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A COMPLETE HEALTH
MAGAZINE

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October- 2017

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It's Time for Awards and Recognitions

Dear readers, Thank you for providing your continuous support and encouragement to us as we bring out informative and thought-provoking content for you every month. With your good wishes and blessings, we now present Double Helical State Health Awards 2017 for Haryana, Punjab and Himachal Pradesh regions at a glittering ceremony to be held in Chandigarh on 6th November. We hope to hold a successful event that will acknowledge and honour the doctors and institutions working for the further advancement of this noble profession and welfare of the suffering humanity.

Our cover story this month is on trauma management system which is still in a primitive state in India with an appalling lack of pre-hospital care, inadequate provision of facilities for the transport of victims, and inefficient emergency and casualty services that are unable to effectively handle traumatic brain injuries (TBIs).

Concerted efforts are required for effective and sustainable prevention and management of critical injuries in India. One of the essential needs is to establish the trauma registries to monitor the system and provide state-wide cost and epidemiological statistics.

The story on coronary artery disease notes that cardiovascular disease (CVD), especially coronary artery disease (CAD), is rising at an alarming level. Even worse, we are seeing people in the age group of 40-50 years becoming prone to heart attack.

The rising epidemic of heart

disease in the Indian patients is attributed largely to lifestyle related factors such as consumption of fast food, late night eating, less physical activity and more vehicular usage to travel, work-related stress, smoking and in some cases adverse family history.

Our story on cataract acknowledges contributions of Prof Jagat Ram in the field of adult and pediatric cataract and related visual sciences for the past 38 years. Presently, Director and Professor of Ophthalmology at the Post Graduate Institute of Medical Education and Research (PGIMER), Chandigarh, he was born in a small village of a remote, backward area in Himachal Pradesh. He has risen to play a major role in establishing the Department of Ophthalmology at PGIMER as the centre of excellence on the national and global map.

Prof Ram has provided compassionate patient care for adults and children suffering from cataract over a period of more than 38 years. The most celebrated aspect of his work belongs to the field of Paediatric Cataract Surgery. Prof Ram has made outstanding contributions by helping several thousands of children suffering from congenital cataract from their infancy or childhood in restoring vision with state-of-the-art surgical techniques with intraocular lens implantation.

Then our story on the menace of pollution underlines that environment is the most important social determinant of health, causing morbidity and mortality in a given population. The WHO's comprehensive global assessment of

the burden of disease from environmental risks reveals that globally, an estimated 24% of the burden of disease and 23% of all deaths can be attributed to environmental factors. Further, globally, deaths on account of noncommunicable diseases (NCDs), attributable to air pollution, amount to 8.2 million of the total 12.6 million deaths.

Household and ambient air pollution is the leading risk factor contributing to the burden of disease in India. According to the Institute of Health Metrics and Evaluation (IHME), air pollution was found to be the leading cause of mortality and disability in India. In Indian settings there is need for reducing sources of emissions, improving access to clean fuel and raising public awareness on health effects of air pollution. Major risk factors are household and ambient air pollution contributing to the spread of disease in India.

Household Air Pollution (HAP) is caused by solid fuels like wood, charcoal, coal, dung, crop wastes used by over 3 billion people for cooking at home. These inefficient cooking methods lead to indoor air pollution especially in houses that are poorly ventilated. Indoor air pollution not only harms health but also has adverse social and environmental effects.

There are many more interesting and insightful stories, based on intensive research and analysis. So, happy reading to all of you!

Warm regards,
Amresh K Tiwary,
Editor-in-Chief

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Health Ministry pitches for eco-friendly Diwali greetings

With the aim to reduce the use of paper and give a boost to digital initiatives of the Government and to promote a contemporary and eco-friendly method of sending greetings, the Ministry of Health and Family Welfare has decided to go forward with e-greetings instead of paper-based greetings starting this festive season. In a circular, the Health Ministry has advised its staff to send festival greetings in the form of e-greetings. Further, the Ministry has also said that it will not entertain any request for printing of season's greeting cards. The e-greetings can be sent through <http://egreetings.india.gov.in>, the e-greetings portal of the Ministry of Electronics and Information Technology developed as part of the "Digital India" initiative.

The e-greeting portal allows users to select and send greetings from multiple occasion-specific templates. Government departments can also customize the greetings by adding tag-lines and messages related to their programmes and schemes. The portal includes greetings for various occasions, including days of national importance. The portal also addresses e-greetings of the specific needs of government organizations. For instance, specific templates can be created for National Science Day, Women's Day, various health days, as well as for national campaigns. Each department can create its own greetings and slogans to connect with their employees, colleagues and stakeholders. The designs and templates of the greetings are being crowd sourced. The portal is also open to use by all citizens. This would promote greater interaction and participation of citizens in the process of creative work for the government as well as dissemination of information pertaining to subjects of national importance.

The portal is also open to all citizens for sending e-greetings to their family and friends. Users can access the portal using the link. 



Health Ministry Bags Swachhta Award


The Ministry of Health and Family Welfare (HFW) has been adjudged as the best department for its contribution during Swachhta Pakhwada, an inter-ministry initiative of Swachh Bharat Mission of Ministry of Drinking Water and Sanitation. The Health Ministry observed the Swachhta Pakhwada (Cleanliness Fortnight) from 1st February, 2017 to 15th February, 2017. The award was presented to the ministry on 2nd October, 2017 (Gandhi Jayanti), the third anniversary of Swachh Bharat Mission. C K Mishra, Secretary (HFW) received the award on behalf of the ministry.

Swachhta Pakhwada activities were organized and observed within the ministry offices, in Central Government Hospitals and in public health facilities of the states across 36 states/UTs. More pertinently, in addition to the envisaged activities, some of the key contributions include mass awareness generation initiatives through rallies, street plays, painting competitions etc., leveraging the participation and support of public representatives, NGOs, school children and the community.

These activities are considered critical for sustaining the swachhta (cleanliness) movement. During the Swachhta fortnight, all hospital/clinics were also directed to install waste bins for segregating waste and massive cleaning drives were undertaken in all the hospital wards and hospital premises.

Doctors, nurses and medical staff along with patients and visitors carried out sensitization drives on the importance of safe sanitation and hygiene.

The Swachhta Pakhwada culminated with inspection and special sanitation drive undertaken by the Minister for Health and Family Welfare J P Nadda on 15th February 2017. The Minister along with the staff of the Ministry participated in cleaning of corridors of Nirman Bhawan and inspected various rooms and areas of the Ministry. Unwanted and old files and records were also weeded out during Swachhta Pakhwada from various Divisions of the Ministry.

Swachhta Pakhwada started in April 2016 with the objective of bringing a fortnight of intense focus on the issues and practices of Swachhta by engaging GoI ministries/departments in their jurisdictions. An annual calendar is pre-circulated among the ministries to help them plan for the Pakhwada activities. The Ministries observing Swachhta Pakhwada are monitored closely using online monitoring system of Swachhta Samiksha where action plans, images, videos related to Swachhta activities are uploaded and shared. For the Pakhwada fortnight, observing ministries are considered as Swachhta Ministries and are expected to bring qualitative Swachhta improvements in their jurisdictions. 

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Considerable reductions in mortality from pneumonia, diarrhoea, neonatal infections and birth asphyxia




India has avoided about 1 million (10 lakh) deaths of children under age five since 2005, owing to the significant reductions in mortality from pneumonia, diarrhoea, neonatal infections and birth asphyxia/trauma, measles and tetanus, according to study published in the latest issue of *The Lancet*. The 'India's Million Death Study', implemented by the Registrar General of India, is the first study to directly quantify changes in cause-specific child deaths in India, nationally and sub-nationally, from 2000-15 among randomly selected homes.

The study further illustrates that the conditions prioritized under the National Health Mission had the greatest declines. Pneumonia and diarrhoea mortality fell by over 60% (most of the decline due to effective treatment), mortality from birth-related breathing and trauma during delivery fell by 66% (most of the decline due to more births occurring in hospital), and measles and tetanus mortality fell by 90% (mostly due to special immunization campaigns against each).

The study states that mortality rate (per 1000 live births) fell in neonates from 45 in 2000 to 27 in 2015 (3.3% annual decline) and 1-59 month mortality rate fell from 45.2 in 2000 to 19.6 in 2015 (5.4% annual decline). Further,


amongst 1-59 months, pneumonia fell by 63%, diarrhoea fell by 66% and measles fell by more than 90%. These declines were greater in girls, indicating that India has, remarkably, equal numbers of girls and boys dying, a significant improvement from just a few years ago. Pneumonia and diarrhoea mortality rates for 1-59 months declined substantially between 2010 and 2015 at an average of 8-10 % annual decline nationally and more so in the rural areas and poorer states.

The Million Death Study builds on the SRS by directly monitoring the causes of deaths in over 1.3 million (13 lakh) homes. Since 2001, about 900 staff interviewed about 100,000 (1 lakh) living members in all homes who had a child die (about 53,000 deaths in the first month of life and 42,000 at 1-59 months) every six months and completed a simple two-page form with a local language half-page narrative describing the deceased's symptoms and treatments. The records have been digitized and each one uniformly coded for cause of death independently by two of about 400 trained physicians, using World Health Organization (WHO) approved procedures. This is a direct study based on face-to-face interviews with families, and is not based on modelling or projections from small samples. 

Significant decline in Infant Mortality Rate (IMR) and major drop in birth cohort and infant deaths

India has registered a significant decline in Infant Mortality Rate (IMR). According to the recently released SRS bulletin, IMR of India has declined by three points (8% decline), from 37 per 1000 live births in 2015 to 34 per 1000 live births in 2016, compared to two points decline last year. Not only this, India also recorded a major drop in birth cohort, which has for the first time come down to below 25 million. India has registered 90000 fewer infant deaths in 2016 as compared to 2015. The total number of estimated infant deaths have come down from 9.3 lakhs in 2015 to 8.4 lakhs in 2016.

According to the SRS Bulletin, the gender gap in India for child survival is reducing steadily. The gender difference between female and male IMR has now reduced to <10%, giving a major boost to the 'Beti Bachao Beti Padhao' scheme of the Government. The results signify that the strategic approach of the ministry has started yielding dividends and the efforts of focusing on low performing states is paying off. Among the EAG states and Assam, all states except Uttarakhand have reported decline in IMR in comparison to 2015. The decline is reported as 4 points in Bihar, 3 points in Assam, Madhya Pradesh, Uttar Pradesh and Jharkhand and two points decline in Chhattisgarh, Odisha and Rajasthan.

These remarkable achievements in merely one year and also the result of a countrywide efforts to increase the health service coverage through various initiatives of the Government that includes strengthening of service delivery; quality assurance; RMNCH+A; human resources, community processes; information and knowledge; drugs and diagnostics, and supply chain management, etc. 

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HOW TO KEEP YOUR HEART HEALTHY



Double Helical provides an easy-to-follow, meticulous and comprehensive guide to help patients fight the risk factors for heart ailments

BY DR MANOJ KUMAR ROHIT

There is hardly a gathering where medical profession is not being discussed with negative overtones. Not a day passes when the media does not draw attention to some event which serves to continue to multiply the trust deficit between public and medical professionals.

It is indeed disappointing to note that cardiovascular disease (CVD), especially coronary artery disease (CAD), is rising at an alarming level. Even worse, we are seeing people in the age group of 40-50 years becoming prone to heart attack.

The rising epidemic of heart disease in the Indian patients is attributed largely to lifestyle related factors such

as consumption of fast food, late night eating, less physical activity and more vehicular usage to travel, work-related stress, smoking and in some cases adverse family history.

- CVD accounts for 29% of deaths in South-East Asia Region (SEAR) countries.
- Cardiovascular diseases are attributable to changing lifestyles, stress, sedentary habits and smoking
- Incidence of CAD in the young (less than 40 years age) is about 5% in the West, while this is up to 12% in Indians.
- CAD in Indians, compared to western countries, has high



prevalence. It affects young population, is more severe disease and often follows a malignant course

- CAD begins early: a) Fatty streaks are common in children as young as 5 years; b) Studies examining autopsy results of Vietnam casualties (average age 19 years) showed significant CAD in majority of men.

Coronary artery disease manifestations are:

- 1) Heart attack (Myocardial Infarction)
- 2) Effort Angina also called chest pain
- 3) In the elderly and diabetic, it may manifest as silent heart attack or as heart failure or as sudden death. There is advanced warning of angina or chest pain in 1/3rd patients only and half of the sudden deaths occur undiagnosed.

Risk Factors for CAD:

Non-modifiable: Genetics/ family history, sex, age. Blood vessels narrow

and become less elastic as age increases. Men of 45-65 group are at higher risk. Same is the case with post-menopausal or over 55 years women. As for family history, parents, brothers and sisters are our most important genetic reference points. CAD occurring before age 55 (male) or 65 (female) may indicate an elevated genetic risk.

Modifiable: Obesity, sedentary life, blood lipids, diet, hypertension, smoking, diabetes, tension & stress.

Factors you can control:

1. SMOKING
2. HIGH BLOOD PRESSURE
3. BLOOD LIPIDS
4. OBESITY
5. DIABETES
6. PHYSICAL INACTIVITY
7. PSYCHOSOCIAL FACTORS.

SMOKING

India accounts for ~ 7% of the global tobacco production and 6.1% of its total utilization. Awareness of risks associated with tobacco use needs to be increased.

Smoking is a major risk factor for:

- 1) CAD development
- 2) 1st heart attack occurrence
- 3) 2nd heart attack occurrence
- 4) Cardiac arrest/sudden death
- 5) Bypass graft blockages

Effects of smoking on the cardiovascular system:

- 1) Increases blood pressure& heart rate
- 2) Decreases oxygen entry into blood stream
- 3) Decreases haemoglobin
- 4) Increases blood clotting
- 5) Increases bad cholesterol total cholesterol, LDL-C
- 6) Decreases good cholesterol: HDL-C
- 7) Increases heart arrhythmias and
- 8) Damages arterial wall damage.

Smoking increases CAD risk by two times and stroke (paralysis attack risk by five times.

Each cigarette smoked equates to a

loss of seven minutes of life – Americans lose 5 million years of potential life annually to smoking!

QUIT SMOKING: The most unfortunate thing about this world is that good habits are easier to give up than the bad ones. Will power, counselling, and nicotine chewing gum will help you give up smoking.

HPERTENSION

Hypertension: High blood pressure is defined as resting systolic > 140 mm/Hg and/or diastolic > 90 mm/Hg. Incidence increases with:

- 1 Family history
- 2 High salt intake
- 3 Stress
- 4 Obesity
- 5 Kidney ailments
- 6 Smoking

Hypertension becomes more prevalent with age, over 50% older than 60 have hypertension, more common in men. Hypertension is often called a “silent killer.” Most people do not know they have it, 90% of causes are of unknown origin; uncorrected, HT can lead to heart failure, heart attack, stroke, and kidney failure. Exercise is often the best way to lower mild hypertension.

Suggestions for keeping blood pressure low:

- 1) Achieve and maintain ideal weight
- 2) Restrict salt intake and salty foods-
Avoide xtra salt intake if you have hypertension
- 3) Limit alcohol intake not more than two pegs, also avoid too much of snacks with alcohol
- 4) Do regular exercise
- 5) Take prescribed BP medicine regularly
- 6) Get adequate calcium and potassium-increase fruit intake
- 7) Avoid excessive stress. Do Yoga or meditation

DIABETES

High blood glucose levels increase degeneration seen in vessels prevalence: India has already been declared as the country with the largest number of diabetics in the world. With ~ 32 million diabetic people, India is now ahead of China and USA which are in second and third place respectively

Most diabetics are Type II, adult onset. Physical inactivity and obesity are the two largest risk factors for Type II diabetes. Most often caused by insulin receptor insensitivity (brought on by huge fluctuations in blood sugar). Most Type II diabetics can control blood

glucose with diet and exercise and can often live completely free of insulin therapy.

BLOOD CHOLESTROL

Lipid Screening should be done in following all:

- 1) Men > 40, Women > 50
- 2) 2 or more risk factors for CAD
- 3) Clinical evidence of CAD
- 4) PVD or Carotid disease,
- 5) Family history of CAD or dyslipidaemia
- 6) Every 2 years for asymptomatic patients > 40 years.

Modifying Blood Lipid Levels: Blood lipids are still very dependent on a person's genetic makeup! Some people respond to diet and exercise, some require medication. Lowering elevated lipids is extremely important for minimizing CAD risk!

