

A COMPLETE HEALTH JOURNAL



# Double Helical

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## Deadly Dependence

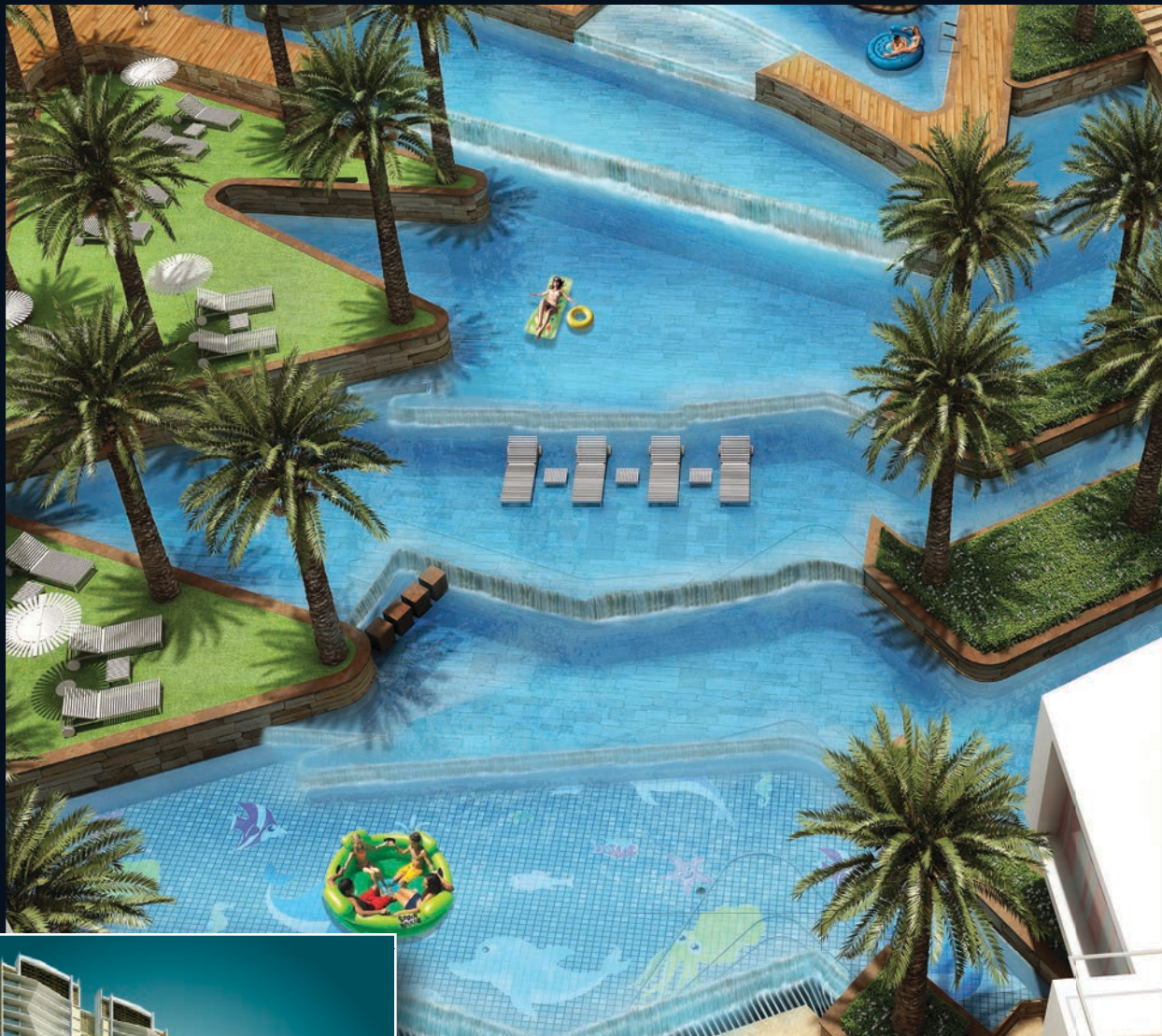
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**Fatal Fixation**



**Lives Interrupted**

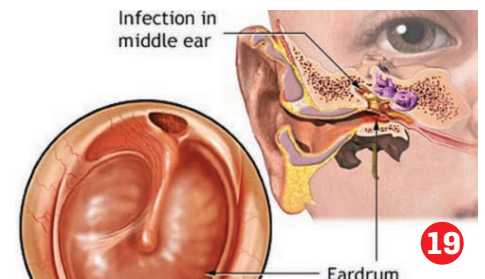


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**Growing Health Hazard**

# Freedom from Ignorance

**D**ear readers, Heartiest greetings on India's 70th Independence Day, truly a landmark in the life of the nation! Over the past seven decades, we have witnessed path-breaking changes in terms of innovation, research and development in the medical field. With seminal contribution to the furtherance of medical science, Indian doctors and medical experts have made their country proud in the eyes of the world.

On such a positive note, we take pride in raising awareness about significant issues confronting Indian healthcare by means of producing a wide range of interesting, in-depth and analytical stories encompassing the latest trends and advancements in medical science. We hope you would appreciate our humble efforts, like every month, after reading the current August 2016 of your magazine Double Helical which carries a comprehensive package – enriched with analysis and expert viewpoints – on the growing menace of dengue.

There is crying need for integrated preventive methods to tackle deadly dengue that has spread its roots in the country. Dengue is a mosquito borne viral disease that has rapidly spread in all member countries of World Health Organization (WHO) in recent years.

Dengue in India has dramatically expanded over the last few decades, with rapidly changing epidemiology. More recent and systematic data are now available because of the NVBDCP (National Vector Borne Disease Control Program). Although the first mention of occurrence of dengue in India is said to be in 1780, the first confirmed outbreak occurred in Kolkata in 1963-1964. It took almost 30 years for dengue to eventually spread throughout the

entire country.

In northern parts of India, the number of reported dengue fever (DF) and dengue haemorrhagic fever (DHF) cases increased, probably because the health authorities of the country became more vigilant, and timely reporting of all cases was initiated.

Another special story entitled "Fatal Fixation" draws your attention to the fact that tobacco is a major risk factor for heart attacks, strokes, chronic obstructive pulmonary disease, and cancer. Don't fall prey to advertisements that seek to glorify tobacco consumption.

Every year tobacco kills more than five million people, more than tuberculosis, HIV/AIDS and malaria combined. Unless urgent steps are taken, tobacco might kill one billion people during this century. In people over the age of 30, smoking accounts for one in every five deaths among men and one in every 20 deaths among women globally.

Similarly, our story entitled "Deadly Dependence" describes the rising trend of alcohol abuse in India with grave implications on the health, mental equilibrium and social standing of those who get addicted to it. The growing incidence of alcohol consumption in the Indian society has wide-ranging negative effects manifesting not only in health-related aspects but adverse social and economic conditions too. Curbing alcohol abuse needs to be made a priority in public health policy in India

Alcohol consumption is a global phenomenon but it is now getting worldwide attention due to its harmful outcomes. Alcohol is classified as psychoactive substance which produces dependence. It has not only important implications on health but has social and economic aspects as well.

We also take note of the recently launched National Health Programme MAA (Mothers Absolute Affection) to generate adequate awareness among masses, especially mothers. As J P Nadda, Union Minister of Health and Family Welfare, said, "Breastfeeding is the most natural, cost effective and significant intervention and should be promoted at all levels. This is an enormous resource that every child has access to. Breastfeeding programme will greatly help to reduce the under-five mortality of children"

The Health Minister highlighted the life cycle approach of the Ministry and stated that a continuum of care approach has been adopted by the Ministry with the articulation of 'Strategic approach to Reproductive Maternal, Newborn, Child and Adolescent health (RMNCH+A)', bringing focus on all the life stages. Nadda further added that breastfeeding is a child's first inoculation against death, disease and poverty and according to the latest scientific evidence; breastfeeding is our most enduring investment in physical, cognitive and social capacity development.

Raising awareness is the key and we have to work on dispelling myths and misconceptions. The breastfeeding creates a special bond between the mother and the baby and the interaction between the two during breastfeeding has positive impact on life, in terms of stimulation, behaviour, speech, and sense of well-being, security and the way the child relates to other people.

We hope you will enjoy reading the edition in the august ambience of 15th August celebrations.

**Amresh K Tiwary,**

Editor-in-Chief



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## Health ministry launches breastfeeding programme

In recently launched National Health Programme MAA (Mothers Absolute Affection) to generate adequate awareness among masses, especially mothers, J P Nadda, Union Minister of Health and Family Welfare, said, "Breastfeeding is the most natural, cost effective and significant intervention and should be promoted at all levels. This is an enormous resource that every child has access to. Breastfeeding programme will greatly help to reduce the under-five mortality of children"

J P Nadda said that all the national health indicators like Infant Mortality Rate (IMR), Maternal Maternity Rate (MMR), Total Fertility Rate (TFR) and under-five mortality are declining faster in India than elsewhere in the world. The Health Minister highlighted the life cycle approach of the Ministry and stated that a continuum of care approach has been adopted by the Ministry with the articulation of 'Strategic approach to Reproductive Maternal, Newborn, Child and Adolescent health (RMNCH+A), bringing focus on all the life stages. Nadda further added that we must appreciate that breastfeeding is a child's first inoculation against death, disease and poverty and according to the latest scientific evidence; breastfeeding is our most enduring investment in physical, cognitive and social capacity development.

Addressing the gathering, Faggan Singh Kulaste, Minister of State for Health and Family Welfare, said that awareness is the key among people and we have to work on dispelling myths and misconceptions. The Minister stated that breastfeeding creates a special bond between mother and baby and the interaction between the mother and child during breastfeeding has positive impact for life, in terms of stimulation, behaviour, speech, sense of well-being, security and how the child relates to other people.

Anupriya Patel, Minister of State for Health and Family Welfare, said that Breastfeeding is central to improving child survival. Poor breastfeeding practices




contribute to about 13% of child deaths. She further added that the Ministry is launching "MAA - Mother's Absolute Affection" to create an enabling environment to ensure that mothers, husbands and families receive adequate information and support to promote breastfeeding practices.

Cine Star and Brand Ambassador Madhuri Dixit laid emphasis on mother's milk in ensuring the survival of the child. The actor and mother of two healthy children, said, "Early initiation of breastfeeding within one hour of birth and thereafter exclusive breastfeeding for the first six months is essential for the wellness of the child." She further added that every family member has to encourage the mother to ensure that child gets it. The family, especially the husband should support his wife. Support is very necessary for successfully breastfeeding the child. The simple act of breastfeeding can ensure our children have the right nutrients to start their life.

Highlighting the importance of this initiative, C K Mishra, Secretary (HFW), said that there is hardly any difference in rates of breastfeeding among rural and urban population as against the perception that rural area might have higher rates of breastfeeding due to traditional practices.

This implies that need for support regarding breastfeeding is universal. "Around 20% newborn deaths and 13% under-five deaths can be prevented by early initiation of breastfeeding," C K Mishra said.

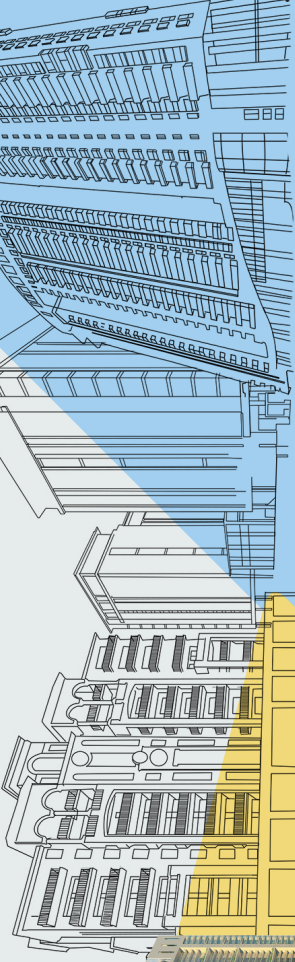
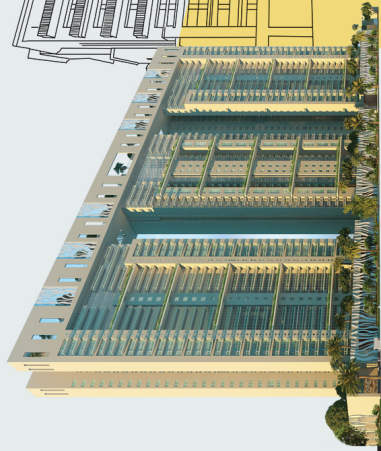
The Secretary (Health) further mentioned that the MAA - the nation-wide breastfeeding promotion program - is about intensified efforts to promote, protect and support optimal breastfeeding. It builds upon the existing initiatives and addresses the needs of all children including those living in difficult circumstances.

"MAA-Mother's Absolute Affection" is a nationwide programme launched in an attempt to bring undiluted focus on promotion of breastfeeding and provision of counselling services for supporting breastfeeding through health systems. The programme has been named 'MAA' to signify the support a lactating mother requires from family members and at health facilities to breastfeed successfully. The chief components of the MAA Programme are community awareness generation, strengthening inter-personal communication through ASHA, skilled support for breastfeeding at delivery points in public health facilities, and monitoring and award/recognition. 



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# Nourishing a healthy workforce

Antriksh India makes it a point to see to ensure that all staff members follow a wholesome work culture to stay healthy

**R**akesh Yadav, Antriksh India Chairman and one of the founder members of Antriksh Group, has a rich experience of working in the real estate sector for the past more than 35 years. He has built an organisation with a work culture that places due importance on the need to stay healthy for all employees. Today most people consider good health and healthy living as activities that are consciously chosen, or something that only those who are into sports can fully achieve. But imagine a culture that empowers every employee to enjoy the bliss of good health. Rakesh Yadav makes his own lifestyle as an example to inspire his workforce to take utmost care of their health.

Yoga is an ultimate option to keep oneself healthy and energised. The company organises yoga workshops on a regular basis to trend the workers for optimal yoga practices and imbibe yoga in their lifestyle. He himself makes it point to practise yoga daily.

Rakesh Yadav is a firm believer in doing regular physical exercise. He has seen to it that all employees in his organisation follow a daily practice of exerting their body to keep themselves fit. The workplace at Antriksh India is always sparklingly clean as highest standards of hygiene are strictly followed. Rakesh Yadav has promoted the following good habits among his staff.

1) Clean hands: Washing hands whenever required is the primary requirement to keep illness at bay. Although it may seem obvious, many




don't keep their hands clean and dirt free, especially before eating, after using the restroom, and after sneezing or coughing. But not so at Antriksh India where employees maintain strict hand hygiene.

2) Clean workspace: The average desk harbours hundreds of times more bacteria than a toilet seat. The company encourages employees to keep their work area neat and organized. Every desk is sanitised to wipe away dirt on a routine basis.

3) Inhaling fresh air: At Antriksh India, during lunch hour, employees are encouraged to go outdoors to provide themselves with their daily dose of vitamin D. They invigorate themselves by going outside and

taking a brisk walk around the office building, or calm themselves from a hectic day by simply sitting and meditating quietly for a few minutes, surrounded by greenery.

Says Rakesh Yadav, "We believe that striving toward a culture of health will help us increase productivity, working capacity and most importantly, ensuring the overall well-being of our staff. Still, making health habits an integral part of life requires collective spirit and efforts. I certainly cannot do it alone. Nonetheless, I firmly believe the vision of a healthy workforce is within the reach of our organisation, and I am doing my bit to inspire each one of our team members to strive towards this goal." 





## Double Helical sponsors a Symposium on Hearing Loss at MAMC

**BY TEAM DOUBLE HELICAL**

**N**ational health magazine Double Helical recently organised a symposium at Maulana Azad Medical College on Causes of Avoidable Hearing Loss in collaboration with Sound Hearing 2030 under the aegis of Society for Sound Hearing National Programme for

Prevention & Control of Deafness, Department of Community Medicine and Department of ENT, Maulana Azad Medical College.

The symposium was attended by over 100 participants comprising WHO experts, ENT specialists, audiologists, public health experts, speech therapists and special educators.

On this occasion, Dr Arun Agarwal, Ex-Dean, Maulana Azad Medical College and President, Sound Hearing 2030 extended a warm welcome to the audience. Next Dr MM Singh, Director Professor, Community Medicine, MAMC explained the objectives of the symposium to all the delegates.

The first presentation was delivered

by Dr Suneela Garg, Director Prof & Head, Community Medicine, MAMC on “Epidemiology & risk factors of Otitis Media in global, regional and Indian context.” She mentioned that about 330 million persons globally are affected by Chronic Suppurative Otitis Media (CSOM) and it accounts for 5 million disability adjusted life years.

She stated that multiple studies have shown high prevalence of otitis media in India with more than 6% experiencing the disorder. She also elaborated on the risk factors associate with it. She concluded by saying that a collaborative efforts from the Ministry of Health, international agencies, public health experts, ENT surgeons, audiologists, special educators and grassroots workers is required to combat this disease.

