxic medicines among others. Where ear morbidities have already developed and hearing loss has set in, effective secondary prevention can be undertaken through early detection. Early identification is important to ensure that persons with ear diseases and hearing loss can receive suitable management.

Persons with ear morbidities, such as suppurative otitis media, otitis media with effusion and wax impaction can be benefitted through a variety of medical and/or surgical interventions. Those who do not benefit from such

Prevention can take place at the primordial level through changes in behavior and improved healthcare and at primary level through strategies for improved immunization, improved birth practices, prompt treatment of acute ear infections




management techniques, can be effectively rehabilitated, if suitable actions are initiated early. Use of hearing devices, such as hearing aids and cochlear implants can help many. Others may benefit from sign language education and other modalities.

A possible barrier to timely diagnosis and care is the lack of awareness about ear and hearing conditions. Most parents experience difficulties in recognizing hearing loss in their children, Delay in diagnosis and management of congenital hearing loss leads to significant adverse impact on the linguistic and academic outcome. A variety of unhealthy beliefs and practices regarding ear care and ear conditions are widely prevalent in community. Self-cleaning of ear, use of

home remedies and stigma attached to ear problems contributes to the high prevalence of these morbidities. Added to this is the lack of information about the consequences of common ear morbidities and their treatment.

The situation is further aggravated by a lack of suitable human resources for ear and hearing care and poor availability of the required services at grassroots level. The paucity of services for primary ear care along with a lack of training resources, adds to the growing burden of ear diseases and hearing loss.

World Health Assembly passed a resolution in 1995 for prevention of deafness which focuses on developing primary ear and hearing care services within countries, integrated within its primary health care system. The resolution encouraged the WHO Member States to develop their own programmes for prevention of deafness, which target its common causes through a primary health care system approach. India took its first step in this direction with the implementation of the National Programme for Prevention and Control of Deafness. The programme is currently being run in over 220 districts of India. Delhi was one of the pilot states which initiated the programme in two of its districts in 2006. The programme includes training and capacity development of human resources and provides suitable care for ear diseases and hearing loss at the primary and secondary levels of health care.

It is on account of the high burden of hearing loss especially preventable hearing loss in the country as well as to emphasize on primary ear and hearing care that there is a need to step forward towards effective delivery of primary ear and hearing care along with advancements in the field with affordable high tech care. 

(The author is Professor of Excellence, Ex Dean, Maulana Azad Medical College and Presently Medical Advisor, Apollo Hospital New Delhi)





Health in Peril

Air pollution is a contributing factor for the burden of respiratory and cardiovascular illnesses, increased health-care costs, lost worker productivity, as well as reduced life expectancy among local populations.

BY AMRESH KUMAR TIWARY



Air quality deteriorated alarmingly a day after Diwali as pollution levels spiked more than five times higher than normal badly impacting millions of lives. The Respirable Suspended Particulate Matter (RSPM), which directly affects breathing, has gone up by five times from the national ambient air quality standard, stated scientists from System of Air quality and Weather Forecasting and Research (SAFAR).

The 24-hours average of PM10 was

recorded at 427mg per cubic metre and PM2.5 was at 278mpcm, almost five times higher than the prescribed standard of 100mpcm and 60mpcm respectively

The health sector can play a central role in the formulation of a multi-sectoral approach to the prevention of exposure to air pollution. It can engage and support other relevant sectors (transport, housing, energy production and industry) in the development and implementation of long-term policies to reduce the risks of air pollution on health.

According to Padamshri Dr K Agarwal, National President(Elect) of Indian Medical Association (IMA), New Delhi, these pollutants can harm the heart and brain as well. People with existing heart or lung diseases such as asthma, chronic obstructive pulmonary disease, congestive heart disease, or ischemic heart disease are at increased risk of admission to hospitals based on the severity of already existing problem.

Dr Anup Mohta, Senior Child Specialist, Chacha Nehru, Bal Chikitsalay, East Delhi, said, “The



The health effects of air pollution highlighted by the committee range from childhood pneumonia and asthma to cardiovascular diseases (heart attacks and strokes), chronic lung disease, cancers and low immunity in adults.

twice as fast as adults, taking in more air and pollutants which can adversely affect their growth and immune system.”

A report says that outdoor air pollution in India exceeds nearly six times that of limits considered safe internationally, while more than half of the country's population still burns solid fuels for cooking and heating, often the causes of ill health and early death in children.

Alarmed at the current air pollution levels in the city, the Delhi high court recently termed it like living “in a gas chamber” and demanded an immediate action plan from the Centre and the state government to combat deteriorating air quality.

Zeroing in on emissions by vehicles and construction related particulates as key pollutants in the capital,

the court recently ordered a clampdown on both, asking the government agencies to take steps. “The level of PM2.5 has crossed level of 60, still the government hasn't done anything” the court said, dismissing the plans filed by the environment ministry and the Delhi government as not comprehensive.

As per a report, many families with

elderly members ailing from respiratory illnesses have installed oxygen cylinders at home for emergency purposes because they can't keep running to the hospital for every frequent breathing crisis that arises. The medical practitioners feel that problem needs the attention of not just a single man, but of an entire system, whose combined effort must be to make whole capital city's air breathable again.

After a neck-and-neck race with Beijing over the past few winters, Delhi may soon find itself without a rival for the 'most-polluted-city' crown. The Chinese city is doing its best to fall behind although, as happened last week, it sometimes nudges ahead with a wind-aided spurt.

Dr Vinay Aggarwal, Ex-President, Indian Medical Association, New Delhi and Founder Chairman, Max Superspeciality, Vaishali (Ghaziabad), said, “No doubt, the air quality of capital of India is being



deteriorated day by day due to increasing level of pollution. Despite precautions, many are experiencing the adverse effects of poor air. Almost all of them claimed to be suffering from respiratory problems or chest congestion.”

Dr Vinay Aggarwal added, “The health interventions must be guided by both emission and exposure estimates. A policy that addresses multiple sources of pollution will be critical for prevention and dealing with existing health impacts of air pollution. This is why we have recommended representation of many ministries and



United Nations Children's Fund in a report entitled Clean the Air for Children, released recently, said

that nearly 20% of the world's children who live in India risked developing life-long health complications due to air pollution and in some cases even death.”

Dr Mohta added, “Children are uniquely vulnerable to air pollution – due both to their physiology as well as to the type and degree of their exposure. That is because they breathe



coordination between them. The health effects of air pollution highlighted by the committee range from childhood pneumonia and asthma to cardiovascular diseases (heart attacks and strokes), chronic lung disease, cancers and low immunity in adults.”