Factors Modifying Blood Lipid Levels:

A) Favourable effects which lower lipids level:

- 1) Weight loss
- 2) Exercise
- 3) High water-soluble fibre intake
- 4) High polyunsaturated: saturated fat ratio

PGI, Chandigarh





5) Intake of omega-3 fatty acids (fish)

B) Unfavourable effects which increases lipids level:

- 1) Smoking
- 2) Diet high in saturated fat and cholesterol
- 3) Stress
- 4) Oral contraceptives
- 5) Sedentary lifestyle

Traditional Cholesterol Values are:
Total Cholesterol <200, Triglycerides 150, LDL 130 and HDL should be >45

OBESITY

Your weight will depend on how much you eat and how much you utilize. Don't kill yourself under your own weight. Calorie charts can help people decide about their requirement. Use low or non-fat dairy products, use only lean meats, fish, and skinless poultry. Increase the use of high fibre foods. Use a variety of fresh fruits and vegetables. If you regularly eat fresh vegetables/salads, fresh fruits, low fat & cholesterol

diets and less/no meat-brain, liver, egg yolk butter, ghee you are likely to have good weight.

Limit intake of all fats. Also eat less salt and salty foods. Pay attention to portion sizes like avoid extra-large Mcburger.

Which oil to use? Cooking oils with good N6/N3 ratio are good like soya bean, rapeseed oil, mustard oil, ricebran oil. Less preferred oils are: Sunflower, groundnut oil, corn oil. Donotuse DALDA orvanaspatighee. COW'S GHEE IN MODERATION IS FINE. REMEMBER TO USE ONLY HALF LITER OF OIL PER MONTH PER INDIVIDUAL. IT IS ALSO A GOOD PRACTICE TO USE DIFFERENT BRAND OIL FOR DIFFERENT MONTH. ALSO DO NOT USE the SAME OIL FOR REPEATED FRYING TRY AND USE FRESH OIL MOST OF THE TIME.

Alpha-Linolenic Acid is good for heart. Following foods are good source of Alpha-Linolenic Acid: Fish , wheat, bajra, black gram (urad), lobia, rajmah,

soybeans, green leafy vegetables, Fenugreek seeds (methi), mustard seeds and in oils: Mustard, Soyabean

With recent innovation and fashion in cooking, some of the healthy foods have become unhealthy. Here are some of the examples:

- 1) Traditionally we used to eat Roti but it now been replaced with Naan - Paratha - Butter Naan
- 2) Replaced normal boiled rice with pulao and biryani.
- 3) Replaced traditional idli with ghee-fried idli
- 4) Replaced plain dosa with masala dosa and or ghee-roasted masala dosa
- 5) Replaced vegetable koftas with malai kofta
- 6) Replaced Bhindi with Bhindi masala Fry or Do-piazza
- 7) Replaced Tomato Rasam with - Cream of Tomato Soup
- 8) Replacing Steamed Fish /Fish Tikka with Fish Fry or Fish in Lemon Butter Sauce

HAVE GOOD BREAKFAST AND LUNCH AND LIGHT AND EARLY DINNER. AVOID LATE NIGHT DINNERS. AVOID SWEETS at NIGHT. If you already had a heart attack and triglycerides are elevated it is strongly recommended that carbohydrate intake should be reduced, like avoid rice, potato, and sugar.

ALCOHOL

Alcohol when consumed in moderation is not bad. This limit is 2 or fewer standard drinks/day.

Beer: 360 c (12 ounce)

Whisky: 45 cc (1.5 ounce)

Wine: 120 cc (4 ounce). Sip slowly. Remember alcohol also has calories. Patients with elevated triglycerides should be advised to decrease or eliminate consumption and also those who had heart attack with damaged heart should not drink at all. Never drink on empty stomach. PLEASE ALSO be ADVISED THAT OILY, NON-VEGETARIAN, and PANNER DISHES SHOULD BE AVOIDED OR TAKEN IN MODERATION ALONG WITH ALCOHOL DRINKS.

STRESS

Stress has become integral part of life. With younger generation becoming more ambitious for early name, fame and money, it has become more prominent. Everybody has ups and downs. Stress whether related to family/ relationships, work and money can become a grave problem if not coped with effectively. Social support is the key. Think of others and work for their welfare. Be honest and true in dealings. Look beyond the material façade. Suffering gives an opportunity for personal spiritual growth. Positive attitude helps. Be optimistic. Exercise regularly, learn to relax, take a break from work, talk it over to your Guru or close relatives, plan your work, be realistic, and religious.

SOLUTION TO OUR CONFLICTS AND CONFUSION LIES IN DEVELOPING A SPIRITUAL ATTITUDE TO LIFE. BABA RAMDEV BASED IN HARIDWAR TALKS ABOUT DIET, YOGA AND PRANAYAM FOR COMBATING LIFE-STYLE RELATED

ABOUT THE AUTHOR

Dr Manoj kumar Rohit Is Professor, Department Of Cardiology at the Post Graduate Institute Of Medical Education & Research-Chandigarh. He is working as faculty since October 2002. The Advanced Cardiac Centre of the institute is a 172-Bed Cardiac Hospital dedicated to the suffering mankind. Today it performs 8000 angiographies and 1500 open heart surgeries per year at affordable cost. Thanks to Smt. Sushma Swaraj, the then Union Health Minister, Dr K K Talwar was appointed as head of cardiology and director of PGIMER Chandigarh in April 2004. Dr KK Talwar worked in this capacity for 7 years. He was instrumental in, among other things, setting up cardiac centre. The author feels himself blessed to have worked with him.

DISEASE INCLUDING CORONARY ARTERY DISEASE. BHRAMA KUMARIS BASED IN MOUNT ABU TALK ABOUT GOOD DIET AND MEDITATION AND THEY HAVE SPECIAL COURSE FOR HEART DISEASE PATIENTS UNDER SUPERVISION OF QUALIFIED CARDIOLOGIST. SATHGURU JAGGI VASUDEV OF ISHA FOUNDATION BASED IN COAMBATURE PROMOTES COURSES FOR STRESS FREE LIFE SUCH AS SAMHAVI MAHAMUDRA. BANGLORE-BASED SHRI RAVISHAKAR PROMOTES SPECIAL COURSES FOR STRESS FREE LIFE. ALL OF THEM EMPHASISE HOW IMPORTANT IT IS TO INCLUDE RAW FOOD IN YOUR DIET LIKE MORE SALAD, FRUITS, AND SPROUTED FOOD.

PHYSICAL EXERCISE PHYSICAL EXERCISE ADDS NOT ONLY YEARS TO LIFE BUT ALSO LIFE TO YEARS

Walking: Simple, easy to perform, does not need money, material or

membership of a club

Other Activities: Swimming, Cycling, outdoor games

Perform exercises at least 3 times a week, for 30 minutes

Exercise guidelines: 100 % of your heart rate = 220 – your age in years. If you are 30 years that your expected target heart rate is 220-30 = 190. Achieve 70% of your peak heart rate for 30 minutes 3 days per week.


Yoga and Meditation are also alternative to exercise. It is said that suryanamaskar is a complete exercise.

Yoga is not merely a set of postures (asanas) but a complete way of life: it promotes vegetarian diet, low in cholesterol & saturated fats, rich in anti-oxidants (vegetables, fruits), regular physical exercise, stress management techniques, abstinence from smoking. Yoga has immense potential for benefit to patients with CAD.

HOW TO SURVIVE A HEART ATTACK WHEN ALONE?

DO NOT PANIC, BUT START COUGHING REPEATEDLY AND VERY VIGOROUSLY. A DEEP BREATH SHOULD BE TAKEN BEFORE EACH COUGH, THE COUGH MUST BE DEEP AND PROLONGED WHEN PRODUCING SPUTUM FROM DEEP INSIDE THE CHEST. A BREATH AND A COUGH MUST BE REPEATED ABOUT EVERY TWO SECONDS WITHOUT LET-UP UNTIL HELP ARRIVES, OR UNTIL THE HEART IS FELT TO BE BEATING NORMALLY. DEEP BREATHS GET OXYGEN INTO THE LUNGS AND COUGHING MOVEMENTS SQUEEZE THE HEART AND KEEP THE BLOOD CIRCULATING. THE SQUEEZING PRESSURE ON THE HEART ALSO HELPS IT REGAIN NORMAL RHYTHM. IN THIS WAY, HEART ATTACK VICTIMS CAN GET TO A HOSPITAL SAFELY.

TO KEEP YOUR HEART HEALTHY:
LOVE YOUR HEART

- A) Become physically active every day!
- B) Limit alcohol, sugar and caffeine
- C) Achieve and maintain an ideal weight
- D) Manage your stress. 

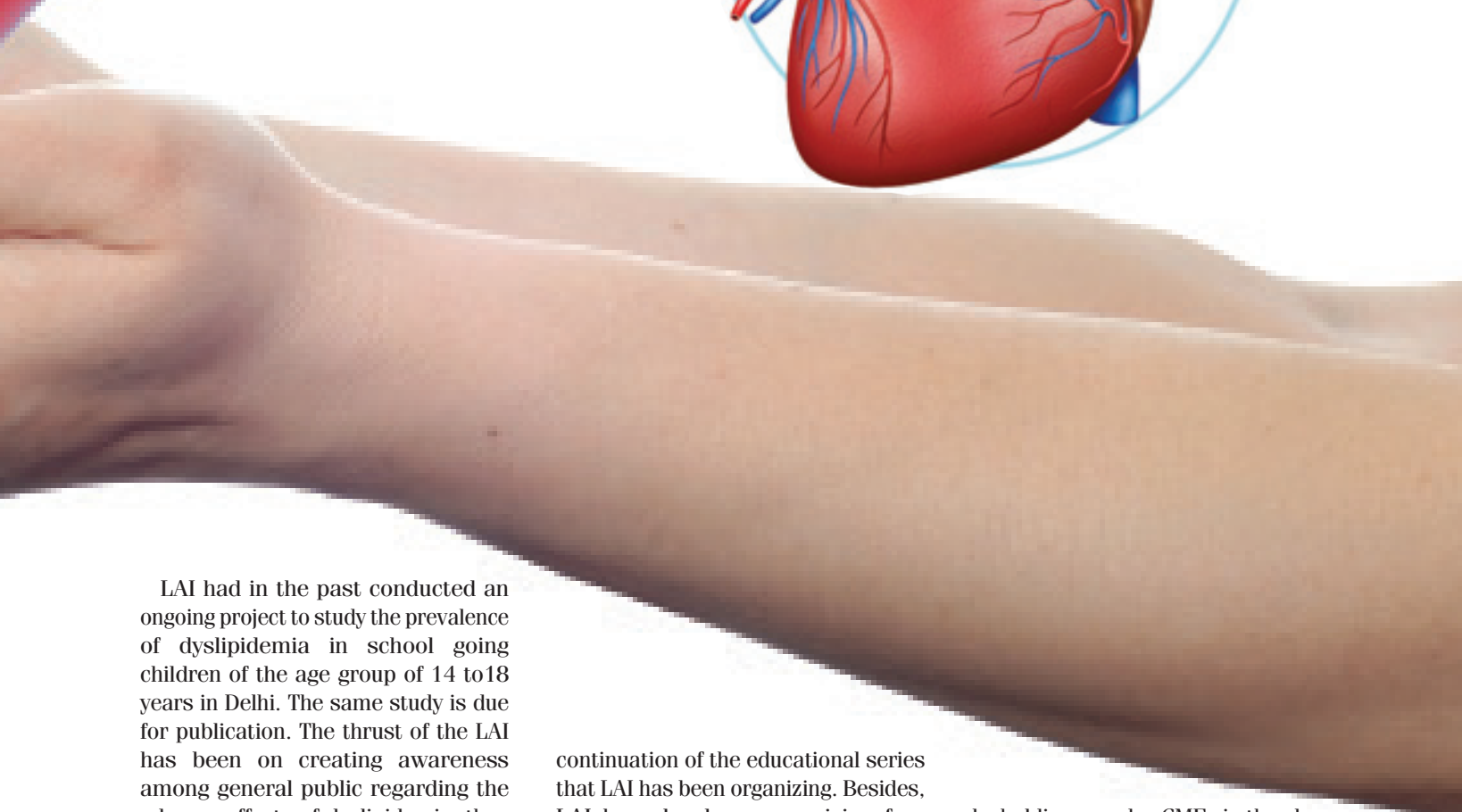
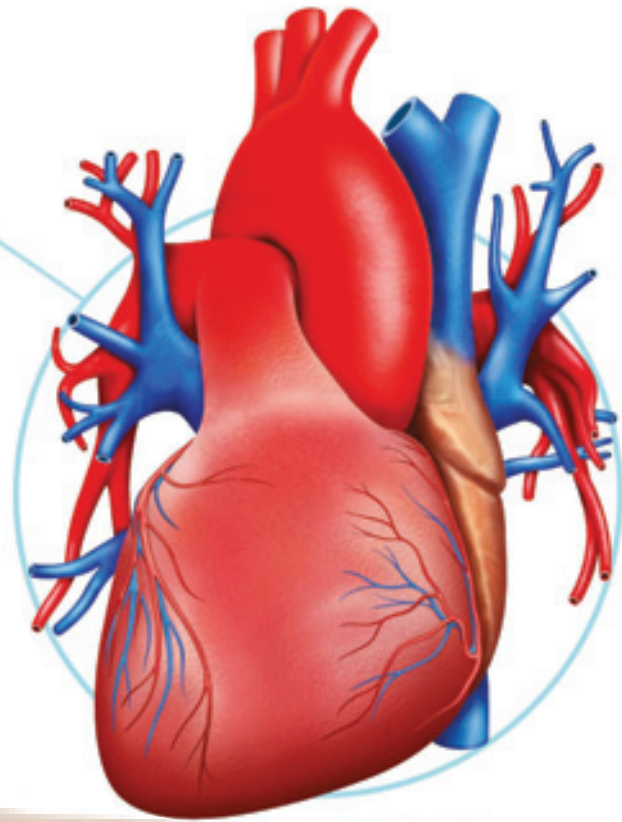
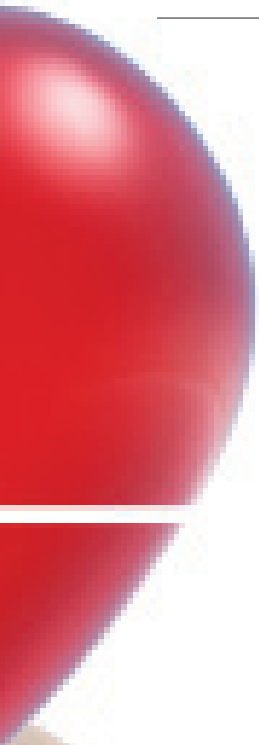
Saviour of Hearts

Dr Raman Puri has played a significant role in reducing incidences of heart attacks in India by creating awareness about the urgent need for lipid management in patients suffering from coronary artery disease, hypertension and diabetes
BY TEAM DOUBLE HELICAL



Noted interventional cardiologist of the country Dr Raman Puri has been tirelessly crusading since long for spreading awareness among citizens in the country about the grave need for getting their lipid profiles screened in time.

He founded the Lipid Association of India (LAI) which comprises a team of eminent doctors in the field of cardiovascular, internal medicine, pharmacology and young doctors interested in the field of lipidology. The objective of LAI is to focus on research activities related to prevalence of dyslipidemia within various age groups in India. Dyslipidemia, or commonly known as high cholesterol level is a disease condition in which the levels of bad cholesterol (like triglyceride, low density lipoprotein [LDL] and total cholesterol) increase while the level of good cholesterol (HDL) decrease making a person prone to developing heart disease.



LAI had in the past conducted an ongoing project to study the prevalence of dyslipidemia in school going children of the age group of 14 to 18 years in Delhi. The same study is due for publication. The thrust of the LAI has been on creating awareness among general public regarding the adverse effects of dyslipidemia, thus achieving the ambitious aim of 'Healthy Heart for Better Tomorrow,' eventually leading to reduced incidences of heart attacks in India.

LAI has been organizing 'Heart related Summits' at different destinations. These summits are a

continuation of the educational series that LAI has been organizing. Besides, LAI has also been organizing free health camps at various places in Delhi-NCR.

Dr Puri has played a significant role in conducting a series of medical educational summits in the field of dyslipidemia, hypertension, acute coronary syndrome and heart failure

by holding one-day CMEs in the above field on a regular basis. He has been assiduously working to help reduce the number of heart related ailments and heart attacks in the country. For this, he has been organizing regular health check-up camps, Run for Heart campaigns as well as national level

and international level seminars for creating widespread awareness about the serious perils of heart related ailments and complications.

Elucidating more on the same, Dr Raman Puri shares, “LAI is one of the few medical societies in India committed to prevent and treat dyslipidemia. Dyslipidemia is considered a silent killer in males and females. Obesity and habits such as a sedentary lifestyle, consumption of unhealthy food among adults and children can lead to a high cholesterol level and precipitate heart disease. Several guidelines to treat dyslipidemia have been designed by western countries. Lack of both epidemiologic and trial data forces us to use western guidelines to treat our dyslipidemic population.”