The second presentation was by Dr Shelly Chadha, Technical Officer, WHO, Geneva on “Addressing Otitis Media: a global perspective”. She highlighted the high burden of CSOM in low & middle income countries which is primarily attributed to poor awareness regarding ear & hearing problems in the community. In order to address otitis media, she stressed on the need to understand the prevalence and profile of ear diseases in the community, engage with health care providers and community to raise awareness. This should be followed by establishing linkages/strengthen infrastructure for treatment of CSOM and launching community based screening and intervention programmes.

The inaugural ceremony was graced by Dr D.K. Tempe, Dean, Maulana Azad Medical College as the Chief Guest. The ceremony began with lighting of the lamp by all the dignitaries followed by Saraswati Vandana by the young and budding medical students of the college. Words of wisdom were given by the dignitaries such as Dr Arun Agarwal, Dr JC Passey, Dr Suneela Garg and Dr Tempe.

The next presentation was by Dr GS



Double Helical recently organised a symposium at Maulana Azad Medical College on Causes of Avoidable Hearing Loss in collaboration with Sound Hearing 2030

Meena, Director Professor, Community Medicine, MAMC on “Barriers to Otitis Media care”. He emphasised that barriers to Otitis Media care exist at individual, family and community level. He mentioned that the major barriers are lack of motivation for treatment, access of healthcare facility, inadequate screening and preventive care, late presentation to health care facility and no or incomplete treatment.

The post-tea session began with a panel discussion on “Diagnostic aspects of Otitis Media - Audiology, Imaging & Microbiology” which was moderated by Dr Arun Agarwal. The esteemed panelists for the session were VP Saha, Assistant Director, Ali Yavar Jung National Institute for Hearing Handicapped, Dr Anjali Prakash, HOD, Department of Radio

diagnosis, MAMC, Dr Ravinder Kaur, HOD, Microbiology at Lady Hardinge Medical College Dr Beena Uppal, Ex-HOD, Department of Microbiology, MAMC and Dr Neelima Gupta, Professor, ENT, UCMS.

Next Dr Saurabh Varshney, HOD ENT, AIIMS Rishikesh delivered a presentation on “Public Health Strategies for Management of Otitis Media.” Dr Nishi Gupta HoD, ENT, Dr Shroff’s Charity Eye Hospital presented a talk on screening protocol for otitis media.

Dr Rohit Mehrotra, Head, Mehrotra ENT Hospital, Kanpur delivered a talk on “Role of surgical interventions in Otitis Media in community.” During his talk, he presented details of surgical



interventions viz. adenoidectomy, myringotomy and grommet insertion, mastoidectomy, tympanoplasty and labyrinthectomy. Dr Rohit Mehrotra was also acknowledged for being the first support of Society for Sound Hearing International.


The first talk post-lunch was on “Role of IEC in prevention of Otitis Media” which was presented by Dr Nandini Sharma (Director Professor, Community Medicine, MAMC) and Dr Neelima Gupta (Professor, ENT, UCMS). Dr Nandini Sharma emphasized the IEC is the cornerstone of any public health initiative. She explained the key principles to designing IEC and different forms of communication viz. mass media and interpersonal communication. Dr Neelima Gupta spoke about the

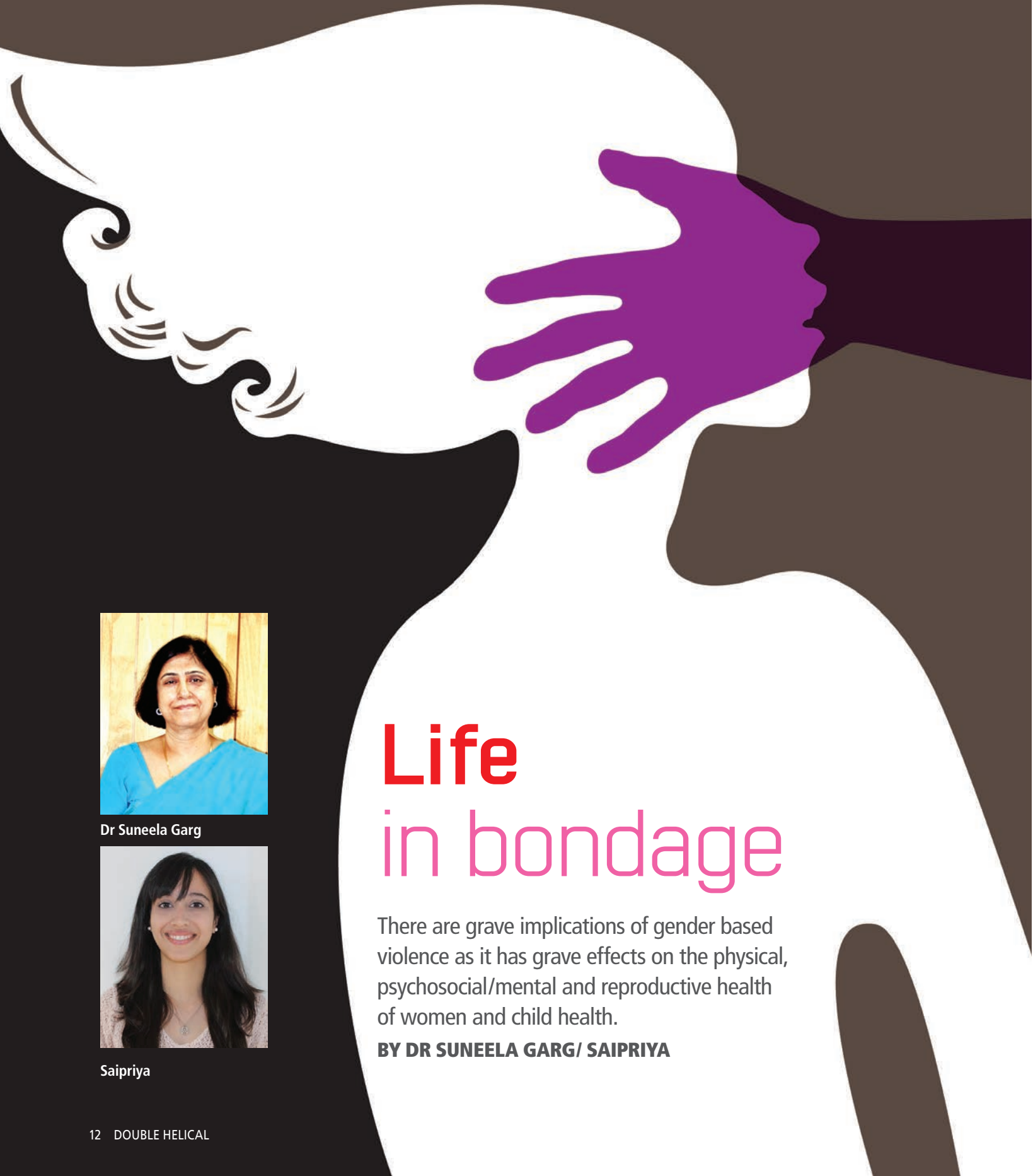
important messages regarding otitis media which should be communicated. She also mentioned that posters, short films, social media, awareness drives in the community and health talks would serve as effective means of IEC in relation to otitis media.

Dr J.C Passey, Director Professor & Head, ENT, MAMC presented the talk on “Role of Cochlear Implant in Otitis Media”. He elaborated that in certain cases profound hearing loss can occur as a result of chronic otitis media, thereby requiring cochlear implantation. He also explained the guidelines to implant and surgical challenges of implanting a patient with otitis media.

The last presentation was by Dr Sunil Dhandra who delivered a talk on “Life threatening conditions in Otitis

Media”. He mentioned that although the complications have reduced over the years due to availability of antimicrobials, wide spread use antibiotics, increased awareness of disease and increased numbers of ENT surgeons, some life threatening conditions still remain. He elaborated on Intratemporal (Mastoiditis, Petrositis, Labyrinthitis and Facial paralysis), Intracranial (Extradural abscess, subdural abscess, Brain abscess, Meningitis, Lateral Sinus thrombosis) and Extracranial (Sub periosteal, Bezold, Luc and Cittelli) conditions.

The symposium ended with felicitation of all the esteemed faculty members and vote of thanks to all those who had contributed to making the event a success. 



Dr Suneela Garg



Saipriya

# Life in bondage

There are grave implications of gender based violence as it has grave effects on the physical, psychosocial/mental and reproductive health of women and child health.

**BY DR SUNEELA GARG/ SAIPRIYA**

**V**iolence against women is recognized as one of the most serious public health issues worldwide. It knows no social, economic or national boundaries. Gender Based Violence (GBV) is any form of intentional physical, psychological, sexual harm, or threat of harm, directed against an individual based on their gender. Although GBV is violence directed against both men and women, it refers mostly to violence directed against women by their men. GBV is a consequence of a patriarchal society at the roots of which lie power inequalities between men and women. GBV is considered as the most pervasive form of violence and is the most prevalent violation of women's human rights. According to the United Nation's global estimates, one in three women has experienced physical and/or sexual violence by their intimate partner at least once in their lifetime.

GBV encompasses physical, sexual, emotional, economic and verbal violence. Physical violence includes hitting, beating, slapping, punching and stabbing out of many others. Studies suggest that between 23 to 53 percent of women physically abused by their partners during pregnancy are kicked or punched in the abdomen. Sexual violence includes coerced sex, marital rape, attacks on sexual organs, demeaning the sexuality of partner, treating her in a sexually derogatory manner, criticizing sexual performance and desirability, accusations of disloyalty and withholding sex. Verbal violence includes withholding access to phone and/or transportation, belittling victim's personal relationships, mental harassment, constant "checking up," not allowing the victim to go anywhere independently, false accusations, threatening to divorce her and verbal abuse by mother-in-law etc. Emotional violence means deriding the victim's sense of worth for instance: criticism, undermining victim's abilities and competency, name-calling, ridiculing her in public and/or private, making



the victim feel guilty, threatening victim's relationship with children and many more. Economic violence means depriving the victim of financial independence. Maintaining total control over financial resources including victim's earning, withholding money and/or access to money, deny employment, seeking accountability and justification for all money spent, lying about income etc. are examples of economic violence.

Globally, nearly 30% women who have been in a relationship, report suffering from some kind of violence in the course of their relationship. Men who have a low education level, have witnessed child mistreatment or exposure to violence in the family, have attitudes accepting violence, support gender inequality, or are substance abusers (including alcoholics, smokers, or drug addicts), are more likely to commit violence against their wives. On the other hand, a women's low education level, exposure to violence in family, being abused during childhood and her attitude of accepting violence and gender inequality, increases her risk of being victimised.

GBV has serious deleterious effect on the physical, psychosocial/mental and reproductive health of women. Physical effects include partial or permanent disability, poor nutrition, chronic pain, gastrointestinal problems and organ damage. Psychosocial/mental effects include anxiety, guilt, shame, post-traumatic stress disorder, depression, sleep disorders, suicidal tendencies, substance abuse, social stigma and social isolation. Reproductive effects include sexual disorders, unprotected sex, low birth weight of new-borns, neonatal death, maternal death, suicide, HIV, AIDS and infertility. According to a study, abused women are more likely to have difficulty using contraceptives than non-abused women. As a result, they are more susceptible of having unwanted or unplanned pregnancies, unsafe abortions, and of becoming pregnant as adolescents.

GBV expresses itself in a multitude of dangerous behaviors directed against women and girls. Sadly, this violation of the basic human rights of women and girls does not stop even when a woman is pregnant. In addition to having deleterious effect on



maternal health, GBV affects birth outcomes of the new-borns of mothers who are victims of violence at home. For instance, research suggests that new-borns of abused women are more likely to die before the age of 5. Violence during pregnancy is directly associated with low birth weight of babies. Pregnant women who are subject to GBV are more likely to delay seeking antenatal care. There are strong links between GBV and sexually transmitted infections (including HIV) that can negatively impact on not only the mother's health, but also her newborn's health and chance of survival.


Further, GBV has far reaching consequences on maternal health of pregnant women. Nearly 1 in 4 women experience physical or sexual violence during pregnancy. Women who suffer from violence during pregnancy exhibit more depression and substance abuse and are less likely to gain needed weight or access to prenatal care, compared with pregnant women who are not exposed to violence. Evidence from Demographic and Health Survey data, reveals that woman who are abused are more than twice as likely to encounter sexually transmitted infections as opposed to non-abused women. A research conducted on married women in India, suggests that women who have suffered both



Women feel uncomfortable to share their experiences since our society wastes no time in stigmatizing these social issues and consider such women unclean. Women are blamed for what has happened and hence may experience discrimination

physical and sexual violence from their spouse, are four times more likely of getting HIV infection than non-abused women. Another study in Tanzania shows that young women aged 18 to 29 who have been victims of GBV are 10 times more likely to be HIV positive than women who have not been abused. Having access to family planning reduces maternal mortality by an estimated 20 to 35 percent by reducing women's exposure to pregnancy-related health risks. Further, women who experience violence tend to have more children than they themselves want.

Unfortunately, this issue has not been given the required attention, primarily because it is rarely reported by women. Reasons for not reporting **GBV include:** Fear of stigma and **discrimination:** Women feel uncomfortable to share their experiences since our society wastes no time in stigmatizing these social issues and consider such women unclean. Women are blamed for what has happened and hence may experience discrimination.

**Blame:** Our society expects women to be able to avoid sexual violence including rape. Fear of disbelief: Women hesitate in disclosing violence against them, thinking that no one will believe them, particularly if their own partner has abused them. Fear of revenge: Mostly married women fear being intimidated or threatened by their husbands that they might harm their family or friends or from the fear of being murdered. GBV, is a grave issue that affects women and girls "by virtue of nothing but their gender." We as a society need to take appropriate actions to eliminate this serious issue from its root in order to provide a safer, healthier and pleasant life for women. 

(The authors are Director Professor and Head Community Medicine Maulana Azad Medical College and Associated Hospitals New Delhi and MPH Candidate' 17 Drexel University, Philadelphia, PA, USA)

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# Dangerous Discharge

Otitis Media, characterized by a persistent discharge from the middle ear leading to hearing loss, can occur in people of all age groups, but it is most commonly found among children

**BY DR SUNEELA GARG / DEEKSHA KHURANA**

**O**titis media is an infection of the middle ear that causes inflammation (redness and swelling) and a build-up of fluid behind the eardrum. Chronic suppurative otitis media (CSOM) is the result of an initial episode of acute otitis media (AOM) and is characterized by a persistent discharge from the middle



ear through a tympanic perforation. The World Health Organization (WHO) had reported and categorized Otitis Media as one of the neglected tropical diseases. Otitis media can be prevented through improved ear care practices. It can be treated effectively to reduce its impact.

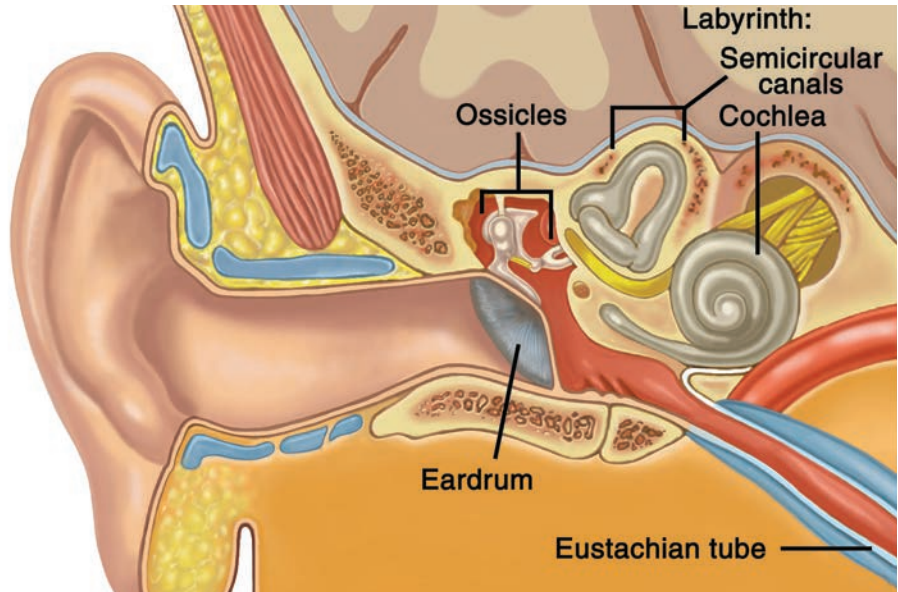
**Epidemiology of Otitis Media**

Globally up to 330 million persons are affected by CSOM. Prevalence of Otitis Media ranges from 1% in developed countries to 46% among certain populations. Ninety percent of CSOM burden is borne by countries of South-east Asia & Western Pacific regions, Africa and ethnic minorities of Pacific Rim. Up to 60% of those with otitis media have disabling hearing loss. It accounts for nearly 28,000 deaths annually.

Although Otitis Media can occur in people of all age groups, it is most commonly found among children. It is estimated that one in every four children experience at least one middle ear infection by the time they are 10 years old. Studies in developed countries show that by their third birthday 80% of children will have experienced at least one episode of AOM, and 40% will have six or more recurrences by the age of seven years.

Global Health Estimates 2012 reveal that Otitis Media is responsible for 5, 233,441 Disability Adjusted Life Years (DALYs). South-East Asia, Western Pacific and Africa region account for over 70% of the total DALYs due to Otitis Media. The table below summarizes the region wise distribution of DALYs due to Otitis Media.