It is not simply those who spend a lot of time outdoors who are affected. Even month-old babies are found to be suffering from blockage of the nose due to pollutants. They are unable to breathe normally. All doctors can do is to open up the upper airway by

administering saline drops.

Exposure to high levels of air pollution can cause a variety of adverse health outcomes. It increases the risk of respiratory infections, heart disease, stroke and lung cancer. Both short and long term exposure to air pollutants have been associated with health impacts. More severe impacts affect people who are already ill. Children, the elderly and poor people are more susceptible.

The most health-harmful pollutants

– closely associated with excessive premature mortality – are fine PM2.5 particles that penetrate deep into

lung passageways. Although air quality in developed countries has been generally improved over the last decades, the adverse health effects of particulate air pollution, even at relatively low levels, remain a global public health concern.

WHAT IS PARTICULATE MATTER?



Particulate matter, or PM, is the term for particles found in the air, including dust, dirt, soot, smoke, and liquid droplets. Large concentrations of particulate matter are typically emitted by sources such as diesel vehicles and coal-fired power plants. Particles less than 10 micrometers in diameter (PM10) pose a health concern because they can be inhaled into and accumulate in the respiratory system. Particles less than 2.5 micrometers in diameter (PM2.5) are referred to as “fine” particles and pose the greatest health



Lower levels of air pollution will reduce the burden of respiratory and cardiovascular disease-related illnesses, health-care costs, and lost worker productivity due to illness, as well as increasing life expectancy among local populations

risks. Because of their small size (approximately 1/30th the average width of a human hair), fine particles can lodge deeply into the lungs.

Worldwide 3, 7 million premature deaths are attributable to ambient air pollution in 2012. 2 About 88% of these deaths occurs in low and middle income countries.

REGIONAL BREAKDOWN (LOW AND MIDDLE INCOME COUNTRIES)

- The Western Pacific: 1 670 000 deaths
- South East Asians regions: 936 000 deaths.
- Eastern Mediterranean region: 236 000 deaths
- Europe: 203000 deaths

- Africa: 176000 deaths
- Americas: 58000 deaths

REGIONAL BREAKDOWN (HIGH INCOME COUNTRIES)

- Europe: 279000 deaths
- Americas: 94000 deaths
- Western Pacific: 68000 deaths
- Eastern Mediterranean countries: 14 000 deaths

The WHO maintains a worldwide, public database on urban outdoor air pollution in its Global Health Observatory. The database contains measured outdoor air pollution levels of PM2.5 and PM10 from 1100 cities in 92 countries for the years 2003-2010. These are used for estimating mean annual exposures of the urban population to fine particulate matter. In 2013, WHO began collaborating with major institutions and agencies worldwide in the development of a global air pollution platform that includes data on air pollution concentrations based on satellite monitoring, chemical transport models and ground measurements, inventories of pollution emissions from key sources, and models of air pollution drift – permitting estimates of air pollution exposures even in areas where there are no ground level monitoring stations.

Dr S P Yadav, Member, Medical Council of India, New Delhi, said, “Governments can identify their main



sources of ambient air pollution, and implement policies known to improve air quality, such as promotion of public transport, walking, and cycling (rather than transport relying on private motor vehicles); promotion of power plants that use clean and renewable fuels (e.g. not coal), and improvements in the energy efficiency of homes, commercial buildings and manufacturing.”

Essential accompanying steps

include increasing awareness about the high disease burden from ambient air pollution and its main sources, as well as highlighting the importance of taking action now to implement country-specific interventions. In addition, the use of effective monitoring to evaluate and communicate the impact of interventions is also an important tool in raising awareness. It can help drive policy action that brings benefits for health, climate and the

environment.

WHO estimates that 12.7% of deaths could be averted by improving air quality worldwide. Lower levels of air pollution will reduce the burden of respiratory and cardiovascular disease-related illnesses, health-care costs, and lost worker productivity due to illness, as well as increasing life expectancy among local populations. In addition, actions that reduce ambient air pollution will also cut




Air pollution combines with other aspects of the social and physical environment to create a disproportional disease burden in less affluent parts of society

diseases. It also increases the prevalence of vector-borne diseases like dengue or malaria.

Air pollution is an important determinant of public health. Today, this is especially the case in developing countries where exposure to air pollution is now higher than in developed countries, where mitigation measures led to reductions in exposure. There is significant inequality in the exposure to air pollution and related health risks: air pollution combines with other aspects of the social and physical environment to create a disproportional disease burden in less affluent parts of society.

Mortality from ischaemic heart disease and stroke are also affected by

risk factors such as high blood pressure, unhealthy diet, lack of physical activity, smoking, and household air pollution. Some other risks for childhood pneumonia include suboptimal breastfeeding, underweight, second-hand smoke, and household air pollution. For lung cancer, and chronic obstructive pulmonary disease, active smoking and second-hand tobacco smoke are also main risk factors. These risk factors may contribute to deaths that are caused by ambient air pollution.

Reducing the public health impacts of ambient air pollution requires addressing the main sources of the air pollution, including inefficient fossil fuel combustion from motor vehicle transport, power generation and improving energy efficiency in homes, buildings and manufacturing. Reducing the health effects from ambient air pollution requires action by public authorities at the national, regional and even international levels. Individuals can contribute to improving air quality by choosing cleaner options for transport or energy production. 

emissions of short-lived climate pollutants, particularly black carbon which is a major component of soot emissions from diesel vehicles, and other sources, as well as greenhouse gases (CO₂) contributing to longer-term climate change impacts. Climate change produces a number of adverse effects on health. This includes those from drought and extreme weather events (e.g. windstorms, floods), such as water-borne and food-borne

A person wearing teal surgical scrubs and teal gloves is holding a silver metal case. The case has two latches and is the central focus of the image. The background is a soft, out-of-focus teal color.

Facing a Crisis

ORGAN TRANSPLANTATION HAS ALWAYS BEEN A CRITICAL ISSUE IN INDIA, MAKING INDIA A LUCRATIVE MARKET FOR ORGAN TRADE. THERE IS AN ACUTE NEED TO RAISE AWARENESS ABOUT ORGAN DONATION

BY ABHIGYAN



Transplantations of one organ from one human being to another has always been a rigorous process which needs critical care. For instance, a heart which is donated must be transplanted within four hours after removal from the donor. For a successful transplantation, a team effort is required by doctors; if one person in the team is not cooperating then it is very difficult to transplant any organ successfully.

Transplantation over the past few decades has gradually become the accepted treatment for a number of conditions where organs like the kidneys, heart and liver have irreversibly failed. For a patient with kidney failure an alternative such as dialysis is available till an organ becomes available, but for a patient with liver or heart failure; the only hope of living may be to have an immediate transplant. Organ donation is a gracious act; it reaffirms our faith in humanity.