Dr Puri makes a very pertinent point when he says, “It is important to understand that western guidelines may not be applicable to Indians since our genetic profile is different. It is prudent to gather data on the incidence and type of dyslipidemia of Indian population in order to frame effective treatment guidelines. In view of this, LAI had taken the initiative to develop indigenous expert consensus statement for the treatment of dyslipidemia in Indian which was published in JAPI March 2016 edition.”

The LAI’s expert recommendation was unique in recommending the level of LDL cholesterol less than 50 mg/dl in patients with established Atherosclerotic Cardiovascular Disease (ASCVD) in contrast to targets of less than 70 mg/dl of LDL cholesterol in European and American guidelines. In the past five years, LAI has conducted numerous free medical checkup camps encompassing several areas in and around Delhi.

In one of the studies of 2502 school going children, school-going children in urban and semi-urban parts of Delhi were found to be at high risk for dyslipidemia. The gravity of this risk lies in the fact that dyslipidemia (abnormal lipid profile) in childhood predisposes to cardiac disease in



young adults. The study shows that substantially high proportion of boys and girls either have a borderline or lower level of the protective cholesterol, HDL.

Nearly half of the children in the LAI’s study, including both boys and girls, either had high or borderline high levels of triglyceride. In addition, other parameters like non-HDL cholesterol, LDL- cholesterol and total cholesterol were also deranged. This is an alarming signal to all the medical fraternity and the general population to take appropriate actions to raise

awareness regarding this problem, and to institute preventive measures. If we remain lax and indifferent today, then we will be putting substantial percentage of our paediatric population at risk for cardiovascular event in the next 10-20 years.

LAI has so far conducted four international summits and five national summits since 2012 in which a large number of experts from India and overseas have participated to share their expertise and experience to combat dyslipidemia. LAI is also committed to create and promote



ABOUT DR PURI

Dr Raman Puri is working as Senior Interventional Cardiologist at IP Apollo Hospital since October 1996. His work involves interventions including coronary angiographies, coronary angioplasty and stenting, valvuloplasty, device closure of the heart defects such as ASD, PDA and pacemaker implantation besides clinical cardiology practice. He has special interest in preventive cardiology especially dyslipidemia and hypertension.




awareness about dyslipidemia in South East Asian as well as other developing countries for which it is organizing for the first time an exclusive South East Summit on lipids in December 2017 by involving cardiologists who are committed to overcome this emerging challenge. In the 4th International Summit on lipids which was organized in August' 2017 in the capital, LAI announced 'Delhi Declaration 2017 on Lipid Management', wherein, a group of experts comprising cardiologists, endocrinologists and physicians

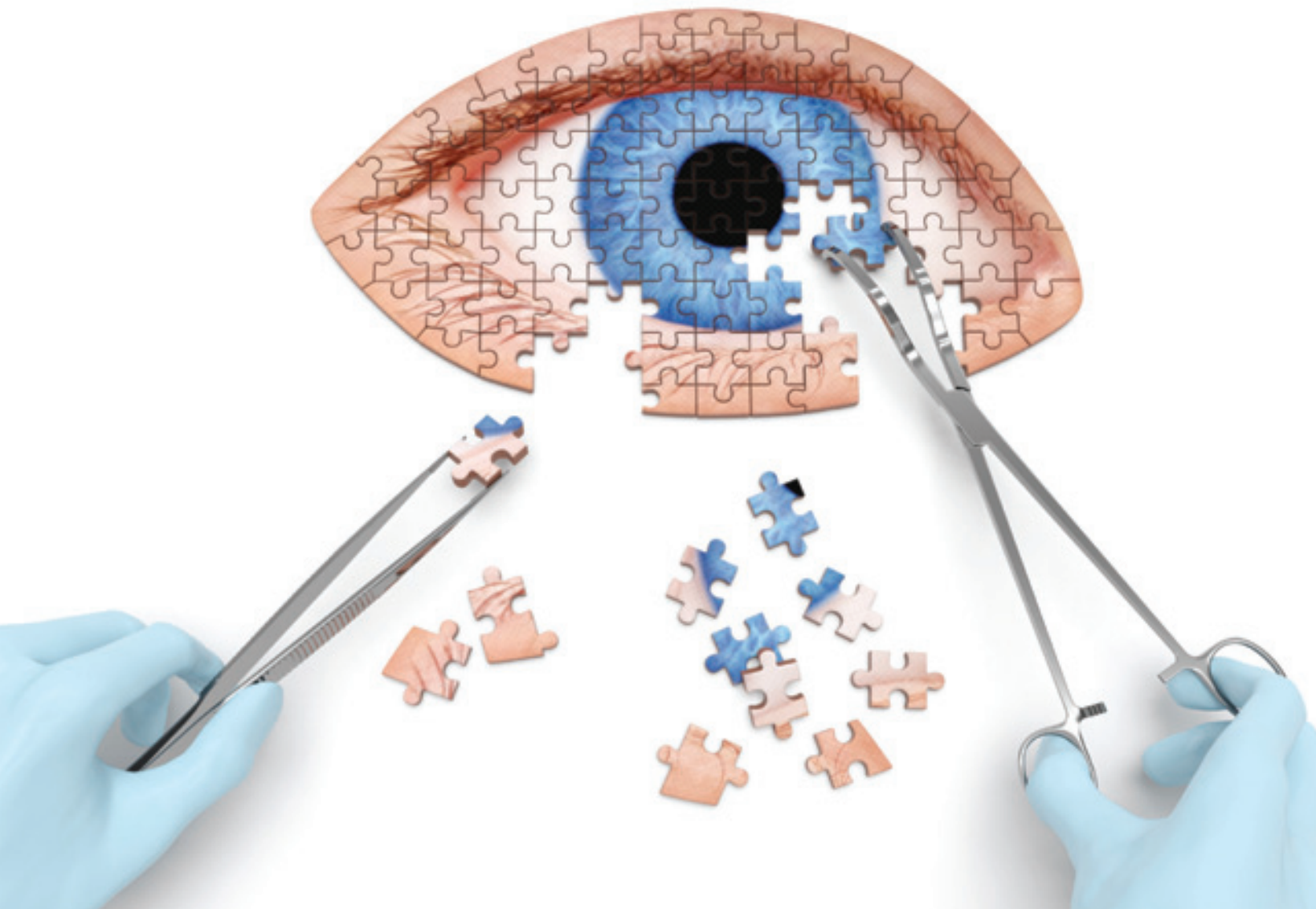
dealing with the day-to-day management of serum lipids, unanimously emphasized upon the urgent need for lipid management in patients suffering from Coronary Artery Disease (CAD), hypertension and diabetes mellitus.

This is based upon the fact that there is increasing prevalence of CVD in India. This high prevalence is due to increased prevalence of diabetes, hypertension, smoking, obesity and sedentary lifestyle. This in turn will have a deleterious impact on health and cause severe blow to economy due to loss of

working hours and medical expenditure. All this is preventable by treating serum lipids (fats in the body) which play an important role in all the diseases mentioned above. Due to these reasons, our risk of developing heart diseases is four times more than the Americans, 6 times more than the Chinese, and 20 times more than the Japanese.

The CAD is more severe in Indians as it carries a higher mortality rate. If this trend continues, the day is not far when by 2020, India will become 'Heart Diseases Capital' of the world with more than 40% of deaths in the country due to CAD. This increased prevalence will obviously result in economic burden on the government. Thus, it is desirable that we should aggressively campaign for the Lipids management for prevention of CAD.

This campaign including lipid profile check should be made mandatory at the time of admission in colleges, as recommended by the expert consensus statement by LAI published on March 2016, public lectures, messages through press and electronic media and increasing awareness through medical fraternity. Adds Dr Puri, "I have always opined on different public forums that the best birthday gift from parents to their children would be getting them screened for the risk factors for CAD including lipid profile." 



Clouds in the vision

Cataract is no longer an inevitable fact of aging, but requires utmost farsightedness in its prevention, treatment, and post-operative care, whether in the case of adults or children

BY ABHINAV/ABHIGYAN

If you have even the slightest symptoms of cataract, you must see an eye specialist without losing any time. There is no conclusive evidence that shows why the eye's lens changes as people advance in years, leading to formation of cataract. But researchers worldwide

have identified factors besides advancing age that may cause cataract or are associated with cataract development.

Cataract can be termed as clouding of the eye's natural lens, which lies behind the iris and the pupil. It is the most common cause of vision loss in people who have crossed the age of 40.

Worryingly, cataract is the principal cause of blindness in the world. In fact, the cases of cataract worldwide outnumber the cases of glaucoma, macular degeneration and diabetic retinopathy combined.

Types of cataracts

1 Subcapsular cataract occurs at the

back of the lens. People with diabetes or those taking high doses of steroid medications have a greater risk of developing a subcapsular cataract.

- 2 A nuclear cataract forms deep in the central zone (nucleus) of the lens. Nuclear cataracts usually are associated with aging.
- 3 A cortical cataract is characterized by white, wedge-like opacities that start in the periphery of the lens and work their way to the centre in a spoke-like fashion. This type of cataract occurs in the lens cortex, which is the part of the lens that surrounds the central nucleus.

Cataract Symptoms and Signs

A cataract starts at a small level and at first does not have much effect on your vision. You may notice that your vision is blurred a little, like looking through a cloudy piece of glass or viewing an impressionist painting. A cataract may make light from the sun or a lamp may seem too bright or glaring. Or you may notice when you drive at night that the oncoming headlights cause more glare than before. Colours may not appear as bright as they once did.

The type of cataract you have will determine the symptoms you experience and the frequency of their recurrence. When a nuclear cataract first develops, it can bring about a temporary improvement in your near vision, called "second sight." Unfortunately, the improved vision is short-lived and will disappear as the cataract worsens. On the other hand, a subcapsular cataract may not produce any symptoms until it's well-developed.

What Causes Cataract?

The lens inside the eye works much like a camera lens, focusing light onto the retina for clear vision. It also adjusts the eye's focus, letting us see things clearly both up close and far away. The lens is mostly made of water and protein. The protein is arranged in a precise way that keeps the lens clear and allows light to pass through it. But



as we age, some of the protein may clump together and start to cloud a small area of the lens. This is a cataract, and over time, it may grow larger and cloud more of the lens, making it harder to see.

Besides advancing age, cataract risk factors include:

- Ultraviolet radiation from sunlight and other sources
- Diabetes
- Hypertension
- Obesity
- Smoking
- Prolonged use of corticosteroid medications
- Statin medicines used to reduce cholesterol
- Previous eye injury or inflammation
- Previous eye surgery
- Hormone replacement therapy
- Significant alcohol consumption
- High myopia
- Family history

One theory of cataract formation that's gaining acceptance is that many cataracts are caused by oxidative changes in the human lens. This is supported by nutrition studies that show fruits and vegetables high in antioxidants may help prevent certain types of cataracts.

Cataract Prevention

Though it is debatable whether cataracts can be prevented, a number of studies suggest certain nutrients and nutritional supplements may reduce

your risk of cataracts. One extensive, 10-year study of female health professionals found that higher dietary intakes of vitamin E and the carotenoids lutein and zeaxanthin from food and supplements were associated with significantly decreased risks of cataract. Good food sources of vitamin E include sunflower seeds, almonds and spinach. Good sources of lutein and zeaxanthin include spinach, kale and other green, leafy vegetables. Other studies have shown that antioxidant vitamins such as vitamin C and foods containing omega-3 fatty acids may reduce cataract risk.

Cataract Treatment

When symptoms begin to appear, you may be able to improve your vision for a while using new glasses, strong bifocals, magnification, appropriate lighting or other visual aids. Think about surgery when your cataracts have progressed enough to seriously impair your vision and affect your daily life.

Many people consider poor vision an inevitable fact of aging, but cataract surgery is a simple, relatively painless procedure to regain vision.

Cataract surgery is very successful in restoring vision. Nine out of 10 people who have cataract surgery regain very good vision, somewhere between 20/20 and 20/40.

During surgery, the surgeon will remove your clouded lens and in most cases replace it with a clear, plastic intraocular lens (IOL). New IOLs are

RESTORER OF VISION

Contributions of Prof Jagat Ram in the field of adult and paediatric cataract and related visual sciences for the past 38 years:

Dr Jagat Ram is Director and Professor of Ophthalmology at the Post Graduate Institute of Medical Education and Research (PGIMER), Chandigarh. Born in a small village of remote backward area in Himachal Pradesh, he has risen to play a major role in establishing the Department of Ophthalmology at PGIMER as the centre of excellence on the national and global map.

From very humble beginnings, Prof Ram has become an international figure as a leading academic ophthalmologist and recognizing his significant contribution in patient care and community service, he has been chosen and given a challenging task as Director, PGIMER Chandigarh, a prestigious medical institute of the country.

Prof Ram has provided compassionate patient care for adults and children suffering from cataract over a period of over 38 years at PGIMER, Chandigarh. The most celebrated aspect of his work belongs to the field of Paediatric Cataract Surgery. Prof Ram has made outstanding contributions by helping several thousands of children suffering from congenital cataract from their infancy or childhood in restoring vision with state of the art surgical techniques with intraocular lens implantation.

In 1979 when Prof Jagat Ram joined the Department of Ophthalmology in PGIMER, Chandigarh, intra-capsular surgery (ICCE) was the only available primitive surgical procedure for removing cataractous lens. The surgical incision was very wide requiring more than 5-6 stitches and patients required thick aphakic spectacles for visual rehabilitation. Since the wound was also very large, the recovery period was often prolonged and sometimes,



unsatisfactory. As time went by, in the period between 1985 and 1994, the surgical procedure of choice was extracapsular cataract surgery (ECCE). The main advantage of this technique was reduction in the size of the incision. In addition, the era of implantation of artificial lens [intraocular lens (IOL)] was introduced. In the period from 1993 to 1994, science showed further progress. Recognizing his capabilities, Prof Jagat Ram was deputed for the prestigious WHO fellowship in the latest technique of phacoemulsification at the University of South Carolina, Storm Eye Institute, USA. Phacoemulsification was a path-breaking technological innovation which ushered in a new era in the management of cataract and IOL implantation. Thereafter, in the year 1994, Prof Ram for the first time introduced phacoemulsification - which is a small incision stitch-less cataract

surgery in North India. Phacoemulsification helps in early rehabilitation and quick recovery of the patient. This technique was made available to the masses by Prof Jagat Ram at PGIMER, a premier institute of this country. In 1998, Prof Jagat Ram was again deputed for another prestigious fellowship in advanced phacoemulsification and paediatric cataract surgery at Charleston, University of South Carolina, USA with a protégé, Prof David Apple.

In 2015, Prof Jagat Ram was instrumental in starting state-of-the-art Femtosecond Laser Assisted Cataract Surgery at the PGIMER, Chandigarh and this facility was inaugurated by Union Minister for Health and Family Welfare, J.P. Nadda.

If we look back in time, there have been tremendous improvements and refinements in the technique of cataract surgery in children from 1979 till date. The

surgical procedure in children for cataract surgery was needling of the congenital and developmental cataract from 1979-1990. Thereafter the surgical procedure advanced to ECCE with IOL implantation from 1985-95. During this period, Prof Ram was instrumental in starting cataract surgery in young children with IOL implantation and performing various complicated cataract surgeries among young children with congenital complications including persistent foetal vessels and other defects for which otherwise no cure was available. He has to his credit surgical innovations for cataract surgery in children.

Prof Ram has contributed significantly in patient care throughout his illustrative career spanning over close to four decades in restoring the vision by modern surgical technique in approximately over 82,000 patients suffering from visual impairment due to cataract. Imbued with a missionary zeal, he has constantly offered his services in over 135 eye relief services in the rural areas of neighbouring states of Punjab, Haryana and Himachal Pradesh. Prof Ram is a regular participant at the rural camps at Beas Amritsar where extremely poor and deprived individuals are provided with high quality care. He was selected by the Government of India for two years assignment with the Republic of Seychelles as Consultant Ophthalmologist from 2003 to 2005 where he was successful in eliminating the backlog of cataract blindness.

He is recipient of over 30 awards at the International, national and state level including most prestigious International Award named as the Best of the Best Award for Innovation in New Surgical Technique for children with cataract and congenital defects at American Society Cataract and Refractive Society Conference held at San Francisco USA in 2013. He was again awarded the Best of the Best Award at New Orleans USA in 2016. He was awarded Oscar of Paediatric Ophthalmology at the World Congress of Paediatric Ophthalmology and Strabismus at Barcelona in 2015.