The Global AOM incidence rate (new episodes per hundred people per year), according to estimates, is 10.85% i.e. 709 million cases each year with 51% of these occurring in children under five years of age. Global incidence rate ranges from 3.64 for Europe Central (40% of cases occurring in children 0–5) to 43.36 and 43.37 for Sub-Saharan Africa West (56% in children under 5 years of age) and Central (58% in children under 5 years of age)



Region (WHO)	DALYs (1000s)
<b>Africa</b>	<b>1025</b>
<b>Eastern Mediterranean</b>	<b>430</b>
<b>South-East Asia</b>	<b>1477</b>
<b>Western Pacific</b>	<b>1238</b>
<b>Americas</b>	<b>553</b>
<b>Europe</b>	<b>430</b>



Deeksha Khurana

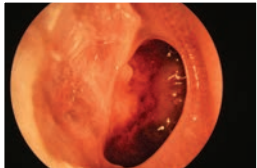
respectively. Other areas with incidence lower than 5 are Asia Pacific High Income (3.75), Asia East (3.93), Europe Eastern (3.96) and Latin America Southern (4.25).

Global incidence rate is highest in the age group 1–4 (60.99%) and in the first year of life (45.28%). Incidence lowers to a minimum of 1.49 in the age group 35–44 and rises again to 2.3% after 75 years of age.



**Acute Otitis Media incidence rate estimates per hundred people, by the 21 WHO Member States**

Global estimated CSOM incidence rate is 4.76 per thousand people for a total of 31 million cases. Latin America is the area with the lowest incidence (1.70 per thousand), followed by Asia Pacific High Income (3.02) and North America High Income (3.06). In the first year of life, Asia Pacific High Income has the lowest incidence rate (1.59 per thousand), while Oceania has the highest (35.96). The proportion of cases occurring in children under 5 years vary



from 1.8% in the Asia Pacific High Income, to 38.9% in Oceania and 41.0% in Sub-Saharan Africa Central.

Globally, CSOM incidence rate is highest in the first year of life (15.40 per thousand) and reaches its lowest value after 65 years of age (2.51).

**CSOM incidence rate estimates per thousand people, by the 21 WHO member states**



In South East Asia Region, prevalence of CSOM ranges from 1.3% in Myanmar to 8.4% in Sri Lanka. Multiple studies have shown high prevalence of otitis media in India with more than 6% experiencing the disorder.


**Risk Factors for Otitis Media**

Risk factors to Otitis Media include exposure to smoke, use of pacifiers, and attending day-care. It may be related to viral upper respiratory infections, overcrowding of households,

Risk factors to Otitis Media include exposure to smoke, use of pacifiers, and attending day-care. It may be related to viral upper respiratory infections, overcrowding of households, use of ear buds, bathing in dirty swimming pools and ponds and seeking care from local practitioners

use of ear buds, bathing in dirty swimming pools and ponds and seeking care from local practitioners.

Breastfeeding, avoidance of smoking during and after pregnancy, and reduction of exposure to indoor air pollution are the pillars of prevention of AOM. Early diagnosis and treatment based on prompt care-seeking remain crucial particularly in the first years of life, also as a way to prevent hearing loss. In developing countries, there have been attempts to standardize diagnosis and treatment of sick children through the IMCI strategy.

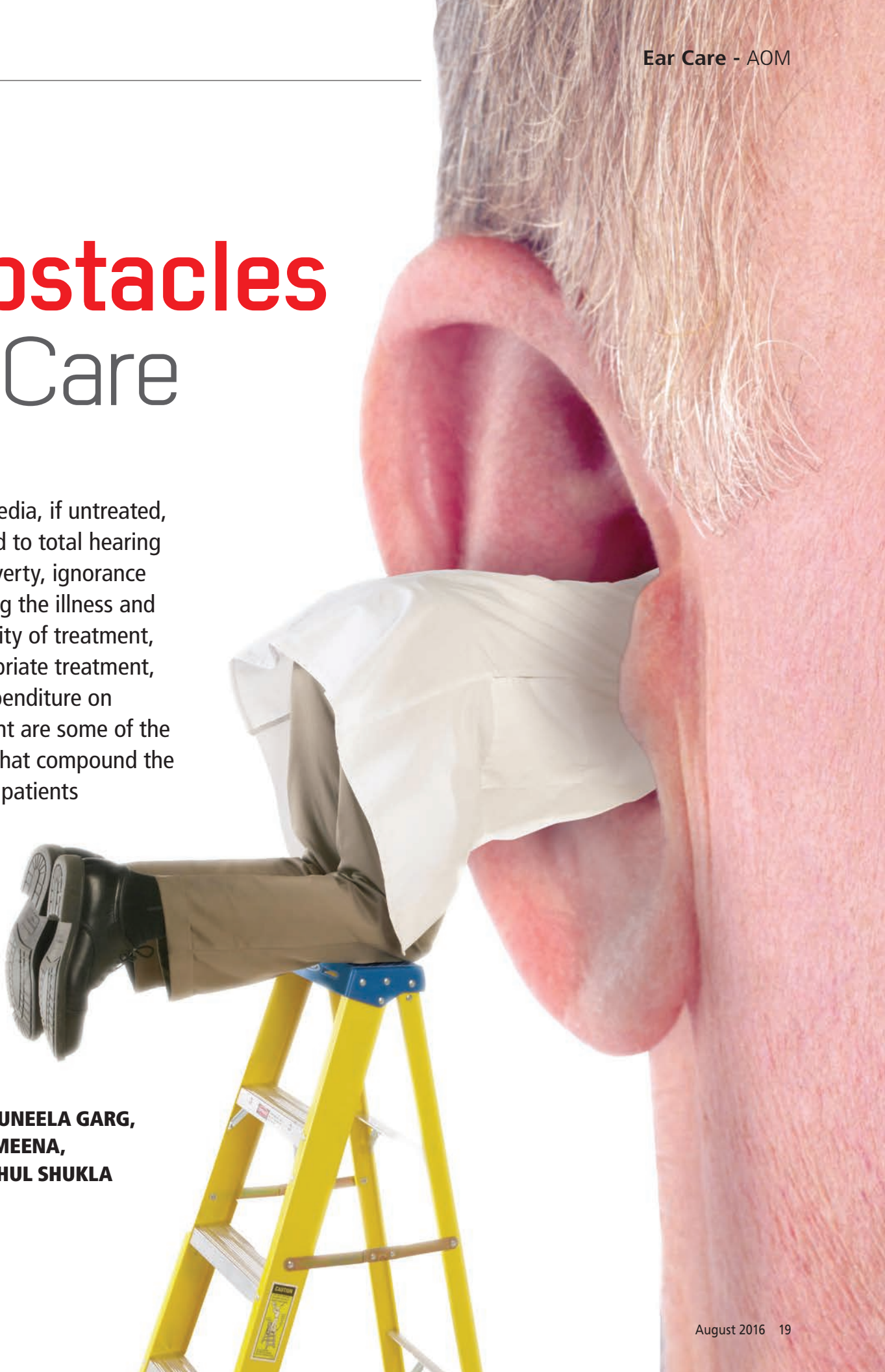
Collaborative efforts from Ministry of Health, International Agencies, Public Health Experts, ENT surgeons, audiologists, special educators and grassroots workers are required to combat this disease. 

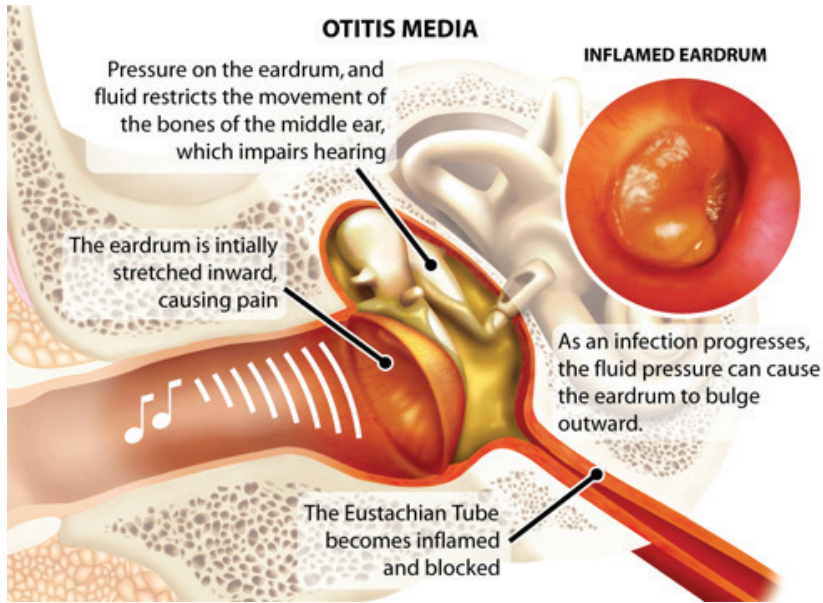
(The authors are Director Professor & Head- Community Medicine, Maulana Azad Medical College and Programme Officer, Society for Sound Hearing)

# Obstacles in Care

Otitis Media, if untreated, may lead to total hearing loss. Poverty, ignorance regarding the illness and availability of treatment, inappropriate treatment, high expenditure on treatment are some of the factors that compound the woes of patients

**BY DR. SUNEELA GARG,  
DR. G S MEENA,  
DR. ANSHUL SHUKLA**





**M**ore than 360 million persons in the world live with disabling hearing loss with approximately 20% of the world's adult population afflicted with some degree of hearing loss. Also, over 17 million people in the world are profoundly deaf.

Around the world up to 330 million persons affected by Chronic Suppurative Otitis Media account for 5 million DALYs. The prevalence of the same ranges from 1% in developed countries to 46% among certain populations with 90% of the burden being borne by countries of South-East Asia and Western Pacific Regions, Africa and ethnic minorities of Pacific Rim.

Otitis Media can lead to disabling hearing loss in up to 60% of cases and accounts for nearly 28,000 deaths annually. Studies in developed countries show that by their third birthday 80% of children experience at least one episode of Acute Otitis Media (AOM) and 40% have six or more recurrences by the age of seven years. On turning our focus to India, multiple studies have shown high prevalence of Otitis Media in India

with more than 6% experiencing the disorder. If we look amongst school children, 10% to 20% have had at least one episode of Otitis Media. Also the burden of the disease in slums is more than in well sanitized urban cities.

The most important factor to consider is that the outcome of Otitis Media is total hearing loss, if it remains untreated. So, what are the factors which act as barriers to seeking effective care and treatment which leads to such an ever increasing burden?

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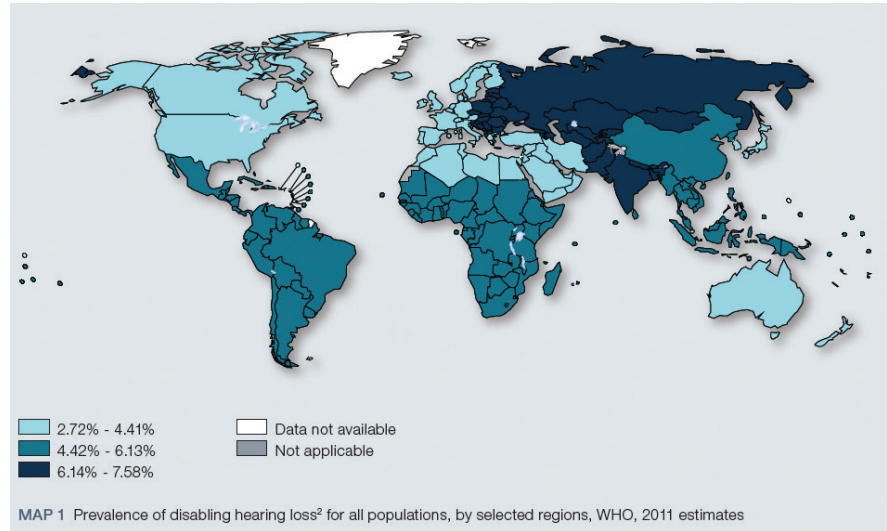
The most important factor to consider is that the outcome of Otitis Media is total hearing loss, if it remains untreated. So, what are the factors which act as barriers to seeking effective care and treatment which leads to such an ever increasing burden?

problem statement include a lack of motivation for treatment, inadequate screening and preventive care, late access to health care facilities and as a consequence seeking incomplete or no treatment.

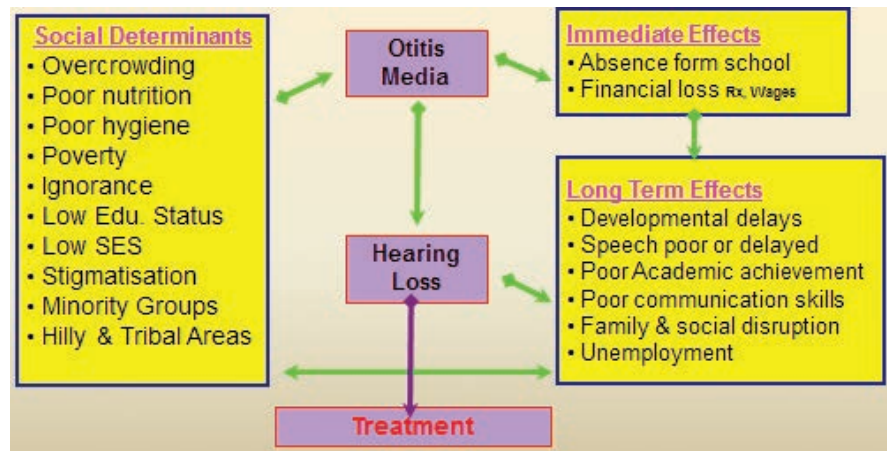
**OTITIS MEDIA : SOCIAL DETERMINANTS AND EFFECTS**

The barriers can be at multiple levels:

Looking at the accessibility of the Healthcare facility there could be possible barriers with respect to availability of providers, proximity of healthcare facility, operating hours of work and also the availability of transport facility. There is also a large mass which is unaware of the available resources and services. Whereas the problems at the healthcare facility are of a different



### Otitis Media : Social Determinants And Effects



nature like long waiting time for appointments, time constraint of physician, lack of interpreter services, lack of appropriate signage for patient guidance and very importantly poor continuity of care and the language used for health education.

To overcome these problems the healthcare facility should have the following 'As' like available, accessible, acceptable, affordable, adaptable, applicable, appropriate, advice, assurance and attitude of the administration.

At an individual level the barriers to prevention and seeking care are manifold like illiteracy, poverty, ignorance regarding the illness and availability of treatment, inappropriate treatment, high and ever rising out of pocket expenditure

and the wage loss with prolonged treatment.

Is the picture so grim or we have hope of overcoming these barriers? Well, yes there is hope and it needs to be tackled at various levels. What is most important is to motivate the patients and the care givers and also the community at large about risk factors, symptoms and seeking effective care through the means of effective Information, Education and Communication (IEC).

As with any healthcare provider there needs to be empathy with the patient, giving a personal touch and building rapport. Also there needs to be increased focus on diagnosis and management and patients should be explained the same patiently and give assistance and help. Patient

satisfaction, addressing their expectations, fears and explaining about outcome of treatment are some concerns that need to be addressed. The cornerstone for success of any of these interventions is a good rapport between the doctor and the patient. And lastly compliance and continuity of care is essential and this needs efforts at all levels and from all the stakeholders involved.

With increasing awareness generation regarding the various barriers to care for Otitis Media, there is an ever increasing need to overcome the hurdles in the path of conquering this menace.

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



# Lives Interrupted

Newborns need a prominent place on the government's health agenda in India where the day of birth is the most dangerous day when nearly half of maternal and newborn deaths and ,unfortunately, still births occur

In the year 2015, an estimated 16,000 children died every day across the globe; most of these deaths were from preventable diseases and circumstances. A total of 5.9 million children under five years of age died in 2015 and 75% of these deaths occurred within the first year of life.

Within the first year of life, nearly 61% of the deaths occurred in the first week of life. This is an appalling tragedy that demands an accelerated response. Therefore it is time that the global strategies give more importance to newborns. In India also the picture is similar with an under five mortality rate of 49/1000 live births and the infant and neonatal mortality rate being 40/1000 live births and 28/1000 live births respectively (SRS 2013).

The day of birth is the most dangerous day when nearly half of maternal and newborn deaths and still births occur. It is also the day babies face the greatest risk of disability. Protecting newborns means ensuring proper care for their mothers before, during and after pregnancy.

The majority of these deaths are preventable, caused by complications related to prematurity, birth, and severe infections.

Preterm and small babies are in much greater peril, including the long-term risk of stunting and developing non-communicable diseases like diabetes and hypertension as adults. The every newborn action plan takes forward the Global Strategy for Women and Children's Health. By focusing on the quality of care at birth, millions of lives can be saved

Protecting newborns means ensuring proper care for their mothers before, during and after pregnancy. The majority of these deaths are preventable, caused by complications related to prematurity, birth, and severe infections

and accelerate progress towards the Sustainable Development Goals (SDGs).

The governments, civil society, donors, the private sector and other partners can take action to address preventable newborn deaths and ensure that the rights of women and children are fully recognized. The robust accountability mechanism under the Every Woman Every Child umbrella will ensure that resources and results are tracked when it comes to commitments to newborns.