In the last 12 years, there has been great advancement in the field of organ transplantation in India. People are discussing or talking about the problem of donating organs. Now in our country organs have been donated and transplanted from one patient who is brain dead. The Government is organizing awareness programs to encourage people for donating their organs. A fortnight



program was recently organized by the government in order to create mass public awareness and make people pledge their eyes for donation. The Government promotes awareness programmes for organ donation on both electronic and print media and electronic media. Organ Retrieval and Banking Organisation promotes organ donation at the level of colleges, societies and other forum. This makes way for slow and steady changes in urban areas but not so much in rural areas.

A successful transplantation of heart requires a fast process where heart is transplanted within four hours after the donor is dead. The process of heart transplantation starts from the doctor who is operating on the donor, police in making green corridor, driver who drives the ambulance as fast as possible to reach the hospital where heart is transplanted, and the team of doctors who are operating on the

patient who receives the heart.

STATISTICS

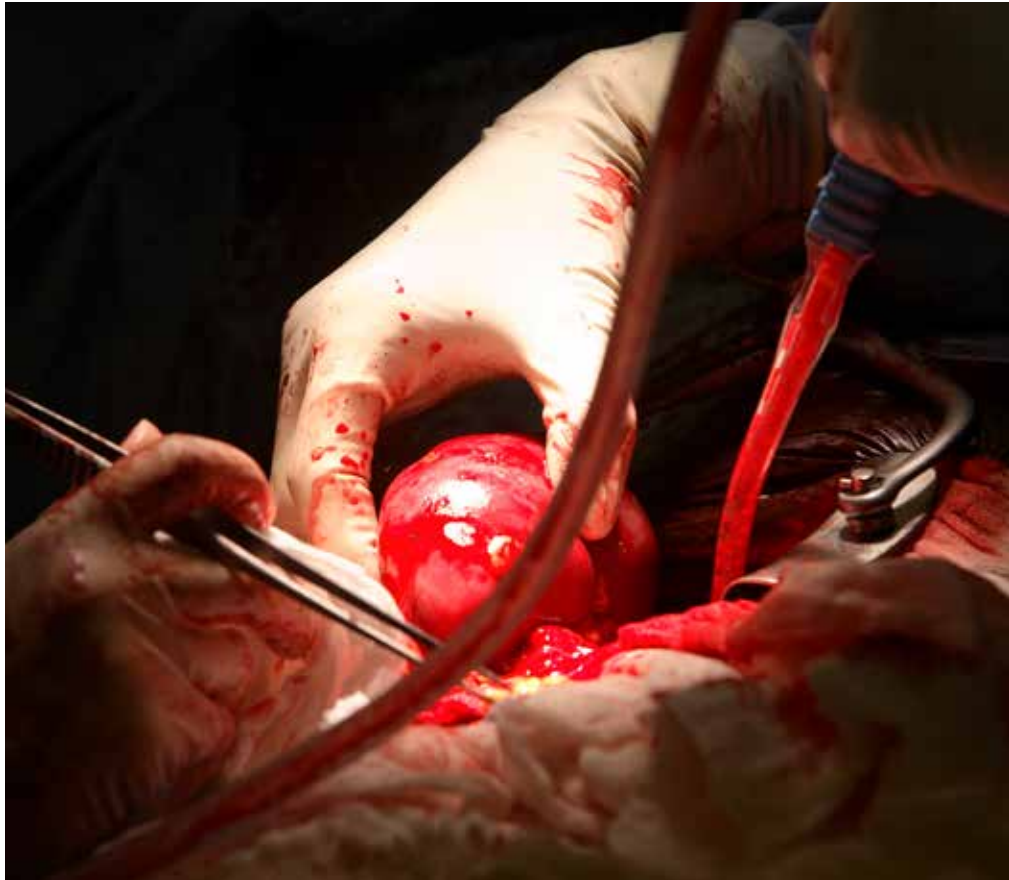
- In India every year nearly:
- 500,000 people die because of non-availability of organs
- 150,000 people await a kidney transplant but only 5,000 get one
- 1,000,000 lakh people suffer from corneal blindness and await transplant nationally, only 0.08 persons in per million populations (PMP) donate, while the total population is 1.2 billion. This is incredibly small figure with respect to total population.
- According to the reports of NOTTO (National Organ and Tissue Transplant Organization), 10750 kidney transplants, 3570 liver transplants and only 29 of heart transplants took place in India. Among this, 14038 transplants were living transplant, while the rest are Cadaver ones.
- 90% of people in the waiting list die without getting an organ.

SALE AND PURCHASE OF ORGANS IS ILLEGAL:

Wholly throughout the world, the trade of human organs is illegal except in Iran. In India before the Transplantation of Human Organ Act in 1994, the trade in organs was legal and it made India a lucrative market for organ trade for the world, but along with it many problems emerged in the market. Due to lack of awareness the lower class people were not compensated properly for their donations, on the other hand some cases showed that the patients were actually unaware about the transplantations.

HEART TRANSPLANT:

Heart transplant is the most critical transplantation among all other transplantation of organs. Apart from the relaxation time of transplantation, its success depends on many other issues, like the state or condition of the



liver, other circulatory action or even age of the receiver body. For a heart transplant, the diseased heart is removed and replaced with the donated heart. During the surgery, a mechanical pump moves blood through the body.

LIVER TRANSPLANTATION:

It is also known as hepatic transplantation. The diseased liver is fully or partially replaced by a healthy and donated liver. It is an option for end-stage or acute liver disease. Immunosuppressive drugs are used to lower the chance of rejection of the transplant by the body and this is the case like all other grafts. Liver transplant is tagged with a controversy where the alcoholic patients get a transplant in order to fight the alcoholic cirrhosis, while other non-alcoholic patients may be considered as more deserving of that transplant.