This achievement was recognized by a number of world leaders in ophthalmology as a tribute to India.

Prof Ram is focused in providing training and mentoring over 250 postgraduate students and ophthalmologists deputed from all over the country and abroad with the most modern surgical technique of phacoemulsification. Prof Ram has delivered over 410 lectures on paediatric and adult cataract in the national and international conferences. As a researcher, he contributed over 300 publications in the National and International Journals including the prestigious New England Journal of Medicine and Lancet. Prof Ram was the only invitee from Asia Pacific region for a special issue on Elimination of Cataract Blindness by Survey of Ophthalmology, which is a unique International honour. Dr Jagat Ram has completed 40 research projects funded by PGI, Government of India and international collaboration. He is on the Editorial Board of Indian Journal of Ophthalmology and as a reviewer for several major International Scientific Journals.

Indian medical community has recognized him as the finest ophthalmic surgeon and a clinician par excellence who provides quality care to all sections

of the society. His exceptional surgical qualities and skill have changed lives of several thousand patients especially those belonging to the poor and deprived classes. He is a role model for the medical students and faculty alike.

Contribution as Director of PGIMER, Chandigarh

On March 17, 2017, he was elevated to the post of Director, PGIMER, Chandigarh. After assuming the charge as Director of the Institute, Prof Jagat Ram has initiated the work on the three major projects after approval by the Government of India namely Mother Child Care Centre and Neurosciences Centre at PGI, Chandigarh and setting up the Satellite Centre at Una in Himachal Pradesh. Upgrading these facilities will greatly benefit the patients coming from the neighbouring states.

He is instrumental in negotiations to significantly bring down the cost of orthopaedic implants and cardiac stents within affordable range for common patients. He has also succeeded in channelizing the working of the overcrowded Emergency by close supervision and prompt management by doctors and staff, which has helped in reducing patient's number and hospital stay.



being developed all the time to make the surgery less complicated for surgeons and the lenses more helpful to patients. Presbyopia-correcting IOLs potentially help you see at all distances, not just one. Another new type of IOL blocks both ultraviolet and blue light rays, which research indicates may damage the retina.

Eyewear After Cataract Surgery

In most cases, unless you choose presbyopia-correcting IOLs, you will still need reading glasses after cataract surgery. You may also need progressive lenses to correct mild residual refractive errors as well as presbyopia.

For the best vision and comfort possible with glasses prescribed after cataract surgery, ask your optician to explain the benefits of anti-reflective coating and photochromic lenses.

Paediatric cataract

As per latest report released by World Health Organization (WHO), cataract is the leading cause of preventable blindness. The statistics show the cataract is the leading cause of blindness even during childhood.

Diagnosis of paediatric cataract is not difficult; however management is more complex than cataract in the adult.

The surgical expertise needed is at a higher level. Experience is needed in terms of decision making regarding timing of the surgery, spacing of cataract surgery between two eyes, whether to go for an intra ocular lens implantation or not. One needs to be well versed with the primary posterior capsulotomy to avoid posterior capsular opacification and consequent amblyopia. Postoperative care needs to be more aggressive in terms of treatment of inflammation and visual rehabilitation. One needs to keep setting of amblyopia in mind, in these children.

If needed amblyopia treatment should to be instituted very early in the post-operative period to have optimal visual recoveries. However, the screening of children for white reflex should be taken up along the lines of a public campaign. The impact of a child going blind is enormous as it corresponds to the loss of number of man years of productivity. The

Academic and Research committee has brought out a CME programme on pediatric cataract with an intention to increase awareness among ophthalmologists. This CME gives an excellent overview of clinical features, diagnosis and management of paediatric cataract. It can serve as good guide to approach a child with a paediatric cataract.

In this CME, the authors have demonstrated good surgical approach in a child with paediatric cataract and IOL power calculations in this age group. They also discussed appropriately the risks of amblyopia and its management especially in unilateral and bilateral cataracts and their care in the post-operative period. The reviewers have done a good job in pointing out the relevant lacunae, so that the CME series can be as useful as possible to all ophthalmologists.

Paediatric cataract is one of the major causes of preventable childhood blindness, affecting approximately 200,000 children worldwide, with an estimated prevalence ranging from three to six per 10,000 live births.¹ to



3 paediatric cataracts may be congenital if present within the first year of life, developmental if present after infancy, or traumatic. Early diagnosis and treatment are of crucial importance to prevent the development of irreversible stimulus-deprivation amblyopia. The management of paediatric cataract should be customized depending upon the age of onset, laterality, morphology of the cataract, and other associated ocular and systemic comorbidities.

Recent advances in surgical techniques, intraocular lens (IOL) composition and designs, increased understanding about the neurobiology of visual development, and early postoperative use of contact lenses for optical rehabilitation have contributed to improved outcomes after paediatric cataract surgery. Furthermore, early diagnosis can be achieved by genetic counseling and testing in cases of hereditary cataracts.

However, certain issues specific to paediatric eyes, such as increased postoperative inflammation, axial growth after cataract extraction,

implant-power calculation, secondary glaucoma, posterior-capsule opacification (PCO), and amblyopia management, are still major obstacles to achieving good visual outcomes in childhood cataract surgery.

The evaluation of a child with a cataract begins with a detailed history including family history; a prenatal history including maternal drug use and febrile illnesses with rash; and birth history, especially birth weight, since low birth weight may be associated with idiopathic bilateral congenital cataracts. A developmental history should be carefully assessed, and if required, review should be sought to exclude metabolic or systemic related etiologies. A history of the onset of the lenticular opacities, laterality, and progression is also important. Unilateral cataracts are usually isolated, but they are most commonly found to be associated with persistent foetal vasculature (PFV) also, other ocular abnormalities, such as lenticonus/lentiglobus may be associated.

A detailed ocular examination is carried out either in the office or in the operating room. This should include slit-lamp biomicroscopy to assess the size, location, density of lenticular opacity, capsular changes, such as preexistent posterior capsular defects, and other associated anterior-segment developmental anomalies. In addition, measurement of intraocular pressures and corneal diameters are performed.

Fundus examination in partial cataracts and ultrasound examination in total cataracts may reveal posterior-segment abnormalities that may affect the visual outcome. Ultrasound biomicroscopy can be informative in children with anterior-segment developmental anomalies and PFV, and also in the assessment of posterior capsular support while considering secondary IOL implantation. In children under 12 months of age, it is sometimes possible to examine them after they have been fed milk.

A cataract is any light scattering opacity of the lens. It is estimated that

congenital cataracts are responsible for 5% to 20% of blindness in children worldwide. Incidence varies from country to country. One retrospective study of the prevalence of infantile cataracts in the US showed a rate of 3-4 visually significant cataracts per 10,000 live births. This is a similar rate to a UK study which showed 3.18 per 10,000. These numbers underestimate the total number since they do not take into consideration visually insignificant cataracts.

Cataracts may be unilateral or bilateral and can vary widely in size, morphology and degree of opacification from a small white dot on the anterior capsule to total opacification of the lens. Consequently, the effect on vision, course of treatment and prognosis may also be widely variable.

The causes of infantile cataracts have been the source of much speculation and research. Making a distinction between unilateral and bilateral cataracts may be useful when considering etiology.

The majority of bilateral congenital or infantile cataracts not associated with a syndrome have no identifiable cause. Genetic mutation is likely the most common cause. Over fifteen genes involved in cataract formation have been identified, and the inheritance is most often autosomal dominant although it can be X-linked or autosomal recessive. Within the same pedigree, there can be considerable morphologic variation.

Systemic associations include metabolic disorders such as galactosemia, Wilson disease, hypocalcemia and diabetes. Cataracts may be a part of a number of syndromes, the most common being trisomy 21. Intrauterine infections including rubella, herpes simplex, toxoplasmosis, varicella and syphilis are another causes.

In contrast, most unilateral cataracts are not inherited or associated with a systemic disease and are of unknown etiology although they do not rule out the possibility of an associated systemic disease. They are usually the

result of local dysgenesis and may be associated with other ocular dysgenesis such as persistent fetal vasculature (PFV), posterior lenticonus or lentiglobus.

Trauma is a known cause of paediatric cataracts. If there is no known history of trauma to explain an acquired cataract in this age group, investigation must be considered in children who present with other signs suggestive of child abuse.

Regardless of the etiology, prompt treatment of visually significant cataracts is necessary to allow proper development of vision.

In many cases of congenital cataracts, there is a family history. History of prenatal and pregnancy history can also provide clues. Cataracts present as an opacity in the lens which run a spectrum from easily visible in the undilated state and apparent to the parents or pediatrician, to much more subtle changes requiring dilation and careful examination with a slit lamp. The red reflex is an extremely useful part of the exam giving an estimate of size and location within the visual axis, even in an uncooperative child.

Cataracts are classified according to their morphological appearance and location; however, making the diagnosis of a specific type of cataract can be difficult if it spreads to involve multiple layers, obscuring the original opacity. Cataracts may be a part of another disease or syndrome, and are sometimes the initial finding that leads to the diagnosis. A cataract may be accompanied by additional noticeable ocular abnormalities such as microcornea, megalocornea, coloboma of the iris, aniridia, and zonular dehiscence.

Symptoms

Often an infant with mild cataracts appears asymptomatic, delaying the diagnosis for years. At other times, lack of reaction to light, strabismus, a failure to notice toys and faces or an apparent delay in development become the cause of concern. Mild cataracts may cause photophobia only in bright



lights. Dense cataracts also may be discovered if they lead to the development of sensory nystagmus.

Clinical diagnosis

For unilateral cataracts in an otherwise healthy child, an extensive workup is not necessary. The most critical part of the workup is a thorough ophthalmologic exam including slit lamp examination of both eyes, checking intraocular pressure, and an ultrasound of the posterior pole if not visible. If the exam reveals the classic appearance of a specific diagnosis such as PFV or posterior lenticonus, no further evaluation is necessary.

The first step in the workup of bilateral cataracts should be a family history including examination of family members. If there is a clear autosomal dominant pattern and the child is healthy, further evaluation is not necessary. In cases without clear family history, a thorough pediatric and developmental exam should be performed. Recommended lab workup includes TORCH titers, VDRL, serum calcium and phosphorus levels and urine for reducing substance. Additional systemic workup should be done in coordination with the paediatrician. Dysmorphic features may suggest the need for involvement of a geneticist.

Not all pediatric cataracts require

surgery. A small, partial or paracentral cataract can be managed by observation. Pharmacologic pupillary dilation with phenylephrine or tropicamide can be helpful. Dilation with atropine should be avoided as it is amblyogenic. Part-time occlusion may be necessary in unilateral or asymmetric cases that develop or are at risk for amblyopia. These techniques may at least delay the need for surgery until a point when eye growth has stabilized and an IOL can be implanted with less refractive uncertainty. Because of the unpredictability in the progression of partial cataracts, these patients should be carefully monitored and if significant amblyopia develops that is unresponsive to treatment, surgical intervention should be performed.

Decision about surgery depends upon age of patient at presentation, extent of opacity and associated conditions.

If child is less than 1 year sequence should be

- Lensectomy pars plana or limbal leaving anterior capsular rim
- Optic rehabilitation using aphakic glasses/contact lenses

Secondary implant in sulcus

- Amblyopia and strabismus management

If child is 1 to 5

- Primary surgery with anterior approach with primary posterior capsulotomy and anterior vitrectomy

If child is greater than 5

- May not need primary capsulotomy

Surgery

If the cataract(s) are felt to be visually significant, surgical intervention is the only option. The timing of surgery is critical for visual development. Most investigators recommend surgery within the first two months of life. There has been evidence to suggest that before one month of age, the risk of aphakic glaucoma is increased. In cases of bilateral cataracts, it may be advantageous to perform surgery on both eyes in the same intervention to allow for simultaneous initiation of visual rehabilitation as well as reducing exposure to general anesthesia. In this setting, treating each eye as a separate sterile procedure may reduce infection risk.

Removal of the lens can be approached through the limbus or the pars plana. The limbal approach has the advantage of maintaining the posterior capsule to facilitate posterior chamber intraocular lens (IOL) implantation if desired.

Several options exist to open the anterior capsule in paediatric cataracts. The ideal anterior capsulectomy technique is one that results in low incidence of radial tears and is easily performed. In cases of dense cataract, dye can be used to stain the anterior capsule, making this step easier and safer. A manual continuous curvilinear capsulorhexis (CCC), which is the preferred method in adult eyes, can be difficult in paediatric cases due to the elasticity of the paediatric capsule. However, when it can be controlled and completed, it creates an edge, which has a low incidence of radial tears. A 23 G vitreous end gripping forceps using push pull technique is very effective.

A mechanized circular anterior capsulectomy, known as vitrectorhexis

has been proven to be a very good, safe alternative if the CCC is not possible. The vitrector tip is placed through a stab incision at the limbus and irrigation is provided through a sleeve around the vitrector or through a separate limbal incision. The vitrector port is oriented posteriorly, and held in the center of the capsule to create an initial opening. The opening is enlarged in a circular fashion, holding the cutter just anterior to the capsule to aspirate the capsule up into the cutter. A smooth, round capsulectomy that is also resistant to radial tears can be produced.

Paediatric cataracts are soft and therefore phacoemulsification is generally not needed. The lens cortex and nucleus can be removed with an irrigation-aspiration or vitrector hand piece. To reduce the risk of posterior capsule opacification most surgeons perform a posterior capsulorhexis at the time of surgery. The lens capsule can be filled with viscoelastic and a posterior continuous capsulorhexis made slightly smaller than the anterior one. If an IOL is to be implanted, it can be placed in the capsular bag at this time and some advocate the technique of optic capture where the optic is pressed through the posterior capsulorhexis and the haptics remain in the bag.

It is controversial whether an anterior vitrectomy should be performed at the primary surgery. It can be performed either through the limbal incisions, after making the posterior capsulotomy with the vitrector hand piece, or through the pars plana. The anterior vitreous is removed and the lens epithelial cells therefore cannot grow in the vitreous face.


IOL implantation in children is felt to be safe and acceptable in children as young as one year. In those younger than one year, the decision is more controversial and research is ongoing. The Infant Aphakia Study is investigating this and early results show good visual outcome.

The refractive goal of surgery is also

controversial. Most surgeons will choose to make the child hyperopic but there is currently no agreed upon standard. These children will need bifocal glasses for the rest of their lives. A pars plana approach can be used when no IOL implantation is intended. An attempt is made to remove the whole cataract and the adjacent vitreous with a vitreous cutter.

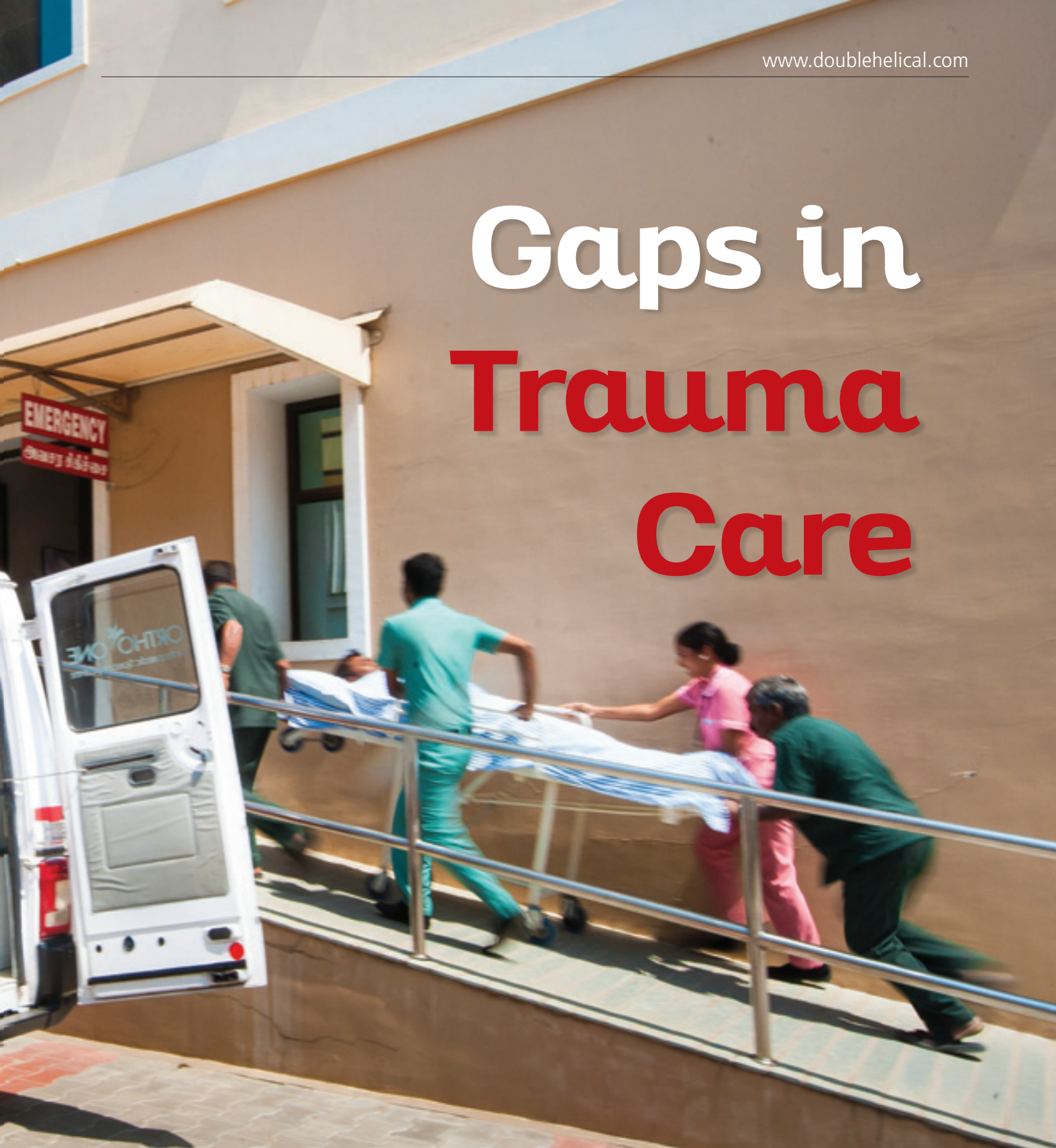
Care should be taken to remove the viscoelastic entirely to prevent elevated intraocular pressure following surgery and the anterior chamber should be checked carefully for vitreous. The sclera in children is soft and elastic and it is difficult to achieve a self-sealing incision, thus the incision should be closed using 10-0 nylon or Vicryl suture.