Millions of babies and women could be saved each year through investing in quality care around the time of birth and special care for sick and small newborns. Cost-effective solutions are now available to protect women and children. Newborn health and still births are part of the "unfinished agenda" of the Millennium Development Goals for women's and children's health.

With newborn deaths still accounting for 44% of under-5 deaths globally, newborn mortality and still births require greater visibility in the emerging post-2015 sustainable

development agenda if the overall under-5 mortality is to be reduced. More than 80% of all newborn deaths result from three preventable and treatable conditions – complications due to prematurity, intrapartum-related deaths (including birth asphyxia) and neonatal infections.

Cost-effective, proven interventions exist to prevent and treat each leading cause. Improving quality of care around the time of birth will save most lives, but this requires educated and equipped health workers, including those with midwifery skills, and availability of essential commodities. Women's

and children's health is an investment, particularly with specific attention to care at birth. High coverage of care around the time of birth and care of small and sick newborns would save nearly 3 million lives (women, newborns, and stillbirths) each year.

This would have a triple impact on investments – saving women and newborns and preventing stillbirths. The every newborn action plan sets out a clear vision of how to improve newborn health and prevent stillbirths by 2035. The plan builds on the United Nations Secretary General's Global Strategy for Women's and Children's Health and the Every Woman Every Child movement by supporting government leadership and providing guidance on how to strengthen newborn health components in existing health sector plans and strategies, especially those that relate to reproductive, maternal and child health.

Every Newborn calls upon all stakeholders to take specific actions to improve access to, and quality of, health care for women and newborns within the continuum of care. The guiding principles are based on Country leadership, Human rights, Integration, Equity, Accountability and Innovation.

The following are the strategic objectives:

1. Strengthen and invest in care during labour, birth and the first day and week of life.
2. Improve the quality of maternal and newborn care.
3. Reach every woman and newborn to reduce inequities.
4. Harness the power of parents, families, and communities.
5. Count every newborn through measurement, programme-tracking, and accountability.

The packages of care with the greatest impact on ending preventable neonatal deaths and stillbirths include care during labour, around birth and the first week of life; and care for the small and sick newborn.

Since these packages would save the most newborn lives as well as prevent maternal deaths and stillbirths, these are the focus of the Every Newborn action plan. Interventions in the package of "care during labour, around birth and in the first week after birth" include skilled care at birth, basic and comprehensive obstetric care, management of preterm births (including the use of antenatal corticosteroids), and essential newborn care (hygienic care, thermal control, support for breastfeeding and, if required, newborn resuscitation. These packages could prevent more than

1.9 million maternal and newborn deaths and stillbirths by 2025 with universal access.

The package of "care of small and sick newborns"







comprises interventions to deal with complications arising from preterm birth and/or small for gestational age, and neonatal infections (sepsis, meningitis, pneumonia and those causing diarrhoea). Appropriate management of small and sick newborns includes extra thermal care and support for feeding for small or preterm babies, including kangaroo mother care, antibiotic treatment for infections and full supportive facility care. The last encapsulates additional feeding support (including cup and nasogastric tube feeding and intravenous fluids), infection prevention and management, safe oxygen therapy, case management of jaundice and possibly surfactant and respiratory support.

Postnatal care provides the delivery platform for the care of the normal newborn, including the promotion of healthy practices and detection of problems requiring additional care. It is provided in a different time window, often by different providers in different places. Care of the normal newborn includes early initiation of (exclusive) breast feeding, prevention of hypothermia, clean postnatal care


practices and appropriate cord care.

Close observation for 24 hours and at least three additional postnatal contacts (on day 3, between days 7 and 14, and at six weeks after birth) is recommended for all mothers and newborns to establish good care-giving practices and detect any life-threatening conditions. Other interventions across the continuum of care are also vital for the survival and health of women and their babies. For example, antenatal care provides an opportunity for integrated service delivery for pregnant women, including obstetric services, but also covers infections, such as preventing, detecting and treating malaria and syphilis in pregnancy, caring for women with tuberculosis and HIV infection, preventing mother-to-child transmission of HIV and reducing harmful lifestyle practices such as smoking and alcohol use.

Some 81% of women receive antenatal care at least once during pregnancy, but only 55% receive the recommended minimum of four visits or more, and the quality of care is often suboptimal. Care before and between pregnancies affects the survival and health of women and

their babies. Family planning is a vital contributor through delaying, spacing and limiting births, all of which can reduce newborn mortality and boost the health of mothers, their babies and their other children.

Access to family planning and the right to control if, when and how frequently to become pregnant empower women and girls and improves babies' health and survival. Investments in family planning will contribute significantly to an overall reduction in newborn deaths and prevent still births and disability.

Hence it is time for the policymakers to ponder over the recommendations and design the interventions accordingly to reduce mortality in the neonatal period. 

(Contributed by Dr Suneela Garg, Director Professor and Head, Department of Community Medicine, Maulana Azad Medical College, New Delhi, Dr Arvind Garg, Senior Child Specialist, Apollo Hospital, Noida, Dr Archana R, Senior Resident, Department of Community Medicine, Maulana Azad Medical College, New Delhi)



# Unknown **Enemy**

It may sound unbelievable but it's true that hypertension, commonly seen in adults, is not uncommon in children, especially those who are obese

**BY DR NEHA BHANDARI**



**G**rowing habit of sedentary lifestyle, lack of exercise, heavy consumption of fast food and intake of steroid either during pregnancy or from any sources may lead to problem of high blood pressure commonly called hypertension in children, even new-borns too.

The problem may go undetected, because many a times there are no symptoms or signs of this disease. If left untreated hypertension can lead to heart failure, vision problems, kidney failure, paralysis and stroke early in life.

It is a general belief that high blood pressure (hypertension) as a problem affects only adults. Contrary to this belief, hypertension can be present at any age, even in newborns and young children. When the parents learn that their child has hypertension, it is very natural for them to deny the possibility due to their ignorance. It is for the paediatrician and the paediatric nephrologist to clear their doubts and to initiate appropriate management plan.

Blood pressure is the force of the blood against the walls of blood vessels as the heart pumps bloods to various parts of the body. If this pressure becomes too high, the child is said to have high blood pressure or hypertension.

As in adults, a child's BP is read as two numbers. The first number or systolic BP is

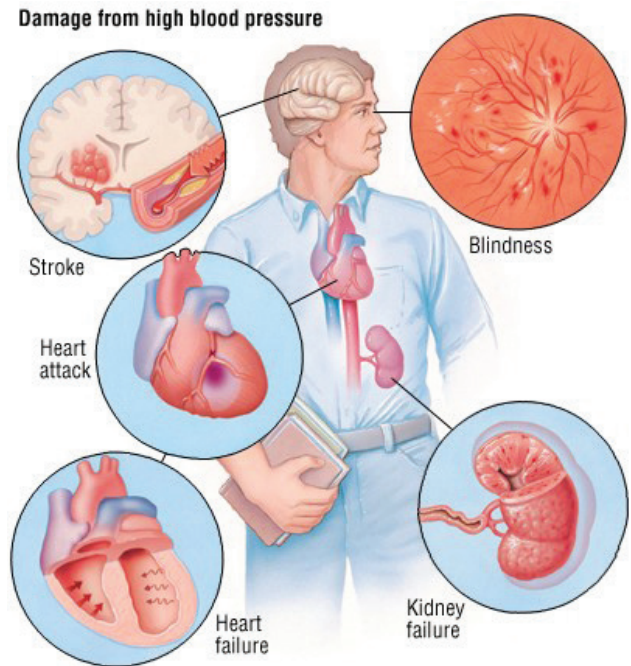


the pressure when the heart is pumping blood to various parts of the body. The second number or the diastolic BP is when the heart is resting between the beats. The diastolic BP is less than the systolic BP. A child is considered to be hypertensive when either the systolic, diastolic or both blood pressures are high.

According to a report, approximately 2-5% of children suffer from hypertension, with the majority unaware that they have this problem. A rise in incidence of hypertension has been linked to concurrent increase in prevalence of obesity. The prevalence of hypertension in obese children is higher and ranges from 10-30%.

The obese children are more prone to hypertension. If hypertension is allowed to continue or become worse over years, the prolonged extra pressure in the blood vessels can lead to heart failure, stroke, damage to eyes and kidney even in children.

Normal BP is lower in children than in adults. BP increases with age and body size. Normal BP for a child will depend on the child's age, sex and height. We compare your child's BP to



AGE (YEARS)	BP (MM HG)
0 – 5 YEARS	100/70
5 – 10 YEARS	120/80
10 YEARS	130/90

readings given on BP charts which lists normal BP or high BP for boys and girls based on their height and age. A child is said to be hypertensive if his average systolic or diastolic BP is more than 95th percentile (according to the standardized charts) for age, gender and height on more than 3 occasions. The doctor is the best person to read and interpret the charts.

To label a child as hypertensive, BP charts have been issued by the fourth US task force report on hypertension. These are charts consulted by doctors to arrive at a conclusion whether the child has hypertension or not. Since these charts are difficult to interpret and not easily available to parents, it is recommended that if your child's BP is beyond the values listed in the table here for the specific age group, you need to consult your

doctor (paediatrician/paediatric nephrologist)

Hypertension has been graded according to the B.P readings like Prehypertension: - Blood pressure is > 90th percentile but <95th percentile (as per BP chart). Children in this range of BP should be carefully followed up as they grow up. And stage 1 hypertension (Unsafe):- BP exceeds 95th percentile up to 5 mm above 99th percentile. Blood pressure in this range should be rechecked at least twice in the next 1-3 week or even earlier. Stage 2 hypertension (Dangerous):- BP exceeds 5 mm or more above the 99th percentile. Confirmation should be made at the same visit.

Children who are more than 3 years and are seen at health care setting (for example cold, cough or fever)

Normal BP is lower in children than in adults. BP increases with age and body size. Normal BP for a child will depend on the child's age, sex and height.

should have their blood pressure measured. Children who are less than 3 years should get their BP checked if they have:

- History of low birth weight, prematurity or requirement of neonatal intensive care,
- History of heart disease by birth
- History of recurrent urinary tract infection
- History of blood or protein loss in urine
- History of any kidney disease in the past
- Family history of kidney disease
- History of organ transplantation
- History of receiving medicines which can cause high blood pressure/kidney damage.

The usual symptoms of hypertension are headache (sometimes throbbing in nature), flushing, giddiness, bleeding from nose, vision disturbances, poor school performance, irritability, blood or protein in urine more or less frequently and weight loss. In some cases hypertension can be without symptoms and therefore those children who are obese, have history of neonatal intensive care stay, or have kidney/ heart disease or cardiac disease should have their

blood pressure checked.

Generally it is preferred to check the blood pressure when the child is sitting comfortably in a chair with feet on the ground and the arm at the level of the heart. The BP cuff should be of the right size for the child's age. The width of the cuff bladder (rubber inside the outer cloth) should be 40% of the arm circumference midway between the shoulder and elbow joint and the length should be double the width. Another simple way is to get a bladder cuff whose width covers  $\frac{3}{4}$  of the upper arm. If the cuff size is not appropriate the blood pressure readings may come falsely high or low. However if an appropriate cuff size is not available the next bigger size can be used. Cuff sizes with a width of 4 cm, 9cm, 10cm, 13cm, and 20cm are available in the market.

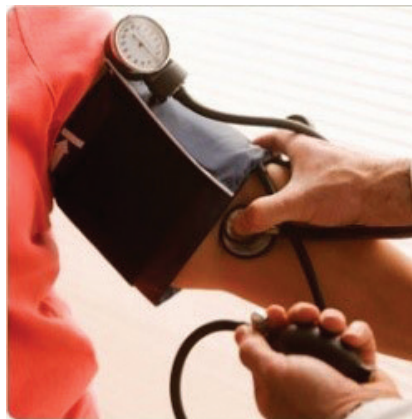
Mercury instruments are the best for checking blood pressure, but as they are being phased out, aneroid devices are being used more commonly and they are fairly accurate, but they require frequent calibration. Automatic BP machines are also being used. If an automatic (digital) blood pressure machine is being used and blood pressure readings come high, then they need to be confirmed with mercury or aneroid device.

Ambulatory Blood Pressure Monitoring (ABPM) means blood pressure is recorded over a 24 hours period by a BP monitor where cuff is tied to the arm and a small digital blood pressure machine is attached to a belt around the waist. The child carries on his/her normal activities in the day and sleep with it, while the machine is on. The machine takes the blood pressure readings at regular intervals usually every 15-30 minutes during the day and night. The monitor should be kept on throughout the night. At the end of 24 hours the cuff and the machine are removed and given to the hospital for analysis of readings.

For the machine to work properly, it is important to make sure that the



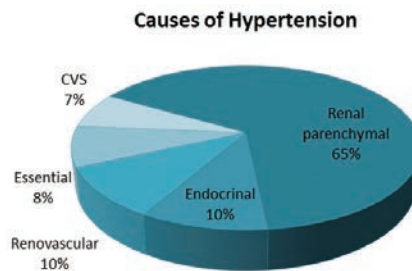
MERCURY INSTRUMENT



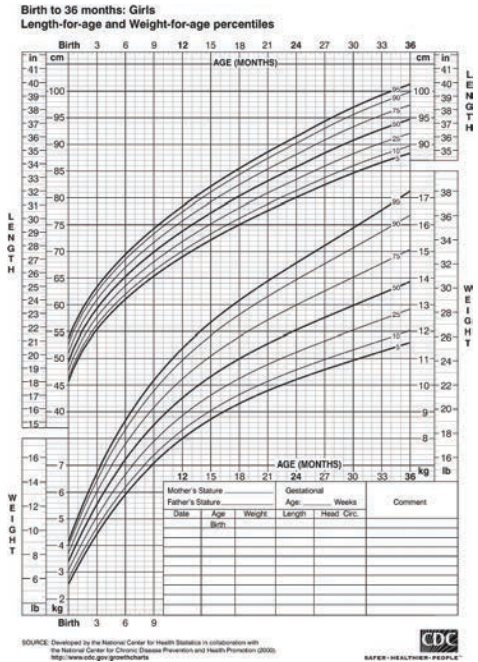
ANEROID DEVICE



AUTOMATIC BP MONITORING DEVICE



tube attached to the machine is not twisted or bent. As a parent you are instructed to maintain a diary, to note the timing of going to bed, medication



and general activities. There are a number of reasons why a doctor advises 24 hour ABPM, which are to find out if the high BP reading in the clinic is higher than the reading away from clinic e.g. home (called white coat hypertension), to see how well the medicines are working and whether they are controlling the blood pressure all the time and to see whether blood pressure at night is less than the recording during day time.

In majority of young children an underlying cause of hypertension can be identified e.g. kidney, heart, blood vessels, hormone problems, tumour or drugs. Diseases of the kidney are the most common cause of hypertension in children. Primary or essential hypertension, commonly seen in adults, is becoming common in children, who are obese or over weight.

If a cause for hypertension is diagnosed, appropriate treatment can be initiated and the child may have normal blood pressure afterwards. For few reasons, a child may have to remain on anti-hypertensive medicines throughout the life. Once a child is diagnosed to have hypertension, it is very important to



Most children with essential hypertension require lifestyle modifications which include weight reduction, meditation, yoga, exercise, low salt diet.




evaluate any underlying disease and to find out risk factors for essential hypertension like obesity, smoking, alcohol, etc. In addition tests are required to find out if any complication (involvement of eye, heart or kidney) has occurred or not. The common tests which may be required are kidney function tests, hormone levels, lipid profile, urine examination, ultrasound and doppler test of kidney, kidney scan, echocardiogram, ECG and eye examination.

Most children with essential

hypertension require lifestyle modifications which include weight reduction, meditation, yoga, exercise, low salt diet. Other risk factors like smoking, alcohol, steroids, oral contraceptives, sleep apnea should also be controlled. For secondary hypertension, surgery helps in certain cases, e.g. if any tumour is causing hypertension, then it needs to be removed surgically. Timely detection helps in appropriate treatment of hypertension and its cause and helps to prevent end organ damage in adult life.