A successful transplantation of heart requires a fast process where heart is transplanted within four hours after the donor is dead. The process of heart transplantation starts from the doctor who is operating on the donor

EYE TRANSPLANTATION:


In eye transplantation, the cornea part of the eye is transplanted, therefore, it is also called corneal transplantation. Cornea is the transparent part of the eye. The

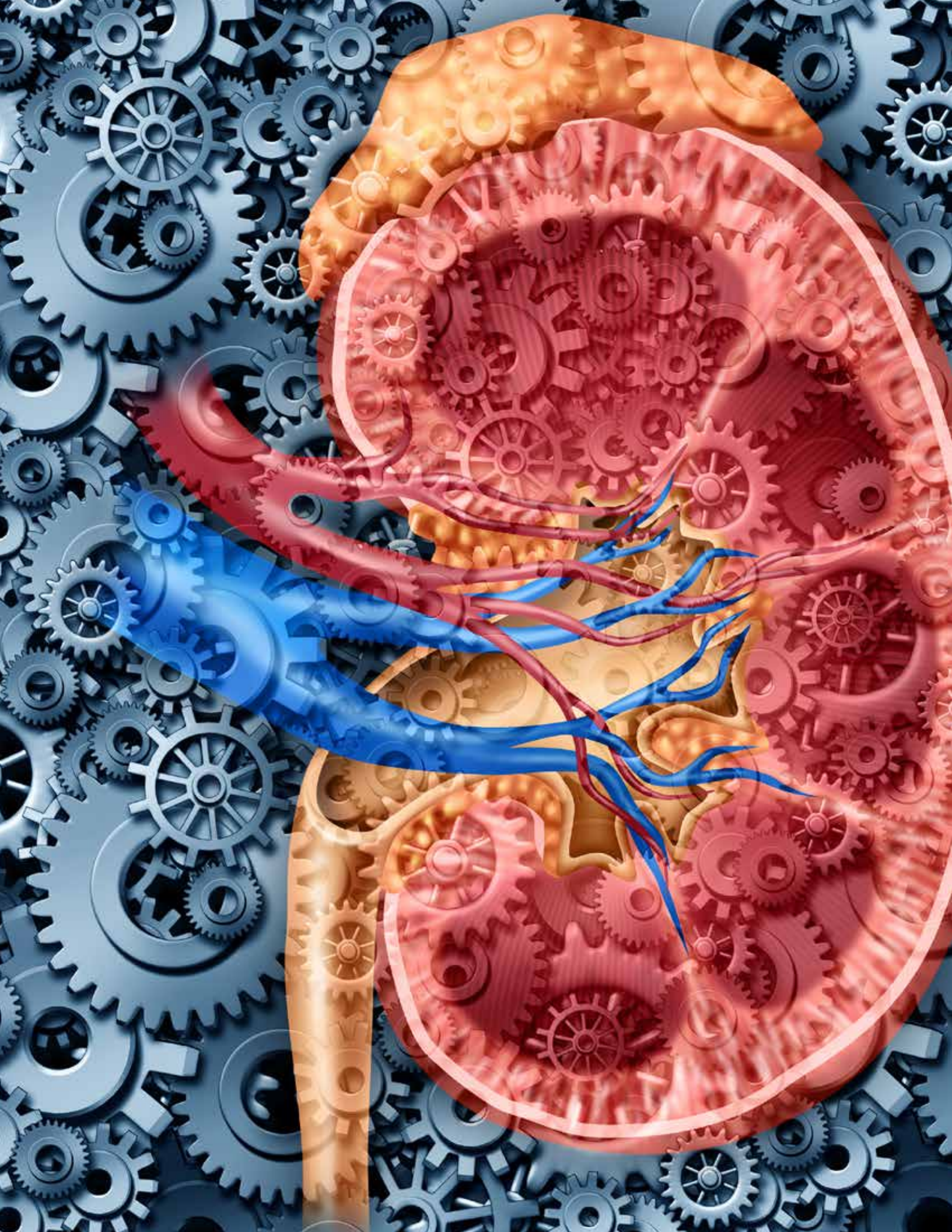
cornea rejection in the patient's eye can occur at any time after the transplantation, even after decades because of several causes.

INTESTINE TRANSPLANTATION:

It is one of the rarest types of transplantations due to the high rate of rejection by the receiving body. Due to the improvements in immunosuppressive regimens, it is done on a more frequent basis. Though the options for treatment of the intestine are many, but in some critical cases the transplantation is the only options.

PANCREAS TRANSPLANTATION:

Pancreas is one of the vital organs in our body as it regulates the sugar level in our body. Therefore, generally a diabetic patient goes for pancreas transplantation. It can also be partially replaced as in the case of liver. 



Failing the PATIENTS

The kidney disease in India is acquiring critical dimensions in view of an acute shortage of organs and no proper legal framework to facilitate organ donation, rendering the process of kidney transplant extremely difficult

BY AMRESH KUMAR TIWARY

Each year, hundreds of people die while waiting for an organ transplant. There is a shortage of organs, and the gap between the number of organs donated and the number of people waiting for a transplant either kidney or liver is getting larger. Transplant, as an option, has successful outcomes, and the number of people needing a transplant is expected to rise steeply due to an ageing population and an increase in organ failure.

Kidney transplant takes place generally at the end-stage of renal-disease. The donor in kidney transplant can either be a living person or a deceased person. According to the statistics, the most frequent organ transplant is the kidney transplant. Kidney transplant is not an emergency surgery and patients can be managed with dialysis. So, no patient should die because of non-availability of organs. The success rate is very high in this type of transplant as there are many ways in which a human body can be supported through dialysis in order to purify the blood. Therefore, we can say that the criticality of kidney transplant is comparatively less.

With the number of kidney transplants in

India averaging in the range of 3,000-3,500 per year whereas about 150,000 patients require kidney replacement, kidney disease is emerging as a major, though silent killer. Transplant of one organ from one human being to another has always been a rigorous process which needs a lot of care.

According to a recent study, India sees more kidney transplants than any other country in the world barring the US. Under the Transplant of Human Organs Act, 1994, there is permission of organ retrieval from the brain-dead patients, kidney donations by live donors remain very much in vogue. The country, however, has slipped to the 40th rank in the study of 69 countries in terms of number of transplants per million population, with only three in a million getting the kidney in case of a renal failure.

A kidney transplant costs about Rs 3-4 lakh, with a lifetime monthly post-operative care costing at least Rs 10,000. Tracking the rate of LKD is important as the worldwide prevalence of end-stage renal disease is increasing and a global trend can help countries evaluate their performance. India is in an unenviable position when it comes to the disease



burden, implementation of the organs Act and preventing kidney rackets that frequently rock the nation. If pushed further to two per million population, then 4,400 kidneys could be retrieved, dramatically reducing the burden on living donors.

Although there is no national registry so that one can know about how many kidney transplants occur in India, Multi Organ Harvesting Aid Network Foundation in Chennai estimates the number of transplants per year to be in the range of 3,000-3,500, with barely 5 per cent coming from the brain-dead. The annual requirement is about 150,000. The LKD rates in two-thirds of the 69 nations surveyed have been growing at 50 per cent over the last decade, but India remains stuck at the same level due to lack of health insurance, and institutional and financial support.

However, over the last 10 to 15

years, the organ donation process is marred in India due to the stigma attached to kidney donation. The law prohibits any commercial dealing in organs such as purchase of kidney from a donor from economically weaker section, but because the demand is so high, the law is difficult to implement and kidney scandals continue to haunt the country where a donor is not adequately compensated.