Secondary glaucoma is the most sight threatening complication of paediatric cataract surgery. Open-angle glaucoma can develop months to years after the surgery. The highest incidence is found when surgery is performed on children younger than 2 months and especially within the first month of life. An IOL may inhibit the development of secondary glaucoma. Glaucoma may also result from inflammation. Angle-closure glaucoma can result from anterior synechiae leading to pupillary block, which can be treated with a peripheral iridectomy. Some eyes with secondary glaucoma can be controlled with topical medication, but many cases will require additional surgical intervention.

Careful surgical technique can reduce early postoperative complications such as wound leak, iris to the wound and vitreous to the wound. Retinal hemorrhages can occur, probably as a result of leaving the intraocular pressure low at the end of surgery. Iris capture of the IOL optic can cause discomfort and disfigure the pupil. This is caused by iris scarring to the posterior capsule and risk can be reduced by careful placement of the lens at the time of surgery. Cystoid macular edema in children is not common as with adults, but can be seen on rare occasions. 



Gaps in Trauma Care



Trauma management system in India is in a primitive state with lack of prehospital care, inadequate provision of facilities for the transport of victim, and inefficient emergency and casualty services to handle traumatic brain injuries

BY AMRESH K TIWARY

Trauma can be defined as an injury to a living tissue caused by an extrinsic agent as a fallout of motor vehicle accidents, falls, gunshots, physical assaults or other forms of emergencies. Road traffic injuries are the leading cause of Traumatic Brain Injuries (TBIs), followed by falls and violence.

Concerted efforts are required for effective and sustainable prevention and management of such injuries in India. One of the essential needs is to establish the trauma registries to monitor the system and provide state-wide cost and epidemiological statistics.

As per an estimate, 20.5 per cent of the trauma patients die in phase III (within 24 hours to 7 days) due to respiratory failure or as a result of post-traumatic complications. A substantial proportion of patients (51.61 percent) who survived for more than one week (phase IV), later died as a result of secondary complications like sepsis or multiple organ system failure. The respiratory insufficiency and related complications are the most common causes of morbidity and mortality in acute spinal cord injuries (SCI) with an incidence of 36 to 83 per cent. Therefore an effort must be taken up to improve respiratory function and minimise respiratory complications arising in serious traumatic cases.

Road Accidents: Leading Cause of Trauma

The World Report on Road Traffic Injury Prevention indicates that by 2020, road traffic injuries will be a major killer accounting for half a million deaths and 15 million disability adjusted life years. Evidence supports the fact that timely referral to trauma centres, equipped with proper facilities to deal with serious injuries, results in reduction of mortality among victims.

Active nightlife like clubs and pubs, reluctance to use helmets, seat belts, violation of speed limits, lack of



tolerance, and increasing competition are some of the causes of increasing road traffic accidents.

According to a report, a vehicular accident occurs every three minutes, and a trauma-related death occurs every 1.9 minutes. In this context, accurate mortality statistics are important for implementing appropriate prevention strategies, improving emergency preparedness, instituting financing policies and appropriate health packages.

According to the latest report of National Crime Records Bureau, the total number of deaths every year due to road accidents has now crossed the 135,000 mark. While trucks and two-wheelers are responsible for over 40 per cent of deaths, peak traffic during

the morning and evening rush hours is the most dangerous time to be on the roads. The situation is aggravated by the menace of drunken driving. Liquor is a state subject and it is taking its toll everywhere in the country, not just Mumbai, Delhi, Bangalore, Hyderabad and metro towns. Ineffective laws, inadequate judicial procedure, little enforcement by the police, no specific segment where they can book people under drunk driving are making it difficult to check accidents under the influence of alcohol.

The road deaths are more rampant in developed states like Andhra Pradesh, Maharashtra and Tamil Nadu. Road safety experts believe that the real numbers of fatalities



REDUCING ROAD TRAFFIC INJURIES

Nearly 10-30 per cent of hospital registrations are due to road traffic injuries and a majority of these people have varying levels of disabilities. A majority of victims of road traffic injuries are men in the age group of 15-44 years and belong to the poorer sections of society. Also, a vast majority of those killed and injured are pedestrians, motorcyclists and pillions riders, and bicyclists.

A clearly defined road safety policy, a central coordinating agency, allocation of adequate resources, strict implementation of proven and effective interventions and reliable information systems are urgently required. Greater participation from health and other sectors based on an integrated, intersectoral and coordinated approach is essential. Health professionals can contribute in numerous ways and should take a lead role in reducing the burden of road traffic injuries in India.



could be much higher since many cases are not even reported. There is no estimate as to how many people injured in road accidents die a few hours or days after the accident.

Head and Spinal Injuries Produce Trauma

Head injury is much more common in young adults than in the elderly. Trauma is the leading cause of death in people under the age of 40. The main causes of head injury are falls, motor vehicle accidents, and assaults.

According to **Dr A K Singh, renowned Neuro Surgeon**, trauma to the head can lead to several types of injuries, including skull fractures, concussions, and cerebral contusions, diffuse axonal injury, epidural



OFFICERS, STAFF AND DRIVERS OF DGHS PLEDGE TO DRIVE SAFELY

Trauma Care Division, Directorate General of Health Services, Ministry of Health and Family Welfare observed the World Trauma Day recently to emphasize the need and importance of observing road traffic rules and saving precious lives lost due to accidents in India.

As a part of special awareness drive, all the participants were administered oath of safe driving and promoting safe road culture. The participants were shown video on road safety and Good Samaritanguidelines. The event was concluded with distribution of informative brochures to all the participants.

Subject experts from Ministry of Road Transport and Highways, and Ministry of Health interacted with the participants and sensitised them with the do’s and don’ts of all aspects related to road safety. Speaking on the occasion, DrJagdish Prasad,Director General of Health Services, stated that it is unfortunate that more people die in road traffic accidents than due to Malaria, T.B and HIV together, but we choose to ignore this silent epidemic. He further exhorted that road traffic accidents are totally avoidable. He also made an appeal to all the participants to follow the traffic rules, avoid using mobile phones while driving and promote healthy road behaviour.

hematomas, and subdural hematomas and intracerebral hematomas. The skull fractures result from a significant blow to the head and can be associated with any of the above listed injuries. Concussion refers to a relatively minor injury, causing a relatively brief loss of consciousness. Cerebral contusions are brain bruises which occur from acceleration and deceleration of the head. Head trauma can also produce microscopic changes that are scattered throughout the brain. This category of injury is called diffuse axonal injury (DAI) and refers to the microscopic severing of axons (fibers which allow brain neurons to communicate with each other). If enough axons are injured in this way, then the ability of nerve cells to integrate and function may be lost or greatly impaired.

Dr Munish Aggarwal, Senior Neuro Surgeon, Shree Balaji Action Medical Institute, New Delhi, says, “Most of the early deaths (almost one fourth of all) are in patients who sustain polytrauma along with spinal injury. There is a need to set up more specialised spinal and brain trauma units across the country with good accessibility to poorer sections of society for comprehensive management of spinal cord injured patients. Early liaison of hospitals without specialised spinal and brain units to specialised spinal centres should be encouraged, so that early transportation of acute spinal cord injured patient to a specialised spinal unit leading to early total care and reduction of mortality can be carried out successfully.”

Adds Dr A K Singh, “There is a need to increase tertiary trauma care units with multidisciplinary approach for comprehensive care of critically injured patients. Steps must also be taken to improve injury surveillance and the quality of data collected. Detailed, complete and relevant data will guide prevention efforts aimed at risk factors in the individual and the environment and provide feedback to trauma care providers. Further



monitoring of these trends will influence training, improve the focus of the trauma service and direct the provision of more effective care to these severely injured patients. There is also a need to allocate resources for trauma prevention, and promote research towards improving the care of acutely injured patients.”

Concurs Dr Munish Aggarwal, “It has also observed that attendants accompanying patients having cervical spine or head injury have little knowledge regarding precautions to be taken to prevent further neurological deterioration during transportation. The place of first medical encounter is decided more often by the relatives, bystanders, and police. In this chaos, the patient is taken to the closest medical facility, which may be grossly inadequate to deal with serious trauma. The golden hour is thus spent without appropriate resuscitation. Expeditious and careful transport of patients with acute cervical spine or spinal cord injuries should be carried out from the site of



injury by the most appropriate mode of transportation available to the nearest capable definitive care medical facility.”

Minimising Pre-Hospital Time Helps in Reducing Trauma

According to a study conducted at Jai Prakash Narayan Apex Trauma Centre, All India Institute of Medical Sciences, New Delhi, about 3500 patients are admitted every year, with no assigned trauma catchment area or geographic jurisdiction. Retrospective data were collected from CPRS (computerised patient record system) of this hospital and autopsy reports maintained in the department of Forensic Medicine. All the cases/autopsy reports with spinal injuries whether in isolation or as a part of polytrauma were reviewed.

Says **Dr Amit Gupta of Dr Jai Prakash Narayan Apex Trauma Centre, All India Institute of Medical Sciences, New Delhi**, “Proper coordination between the trauma receiving facility and

ambulance services is present in as low as 4 per cent of the pre-hospital network. It has been shown that minimising pre-hospital time greatly helps in reducing trauma mortality and morbidity. The spot deaths have markedly declined by introducing the special mobile ambulance services to accident patients.”

Well-Equipped Trauma Centres: Need of the Hour

The WHO, in its first ever Global Status Report on Road Safety, claims that speeding, drunk driving and low use of helmets, seat belts and child restraints in vehicles are the main contributing factors. Every hour, 40 people under the age of 25 die in road accidents around the globe. According to the WHO, this is the second most important cause of death among 5 to 29 year olds.

Injuries are caused by a complex interaction among agent (vehicle, product), human and environmental factors operating in complex sociopolitical and economic systems.

Injury prevention and control depending on evidence-based research is gaining momentum all over the world. High-income countries have made significant progress in the past two–three decades by developing comprehensive, integrated and intersectoral approaches based on scientific understanding. This has resulted in a decline in death and disability due to injuries. Accident and trauma care services were identified as an important area for growth and development during the Tenth Plan period. The report acknowledges that ‘there are no organised comprehensive trauma care services either at the Centre or the state level.’ It specifies that ‘services developed in the past have not been linked to an effective multidisciplinary trauma care system’.

The report further highlights the need for emphasis to be laid on adequate training of medical and paramedical personnel, provision of facilities for transport of patients, suitable strengthening of existing emergency and casualty services, and

Pathetic state of trauma-care

BY DR MANISHA YADAV

Accelerated urbanization and industrialization have led to an alarming increase in the rate of accidental injuries, crime and violence in India. An unprecedented increase in the number of vehicles has outpaced the development of adequate roads and highways.

India has 1% of the motor vehicles in the world, but bears the burden of 6% of the global vehicular accidents. It is well recognized that our health care system is not fully equipped to meet the challenge. Road-traffic accidents are increasing at an alarming annual rate of 3%. In 1997, 10.1% of all deaths in India were due to accidents and injuries. A vehicular accident is reported every 3 minutes and a death every 10 minutes on Indian roads. During 1998, nearly 80,000 lives were lost and 330,000 people were injured. Of these, 78% were men in age group of 20-44 years, causing significant impact on productivity. The majority of victims are pedestrians, two wheeler riders and bicyclists.

No credible data is available to ascertain the outcome of trauma victims; it is generally perceived that outcomes in patients with single system injury (e.g. musculoskeletal trauma) have improved. Unfortunately, the same cannot be said for polytrauma. There is a high mortality rate amongst those with multisystem injuries, which can be attributed to the primitive state of trauma-care systems, lack of prehospital care and inadequate critical care. It is established that the mortality in serious injuries is six times worse in a developing country such as India compared to a developed country. Despite trauma being a major public-health problem with high morbidity and mortality, the Ministry of Health does not have a designated unit to deal with issues related to trauma. There is no central government agency to integrate



policy-making, planning, financing, drafting legislation or establishment of minimum standards for the performance of a trauma-care system.

No reliable institutional arrangement exists to lead the development of such a system in any Indian state. In 26% of the systems surveyed, the overall responsibility for leading the system was undefined. The Centralized Ambulance Transport Service (CATS) of the Government of the State of New Delhi is the only noteworthy state initiative in this direction. This is restricted mainly to prehospital care. Only 28% of respondents identified the presence of a unified leadership coordinating various components and agencies. The existing systems for trauma care are elementary in nature, predominantly restricted to cities and semi-urban areas, without integration of region or statewide systems. No such systems exist in rural and remote areas to offer prompt life-saving treatment and safe transfer to an appropriate facility. Consequently fatal accident rate (expressed per kilometer of travel) in India is estimated to be

sevenfold worse compared to most advanced states.

The trauma systems operational in cities, with the exception of New Delhi, receive significant contributions from the private sector. In cities such as Mumbai, Pune, Bangalore, Hyderabad, Ahmedabad and Chennai, the trauma systems are at an embryonic stage, predominantly supported by non-government and private agencies. No law exists to ensure prompt access to life-saving treatment for trauma victims. Statutory provisions to aid national, state, or interstate planning and implementation of trauma-care systems, regardless of jurisdictional boundaries, are yet to evolve. Issues such as the accreditation of trauma centers and critical care units, specialist licensing of health personnel and mandatory training of physicians lack national guidelines.

In the absence of guidelines, the workforce available for prehospital and hospital-based critical care varies enormously. Available personnel and their skills often do not match the needs of the patients. The optimal

number and type of prehospital personnel for ambulances is not defined. The concept of a dedicated trauma team is not accepted at all levels. At a majority of hospitals in the public health system, the casualty medical officer is the only one to respond to a demand for major resuscitation. This paradox is striking, resulting in the most seriously injured patients frequently being dealt with by the most junior and inexperienced staff. There are no plans for dynamic and flexible responses to the optimal management of trauma patients. The lack of precise and predetermined role allocation during peak periods of activity stresses the fragile current systems and workforce.

The state medical and nursing councils control the educational and licensing requirements for physicians and nurses. However, formal education and specialty training (in emergency medicine, trauma surgery and critical care) are not mandatory for personnel involved in trauma care and available at select private institutions. The standardized education in trauma life-support skills is made available through the efforts of Academy of Traumatology (India) under the 'National Trauma Management Course' (NTMC) with accreditation from the International Association for Surgery of Trauma and Surgical Intensive Care (IATSIC).

Currently, this training is available mainly in larger centres and is intended for doctors. So far over 2500 doctors have received training through this programme. The issues of educational standards, certification and continuing education and evaluation requirements for doctors involved in trauma care are yet to be addressed. The National Board of Examinations has recently begun registering courses in trauma care, though in a very limited manner. There are no minimum stipulated educational standards for paramedic and ambulance personnel. Paramedic training programmes are offered in major institutions but there is no accreditation, review or provision for periodic update of skills and knowledge.



improving referral linkages. Both research and experience have proved that with existing resources, many activities can be performed at peripheral levels with adequate knowledge and skills. This implies that staff (medical/non-medical) requires training to perform these tasks with basic and refresher programmes. Availability of equipment means that these facilities are not only available but also functional, and can be put to use throughout a 24-hour period. Organisational support must be provided for skills enhancement, curative and partial rehabilitative services to trauma patients.