Indications for drug treatment in

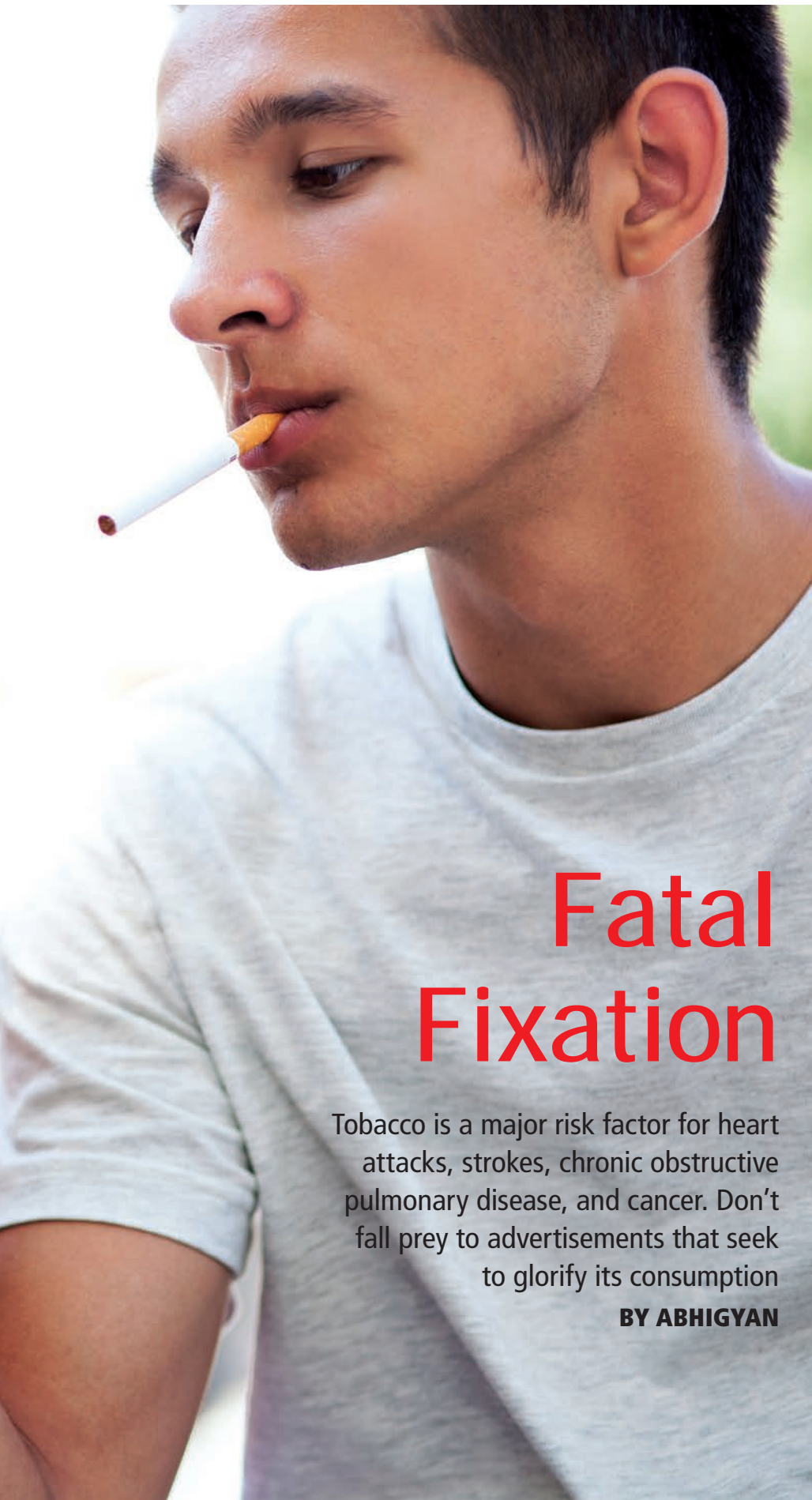
hypertension

- a) Stage 1 hypertension persisting even 6 months after lifestyle modifications or those who have any pre existing kidney disease
- b) Stage 2 hypertension
- c) Damage to eye, kidney, heart, or brain has occurred
- d) Pre hypertension in a child with chronic kidney disease, diabetes or lipid abnormalities. 

(The author is Paediatric Nephrologist, Sri Balaji Action Medical Institute, New Delhi)







# Fatal Fixation

Tobacco is a major risk factor for heart attacks, strokes, chronic obstructive pulmonary disease, and cancer. Don't fall prey to advertisements that seek to glorify its consumption

**BY ABHIGYAN**

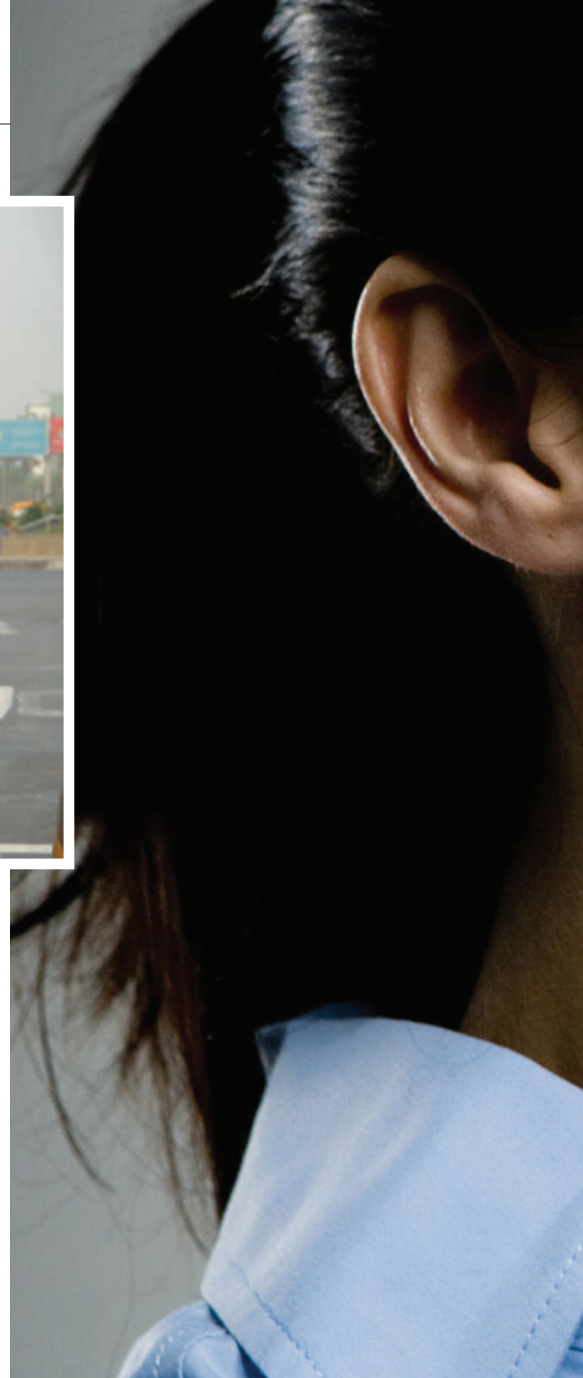
**E**very year tobacco kills more than five million people, more than tuberculosis, HIV/AIDS and malaria combined.

Unless urgent action is taken tobacco could kill one billion people during this century. In people over age 30, smoking accounts for one in every five deaths among men and one in every 20 deaths among women globally.

As per report, there are more than 1.3 billion smokers world-wide, out of which about 80% are residing in low and middle-income countries. According the WHO estimates in 2008, India and China, the two most populous countries contribute to over 40% of the global tobacco users.

Tobacco use is a risk factor for six of the eight leading causes of death in the world. These include ischemic heart disease, cerebrovascular diseases, lower respiratory tract infection, chronic obstructive pulmonary diseases (COPD), tuberculosis and cancer of the respiratory tract (lung, trachea and bronchus). Apart from five million smokers, about 600,000 are non-smokers exposed to second-hand smoke.

Non-communicable diseases (NCDs) kill 35 million people annually, 80% of which are in low- and middle-income countries. Tobacco is responsible for 1 out of 6 NCD deaths. Besides its ill-effect on health, tobacco use costs the world an estimated \$500 billion each year in health care expenditures, productivity losses, fire damage and other costs. Tobacco-related illnesses and premature mortality impose high productivity costs to the economy because of sick workers and those who die prematurely during their working years. In India, tobacco consumption is responsible for half of



all the cancers in men and a quarter of all cancers in women. About 80% (or 8 out of 10) of all deaths from chronic obstructive pulmonary disease (COPD) are caused by smoking. .Our country also has one of the highest rates of oral cancer in the world, partly attributed to high prevalence of tobacco chewing.

**TOBACCO USE IN INDIA**

The Global Adult Tobacco Survey India (GATS India) was carried out in all six geographical regions for both urban and rural areas of 29 states of the country and the two Union Territories of Chandigarh and Pondicherry covering about 99.9 per cent of the total population of India. The survey is based on a sample of households which is representative at the national and state levels. GATS India conducted interviews with

69,296 adults aged 15 and above, 33,767 men and 35,529 women aged 15 and above.

The survey reports that the current tobacco use in any form is 34.6% of adults out of which 47.9% were males and 20.3% of them were females. From among the smokers 14.0% of adults were smoking and out of them: 24.3% are males and 2.9% of them were females. The total number of smokeless tobacco users was 25.9% of adults in which 32.9% of them are males and 18.4% are females.

Young people are the most vulnerable segment and adolescence is found to be the most susceptible time for initiating tobacco use. Tobacco use among the adolescents in India is believed to be on an increase. It was estimated in 1999-2001 that approximately 5500 adolescents, some as young as 10

Tobacco use is a significant factor in miscarriages among pregnant smokers, and it contributes to a number of other threats to the health of the fetus such as premature births and low birth weight and increases by 1.4 to 3 times the chance for Sudden Infant Death Syndrome (SIDS)

years old start tobacco use every day in our country and nearly 4 million young people under the age of 15 years are already using tobacco regularly. A study conducted in the year 2005 reported the current prevalence of any form of tobacco use among school-going adolescents (aged 13-15 years) in India to be 17.5%. Tobacco use in any form increased in India during the 7-year period between the NFHS-2 and NFHS-3, and the maximum increase in tobacco use occurred in persons between 15 and 24 years of age in the richer classes and in urban areas.



### **HEALTH CONSEQUENCES OF TOBACCO USE**

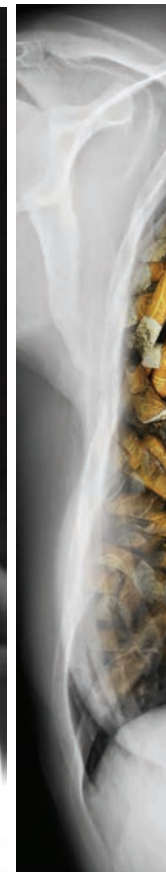
Unlike many other dangerous substances, the impact of tobacco use on health is not so immediate. It usually takes decades or years after its first use to develop tobacco related disease in a person. Tobacco is used mainly in two forms which are mainly smoked as bidi, cigarette and hookah. It is also used in smokeless form as gul (powdered form tobacco), khaini (tobacco-lime mixtures) which is applied to the oral mucosa, gutka (industrially manufactured and marketed tobacco product), and betel quid which is consisting of fresh betel

leaf, lime, catechu, areca nut and tobacco and is chewed in the mouth. In some northeastern states of India a liquid form which is manufactured by passing tobacco smoke in water is also being consumed.

Tobacco smoke contains several carcinogenic pyro lytic products that bind to DNA and cause many genetic mutations. There are more than 7000 chemical substances in tobacco smoke out of which 49 are known or suspected chemical carcinogens. Tobacco also contains nicotine, which is a highly addictive psychoactive drug and is responsible for physical and psychological dependency.

Tobacco use leads most commonly to diseases affecting the heart, liver and lungs.

Smoking is a major risk factor for heart attacks, strokes, chronic obstructive pulmonary disease (COPD) (including emphysema and chronic bronchitis), and cancer (particularly lung cancer, cancers of the larynx and mouth, and pancreatic cancer). It also increases the incidence of coronary heart disease by 2 to 4 times and contributes to development of peripheral vascular disease and hypertension. It also increases the incidence of tuberculosis by 3-4 times as compared to non-



smokers and the mortality from tuberculosis is shown to be about 3 times higher in smokers than that of non-smokers.

The effects depend on the number of years that a person smokes and on how much the person smokes. Starting smoking earlier in life and smoking cigarettes higher in tar increases the risk of these diseases. Also, environmental tobacco smoke, or secondhand smoke, has been shown to cause adverse health effects in people of all ages. Cigarettes sold in underdeveloped countries tend to have higher tar content, and are less likely to be filtered, potentially increasing vulnerability to tobacco smoking related disease in these regions.

Tobacco use is a significant factor in miscarriages among pregnant smokers, and it contributes to a number of other threats to the health of the fetus such as premature births and low birth weight and increases by 1.4 to 3 times the chance for Sudden

Infant Death Syndrome (SIDS). Incidence of impotence is

Second-hand smoke also has serious and often fatal health consequences. Second hand smoke is the smoke exhaled by a smoker or smoke emanating from the burning end of a cigarette/bidi/cigar. In India, smoking is more prevalent among men, therefore women and children are prone to exposure of second hand smoke in their homes.

approximately 85 percent higher in male smokers compared to non-smokers, and is a key factor causing erectile dysfunction (ED).

#### **SECOND HAND SMOKE**

Smokers are not the only ones harmed and killed by tobacco. Second-hand smoke also has serious and often fatal health consequences. Second hand smoke is the smoke exhaled by a smoker or smoke emanating from the burning end of a cigarette/bidi/cigar. In the United States, second-hand smoke causes about 3400 lung cancer deaths and 46000 heart disease deaths a year. In India, smoking is more prevalent among men, therefore women and children are prone to exposure of second hand smoke in their homes.

As per GATS, India Chapter 2010, more than 52% of the adults in India were exposed at home and 29% in public places. Exposure to second hand smoke can lead to cancer and heart diseases among adults and SIDS



(sudden infant death syndrome), chronic respiratory infections, worsening of asthma, middle ear diseases and acute respiratory illness in children.

### **FIGHTING THE TOBACCO EPIDEMIC**

The WHO has been giving aid to countries fight tobacco use and the tobacco industry's marketing of its products. In May 2003, the WHO World Health Assembly unanimously adopted the WHO Framework Convention on Tobacco Control (FCTC); the world's first against tobacco in order to support action at the global and country level against the tobacco epidemic. The core demand reduction in the FCTC includes price and tax measures and non-price measures to reduce tobacco demand. It comprises of protection from exposure to tobacco smoke in public places or transports, regulation on tobacco product contents and regulation on disclosures, packaging

and labeling of tobacco products so as to prevent its promotion, enhancing public awareness and comprehensive ban on tobacco advertising, promotion and sponsorships etc. The core supply reduction provisions in the FCTC includes prevention of illicit trade on tobacco, banning of sale to minors and providing alternative means of economic support to workers engaged in tobacco industries.

In order to spearhead the fight against the current global tobacco epidemic, the WHO has introduced the MPOWER package of six proven policies which basically may be elaborate as the following points:


- **Monitor tobacco use and prevention policies,**
- **Protect people from tobacco smoke,**
- **Offer help to quit tobacco use,**
- **Warn about the dangers of tobacco,**
- **Enforce bans on tobacco advertising, promotion and sponsorship, and**
- **Raise taxes on tobacco.**

This policy package can help reverse the tobacco epidemic and help reduce the mortality from tobacco related diseases.

In order to protect the health of the people from the effect of smoking and to control its use, the Government of India has taken various initiatives for tobacco control in the country. India was among the first few countries to ratify WHO's Framework Convention on Tobacco Control (WHO FCTC) in 2004. The National Tobacco Control Programme was started during the 11th Five Year Plan which is under implementation in 42 districts of 21 states in the country. The main

objectives of the program are to bring greater awareness about the harmful effects of tobacco use and tobacco control laws through mass media, public awareness campaigns etc. It also aims to facilitate the effective Implementation of the Tobacco Control laws in the country. The Centre has also enacted a comprehensive tobacco control legislation titled "The Cigarettes and Other Tobacco Products (Prohibition of Advertisement and Regulation of Trade & Commerce, Production, Supply and Distribution ACT, 2003" in May 2003. The important provisions of this act includes ban on smoking in public places, display of prominent signboard on anti-smoking signage at public places, prohibition of direct/indirect advertisement and sponsorship of tobacco products, ban on sale to minors, mandatory depiction of statutory warnings on tobacco products, specific health warnings on tobacco products and ban on sale of tobacco products with 100 yards of the educational institution.