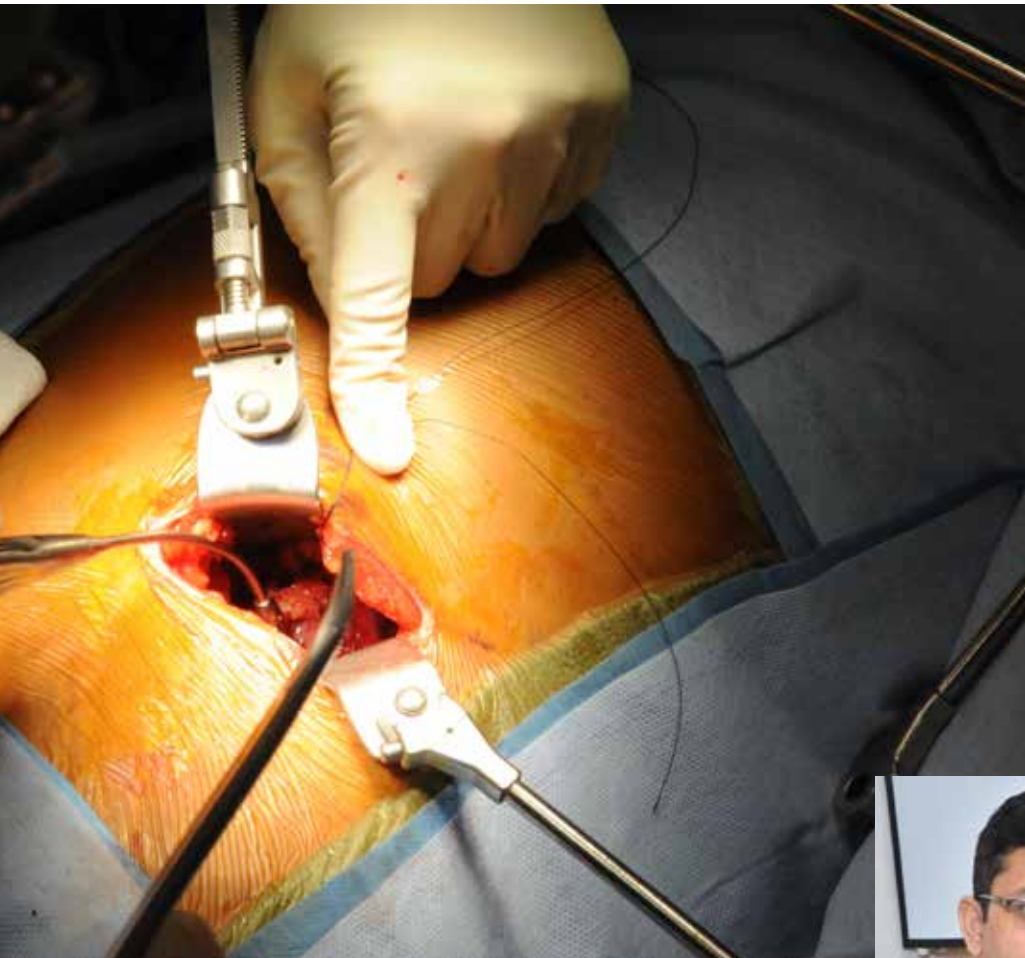
There have been several news reports about organ trafficking in India, putting the spotlight on the shortage of donors. Against the global requirement of about 600,000 each year, only 60,000 kidney transplants are done in India. And, of the 150,000 to 200,000 people who need



transplant, only 3,500 get it. This scarcity will grow rapidly in the coming years because of an increasing lifespan, rising incidence of end-stage kidney disease, and wrong legislative policies.

According to **Dr S P Yadav, Senior Urologist and Member, Medical Council of India, New Delhi**,

“There should be a uniform legislative policy to augment organ donations and enforce regulatory mechanisms. Kidney transplant is different from other healthcare activities and the law on this subject should be enacted by the Centre. Also, needed is a centralised regulatory authority to monitor the transplant procedures, inspect hospitals, and summon the concerned managerial and medical, paramedical staff



Act, 1994, the Union health ministry has come up with a composite set of guidelines to deal with such issues. But it needs to develop a number of government healthcare institutions in India where legal issues and cost factors should be negligible for kidney transplant,” Dr Rajesh Agarwal, said.

Dr S P Yadav, added, “It’s not easy to find donors in the case of kidney transplant. The aim of the facility should be to serve the poorest of the poor, build proper medical expertise and build the system’s capacity. The number of candidates waiting for a kidney transplant has increased day by day. Over the past few years, several proposals have been designed to increase overall transplant benefit by incorporating a measure of transplant outcome, while maintaining access to transplant for all candidates, have been considered.”

Based on the Kidney Donor Profile Index (KDPI), kidney allocation in the right direction allows longest expected survival of both donors and recipients. It depends on a clinical formula that classifies donor kidneys based on how long



they are likely to function once transplant is done. The access to transplant is enhanced for certain populations by calculating waiting time from the dialysis start date. This should successfully address two major problems in kidney allocation: allocation of kidneys from ideal donors to recipients with short expected survival and the use of kidney from less than ideal donors to those expected to live for a long time.

CAUSES OF KIDNEY DISEASE

According to a study, two persons every five minutes or roughly two lakh people die due to kidney-related

involved in the procedure.