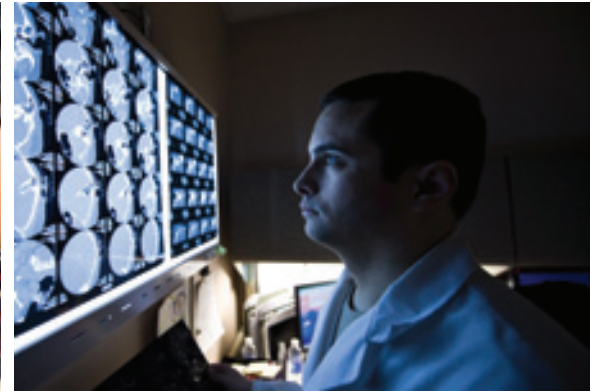
Traumatic Brain Injuries (TBIs) on the Rise in India

Comprehensive research in India in the area of Traumatic Brain Injuries (TBIs) is extremely limited. Scientific information in this area is vital and a basic prerequisite to understand the enormity of the problem and its various determinants and various dimensions. It helps to formulate, implement and evaluate programs for

reduction of morbidity, mortality, disability and socioeconomic losses in every country. Earlier research in India has been extremely limited and has been from isolated settings based on personal areas of interest by individual researchers.

Injuries and TBIs in India have been increasing significantly due to rapid motorisation, industrialisation, migration and changing value systems of Indian society. The consequences on health are tremendous and have been underestimated due to absence of research. Apart from instantaneous deaths, the suffering and poor quality of life among survivors is a living testimony to the impact of TBIs. It is estimated that nearly 1.5 to 2 million persons are injured and 1 million succumb to death every year in India.

Road traffic injuries are the leading cause of TBIs followed by falls and violence. Alcohol involvement is known to be present among 15 -20 percent of TBIs at the time of injury. The rehabilitation needs of brain injured persons are significantly high and increasing from year to year. India



and other developing countries face the major challenges of prevention, pre-hospital care and rehabilitation in their rapidly changing environments to reduce the burden of TBIs.

Dr Sandip Jain, Trauma Surgeon, Pushpanjali Crosslay Hospital, Vaishali (Ghaziabad), says, "Trauma-care systems in India is at a nascent stage of development. Industrialised cities, rural towns and villages coexist with almost complete lack of organised trauma care. There is gross disparity between trauma services available in various parts of the country. Rural India has inefficient services for trauma care, due to the varied topography, financial constraints and lack of appropriate health infrastructure. There is no national lead agency to co-ordinate various components of a trauma system. No mechanism for accreditation of trauma centres and professionals exists. Education in trauma life-support (TLS) skills has only recently become available. A nationwide survey encompassing various facilities has demonstrated significant deficiencies in current trauma systems."


Adds Dr Sandip Jain, "Although injury is a major public-health problem, the Government of India has failed to recognise it as a priority. Significant efforts to develop trauma-care systems across the country are seen mainly in the private sector. New initiatives under National Health Policy 2002 are expected to result in improvement in the systems, but the allocation of funds remains grossly inadequate for any significant impact on the outcome."

Says **Dr Ashish Gautam, Senior Consultant, Yashoda Superspeciality Hospital, Ghaziabad,** "If we talk globally, it is important to mention global annual cost of road traffic accident is 230 billion dollars, of which the share of developing countries is 65 billion dollars. This is double of total aid received for the national projects received. In India, more than 12.75 lakh people sustain serious injuries in road traffic accident and 1.2 lakh die every year."

India has one percent of the world's vehicles, but 6 percent of the total global road traffic accident deaths. Economic loss amounts to Rs 550 crore an amount that equals our

defense budget. Majority of road traffic accident injuries are of the nervous system, predominantly of the brain. In our country, 60 percent of TBIs are caused by road traffic accidents. Fatality rate is 70/1000 vehicles, which is 25 times higher than in developed countries.

The major cause of road traffic accidents are due to rash driving which usually happens during night. Intoxication by alcohol as a causative factor is seen in 15-20 percent traffic accidents. Reported incidence of mortality due to severe traumatic brain injury ranges from 38 to 43 per cent. Rehabilitation needs of severe head injury are 100 percent but there is a woeful lack of neuro-rehabilitation facilities.

The incidence of head injury is on the rise in India. The number of deaths and burden of disability may be reduced, if not completely stopped, through preventive measures after an epidemiological survey on trauma. The goal can be achieved to a significant extent through the use of guidelines from the countries that have achieved a reduction in the incidence of neurotrauma. 

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The Foul Air We Breathe

Air pollution is the leading cause of mortality and disability in India. The problem has been compounded by household and ambient air pollution, caused by factors such as burning of biomass fuel

BY DR SUNEELA GARG/ DR NEHA DAHIYA/DR ARVIND GARG





Globally, an estimated 24% of the burden of disease and 23% of all deaths can be attributed to environmental factors. Further, deaths on account of noncommunicable diseases (NCDs), attributable to air pollution, amount to 8.2 million of the total 12.6 million deaths. NCDs, such as cardiovascular diseases including stroke, cancer and chronic respiratory disease, now claim nearly two-thirds of the total deaths caused by unhealthy environments. These facts have been highlighted in the WHO's comprehensive global assessment of the burden of disease from environmental risks.

In fact, environment is the most important social determinant of health, accounting for morbidity and mortality in a given population. The Global Burden of Disease (2010) data showed that household air pollution was ranked at the 3rd position and

ambient air pollution at the 9th position among the leading risk factors that contribute to morbidity and disability adjusted life years (DALYs). Household and ambient air pollution is the leading risk factors contributing to burden of disease in India. Household air pollution contributed to nearly 3.5 million deaths and a loss of 3.5% DALYs globally (2010). Ambient air pollution contributed to another 3.1 million deaths and 3.1% DALYs. The ambient ozone pollution had a lower effect than the above and led to 0.2 million deaths and 0.2% DALYs in 2010.

Cognizant of the fact that air pollution needs to be addressed in right earnest, a Steering Committee was constituted, by the Ministry of Health & Family Welfare (MoHFW), government of India in 2014, with members drawn from both health and non-health sectors. The report of this Committee, released in December 2015, has been able to shift the

historical 'urban air pollution centric focus' to the 'burning of biomass fuel across rural and periurban pockets in India'.

According to the Institute of Health Metrics and Evaluation (IHME), air pollution was found to be the leading cause of mortality and disability in India. In Indian settings there is need for reducing sources of emissions, improving access to clean fuel and raising public awareness on health effects of air pollution.

Major risk factors are household and ambient air pollution contributing to spread of disease in India. Household Air Pollution (HAP) is caused by solid fuels like wood, charcoal, coal, dung, crop wastes used by over 3 billion people for cooking at home. These inefficient cooking methods lead to indoor air pollution especially in houses that are poorly ventilated. Indoor air Pollution not only harms health but also has adverse social and environmental



effects.

Poverty: Poor households are unable to afford LPG and other cleaner fuels and reliance on inefficient fuels reduces the time they could spare for income generating activities and education. As a result, a vicious cycle of poverty leads to the use of inefficient fuels.

Gender issues: The above factors in turn contribute to poverty. In most of the cases, women carry out the household chores and hence are the major sufferers of indoor air pollution.

Environmental impact and climate change: The reliance on wood for fuel leads to deforestation and consequent loss of habitat and diversity. The simple biomass and other fuels are inefficient and incomplete combustion takes place. The pollutants like black carbon and methane that are produced as a result of incomplete combustion lead to climate change.


Major health effects of Indoor Air Pollution: Acute lower respiratory

infections, chronic obstructive pulmonary disease, lung cancer, cardiovascular disease, and burns.

Other health outcomes: There is emerging evidence which suggests that household air pollution in developing countries may also increase the risk conditions such as low birth weight and perinatal mortality (still births and deaths in the first week of life), asthma, otitis media (middle ear infection) and other acute upper respiratory infections, tuberculosis, nasopharyngeal cancer, laryngeal cancer and cervical cancer. Considerable evidence suggests that exposure to air pollution leads to adverse respiratory outcomes. Perinatal exposure to air pollution can impair organogenesis and can lead to long term complications. Exposure to air pollution during pregnancy has also been linked to decreased lung function in infancy and childhood, increased respiratory

symptoms, and the development of childhood asthma.

The WHO's Ambient Air Pollution database for 2016 shows that the levels of PM₁₀ and PM_{2.5} in Delhi are way above the normal levels. The annual PM₁₀ level was found to be 229 $\mu\text{g}/\text{m}^3$ and that of PM_{2.5} was found to be 112 $\mu\text{g}/\text{m}^3$.

In a study conducted at the Department of Community Medicine, Maulana Azad Medical College, New Delhi, by Garg Suneela et al in 2016, a total of 3019 individuals were screened through spirometry and nearly 34.35% were found to have lung impairment. Almost 32.5% of the individuals screened were from the age group of 41-50 years. More than half of the subjects (57.6%) were living in Delhi for more than 20 years. 

(The authors are from the Deptt of Community Medicine, Maulana Azad Medical College, New Delhi



Guard Your Eyes

Air pollution leads to eye-related discomfort and suffering in the affected population.

Learn how you can avoid the ill-effects of particulate matter in the air

DR MAHIPAL S SACHDEV

Despite the presence of air pollution in many indoor and outdoor environments, its effects on our eyes are often overlooked by us. The information below will help us understand the effects of air pollution on eyes and what can be done to mitigate the problems.

Human eyes are sensitive and prone to irritation from allergies, chemicals and pollutants in the air. Some people might notice their eyes are red and itchy on days air pollution is high. Manifestations of air pollution can range from minimal or no symptoms to a chronic discomfort and irritation in the eyes. There may also be specific situations, in contact lens wearers for example, where the eyes may be adversely affected by air pollution.

There are a number of symptoms which occur due to air pollution. It may range from simple irritation and burning to a severe allergy and cataract. The most commonly experienced problems are – redness, burning sensation, watering, ropy discharge, itching sensation, dry & gritty sensation, difficulty in vision due to watering and itching etc. While wearing face masks may help minimize inhalation of particulate matter, the eyes remain exposed to airborne pollution. Studies have found that in areas where air pollution is high, people were more likely to report eye-related discomfort and are 3 to 4 times more likely to be diagnosed with



dry eye. Now that we understand how these air pollutants can affect the eyes, here are few tips for certain scenarios which can save you from the unnecessary suffering.

1) Stay indoors when pollution levels are at their peak

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


2) What to do while using Eye Contacts

If wearing contact lenses, use

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

3) If pollutants made contact with the eyes

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

If you experience highly dry and irritated eyes due to pollution, visit your ophthalmologist for a quick diagnosis and recommended course of treatment, and follow the tips given above to reduce the issues regarding the health of eyes. With a little help, you can reduce your eyes' irritation and have a clear vision to enjoy the world as it should be. 

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



Restoring the **World of Sounds**

A cochlear implant is emerging as an established, effective and long-term hearing solution for people with moderate to profound hearing loss. Unlike traditional hearing aids that amplify, or make sounds louder, a cochlear implant system can be a more effective hearing solution for certain people. A cochlear implant is capable of directly stimulating the cochlea hearing nerve, bypassing the damaged area of the hearing pathway. Here in this package, we present you three informative and insightful pieces penned by renowned doctors on the efficacy of cochlear implant.

An established, effective and long-term hearing solution

BY DR A K AGARWAL

East Delhi's Lakshmi Nagar-based Anju Sharma's two year old son has severe profound hearing loss. Cochlear implantation is the only option but it is very costly. Anju is worried about whether she can afford it. She is really anxious about her child's future.

When Anju came into my advice for low cost cochlear implant, I told her to stop worrying. Providing a ray of hope for millions of deaf people in the country, Indian defense scientists have already developed a low-cost cochlear implant that will enable them hear again. The new implants are being developed by the Defense Research Development Organisation (DRDO). An indigenous cochlear implant device, costing under Rs 50,000-One lakh, is likely to be ready by very soon. While there have been substantial improvements in cochlear implants made by international manufacturers, the cost remains high and they remain out of reach of most people. Presently, the device costs between Rs 5 lakh and 9 lakh.

While in the West these costs are borne by insurance, in the absence of such an arrangement in India, it would be essential to develop a cost-effective model on mission mode. The government has also considered to waiving levies on import of the device.

And when it comes to effectively managing hearing loss, among other factors, the brand of ear implants has been shown to make a significant difference in the speech performance outcomes of post-linguistically



deafened adults.

With the popularity of transcanal technique for cochlear implants, deafness is slowly becoming a thing of the past. Being minimally invasive, the technique is less time-consuming with reduced complications and available at a cost which is 80 percent lesser than the conventional procedure.

Cochlear implants are not hearing aids. Hearing aids amplify sound. Cochlear implants are classified as medical devices by the U.S. Food and Drug Administration (FDA). Cochlear implants function differently from hearing aids. A cochlear implant uses electrical signals to stimulate the auditory nerve. This allows sound to skip around damaged hair cells in the cochlea and go directly to the brain.

The user has a speech processor that collects sound and converts it into electrical signals. The processor then sends those signals to the coil on the user's head (held in place by a magnet under the skin). The coil in turn transmits the electrical signals to the cochlear implant electrodes inside the cochlea. The electrodes stimulate the auditory nerve, and the auditory nerve

sends the signals to the person's brain to be interpreted into sound.

Not everyone qualifies for a cochlear implant. A candidate can be rejected if he has too much residual hearing for an implant. This is because a cochlear implant destroys whatever natural hearing remains in the implanted ear. When the cochlear implant is not in use, the person cannot hear. This is not much different from what patient has experienced wearing a hearing aid.

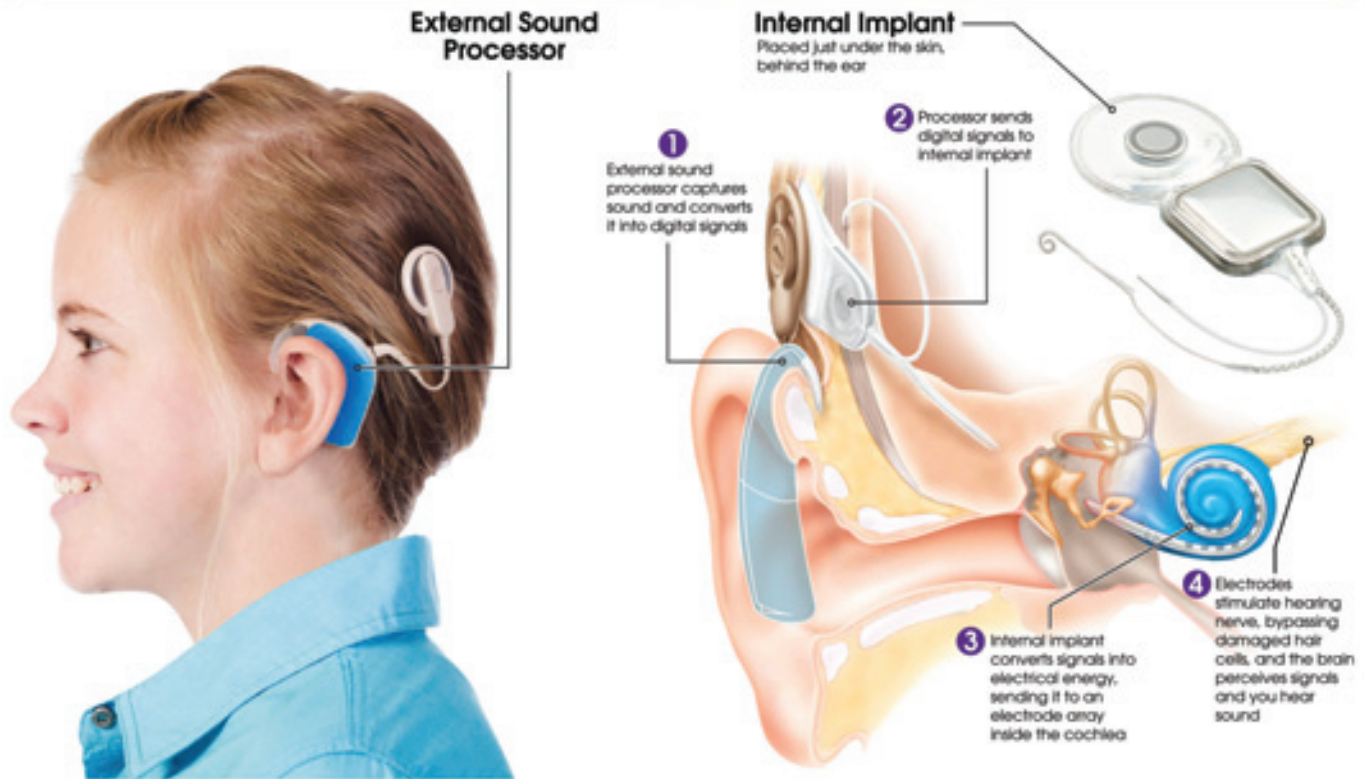
The decision to implant a child or to get one yourself is very personal. I faced this same issue myself. There are risks (including risks associated with any surgery), however minimal. These risks include facial nerve injury and infection in the surgical area. Furthermore, if a patient does not strive to develop good auditory skills, the implant may not produce good results.