However, the Act has many limitations which include limited coverage on chewable tobacco products like gutkha and measures on tackling second hand smoke, lack of focus on smokeless tobacco industry, poor compliance from many states and lack of effective implementation of the law by various enforcement agencies in the state. In response to these drawbacks, the Centre has moved to improve on the COTPA Amendment Act 2015 and has proposed radical changes,

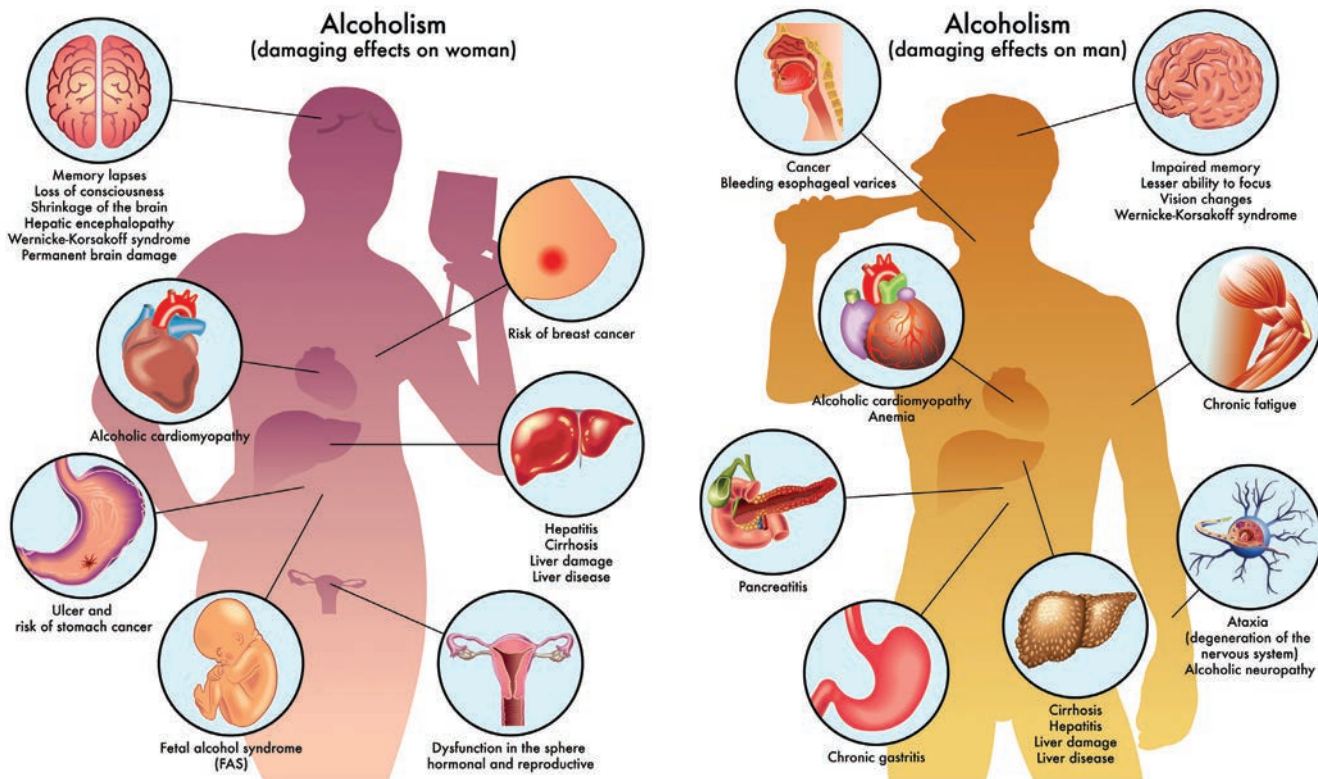
Some of the major recommendations include ban on sale of loose cigarettes and raising the minimum age of a person buying tobacco products to 21 years from existing 18, constitution of National Tobacco Control Organization, raising of fine to Rs. 1000 from Rs. 200 on smoking in public places as well as recommending removal of designated smoking zones in hotels and restaurants. 

A large, dark silhouette of a person's head and shoulders, facing right. The person is holding a glass of red liquid (alcohol) in their right hand. To the right of the silhouette, a bottle of alcohol is partially visible. The background is white, and the silhouette is set against a dark surface at the bottom.

# Deadly Dependence

The rising trend of alcohol abuse in India has grave implications on the health, mental equilibrium and social standing of those who get addicted to it

**BY AMRESH KUMAR TIWARY**



**T**he growing incidence of alcohol consumption in the Indian society has wide-ranging negative effects manifesting not only in health-related aspects but adverse social and economic conditions too. Curbing alcohol abuse needs to be made a priority in public health policy in India

Alcohol consumption is a global phenomenon but it is now getting worldwide attention due to its harmful outcomes. Alcohol is classified as psychoactive substance which produces dependence. It has not only important implications on health but has social and economic aspects as well. There are a number of factors which determine alcohol consumption in a society.

**According to Dr Vinay Aggarwal, Ex President, Indian Medical Association, New Delhi and Founder Chairman, Max Superspeciality Hospital, Vaishali,** social factors like cultural practices, level of development, alcohol production, distribution and



marketing strategies are important factors. In India, alcohol consumption on certain religious occasions and social gathering is an accepted norm. Similarly, consumption of alcoholic beverages is prevalent in many tribal and village societies around the world. Individual factors also play a role in the pattern of alcohol consumption. Age group, gender, socio-economic factors, education, certain occupation, familial tendency, peer pressure etc are individual determinants of alcohol intake. Early



age of initiation of alcohol intake leads to higher rates of diseases due to abuse, accidents and injuries.

Alcohol consumption, determinants of its use in different populations, consequences on health and different strategies to reduce the health and social burden caused by the alcohol abuse are important issues for public health in India.

Harmful use of alcohol is defined by the World Health Organization (WHO) as “drinking that causes detrimental health and social consequences for the drinker, the people around the drinker and society at large, as well as the patterns of drinking that are associated with increased risk of adverse health outcomes”. The adverse use of alcohol leads to deaths of millions of people worldwide every year making it a grave concern for society.

### Shocking Figures

As per the WHO, worldwide 3.3

million deaths result from harmful use of alcohol every year, which is 5.9 % of all deaths. Alcohol consumption causes death and disability relatively early in life. In the age group of 20-39 years, approximately 25% of the total deaths are alcohol-attributable. A majority of this is due to injuries. Excessive use of alcohol kills or disables people at a relatively young age which puts a huge burden on society. Indian figures by WHO shows that per capita alcohol consumption in the age group of 15 years and above is about 4.3 liters. Most common ill-effects effects of alcohol consumption in India are liver cirrhosis and road traffic accidents. Prevalence of alcohol use-related disorders is 2.2% in India.

### Cause and effects

Alcohol is a contributory factor in more than 200 diseases and injuries. There is a causal relationship between harmful use of alcohol and mental and

behavioural disorders. It is an independent risk factor for non-communicable conditions as well as injuries. Recent studies have reported the role of alcohol in infectious diseases like tuberculosis and HIV/AIDS too. Beyond health consequences, the harmful use of alcohol brings significant social and economic losses to individuals and society at large. The harmful effects of alcohol are dependent on amount, type and frequency of usage of alcohol.

- **Mental disorders:** Alcohol consumption leads to neuropsychiatric conditions called alcohol use disorders. Epilepsy, seizure disorder, depression and anxiety are directly attributed to alcohol consumption.
- **Gastrointestinal diseases:** Liver cirrhosis, pancreatic diseases are some examples.
- **Cancers:** One of the most serious effects of alcohol is cancer. Alcohol



is causative factor for cancer of the mouth, pharynx, laryngeal cancer, oesophageal cancer, colon and rectum cancer, stomach cancer, kidney and urinary bladder cancers, liver cancer and female breast cancer.

- **Injuries and accidents:** Alcohol consumption is directly associated with road traffic accidents, gang violence and criminal activities. These may lead to severe injuries leading to disabilities and deaths.
- **Cardio vascular diseases:** Alcohol consumption has negative consequences on hypertension, atherosclerosis, atrial fibrillation and stroke. Heavy drinking is a risk factor for heart diseases, stroke and diabetes.
- **Maternal and foetal mortality:** Alcohol, if consumed by female during pregnancy, has detrimental effects on the baby. It leads to congenital deformities in foetus.
- **Infectious diseases:** Alcohol directly weakens our immune system, thereby making human body prone to a number of infections. This is especially relevant in pneumonia and tuberculosis.
- **Reproductive health outcomes:** Reproductive problems in females like reduced fertility. In males, it is associated with reduced sperm count and erectile dysfunction thereby causing fertility problems.
- **Socio economic consequences:** Alcohol consumption leads to inefficiency in work and in fulfilling family and social relations. It is associated with loss of job, poverty, domestic violence, damage to the one's image in society, loss of productivity, absenteeism and earning potential.

#### **Prevention and control measures**

Says Vinay Aggarwal, "The market forces which are promoting alcohol should be brought under legislative control. Regulating the marketing of

alcohol is essential since it has important impact on younger population. Restricting the availability of alcohol can be effective. Legislations should be made and strictly enforced. Taxation policies can have huge impact on alcohol demand and supply system. Raising public awareness about the harmful effects of alcohol is essential. Innovative strategies should be used including mass media campaigns for the same. More and more counselling and rehabilitation centres should be opened for those in need all over the country. Those who recover should be integrated within the society without stigma and discrimination. All healthcare workers, social workers should be trained in counselling alcohol users."

The WHO has launched "Global monitoring framework for the prevention and control of non-communicable diseases". India being one of the signatory of this is committed to take measures for reduction of harmful effects of alcohol intake. In India, there is lack of a uniform law to cover alcohol production and sale across the country.


Certain states like Gujarat have framed legislations at the state level to curb the liquor menace. The Punjab Excise Act, which also extends to Haryana, prohibits establishments from employing women in any part of

Alcohol consumption, determinants of its use in different populations, consequences on health and different strategies to reduce the health and social burden caused by the alcohol abuse are important issues for public health in India.



such premises in which liquor is consumed by the public. Drunk driving is a punishable offence. Legal limits are set for alcohol concentration for breath analyzer test.

**Dr H P Singh, Senior Child Specialist, Mother Child Care Hospital, Vaishali, observes,** "There is growing incidence of consuming alcohol in teenagers which might harm their future. There are national prohibited days which are specific days when the sale of alcohol is not permitted. The government of India has established detoxification centres and counseling centers for people who need special care and rehabilitation. Although steps have been taken but they are not sufficient. Despite its negative effects on almost every aspect of life, alcohol consumption has remained a relatively low priority in public health policy in India."

To combat the problem of alcohol abuse, political will is of utmost importance. Public policies and interventions to prevent and reduce alcohol-related harm should be formulated. All stakeholders should be involved while framing the public policies and frameworks for preventing alcohol abuse. Specific care should be taken to prevent initiation of alcohol intake in early age groups like youth. Those who are affected should have easy access to services for care and rehabilitation. 

# Dangerous Dengue

There is a crying need for integrated preventive methods to tackle the menace of dengue that has spread its roots in the country

**BY TEAM DOUBLE HELICAL**



**D**engue is a mosquito borne viral disease that has rapidly spread in all member countries of World Health Organisation (WHO) in recent years. Dengue virus is transmitted by female mosquitoes mainly of the species *Aedes aegypti* and, to a lesser extent, *A. albopictus*.

The disease is widespread throughout the tropics, with local variations in risk influenced by rainfall, temperature and unplanned rapid urbanization. Dengue viruses can cause a wide variety of clinical illnesses ranging from mildly symptomatic dengue fever (DF) to more dangerous clinical conditions with capillary leakage syndrome such as dengue shock syndrome (DSS) and dengue hemorrhagic fever (DHF).

Severe dengue (also known as Dengue Haemorrhagic Fever) was first recognized in the 1950s during dengue epidemics in the Philippines and Thailand. Today, severe dengue affects

most Asian and Latin American countries and has become a leading cause of hospitalization and death among children in these regions.

There are 4 distinct, but closely related, serotypes of the virus that cause dengue (DEN1, DEN2, DEN3 and DEN4). Recovery from infection by one provides lifelong immunity against that particular serotype. However, cross immunity to the other serotypes after recovery is only partial and temporary. Subsequent infections by other serotypes increase the risk of developing severe dengue.

### **Global burden of dengue**

According to the WHO, the incidence of dengue globally has shot up 30-fold in the past 50 years. The actual numbers of dengue cases are under reported and many cases are misclassified. One recent estimate indicates 390 million dengue infections per year (95% credible interval 284–528million), of which 96 million (67–136 million) manifest

clinically (with any severity of disease). Another study, of the prevalence of dengue, estimates that 3900 million people, in 128 countries, are at risk of infection with dengue viruses.

Member States in 3 WHO regions regularly report the annual number of cases. In 2010, nearly 2.4 million cases were reported. Although the full global burden of the disease is uncertain, the initiation of activities to record all dengue cases partly explains the sharp increase in the number of cases reported in recent years.

Before 1970, only 9 countries had experienced severe dengue epidemics. The disease is now endemic in more than 100 countries in the WHO regions of Africa, the Americas, the Eastern Mediterranean, South East Asia and the Western Pacific. The America, South East Asia and Western Pacific regions are the most seriously affected with over 3 million cases in 2013 (based on official data submitted by Member States). Not only is the number of cases

increasing as the disease spreads to new areas, but explosive outbreaks are occurring too.

An estimated 500 000 people with severe dengue require hospitalization each year, a large proportion of whom are children and about 2.5% of those affected die.

#### Changing epidemiology in India

Dengue in India has dramatically expanded over the last few decades, with rapidly changing epidemiology. More recent and systematic data are now available because of the NVBDCP (National Vector Borne Disease Control Program).

Although the first mention of occurrence of dengue in India is said to be in 1780, the first confirmed outbreak occurred in Kolkata in 1963–1964. It took almost 30 years for dengue to eventually spread throughout the entire country, resulting in the first major nationwide outbreak of DF/DHF in the year 1996 in Delhi where 10,252 cases and 423 deaths were reported. This outbreak was caused by DENV-2, genotype IV strain of the virus.

In northern parts of India, the number of reported DF/DHF cases increased, probably because, as now, the health authorities of the country became more vigilant, and timely reporting of all cases was initiated. Following this, gradual dengue virus expansion started in the entire nation, and northern parts of India faced yet another outbreak in 2003 and at this time, all four serotypes were seen in circulation for the first time in Delhi. A shift in the age group involvement from children to young adults was also noticed in several studies from India. Thus, it is evident that now in India there is a definite increase in the frequency.

#### Burden of disease in India

India's population is twice that of Southeast Asia, the region that currently reports the most dengue-related deaths. A recent study done at the University of Oxford using a map-based approach to model how many dengue cases were



occurring in various parts of the world, estimated that India had the largest number of dengue cases, with about 33 million apparent and another 100 million asymptomatic infections occurring annually.

Quantifying the burden of dengue is critical for policy makers to set policy priorities and make informed decisions about disease control. Surveillance for dengue has been very limited in India and reporting to the central government has also not been mandatory. In 2004, a WHO initiative called for promoting improvement of dengue surveillance as part of the Integrated Disease Surveillance Programme in India,

strengthening laboratory networking and quality assurance, and reviewing case definitions. Although improvements are being made, the current gaps in epidemiological data and surveillance mean that the burden of dengue in India probably is much higher.

According to NVBDCP from 2009 to 2014, total 229288 cases of Dengue are detected in India while in current year upto June 2015 total 5874 cases are detected and 19 deaths has been occurred. A study says that so far each reported dengue case at the national level, 282 clinically diagnosed dengue cases actually occurred and obtained medical care. According to that study,



the NVBDCP captures only 0.35% of the annual number of clinically diagnosed dengue cases in India.

Although the number of dengue cases has shown a steady rise with every passing year, the mortality has reduced. The overall mortality rate of 1.2% in 2007 dropped to 0.25% in 2013. This reduction is probably the result of the cumulative effects of better patient management, increased diagnostic capabilities and better reporting. Compared with the rest of South-East Asia, the number of dengue shock syndrome (DSS) cases in India remains low.

**Transmission:** The *Aedes aegypti* mosquito is the primary vector of dengue. The virus is transmitted to humans through the bites of infected female mosquitoes. After virus incubation for 4–10 days, an infected mosquito is capable of transmitting the virus for the rest of its life. Infected humans are the main carriers and multipliers of the virus, serving as a source of the virus for uninfected mosquitoes. Patients who are already infected with the dengue virus can transmit the infection (for 4–5 days maximum 12) via *Aedes* mosquitoes after their first symptoms appear.

The *Aedes Aegypti* mosquito lives in

urban habitats and breeds mostly in manmade containers. Unlike other mosquitoes, it is a day time feeder its peak biting periods are early in the morning and in the evening before dusk. Female *Aegypti* bites multiple people during each feeding period.

*Aedes albopictus*, a secondary dengue vector in Asia, has spread to North America and Europe largely due to the international trade in used tyres (a breeding habitat) and other goods (e.g. lucky bamboo). *Ae. albopictus* is highly adaptive and, therefore, can survive in cooler temperate regions of Europe. Its spread is due to its tolerance to temperatures below freezing, hibernation, and ability to shelter in microhabitats.

#### Prevention and control

**Vector control:** With limited therapeutic strategies and the current lack of a vaccine, effective vector control methods are an essential component to reduce dengue-related mortality and morbidity. Vector control methods involve environmental, chemical, and biological management approaches. Utilizing an effective integrated vector control strategy with a combination of approaches, such as social mobilization

and integration of chemical and nonchemical vector control methods targeting areas of high human–vector contact, will aid in reducing dengue transmission. Bioassay data demonstrate that resistance to organophosphates (temephos) and pyrethroids is widespread in *A. aegypti*, and resistance has also been reported in *A. albopictus*. Monitoring resistance is, therefore, necessary to ensure that effective insecticides are being used. Despite extensive efforts in developing the effective dengue control measures, several factors pose difficulties in implementing efficient vector control measures, such as large population size, lack of awareness, lack of education, and poverty.

**Integrated surveillance:** Surveillance is an essential component of any dengue pre–vention and control program, as it provides the necessary information for risk assessment and program guidance. Surveillance utilizes both passive and active data collection methodologies. Furthermore, information on the genetic sequence of the circulating viruses is also important to predict epidemics. In India, the government’s initiative to set up virology diagnostic laboratories in different states along with initiation of



a national program has geared up the surveillance activities; however, a lot more remains to be achieved for effective surveillance.