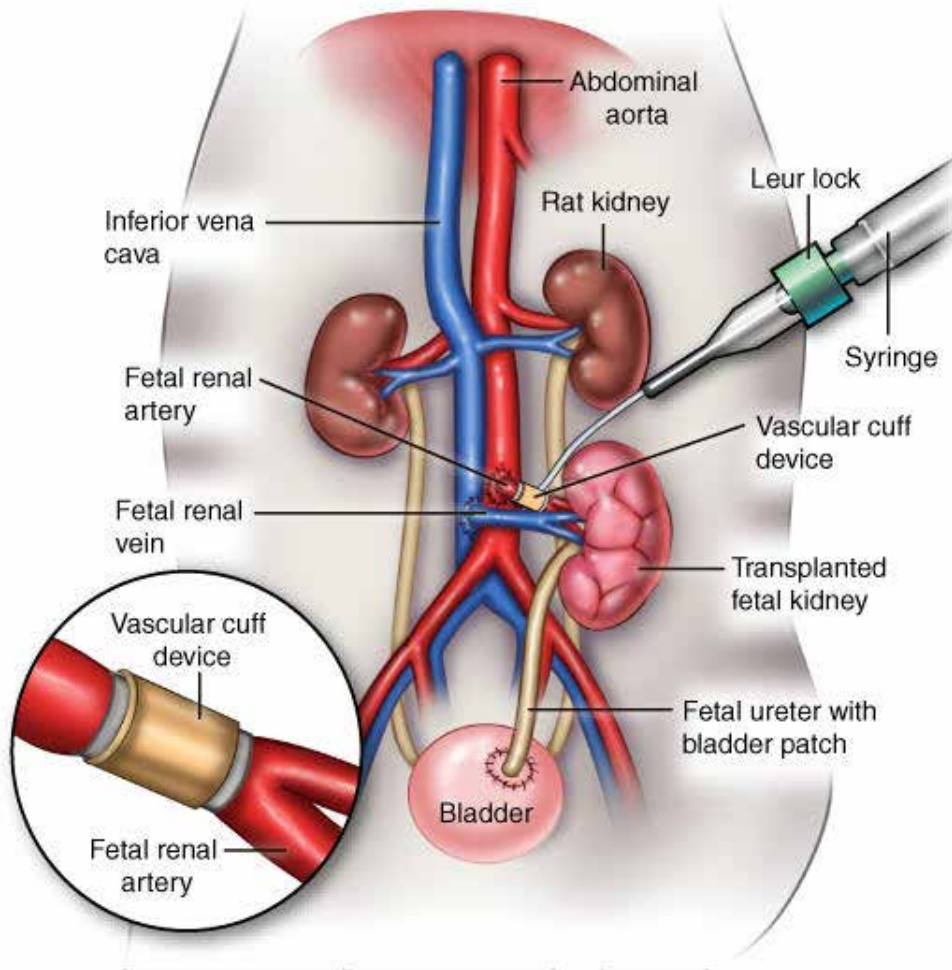
“The authority constituted under the Transplant of Human Organs Act 1994 doesn’t have pan-Indian jurisdiction. It should be mandatory to report all transplants to the central organ donation authority, with details of the donor and the recipient, members of the authorisation committee and the transplant team. All transplants must be registered, which should allot a wait-listed number to each registrant’, Dr S P Yadav, said.

Dr Ravi Bansal, Senior Consultant Nephrologist, PSRI Hospital Delhi, said “International organ donation policy is well established. More than 80% of transplants are cadaveric. In Netherlands, organ donation is included in curriculum of school students. They have an option of taking the pledge to donate organs before they exit from school and join higher education. In India laws are adequate

but awareness is less; there is a need to make medical doctors and general public more aware of these laws.

Dr Rajesh Agarwal, Nephrologist, Sri Balaji Action Cancer Hospital, said, “Kidney transplant in India faces great challenges in the wake of acute organ shortage and difficulty to optimise transplant outcomes. Though the advancement in immunosuppression and clinical care has resulted in positive short and long-term outcomes, with overall one-year graft survival of 95 percent, kidney transplant suffers from many bottlenecks, beginning with the ever-growing waiting list. Then there are fraudulent practices giving a fillip to the growing market in illegal organ transplant.”

“Under Transplant of Human Organs



diseases in the country every year. The need of the hour is to establish more detection clinics and take steps to arrest the deaths due to kidney failure.

Most people are not aware of the fact that kidney disease can be a silent killer. It may not show any symptoms for a long time till the situation becomes critical. The first symptom of kidney disease is changes in the amount and frequency of your urination. There may be an increase or decrease in amount and/or its frequency, especially at night. It may also look more dark coloured. You may feel the urge to urinate but are unable to relieve yourself when you get to the restroom.

The most common causes of kidney disease include diabetes, high blood pressure, and hardening of the arteries (which damages the blood vessels in the kidney). Some kidney diseases are

caused by an inflammation of the kidneys, called nephritis. This may be due to an infection or to an autoimmune reaction where the body's immune or defence system attacks and damages the kidneys. Other kidney diseases like polycystic kidney disease are caused by problems with the shape or size of the kidneys (anatomic disorders), while other kidney diseases interfere with the inner workings of the kidneys (metabolic disorders). Metabolic kidney disorders are inherited from both parents, consequently, they are rare.

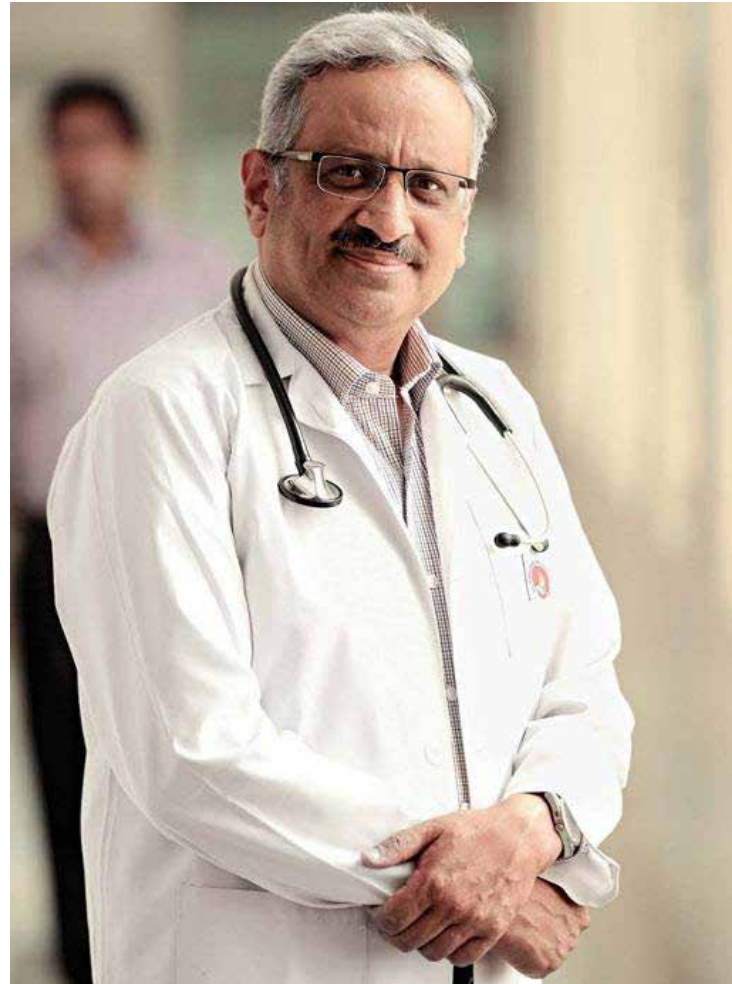
The two bean-shaped kidneys are located on either side of the body, just underneath the ribcage. The main role of the kidneys is to filter out waste products from the blood before converting it into urine. Kidneys play one of the most vital functions in our body. Sometimes, the kidney may lose

its ability to function properly. In extreme cases, they may cease to work. Such a condition is called kidney failure. In such extreme cases, kidney transplant is believed to be the most viable option in the long run.