Hearing loss, also known as hearing impairment, is a partial or total inability to hear. A deaf person has little to no hearing. Hearing loss may occur in one or both ears.

In children hearing problems can affect the ability to learn language and in adults it can cause work related difficulties. In some people, particularly older people, hearing loss can result in loneliness. Hearing loss can be temporary or permanent. Hearing loss may be caused by a number of factors, including genetics, ageing, exposure to noise, some infections, birth complications, trauma to the ear, and certain medications or toxins.

A common condition that results in hearing loss is chronic ear infections.

HOW A COCHLEAR IMPLANT WORKS



Certain infections during pregnancy such as rubella may also cause problems. Hearing loss is diagnosed when hearing testing finds that a person is unable to hear 25 decibels in at least one ear. Testing for poor hearing is recommended for all newborns. Hearing loss can be categorised as mild, moderate, severe, or profound.



Half of hearing loss is preventable. This includes by immunisation, proper care around pregnancy, avoiding loud noise, and avoiding certain medications. The World Health Organization recommends that young people limit the use of personal audio players to an hour a day in an effort to limit exposure to noise. Early identification and support are particularly important in children. For many hearing aids, sign language, cochlear implants and subtitles are useful. Lip reading is another useful skill some develop. Access to hearing aids, however, is limited in many areas of the world.

Those who use sign language and are members of deaf culture see themselves as having a difference rather than an illness. Most members of deaf culture oppose attempts to cure deafness and some within this community view cochlear implants with concern as they have the potential to eliminate their culture. The term hearing impairment is often viewed negatively as it emphasises what people cannot do.

Cochlear implants have been around since the 1960s, but they really began to catch on in the early 1990s. At that time, many in the deaf community

reacted with alarm. There were unfounded fears that the technology would negatively affect deaf culture and countless debates in deaf forums and even public protests erupted.

Today, deaf people with cochlear implants are largely accepted in the deaf community. Parents are routinely getting them for their deaf children. Bilateral cochlear implants are standard for young children.

for young children.

The world's best cochlear implant technology is now available in India. Available in a range of product offerings, you can choose from devices and solutions that best fits your needs and lifestyle. Available through a multitude of clinics across the country, the products are backed by the unmatched Cochlear advantage and excellent service and support.

(The author is a renowned ENT Surgeon/Professor of Excellence and Medical Advisor, Apollo Group of Hospitals, New Delhi)

Post operative speech **and hearing** rehabilitation

BY SANJEEV KUMAR

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

Switch on

After six weeks of your operation, the audiologist will fit the external speech processor and switch on the device. He will also connect it to the computer adjust the settings on your device. So as the device is switched on, the speech processor will start sending signals to the electrodes in the cochlea for the first time. After this, the speech processor's microphone is activated and the patient will hear for the first time and it is usually like buzzing sound or mechanical sounds.

Mapping

Mapping or MAPping is the term used for programming a cochlear implant according to the needs of its user. These programs actually stimulate the electrodes of the implant and there by determine the exact amount of signal (electric activity) required for the patient to optimize the cochlear implant to any sound. The computer can thus make changes in the input to the electrodes array that is implanted into the cochlea. This is done by connecting the cochlear implant processor to a computer. By giving series of acoustic signals in form "beeps" and measuring the patient response, the audiologist adjusts the T- and C- levels for each electrode.




T-Levels, or Thresholds, are the softest sounds the cochlear implant users can detect while C-Levels are Comfortable loudness levels that are tolerable for the implant users. The audiologist also adjust the stimulation rate or programming strategy that is used to translate acoustic sound into the correct combination of electrode stimulations to give the cochlear implant user the same sensation of sound which a normal person would have.

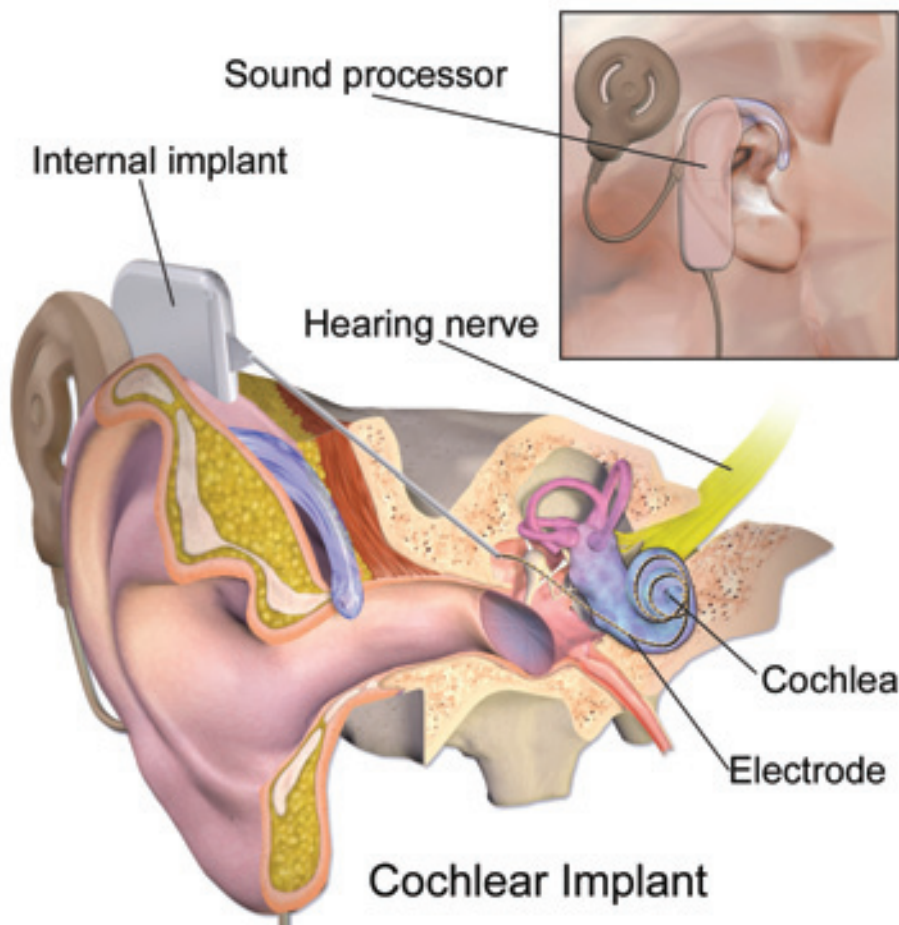
Speech and Hearing rehabilitation sessions

After your implant is 'switched on' the patient usually takes few weeks to get used to hearing with the implant. The audiologists will keep on making adjustments to the computer settings as per the requirement and the performance of the child.

Along with this, implanted child will receive lessons from a Speech & Hearing Therapist who will help in identifying different sounds and distinguish vowels and consonants. Rehabilitation is an important stage of cochlear implant where the patient learns to make meaningful response to various sound stimuli coming to the brain. Speech therapy is an important part of rehabilitation process where the child learns about oro-motor control to produce meaningful words and sentences.

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

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



A Sound Surgical Procedure

BY DR RAVI MEHER



The cochlear implant surgical procedure is done in the hospital setting under general anaesthesia. The procedure usually takes 2.5 to 3 hours.

The surgeon performing cochlear implant surgery must be experienced in ear surgery and ideally in some aspects of neurotologic surgery. Intimate knowledge of the relevant surgical anatomy of the middle and the inner ear is important in properly performing the approach to the cochlea where in the electrodes are inserted. In addition, the relationship of the facial nerve, ear bones and inner ear needs to be understood properly to safely perform the surgical drilling to

gain access to the middle ear. Once the middle ear has been opened, knowledge of the inner ear structures and the round window anatomy is vital. Variations in anatomy, ossification of the inner ear, facial nerve must be anticipated. These variations make surgery even more difficult.

The surgical procedure is done under microscopic control and strict sterile conditions are maintained. An S shaped Incision is made behind the ear and bone (mastoid) is exposed anteriorly till the level of the ear canal and posteriorly to allow for insertion and securing of the implant's receiver. The mastoid bone is drilled and the air cells in the bone are opened. The external ear canal and ear drum are

not disturbed during the procedure. A mastoid cavity (mastoidectomy) is created by drilling the surrounding mastoid air cells. Through this cavity, a small opening is made in the posterior ear canal wall to reach the middle ear. It is a critical step because facial nerve is very close and can be injured during drilling at this step. The middle ear structures are then visualised under high magnification and another opening is made in the inner ear near the round window. This opening which opens the basal turn of cochlea is called cochleostomy, through which the implant electrode is inserted. Next, bone behind the mastoid cavity is drilled to make a well for the internal magnet receiver of the



implant. The receiver is then fixed in the well and secured by sutures. The functioning of all the electrodes is confirmed by doing neural telemetry intraoperatively. This confirms the functional status and right positioning of all the electrodes. The wound is then closed in layers and an aseptic dressing is applied. Patient is kept on antibiotics and analgesics for around 7 days. Once the wound heals the external device is put and switched on usually after 3 weeks of the surgery.

Complications


As with any surgical procedure, cochlear implant surgery may also have complications. These can be anaesthesia related which are because of drugs and anaesthetic gases. For most people, the risk of general anaesthesia is very low. However, for some with certain medical conditions, anaesthesia can be more risky.

Surgical risk can be injury to the facial nerve. This nerve goes through the middle ear to give movement to the muscles of the face. It lies close to where the surgeon needs to place the implant, and thus it can be injured

during the surgery. An injury can cause a temporary or permanent weakening or full paralysis of the face on the same side as of implant. Another complication is meningitis which is infection of the covering of the brain. Patients who have inner ear abnormality are at greater risk. Thirdly, there may be fluid leakage from a hole created in the inner ear to place the implant and is more commonly seen in patients with inner ear abnormality. Infection of the skin wound and blood or fluid collection at the site of surgery can occur and may require drainage of the collected blood and fluid with antibiotics. Also, severe infection at the site of implant can sometimes lead to extrusion or rejection of the implant. Some patients may suffer from attacks of dizziness or vertigo and tinnitus, the latter is ringing or buzzing sound in the ear. This usually settles with time. The nerve that gives taste sensation to the tongue also goes through the middle ear and may be injured during the surgery.

People with a cochlear implant cannot undergo MRI as it may dislodge the implant or demagnetize its internal

magnet. In cases of dire need of an MRI, the magnet from the internal part may be removed surgically. There are certain implants which are compatible with 1.5 Tesla MRI. The external as well as internal part of implant may get damaged with contact sports, automobile accidents, slips and falls, or other impacts near the ear. The implant may have to be removed temporarily or permanently if an infection develops after the implant surgery or there is implant failure.

The patient may develop irritation where the external part rubs on the skin and hence may necessitate temporary removal. The external parts of the implant may get damaged if it gets wet. Thus, the implantee would need to remove the external parts of the device while bathing, showering, swimming or participating in water sports. However, accessories are available which can be used to encase the implant while swimming. 

(The author is Professor, Department of ENT & Head Neck Surgery, Maulana Azad Medical College, New Delhi)

Pen Wielding Doctor

Eminent hand surgeon and microsurgeon, Dr Anuj Kumar is also an author with impeccable literary skills. For him the pen is as endearing as his surgical knife.

By Bipin Sharma



Having made a mark for himself as one of the country's top ranked hand surgeons and microsurgions, multifaceted, multitalented Dr Anuj Kumar has donned the hat of an author with all flamboyance and distinction.

Based out of Agra, Dr Anuj presently serves as the Director of the Microsurgery, Centre of Agra. Dr Anuj was conferred the prestigious P. N. Wahi Gold Medal for Pathology and B. C. Roy Gold Medal for Medicine. He has been a visiting hand surgeon to various hospitals including the USA, Switzerland, Taiwan, Hong Kong, Australia and Thailand. An Ex. Visiting Consultant at the Department of Plastic Surgery, Indraprastha Apollo Hospitals, New Delhi, he is presently Visiting Hand Surgeon at Rainbow Hospital, Agra and Moolchand Hospital, Agra.

It was his endless love for music, poetry, and nature that led him to penning his poetic thoughts in his Hindi poetry book entitled 'Bhavranjini.' Buoyed by the success of 'Bhavranjini,' Dr Anuj turned over a new leaf by

penning his first fiction novel entitled "That Erotic Silence" which deals with a very bold and sensitive subject. Launched at the Lucknow Literary Festival, the book received widespread appreciation for bringing to fore an extremely sensitive and a pertinent issue. "That Erotic Silence" is a thought - provoking book which presents an emotional voyage of a child from age three till adolescence. It's a journey, full of intrigue and the child's close encounters with the sexual and sensual activities happening around him, and his experiences and self-revelations, in a pursuit to decipher the truth behind the actual meaning of love.

The Editor's Foreword by Dr Rosa Maria Del Vecchio on Dr Anuj's book speaks volumes for itself. Dr Rosa, a literary writer residing in Brooklyn, Ohio, and an Associate of the University at CSU in her foreword says, "That Erotic Silence is an emotionally charged drama that employs 'Freudian Psychology' to trace a boy's sexual development as a sort of quest to understanding the man he grows into. The protagonist is known to us only as

'Z'. His journey into sexuality ranges from the simple 'peephole' through which the little boy observes couples engaged in the act to the blissfully fulfilling consummation that the young man finally experiences for himself with a married woman on the brink of divorce. In between the two extremes is a series of graphic sexual situations or encounters by Z with various boys and girls, men and women, and his imagination accompanied by some self-gratification. Some experiences he finds pleasant and others painful, some are consensual and some bear on criminal. Some the reader will find delightfully amusing such as Z's quest to purchase his first condom that he does not even end up using -while other encounters will make us wish we could jump into the story and call 911. Nevertheless all of Z's experiences from these early stages of sexual development have in some way or the other, contributed to the persona of the elderly gentleman he becomes. And that is the challenge in reading this novel to figure out why our once youthful romantic hero is a retired



success story whose favourite pastime is brooding about the good old days.”

Dr Anuj is all set for a grand launch of his book in the capital. The event is expected to be graced by the crème de la crème of the society.


An old friend of Dr Anuj, Vaibhav Chibber describes the book as an eye opener for the society. He goes on to add, “I am optimistic that the book will serve as the guiding light to clear copious of myths, phobias and stigmas associated with the society presently. Dr Anuj has left no stone unturned in touching upon all relevant aspects while compiling the book. He is a microsurgeon for whom the pen is as endearing as his surgical knife.”

Sharing more on his new book, Dr Anuj says, “It was an ‘inner calling’ that inspired me to penning my first fictional ‘book’ or ‘novel’ as one may like to refer to it as. The intense subject discussed in the novel is quite germane. Having given the best years of my life to the profession of medicine, I strongly felt it was time for me to play a bigger role in the society which is what led me to take to donning the hat of an ‘author’.

Journalists, authors, writers, thinkers and philosophers all have had a critical role to play in the society with their ideas, thoughts and expressions. I have this innate desire to create awareness regarding myriad issues pertaining to the holistic development and grooming of young minds especially children. I wish to contribute in my own special way towards educating people on good moral values and ethics, and the grave need for integrating the holistic education component with the existing curriculum of modern-day education system.”

Dr Anuj adds, “I see eternal duality of two distinct processes that influence a child. First one is available ‘information’ that is abundant and limitless for which avenue sources are countless such as the print, TV, radio, broadcast TV, and web media. The much valued process of ‘formation’--most important for any growing child in the tender years of development --comprises selective guidance, identifying right quantum and quality of ‘information’ imparted in a continuous, controlled directive manner. This

process needs to be monitored based on proper proficiency and skills. Schools being ideal institutions possess the most conducive environment for early formative years of any child, as educating young minds has perpetually been a natural exercise right through human evolution in history. ‘Human contact’ being a vital factor, it is essential for a school Principal to keep him or her accessible for interaction with students, teaching staff and parents. Those at the helm of affairs should not shun the responsibility to meet students, or parents needing help. School counselors too have a pivotal role to play in not only helping the students cope with stress related issues, but also help them get rid of pre-conceived notions and social taboos. It will render a great service to the society if ‘sex education’ is imparted holistically and methodically to children at the right stage. The objective behind writing “That Erotic Silence” is to inspire and awaken people towards addressing the lacunas that hamper the development of young minds. For ensuring the progress of the nation, the society has to evolve both at the micro and the macro level. Every member of the society has to rise to the occasion, and address the lacunae in the system.”