**Toward a new vaccine:** To date, an effective vaccine to protect against dengue is lacking owing to several challenges such as the requirement of a tetravalent vaccine providing long-term homo typic and heterotypic protection, the lack of an adequate animal disease model, and the resulting uncertainty around correlates of protection. However, several candidate vaccines are in various phases of trials. The candidate currently at the most advanced clinical development stage, a live-attenuated tetravalent vaccine based on the chimeric yellow fever-dengue virus, has progressed to support phase III efficacy studies. Several other vaccines are also at earlier stages of clinical development. Additional technological approaches, such as virus-vectored and virus-like particle-based vaccines, are under evaluation in preclinical studies..

**Research:** Some promising new dengue vector control tools are the subject of research and are currently being field tested for their use as public health interventions. Some research

areas are:

**Insecticide treated materials:** Insecticide treated materials (ITMs) consist of long lasting insecticidal nets, curtains and wall hangings. Bednets have proved highly effective in preventing diseases transmitted by nocturnally active mosquitoes. If the application of these interventions is shown to be efficacious, cost effective and sustainable it may offer additional prospects for dengue vector control in the home, workplace, schools, hospitals and other locations.


**Lethal ovitraps:** Ovitrap are often used for surveillance of Aedes vectors can be modified to render it lethal to immature or adult populations of *Ae. aegypti*. Lethal ovitraps (which incorporate an insecticide on the oviposition substrate), autocidal ovitraps (which allow oviposition but prevent adult emergence), and sticky ovitraps (which trap the mosquito when it lands) have been used on a limited basis. Studies have shown that population densities can be reduced with sufficiently large numbers of frequently serviced traps.

**Genetically modified mosquitoes** There are two methods of reducing disease transmission using genetics :(a)

**Population suppression:** reduce mosquito population such that it would not be able to sustain pathogen transmission. This includes sterility, reduced adult longevity, or decrease larva/pupa survival. (b) **Population replacement:** Reduce inherent ability to transmit the pathogen. Mating will alter the genetic pool of the wild population.

**Public awareness about dengue:** Dengue is one of the major public health problems which can be controlled with active participation of the community. Need is to organize health education programmes about dengue disease to increase community knowledge and sensitize the community to participate in integrated vector control programmes.

### Conclusion

Dengue has established its roots in India. Now it is endemic and almost hyper endemic in population. National level comprehensive studies to estimate the true burden of dengue in India and its geographical mapping are lacking. Through integrated and combined efforts from various sectors and policy makers, prevention of dengue must be intensified to control further disease transmission. 



# Unfair Treatment



Generally, women are older in age by the time they need investigative procedures for heart disease and probably have higher incidence of risk factors like diabetes, hypertension and obesity. Earlier referral of women would be definitely advantageous both for operative morality risk and symptom relief

**BY DR K K AGGARWAL**

It has been observed for some time now that the management of Coronary Artery Disease differs in men and women. The differences exist right from the stage of interpretation of symptoms,

non-invasive investigative procedures, cardiac catheterization and finally balloon therapy and bypass surgery, if required.

It is a statistical fact that although the incidence of coronary disease is

very high these days, only a comparatively small number of women go for cardiac catheterization. The number is less than one fourth that of men. The number of women who undergo interventional treatment

like balloon therapy and bypass surgery is much smaller than that.

It was reported some time ago that women under 60 years of age with symptoms of angina have better prognosis than men under 60 years with history of angina where as women with angina between 60-69 years have bad prognosis. The mortality rate in this group for women was comparable to that of men with angina regardless of age.

This information is useful while treating women with coronary disease. The prognosis in women is more age dependent than men. Obstructive coronary disease is usually found on angiography in about half the women under the age of 50 years with typical angina compared with over 90 percent of older women. In contrast, obstructive coronary disease is found in virtually all men with history of typical angina regardless of age.

After careful history and physical examination, ECG stress testing is considered necessary because many symptomatic men and women are found to have coronary artery disease. These tests are of relatively low cost and available at most of the centres. ECG stress testing, however, seems to be less sensitive in women for coronary artery disease per se as compared to men and this is apparently due to the fact that the women with coronary artery disease have been reported to have fewer vessels involved than men.

ECG stress testing is quite sensitive for the disease in women with multi vessel disease. Stress echocardiography is much more sensitive. The sensitivity and specificity of stress echo and radionuclide myocardial perfusion imaging in coronary artery disease is similar for men and women. Yet the number of men referred for cardiac catheterization is much more as compared with women: the incidence of disease does not explain why lesser number goes for coronary angiography. Lesser number of



women also subsequently goes for balloon angioplasty and bypass surgery.

Dobutamine (a drug) stress echocardiography (DSE) has been found to be very useful for detecting and locating coronary artery disease accurately in both men and women. The sensitivity and specificity of DSE in detecting CAD in patients with normal resting heart is around 89 percent and 85 percent. Sensitivity is 81 percent in patients with single vessel disease and 100 percent for detection of multi vessel coronary artery disease.

It has been seen previously that a large number of women with atypical chest pain shown nonspecific ECG changes and significant changes on stress testing but coronary angiography does not reveal significant coronary artery disease. It was surmised that these women mostly under 50 years of age probably had small vessel disease. It is now possible to assess more accurately the extent and location of coronary

disease by DSE. In these women, DSE is a versatile and accurate cardiac stress testing modality with a wide range of clinical applications. It is useful for detecting CAD and for stratifying preparative risk and risk for heart attack and is an effective alternative to exercise testing in patients who are unable or unwilling to adequately perform an exercise test.

DSE is safe, well tolerated and relatively easy to administer by the clinician. Dobutamine stimulation can produce ischemia (lack of blood supply) in presence of small vessel coronary disease and can be usefully employed to test the functional significance of a coronary lesion or small vessel disease in women below 50 years of age and so also the severity of coronary disease. The technique allows the investigator to control the level of stress while continuously monitoring the echocardiographic images, thereby permitting interruption of the test at the earliest detection of significant



ischaemia. This further contributes to the safety profile and patient acceptance of the procedure. Low dose dobutamine stimulation can augment contractility in areas of stunned myocardium following clot dissolving therapy and has been used to identify patients who have the potential for functional recovery in the infarct zone.

It is interesting; to note that the results of all the non invasive tests are not used to the same extent in men and women. In one large study in the United States the non invasive tests were positive in 40.2 percent of men and only 4.2 percent of women were referred for coronary angiography. Differences in disease prevalence did not explain the disproportionate number of men referred for cardiac catheterization as the figures pertain only to those men and women who had been found positive for reversible ischaemia on noninvasive stress testing. The situation is similar in India, if not worse, women seem to be more sacrificing and tend to avoid coronary

angiography and subsequent interventional procedures and when it comes to their men folk, they want them to undergo all necessary procedures and get well as early as possible.

It is possible that women are older in age by the time they need these procedures and probably have higher incidence of risk factors like diabetes, hypertension and obesity and are more often kept on antianginal medication rather than being subjected to balloon angioplasty or bypass surgery.

The question now arises as to whether coronary angioplasty and bypass surgery is equally effective in both the sexes. May be they are not as effective options in women as in men. Coronary bypass surgery has been found to be associated with greater operative mortality and less symptomatic relief in women than in men. In the coronary artery Surgery Study, operative mortality was 1.9 percent for men and 4.5 percent for women. The observations are very significant. The differences in

operative mortality have been explained to a great extent by older age group, advanced clinical disease present in women as compared to men by the time they come to specialized centres. Women have coronary arteries with smaller diameters and this may be related to greater operative mortality and less symptomatic relief in them.

Although the smaller sized coronary arteries have been considered a cause for greater mortality and lesser symptom relief for many years, it is now felt that the greater cause of these differences as assessed by some surgical series, in the outcome, are more likely to be due to a large extent to the fact that women are nearly always referred usually quite late for surgery as compared to men.

It has also been found from various data that women usually have a prolonged duration of angina prior to heart attack or death and there is an unwillingness both amongst the women patients and their physicians to refer them for cardiac catheterization and interventional





therapy as they are often stable on medical treatment when their exercise tests are positive for reversible ischemia. This may be alright if all the risk factors are being looked into and taken care of but what happens in practice is that there is a delay in referral of women even after disabling symptoms are present for years, for interventional treatment as compared to men. It appears reasonable to conclude that earlier referral of women would be definitely advantageous both for operative morality risk and symptom relief.

The first report from the National Heart Lung and Blood Institute Registry analysis of 12,486 patients in 1991, indicated a lower angiographic success rate in women (60% v 66%) and a higher incidence of coronary dissection (rupture of the vessel wall) (5.8% v 4%) after balloon therapy. As with early experience with CABG, small vessel size has been related to the morality during PTCA in women. Recently more sophisticated technology early success rate are being reported to be

as good as in men but the in hospital morality rates are still higher for women as compared to men and that is apparently related to the fact that women are generally sicker than men at the time of intervention. Once angioplasty is successful women are experiencing more favorable long term symptomatic relief along with better angiographic outcome.

It must be realized that the incidence of coronary artery disease

Women usually have a prolonged duration of angina prior to heart attack or death and there is unwillingness both amongst the women patients and their physicians to refer them for cardiac catheterization and interventional therapy

is rising amongst women as never before. This calls for early detection of the disease by stress testing especially when risk factors are present. Early institution of medical therapy and change of life style is mandatory. Symptomatic women with high risk factors and positive noninvasive test results or disabling cardiac symptoms despite aggressive medical therapy should be referred for cardiac catheterization without further delay for maximal benefit from interventional therapy. The later the woman patients are sent for these procedures greater the risk involved.

Women die more than men in hospital from severe heart attack

Men and women have about the same adjusted in-hospital death rate for heart attack — but women are more likely to die if hospitalized for a more severe type of heart attack.


According to a report in *Circulation*: Journal of the American Heart Association:

**1.** Women are twice as likely as men to die if hospitalized for a type of heart attack known as ST-elevation heart attack.

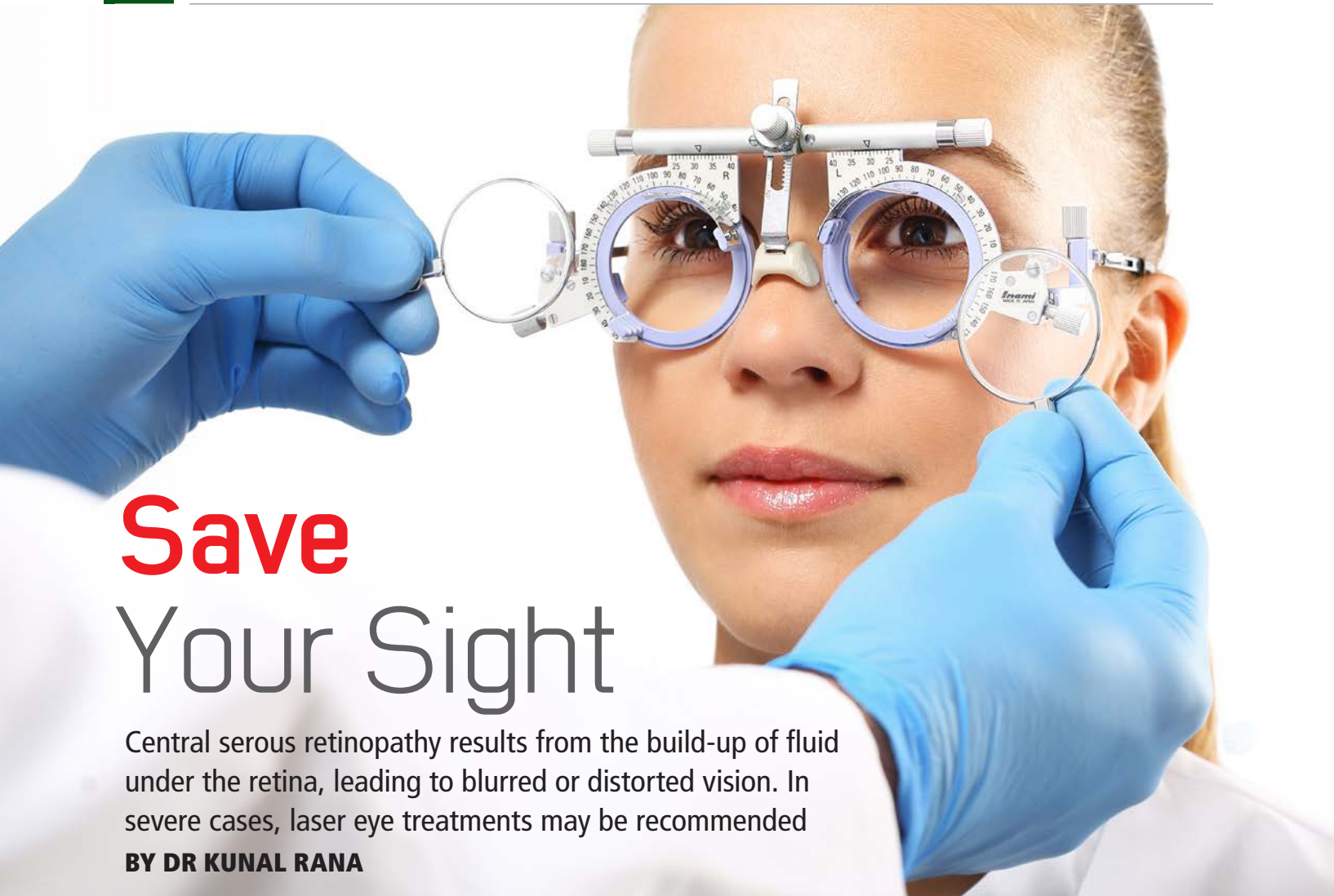
**2.** Women are also less likely to receive appropriate and timely treatment for heart attack.

**3.** Women with ST elevation heart attack have a 12 percent higher relative risk for in-hospital death compared to men.

**4.** Compared to men, women are 14 percent less likely to receive early aspirin; 10 percent less likely to receive beta blockers; 25 percent less likely to receive reperfusion therapy (to restore blood flow); 22 percent less likely to receive reperfusion therapy within 30 minutes of hospital arrival; and 13 percent less likely to receive angioplasty within 90 minutes of hospital arrival.

Women admitted with a STEMI are about twice as likely to die in the first 24 hours of hospitalization as men. 

(The author is Honorary Secretary General IMA, Padma Shri and Dr B C Roy National Awardee)



# Save Your Sight

Central serous retinopathy results from the build-up of fluid under the retina, leading to blurred or distorted vision. In severe cases, laser eye treatments may be recommended

**BY DR KUNAL RANA**

**C**entral serous retinopathy (CSR) is an eye disease which causes visual impairment, often temporary, usually in one eye. When the disorder is active, it is characterized by leakage of fluid under the retina that has a propensity to accumulate under the central macula. This results in blurred or distorted vision.

CSR is sometimes called idiopathic CSR which means that its cause is unknown. Nevertheless, stress appears to play an important role. An oft-cited but potentially inaccurate conclusion is that persons in stressful occupations.

CSR, also known as central serous choroidopathy (CSC), is usually a temporary inner eye condition. CSR results from the build-up of fluid under the retina. The retina is similar to the film in a camera and is the inner layer of the eye. CSR may improve without

treatment; however, in severe cases, laser eye treatments may be recommended.

The CSR occurs when fluid leaks from the choroid layer beneath the retina and builds up. The fluid leakage in the macula produces symptoms, including blurred vision. The condition is usually temporary and most frequently occurs in just one eye.

The exact cause of CSR is still unknown. The condition is more common in men between the ages of 40-50, but may occur in anyone. CSR has been associated with high levels of cortisol and corticosteroid levels. Cortisol is a hormone that the body produces to help deal with stress. Corticosteroids are medications that are commonly used to treat inflammation. There is no known prevention of central serous

retinopathy, but routine eye exams are important as is reporting any vision changes to your doctor

Most cases of CSR resolve without treatment in a few months. However, the condition can return. People with cases that last longer than a few months, severe leakage, or severe vision loss may benefit from laser treatment. The laser treatment can seal and stop the leakage. Intake of steroid may also lead to cause of CSR. So if you take steroid medication and develop CSR, you should discuss the possibility of discontinuing the medication with your doctor. You should not discontinue taking steroid medication on your own. CSR, in rare instances, can leave a permanent visual defect. In older patients, it can lead to bleeding under the retina.

In those patients that are treated,

laser is the main form of treatment. However, newer drug treatments are presently being studied and may lead to better therapies.

A blurred or gray spot in the central visual field is common when the retina is detached. Reduced visual acuity may persist after the fluid has disappeared.

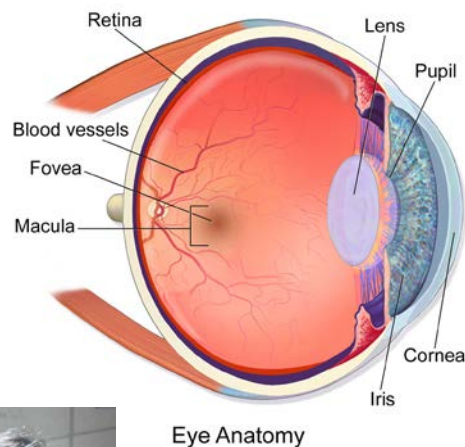
The retina is a thin tissue layer that contains millions of nerve cells. The nerve cells are sensitive to light. The choroid is the lining underneath the retina. The choroid contains blood vessels that supply the retina with blood and oxygen to keep it healthy.