NEED FOR KIDNEY TRANSPLANT

Kidney transplant is something that is needed for a patient with renal failure. Other than dialysis, a transplant is the only way for someone with advanced renal failure to survive. A transplant must come from a healthy donor who is a match, and even after a transplant, the patient has to take medication and be under a doctor's supervision for the rest of his life.

A kidney transplant may be performed regardless of age of the recipient (patient who requires the kidney) provided he/she has a general health status that can withstand the



major operation. The person should be aware and willing to comply with taking immunosuppressant medications after the transplant to prevent rejection of the new organ by the body's immune system.

According to Dr N P Singh, Senior Nephrologist, Max Superspecialty Hospital, Vaishali, Ghaziabad, "Patients usually require dialysis when the waste products in their body become so high that they start to become sick from them. The level of the waste products usually builds up slowly. Doctors measure several blood chemical levels to help decide when dialysis is necessary. The two major blood chemical levels that are measured are the "creatinine level" and the "blood urea nitrogen" (BUN) level. As these two levels rise, they are indicators of the decreasing ability of the kidneys to cleanse the body of waste products."

Dr Rajesh Aggarwal, Chief Nephrologist, Sri Balaji Action Medical Institute, said, "We use a urine test, the creatinine clearance to measure the level of kidney function. The patient saves urine in a special container for one full day. The waste products in the urine and in the blood are estimated by measuring the creatinine. By comparing the blood and urine level of this substance, the doctor has an accurate idea of how well the kidneys are working. This result is called the creatinine clearance. Usually, when the creatinine clearance falls to 10-12 cc/minute, the patient needs dialysis."

Dr Rajesh Aggarwal added, "We also use other indicators of the patient's status to decide about the need for dialysis. If the patient is experiencing a major inability to rid the body of excess water, or is complaining of problems with the heart, lungs, or

stomach, or difficulties with taste or sensation in their legs, dialysis may be indicated even though the creatinine clearance has not fallen to the 10-12 cc/minute level."

Dr N P Singh added, "With a view to create more awareness, Max Superspecialty Hospital, in association with Indian Medical Association, recently organised a conference which focused on issues like the role of dialysis services and sensitisation of cadaver kidney transplant which has still not picked up due to lack of public awareness and the people's unwillingness to become organ donors."

COMMON CAUSES OF CHRONIC KIDNEY DISEASE (CKD)

As per a report, about 800 million chronic kidney patients are detected in India per year. About 3000 kidney



transplants are performed every year and many more could be performed if more kidneys were available. The success rate for kidney transplants is excellent and higher than for other kinds of organ transplants at affordable cost. The transplant kidney provides enough kidney function. After a successful transplant, there is no need for dialysis, provided the transplant continues to work well. The patients who have a successful transplant should feel better and have more

energy. There may, however, be a need to watch their diet to protect the kidney.

Said Dr N P Singh, “In most cases, the barely functioning existing kidneys are not removed, as this has been shown to increase the rates of surgical morbidities. Therefore the kidney is usually placed in a location different from the original kidney, often in the iliac fossa, so it is often necessary to use a different blood supply. The renal artery of the kidney, previously branching from the abdominal aorta in



the donor, is often connected to the external iliac artery in the recipient. The renal vein of the new kidney, previously draining to the inferior vena cava in the donor, is often connected to the external iliac vein in the recipient.”

The transplant surgery lasts five hours on average. The donor kidney will be placed in the lower abdomen and its blood vessels connected to arteries and veins in the recipient’s body. When this is complete, blood will be allowed to flow through the kidney again. The final step is connecting the ureter from the donor kidney to the bladder. In most cases, the kidney will soon start producing urine. Depending on its quality, the new kidney usually begins functioning immediately. Living donor kidneys normally require 3–5



days to reach normal functioning levels, while cadaveric donations stretch that interval to 7–15 days. Hospital stay is typically for 4–7 days. If complications arise, additional medications (diuretics) may be administered to help the kidney produce urine.

The immunosuppressant drugs are used to suppress the immune system from rejecting the donor kidney. These medicines must be taken for the rest of the patient's life. Blood levels must be monitored closely and if the patient seems to have declining renal function, a biopsy may be necessary to determine whether this is due to rejection or cyclosporine intoxication. Grapefruit can decrease the proper metabolism of many drugs, and therefore decrease/or almost cancel

out the effect of many critical drugs given after kidney transplants. Therefore, grapefruit products and certain other citrus products must be avoided.


Acute rejection occurs in 10–25 per cent of people after transplant during the first sixty days. The rejection does not necessarily mean loss of the organ, but may require additional treatment and medication adjustments. The problems after a transplant may include transplant rejection (hyper acute, acute or chronic), infections and sepsis due to the immunosuppressant drugs that are required to decrease risk of rejection, post-transplant lymphoproliferative disorder (a form of lymphoma due to the immune suppressants), imbalances in electrolytes including calcium and

phosphate which can lead to bone problems amongst other things and other side effects of medications including gastrointestinal inflammation and ulceration of the stomach and esophagus, hirsutism (excessive hair growth in a male-pattern distribution), hair loss, obesity, acne, diabetes mellitus type 2, hypercholesterolemia, and others.

Elaborated Dr Rajesh Aggarwal, “The average lifetime for a donated kidney is ten to fifteen years. When a transplant fails, a patient may opt for a second transplant, and may have to return to dialysis for some intermediary time. The government and private hospitals won't be able to provide you a living donor for transplant. Donor should be arranged as the human organs transplant law is very strict. In the entire process of donation of kidney, monetary exchanges are not at all accepted and are illegal. So, it's a patient's responsibility to arrange a donor for the transplant within your relations.”

ETHICAL ANGLE TO KIDNEY TRANSPLANT

One of the effects of contemporary medicine, from a sociopolitical point of view, is to place death within a framework of ethical decision-making that emphasises the fight against specific mortal diseases and conditions. In the case of kidney transplant for older adults, longevity at older ages becomes an object of intervention and apparent choice.

Dr Rajesh Aggarwal explained, “The materiality of the body and its relationship to notions of health has become an important frame for ethical judgments. We explore here the kinds of social obligations and, thus, moral order at stake and in play when the age for transplant moves beyond 70 and, especially, when living donors come from the succeeding generation. The routineness of transplant procedures extends moral awareness and action to the body itself via the ever-present potentiality of being a donor or recipient.” 



Life at Stake



UNSAFE FOOD POSES GRAVE HEALTH THREATS, ENDANGERING EVERYONE. SADLY, FOOD SAFETY HAS BEEN A LONG NEGLECTED ISSUE IN INDIA.