Dr Anuj is credited with innovating a new technique that got labeled as ‘Kumar Technique’ by Hand Surgeons in Switzerland--” using of Mitek Anchor for fixing the biceps brach II tendon to radius in cases of acute evulsion injuries. His present field of work includes replantation in amputations of upper limb at various levels, reconstructive surgery in hand following trauma and other acquired defects, congenital hand problems in children, vascular and micro vascular surgery, microneural surgery in hand and brachial plexus surgery in cases of trauma. He has been honoured with the Asia Pacific Fellowship (1999) - Prince of Wales Hospital, Hong Kong and the President’s Gold Medal for the Best Paper Presentation at the Annual conference of UP Chapter, Allahabad 2000. 

“UN-GCNI remains committed to inspiring the culture of Sustainable Development Goals in India”



UN Global Compact Network India (UN-GCNI) is a country level platform for public & private sector, businesses, NGOs, civil society organisations which aid in aligning stakeholders' responsible practices towards the UN 17 Sustainable Development Goals (SDGs) and the Ten Universally Accepted Principles of UNGC in the areas of Human Rights, Labour, Environment and Anti-Corruption. It has also emerged as the largest corporate sustainability initiative in India and globally with a pan India membership of 300 leading business and non-business participants and 450 signatories, strengthening their commitment to the UN Global Compact Principles by becoming proud members of the Local Network in India.

Kamal Singh, Executive Director, UN-GCNI shares some insights, accomplishments and activities of his organization in an exclusive interaction with **Double Helical**. Excerpts...

What have been the key accomplishments of UN Global Compact Network India in the recent times?

UN-GCNI happens to be the world's largest UN-led CSR and sustainability initiative with more than 14,000 members in 160 countries. We have been running programs for various stakeholders including the Governments, NGOs, Academia and Businesses on wide ranging issues such as Human Rights, Sustainability, Corporate Social Responsibility (CSR)

and Climate Change for large-scale innovation and leadership at national levels and beyond. We have engaged with state governments around the Sustainable Development Goals (SDGs) and have been conducting the world's largest sustainability survey with Accenture covering more than 1000 CEOs in 100 counties across 25 market segments. We have been engaged into activities spanning across various projects, programs, training and capacity building programs, cutting edge research and

publications while maintaining the highest levels of contacts with the governments within the country and globally. We have also been instrumental in shaping the SDGs, running successful training programs for the civil servants in Kerala, rolling out 'business for peace', 'rule of law', global strategy 2020 for Global Compact and sensitizing media, academia and start ups in their adoption of the UNGC Principles for Responsible Business conduct. We were the first ones in the world to run



'India Collaboration Lab' to develop models in areas like water and sanitation which has since been replicated in Colombia and Brazil successfully. Starting programs on 'rule of law and business for peace' in India remain some of the key programs that GCNI accomplished in India.

Enlist some of the recent activities of UN-GCNI?

UN-GCNI regularly conducts knowledge sharing sessions for the benefit of our various stakeholders. We recently organized an Interactive Session on 'Towards use of Sustainable Natural Resources' which happened to be a case study of ONGC Tripura Power Company Limited (OTPC). The session was hosted at the SCOPE Convention Centre, Lodhi Road, New Delhi and was graced by the presence of Satyajit Ganguly, MD, OTPC. SK Chaturvedi, former CMD, Power Grid Corporation of India chaired the session and enlightened the audience gathering on the various facets concerning the optimum use of natural resources and the various CSR initiatives undertaken for the society overall. In my capacity as the Executive Director, UN-GCNI, I elucidated on the

critical aspects pertaining to natural resources, sustainability, CSR initiatives and the accomplishments of the corporate and the public-sector undertakings. On the occasion of World Environment Day, UN-GCNI keeping in mind its mission of connecting people to nature, collaborated with The Energy and Resources Institute (TERI) to organize a lecture on the theme of "Sustainable Development Goals for a better Planet" at TERI, New Delhi. Dr PK Anand, Advisor, NITI Aayog and Anurag Goel, Former Secretary, Ministry of Corporate Affairs, Government of India and Advisor, SDGs, Govt of Assam shared their key insights within SDGs at national level implementation and Assam 2030 vision for SDGs. The SDG framework highlights measurable and tangible steps that public-private enterprises can take to set the ball rolling. Active and sustainable steps towards environmental protection can not only result in improved health, but also in the longevity of our planet.

Can you please share some facts about the 'Best Practices Awards' on SDGs?

UN-GCNI announced its 1st Best

Practices Awards on SDGs during its 12th National Convention held on the theme of "Making Global Goals Local Business" on 27th-28th April 2017 at Hotel Le-Meridien, New Delhi. Rotated round the country, the Convention had greater significance since it coincided with the UN Global Conference hosted by UN-GCNI on 26-27th April 2017 in New Delhi. Accenture, one of the leading consultancy firms and our member was our knowledge partner. Over 400 delegates from businesses, Government, UN and its systems, civil society organizations including chiefs of public sector, private sector, SMEs and key stakeholders of reputed organizations, NGOs, industry bodies' representatives and senior officers from state and central governments attended this year's national convention.

What have been the key thrust areas for UN-GCNI?

Considering the significant contribution of our stakeholders towards SDGs practices in India, UN-GCNI has regularly been inviting them to take part in different conventions since we have firmly believed that their participation would go a long way in not only uplifting the deliberations, but also inspiring the culture of SDGs in the country. As the Executive Director, my role is comprehensive as it involves wide spread co-ordination between country, regional and international levels both within the UN, its systems, private sector, stock exchanges, academic institutions, governments at all levels, NGOs and media houses. As a team, we have to work towards empowering them to embrace 10 universal principles of the United Nations Global Compact that are largely covered by human rights, labor standards, anti-corruption and environment and sustainability within and outside the supply chain and value chains of the stakeholders. I also participate in policy level works both at national and international levels. 



“The medical fraternity
needs to stand united
and support the
**IMA in voicing the
concerns of doctors**”

Dr Vinay Aggarwal, former National President, Indian Medical Association (IMA) and Founder Member of IMA-East Delhi is all for a relationship of deep trust between patients and doctors. Towards this end, he believes the doctor has to go an extra mile in extending healthcare with a healing touch and the society too has to develop an understanding of the complexities involved in medical care and treatment. Dr Aggarwal has been closely involved with various welfare measures adopted for the betterment of patients and doctors.

He founded Pushpanjali Medical Centre, a 60-bedded secondary care hospital and then started Pushpanjali Crosslay Hospital, a 300-bedded tertiary care centre of excellence (now Max Super Specialty Hospital, Vaishali). He started a social initiative under the scheme Beti Padaho Yojana as he believes that educating a girl child means educating an entire family and society. His initiative provides monthly financial assistance to the minor girl children as decided from time to time. The multifaceted Dr Vinay with an ever-present winning smile on his face, spoke at length to **Amresh K Tiwari, Editor-in-Chief, Double Helical** on a wide range of issues.

Excerpts of the interview...



Can you please take us along your long journey as a medico-social activist and leader?

I started my medico-social activist journey in 1970 as a rebel medical student against the urban health programme run by the Preventive and Social Medicine (PSM) department of Maulana Azad Medical College, where students were not made to actively participate. We collected funds and started our own dispensary at Seelampur. It grew from strength to strength from a few eager medical students trying to help the well-known NSS Seelampur Health Centre to the one which fulfilled the medical needs of a large minority population of the area. As a medical intern in 1974, I took an active part in the historical national strike to increase the meager spend provided to doctors by medical colleges, which successfully culminated in the government taking note and including doctors salaries under the National Pay Commission. This is how the residency program was started. At an early stage, I realized the potential of Medical Associations, and the need for doctors to stand united. So, in 1978-82 I became the youngest secretary of Delhi Medical Association (DMA). From an elite eminent club of handful senior doctors, I strived hard and increased its membership to include hundreds of young doctors. As DMA Secretary and president of ESI Medical officers Association, I successfully achieved the regularizing of more than 500 ad hoc doctors through DPC. By this time I was a recognized state medico political leader. I worked for the revival

of IMA East Delhi Branch (EDB) along with Dr S N Mishra, Dr Harsh Vardhan and Dr Sudarshan Vaid.

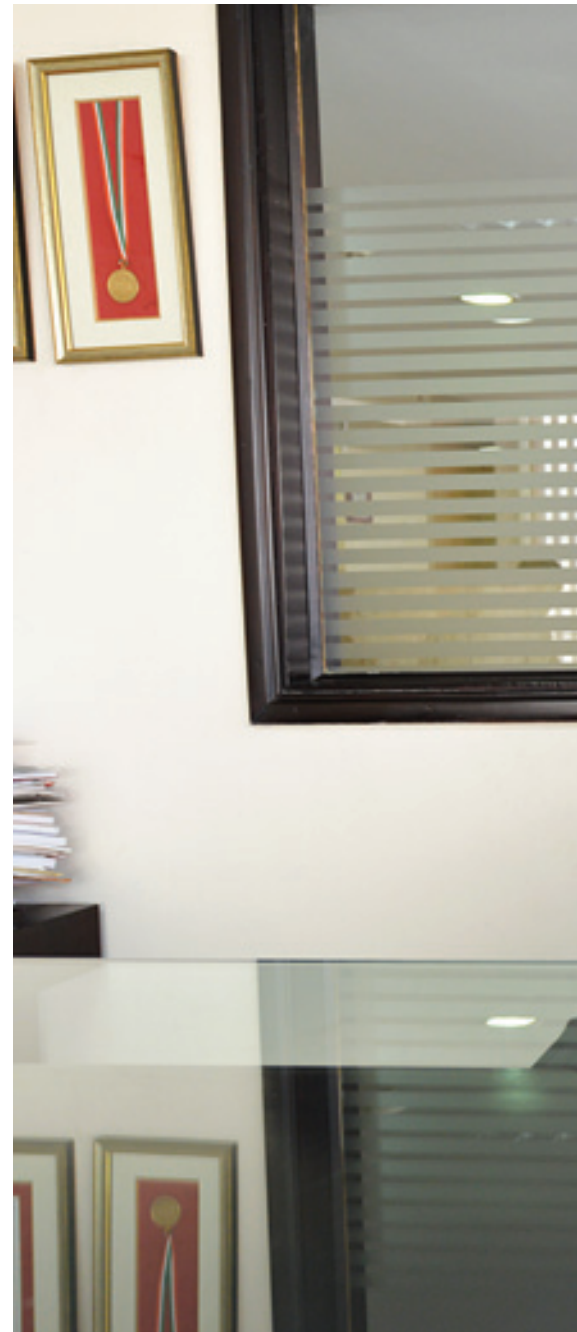
How did you achieve excellence in the medical field?

I studied in Government Boys’ Higher Secondary School, Krishna Nagar and was the first student from my school to be selected at the prestigious Maulana Azad Medical College. I come from a humble background and paid for my college education by selling anatomy dissection boxes to fellow classmates. I went from a shy awe-struck boy among a batch of 140 to later being recognized by my alma mater with the “Best Alumnus” award. I started a small clinic in Krishna Nagar, and like most doctors, I was the neighbourhood ‘Family doctor’. With the goodwill of my parents and friends, I established Pushpanjali Medical Centre, a 60-bedded secondary care hospital and then started Pushpanjali Crosslay Hospital, a 300-bedded tertiary care centre of excellence (now Max Super Specialty Hospital, Vaishali).

We would like to know more about some community health programmes you have been a part of...

Some of the projects I have been actively involved with and played a leadership role include the following:

Save the Girl Child & Stop Female Foeticide, Anemia Free India; Stop Child Abuse; Prevention of Blindness Programme; Programme for Prevention and Control of Water and Vector Borne Diseases; Leprosy Control Program; HIV/AIDS programme (in close association with the Clinton Foundation); amongst many others. I spearheaded the ‘Aao Gaon Chalen’ project under the aegis of IMA, with adoption of a village by each branch of IMA. I was honoured by the President of India with the BC ROY Award (2005), by FICCI as the Healthcare Personality of the Year award (2014) and by the Global Association of Physicians of Indian Origin with the Lifetime Achievement Award (2014) for my medico-social work besides many others.



What is your opinion about the current medical scenario in the country?

These are hard times to be a doctor. The medical profession today is under attack on various front – bureaucrats, media and dissatisfied relatives of patients. The traditional issues of wages and working conditions for doctors that the IMA has always fought for remain unresolved and yet we have additional demons to deal with such as violence against doctors, Clinical Establishment



Act, criminalizaon of Pre-Natal Diagnostic Techniques (PCPNDT) Act, Cross-pathy, quackery, the need for capping of compensation in medical negligence, generic medicine, and the NMC bill. I think now more than ever the medical fraternity needs to stand united and support the IMA in voicing the concerns of doctors.

This IMA EDB Election, you were a strong proponent of having a female leader, why?

Shouldn't everyone be a proponent of a hard working and dedicated female leader!? Over the years women's membership and participation in IMA activists has been increasing but unfortunately they are grossly underrepresented in leadership positions in the medical fraternity. Dr Neelam Lekhi has been working for the benefit of IMA, peculiarly EDB for several years now. It was a natural choice and one that I assumed would be unanimous. Anyway she came out

stronger by winning the election with a thumping majority. I think IMA EDB Branch is in good hands and I wish her and her team all the success.

What are your main socio-medical achievements?

With efficient leadership skills and an aim for greater social benefit, I initiated and significantly contributed to the following projects:

Aao Gaon Chalen – a Dream Project



As Secretary General of Indian Medical Association (IMA), initiated the project to improve rural health as envisaged in the National Health Policy.

Anemia Free India

On Doctor's Day on 1st July 2005, a National Project – "Anemia Free India" – was initiated with the aim to create public awareness regarding the ill effects of anemia, to promote better nutrition and promote vitamin, iron and folic acid supplementation.

Physician's Training Initiative - Bill Clinton Foundation

An ambitious project of sensitizing 1.5 lakh members of IMA to HIV/AIDS and

anti-retroviral therapy has been undertaken with NACO and Clinton Foundation. The project is accredited by the Medical Council of India launched on 26th May, 2005 by former president Bill Clinton himself in Delhi.

Iodised Salt

Convened a country-wide campaign along with UNICEF, Department of Nutrition and All India Institute of Medical Sciences, explaining the importance of iodization of salt. Five regional meetings were organized in various cities on this issue.

Integrated Disease Surveillance Programme

Worked on a National Project along with NICD and the World Bank. A workshop of seven states was organized in November 2005 along with representatives of NICD and World Bank in this regard.

Family through the Child

"Family through the Child", a Balwadi-oriented health project, was started with the assistance of Delhi Social Welfare Advisory Board in 1980. A health survey of 2000 children and their families was conducted in this scheme. Proper health facilities were provided to the families of these children of the Balwadis. Also organized a reorientation course for Bal-Sevikas in DMA during the project.

Save the Girl Child Campaign


The main goal of Beti Bachao Beti Padhao launched by Prime Minister Narendra Modi, is to generate awareness and improve the efficiency of welfare services meant the girl child across the whole country.

The scheme is being implemented in almost 100 districts with low Child Sex Ratio (CSR). The major fundamentals of this Yojna include Enforcement of PC & PNDT Act, nation-wide consciousness and encouragement campaign and multi-sectoral action in choose 100 districts in the first stage.

The main objective of the Beti Bachao Beti Padhao Yojana is to prevent gender biased sex selective elimination, survival and protection of the girl child and her education.

The issue of falling sex ratio and female foeticide was effectively highlighted by IMA by various Campaigns during my tenure as President, MAMCOS.

"No Tobacco Day" and "Smoking or Health Choice is Yours"

Launched a massive Anti-Tobacco Campaign during my tenure as the secretary of DMA on the WHO Day on 7th April, 1980 on the theme of "Smoking or Health - Choice is Yours". Public awareness lectures were organized at various places in Delhi. 

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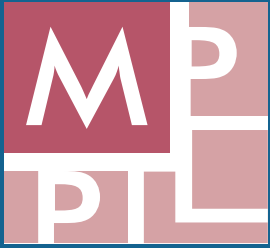
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