The defect in the eye in CSR is a serious detachment of the macula (central part of the retina) due to localized disruption in the blood-retina barrier. There will be hyper-permeability of the blood vessels with leakage of blood and serous fluid into the macula. In the acute phase of the disease (within 3 months) CSR usually resolves spontaneously. However, some patients may progress into chronic CSR or may have resolution but later experience recurrence of the condition.

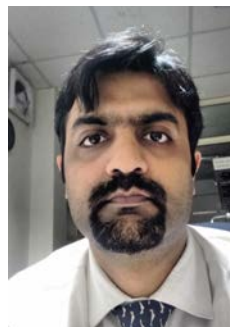
The diagnosis usually starts with a dilated examination of the retina, followed with confirmation by optical coherence tomography and fluorescein angiography. The angiography test will usually show one or more fluorescent spots with fluid leakage. In 10%-15% of the cases these will appear in a "classic" smoke stack shape. Indocyanine green angiography can be used to assess the health of the retina in the affected area which can be useful in making a treatment decision. An Amsler grid can be useful in documenting the precise area of the visual field involved.

The affected eye will sometimes exhibit a refractive spectacle prescription that is more far-sighted than the fellow eye due to the decreased focal length caused by the raising of the retina

CSR is a fluid detachment of macula layers from their supporting tissue.



Eye Anatomy



DR KUNAL RANA

This allows choroidal fluid to leak beneath the retina. The build-up of fluid seems to occur because of small breaks in the retinal pigment epithelium.

Differential diagnosis should be immediately performed to rule out

retinal detachment, which is a medical emergency. Additionally, a clinical record should be taken to keep a timeline of the detachment.

Most eyes with CSR undergo spontaneous resorption of subretinal fluid within 3-4 months, recovery of visual acuity usually follows. Any ongoing corticosteroid treatment should be tapered and stopped, where possible. It is important to check current medication, including nasal sprays and creams, for ingredients of corticosteroids, if found seek advice


CSR is sometimes called idiopathic CSR which means that its cause is unknown. Nevertheless, stress appears to play an important role. An oft-cited but potentially inaccurate conclusion is that persons in stressful occupations.



from a medical practitioner for an alternative.

Patients sometimes have an obvious history of psychosocial stress, in which case counseling and expectancy is relevant. Treatment should be considered if resorption does not occur within 3-4 months, spontaneously or as the result of counseling. Laser photocoagulation, which effectively burns the leak area shut, may be considered in cases where there is little improvement and the leakage is confined to a single or a few sources of leakage at a safe distance from the fovea.

However, for many cases the leak is very near the central macula, where photocoagulation would leave a blind spot or the leakage is widespread and its source is difficult to identify. Foveal attenuation has been associated with more than 4 months' duration of symptoms; however a better long-term outcome has not been demonstrated with laser photocoagulation than without photocoagulation.

Laser photocoagulation can permanently damage vision where applied. Carefully tuned lasers can limit this damage. Even so, laser photocoagulation is not a preferred treatment for leaks in the central vision and is considered an outdated treatment by some doctors. 

(The author is an eye consultant, Sri Balaji Action Medical Hospital, New Delhi)



# Hassle-free Hair

Hair transplantation is an effective and safe procedure. To make the hairline look natural, transplanted hair and natural hair are blended together to make a perfect mix

**DR VIJAY SINGHAL**



**H**air transplantation, a surgical technique, allows the doctor to single out the permanent hair on the back of the patient's head and use them as the transplanted hair to the bald spots.

The hair at the back of our heads are permanent and do not suffer any damage through age, which is why these hair are chosen for the process. This procedure is quite similar to the technique widely used in flora where a plant can be transferred from one place to another. The process allows the

patient to have normal hair like before, which can be shaved, cut, trimmed, coloured or anything they wished.

#### **How hair transplantation is done**

The whole procedure involves three steps:

**Graft extraction:** Extraction of the hair follicles from the back of head. It is done under local anesthesia, and can be carried out in two ways- FUT or FUE.

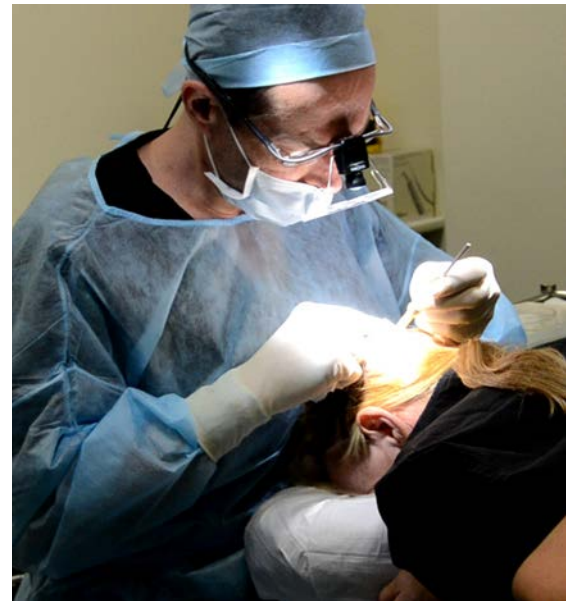
**FUT (Follicular Unit Transplant):** In this way, a strip is taken from the back

of the head, aka donor area, and later the space is stitched. The stitches require around two weeks' time to heal.

**FUE (Follicular Unit Extraction):** This method is less extreme as individual hair is extracted from the donor area, creating no need of stitches.

**Graft Preparation:** Hair in the strip are cut and separated into individual hair follicles.

**Graft Insertion:** Tiny holes are made in the bald spots so that the hair can be



placed for the final growth.

**Economic Factor:** The cost of the transplant varies from patient to patient. The money required is subjective as it depends on the number of hair a patient wants to get transplanted.

**Suitability:** The suitability again depends on the patient. Both of the techniques are extremely good and suitable, but it also depends on the technique the doctor is more comfortable performing.


**Guarantee:** There is no need to worry about the procedure or the result. We

need all the factors you bring in the equation, and we guarantee long lasting effects of the transplant.

**Permanence:** The hair is taken from the donor area because they are permanent and last as long as your life does. After the transplant, your hair will be stronger and better.

**Safety:** The procedure is extremely safe, leaving nothing to worry about. All the necessary precautions are taken. Done under local anesthesia, the patient is relaxed enough to watch a movie, listen to songs, attend phone calls etc. The patient is free to resume their

normal routine right after the procedure.

**Natural Looks:** Though it may look like a scientific procedure, but designing a natural looking hairline is nothing less than an art. Special focus is giving to all the details make the hairline look natural, and in such an effort, transplanted hair and natural hair are blended together to make a perfect mix. 

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(The author is Consultant Dermatologist and Hair Transplant Surgeon, Sri Balaji Action Medical Institute & Action Cancer Hospital, New Delhi)



# Growing Health Hazard



Dr Suneela Garg



Dr C. Vankhuma

The primitive practices of burning e-wastes not only create an enormous amount of environmental pollution, but also disseminate geno-toxic agents which are found to be mutagenic or carcinogenic, i.e. capable of causing genetic mutations or the development of cancer

**BY DR SUNEELA GARG/ DR C. VANKHUMA**

**T**he information revolution in the wake of the outburst of information and communication has brought enormous changes in the way we conduct our lives, society and economy. These changes have brought enormous development and enhanced the quality of our lives.

The Indian information technology sector is also largely contributing to the global economy. At the same time, it is generating a new problem to our civilization as a result of its by-product known as electronic waste or e-waste. The electronics industry today is one of the world's largest and fastest growing manufacturing industries and e-waste churned out by it is one of the rapidly growing problems of the world. The quantity of such waste has now become such a major problem that it has now become the most rapidly growing segment of the formal municipal waste stream in the world.

According to a United Nations Environment Programme (UNEP) report, the total numbers of mobile users in India stand at 1 billion as on November 2015. With ever rapid change in technology, the average lifespan of computer has dropped from 6 years in 2002 to just 2 years. Today's mobile phones have a lifecycle of less than 2 years in developed countries. It was also stated that 674 million mobiles phones were sold worldwide in 2014 i.e. (30% more than in 2008). There are 178 million new computers users in China and 80 million new users in India.

#### **MAGNITUDE OF THE PROBLEM**

In the Global scenario, the U.S. generated the largest volume of e-waste with about 3 million tonnes in the year 2010 as per the UNEP report. Second to it is China that produced about 2.3 million tons the very same year. It has also been estimated that the EU and the U.S. together would account for maximum e-waste generation during this current



decade (12-20% recycled properly). The Basel Action Network (BAN) stated in a report that 50-80% of e-waste collected by the USA is

exported to India, China, Pakistan, Taiwan, and a number of African countries.

India is already facing burden with its solid waste management and disposal due to scarcity of manpower, management system and infrastructure. With the emergence of e-waste, this has become an even more complicated task to handle efficiently.

According a statement made by the Central Pollution Control Board, 1,46,000 tonnes of e-waste was generated during 2005 which rose to more than two times to about 3,80,000 tonnes during the year 2007. It is estimated to touch around

The geno-toxins associated with e-waste can lead to a number of pathologies including genetic disorders, infertility, spontaneous abortions, elevated cancer risk and premature ageing



8,00,000 tonnes in 2015. By 2020, e-waste from old computers in India will jump by 500% and the amount of discarded mobile phones will be about 18 times high according to the UNEP.

A study published by the Manufacturers Association of Information Technology (MAIT) in the year 2011 states that “India produces almost 4, 00,000 tonnes of e-waste each year. Out of the country’s total e-waste only 5 percent is recycled and about 40 percent of obsolete and unused computers and electronic products decay in homes and warehouses.”

### **E-WASTE MANAGEMENT & INDIA**

In India, e-waste management assumes greater significance not only due to the generation of its own e-waste but also from the dumping of e-waste from developed countries. There is also lack of appropriate infrastructure and procedures for its proper disposal and sound recycling. Electronic equipment contains many hazardous metallic contaminants

such as lead, cadmium, and beryllium and brominated flame retardants. The fractions constitute mostly of metals- 64%, (ferrous – 38%, Non-ferrous-26%), Plastics & Ceramics - 30%, and Glass – 4% ,

The recycling process is presently concentrated in the informal (unorganized) sector where few or no organized collection system prevails. The operations conducted are mostly illegal and the processing methods are highly polluting to the environment and also pose risk to the health of the people engaged in them.

India heavily depends on the unorganized sector as only a handful of organized waste recycling facilities are available as of today. Over 95% of the e-waste is treated and processed in the majority of urban slums of the country, where untrained workers carry out the dangerous procedures without personal protective equipment and using primitive methods of disposal. Land filling which is also known as dumping site for the disposal of waste materials by

burial is the oldest form of waste treatment which allows heavy metals to leak into ground water.

Metals like mercury, cadmium, lead reach into the soil and ground water becomes polluted. Another common practice of disposing e-waste is incineration which basically is a controlled and complete combustion process, in which the waste materials are burned in specially designed incinerator at a high temperature (900 – 1000c) which produces fumes that are harmful to the environment.

A less commonly practiced method of recycling and disposal of e-waste which is also prevalent in the country is Acid Bath. In this method, the items are dumped concrete tubs and then treated with lead acid. The recyclers dump all collected e-waste into the acid bath overnight and once the process is done, most of the liquid waste is dumped into the nearest sewage, drains and into rivers which causes water and soil contamination.

### **E-WASTE HARARDS AND ITS**





### PUBLIC HEALTH CONCERN

E-waste is not hazardous waste per-se. However, the hazardous constituents present in the e-waste render it hazardous when such wastes are dismantled and processed. The ever increasing amount of e-waste associated with the lack of awareness and appropriate skill in handling them has been a challenge that poses a serious threat to our environment and health of the people.

A large number of untrained/unprotected workers are currently engaged in the system whose health is at risk. E-wastes can cause widespread environmental damage due to the use of toxic materials of its constituents. High-risk backyard operation, non-efficient and non-environmentally sound technologies are the major causes of concern. This directly or indirectly impacts the vulnerable social groups i.e. women, children and immigrant laborers. Studies in China have shown that recycling activities had contributed to the elevated blood lead levels in


children living there because the processing and techniques used during the recycling activities were very primitive and also reported that the human milk, and placenta from the e-waste processing site showed significantly higher levels of harmful substances like polychlorinated dibenzodioxins and polychlorinated dibenzofurans (PCDD/Fs) amongst the people who were residing in nearby areas of such recycling sites.

The primitive practices of burning E-wastes not only create an enormous amount of environmental pollution, but also disseminate geno-toxic agents that threaten the health of current and future generations living in the local environment which are found to be mutagenic or carcinogenic, i.e. capable of causing genetic mutations or the development of cancer. The geno-toxins associated with e-waste include: metals such as chromium, beryllium, and cadmium; chlorinated dioxins and furans formed from the burning of plastics; and, flame retardants such as poly-

brominated diphenyl ethers. These can lead to a number of pathologies including genetic disorders, infertility, spontaneous abortions, elevated cancer risk and premature ageing.

In India, the Government has also taken a number of measures to curb the problem by introducing various laws and operational guidelines like 'The Hazardous waste (Management Handling and Trans boundary Movement) Rules, 2008' and the 'The E-waste (Management and Handling) Rules, 2011'. The Supreme Court has also given directives to build facilities for treatment of e-waste but only 23 are present in country out of which 75% of the state bodies are not following the directives.

However, our country has still been facing various issues and obstacles in implementing these directives and guidelines as well. According to an e-waste management study in India on "Role of state agencies", most of the Indian states have failed to implement e-waste rules in the country which came into being in 2011. The study also reveals that lack of efforts and action is made by most state pollution control board and committees which is a very discouraging sign.

Therefore, there is an urgent need to plan appropriate strategy in relation to the health hazards of e-waste handling and proper information and assistance should be provided to those people regarding safe handling of such waste along with proper personal protection. It needs to be adopted in the management system in accordance with prerequisite conditions such as proper legislation, collection system, logistics, and manpower. Further, this may also require more rigorous research and evaluation studies in this field. 

(The authors are Director Professor & Head and Junior Resident, Department of Community Medicine, Maulana Azad Medical College, New Delhi)

# Sri Balaji Action Group gets new medical director

**Sri** Balaji Action Group of Hospitals (Action Medical Institute & Action Cancer Hospital) Paschim Vihar, New Delhi has announced the joining of Dr Anand Bansal as a Medical Director. He has been a Principal Assessor NABH for Quality Council of India ensuring strict implementation of guidelines and quality parameters.

Besides being a medical practitioner par excellence, Dr Bansal is very passionate about hospital administration, fair and effective clinical management and strives to provide the highest standard of medical care.

Throughout his career, Dr Anand Bansal has been a meritorious candidate and was awarded national scholarship during schooling for a period of eight years. He was also awarded by the Vice Chancellor for the meritorious position in the university pre-medical examination. He has always been a rank-holder throughout his career.

After his elementary education from prestigious SM Hindu High School and Hindu College, Sonapat, he did his MBBS and MD (medicine) from PGIMS Rohtak, Haryana. After joining Maharaja Agrasen Hospital in 1993, besides his clinical experience as physician, he took keen interest in administration and was instrumental and a pillar of strength in the hospital's growth from initial 60 beds to the present status of 400 bedded multi super-specialty teaching hospital with utmost thrust to provide quality medical care to the patients.

Dr. Anand Bansal has always been dynamic in strategic planning and policy making in the hospital. In the



initial phase of his administrative career, he did DHA (Diploma in Hospital Administration) and then MBA (Master of Business Administration) in Health Care Administration from prestigious Faculty of Management Studies (FMS), University of Delhi, to acquire the latest management skills in addition to his clinical expertise. Due to his commitment to provide quality medical care to patients, he qualified the Quality Council of India-certified NABH Assessor course and Six Sigma Green Belt course.

Dr Bansal has over 23 years of experience in hospital administration. In April 2015 Dr. Bansal was appointed

as Medical Director of Fortis Escorts Heart Institute, Delhi. At Fortis, Dr Bansal's contribution was evident in a short span.

Says Dr. Bansal, "I have joined Action Group of Hospitals with a mission to utilize my healthcare planning, administrative and clinical expertise as well as team management skills and to take healthcare to a new level which is both cost effective as well as world class."

#### ACHIEVEMENTS:

- MBA (Healthcare Administration) and MD (Internal Medicine) with more than 23 years of experience in Hospital Planning, Administration and Healthcare management.
- Played a key role in expanding Maharaja Agrasen Hospital from 60 beds to 400 bedded multi super specialty teaching Hospital with a thrust to provide quality care.
- Joined Fortis Escorts Heart Institute to expand his horizon and acquire new corporate skills. Learnt financial aspects of Healthcare management along with an aim to bring quality care service to the customers with utmost safety.
- Recently joined as Medical Director Action Group of Hospitals - Sri Balaji Action Medical Institute & Action Cancer Institute to utilise his administrative skills in more effective and efficient way.
- Awarded National Scholarship during matriculation for a period of 8 years.
- With extensive clinical and administrative experience, he considers himself self-motivated and goal-oriented individual with leadership qualities that have helped him achieve his goals. 

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