BY DR NEELAM MOHAN







As per a report released by the WHO (World Health Organization), 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.

In the recent past, the inspection of “Maggi” noodles in different batches suggested levels of lead above the limits specified by food regulators. This sensationalized 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 realize the importance for food safety in India.

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. They are more prone to ingesting and inhaling dust that is 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.

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


The current reference range of acceptable blood lead concentrations in healthy person without excessive exposure to environmental sources of lead is less than 5 g/dL for children and less than 25 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 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 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 excessive use of these products. It is the 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 implemented on an urgent basis.

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

Protect your Eyes

Do not underestimate the adverse effects of air pollution on your eyes. Safeguarding your eyes against particulate matter is essential to enjoy clear vision.

**BY DR. MAHIPAL S
SACHDEV**



Human eyes are sensitive and prone to irritation from allergies, chemicals and pollutants in the air. Some people might notice their eyes are red and itchy on days when air pollution is high. Manifestations of air pollution can range from minimal or no symptoms to a chronic discomfort and irritation in the eyes. There may also be specific situations, in contact lens wearers for example, where the eyes may be adversely affected by air pollution. Despite the presence of air pollution in many indoor and outdoor environments, its effects on our eyes are often overlooked by us. This article seeks to tell you the effects of air pollution on your eyes and what steps you can take to mitigate the problems.

There are a number of symptoms which occur due to air pollution. It may range from simple irritation and burning



to a severe allergy and cataract. The most commonly experienced problems are- redness, burning sensation, watering, ropy discharge, itching sensation, dry & gritty sensation, difficulty in vision due to watering and itching etc. While wearing face masks may help minimize inhalation of particulate matter, the eyes remain exposed to airborne pollution. Studies have found that in areas where air

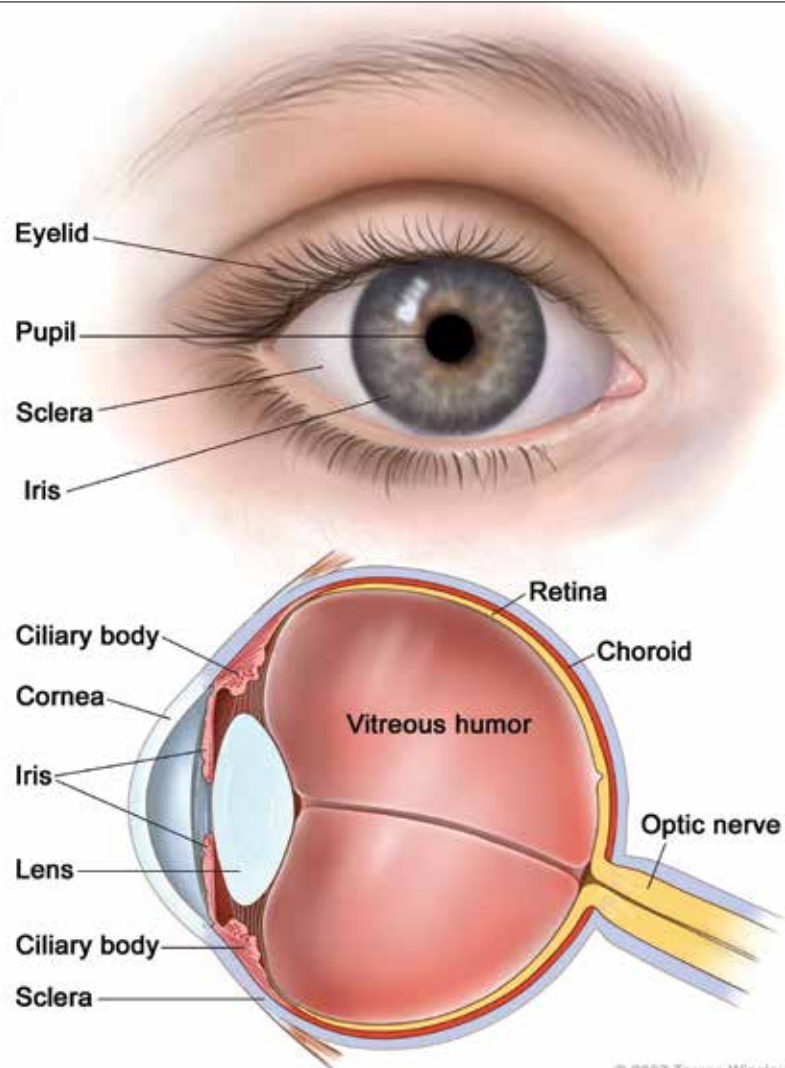
pollution is high, people were more likely to report eye related discomfort and are 3 to 4 times more likely to be diagnosed with dry eye. Now that we understand how these air pollutants can affect the eyes, here are few tips for certain scenarios which can save you from unnecessary suffering.

1) Stay indoors when pollution levels are at their peak

If there is excessive particulate matter in the air, limit your exposure to outdoors and wherever possible, protect your eyes with spectacles and/or masks. If it is absolutely necessary for you to go outside, wear sunglasses (wrap-around styles are best) to prevent pollutants entering your eyes.

2) What to do while using Eye Contacts

If wearing contact lenses, use



lubricating eye drops as needed and ensure that you clean and disinfect your lenses thoroughly with lens solution each time you wear or remove them. Protective glasses over contact lenses may be useful if the air contaminant levels are high. If there is any irritation and/or foreign body sensation with contact lenses, remove them immediately and rinse your eyes with lubricant eye drops. Clean lenses thoroughly prior to reinserting. Avoid wearing contact lens and eye makeup if your eyes are feeling sore.


3) If pollutants made contact with the eyes

Avoid rubbing your eyes directly even if fine particulates have entered the eyes. Wash your eyes with water and apply a cool compress to help reduce irritation. Furthermore, use lubricating eye drops given by eye doctor. Lubricating eye drops help prevent soreness or itching.

If you experience highly dry and



irritated eyes due to pollution, visit your ophthalmologist for a quick diagnosis and recommended course of treatment, and follow the tips given above to reduce the issues regarding the health of eyes. With a little help, you can reduce your

eyes' irritation and have clear vision to enjoy the world as it should be. 

(The author is Chairman & Medical Director, Centre for Sight Group of Eye Hospitals, New Delhi)

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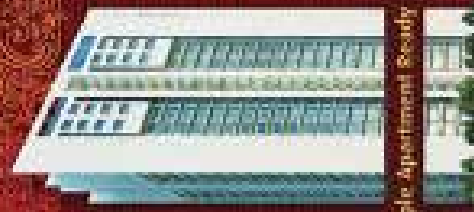
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