

Also  
available on

[www.doublehelical.com](http://www.doublehelical.com)  
[www.doublehelical.in](http://www.doublehelical.in)



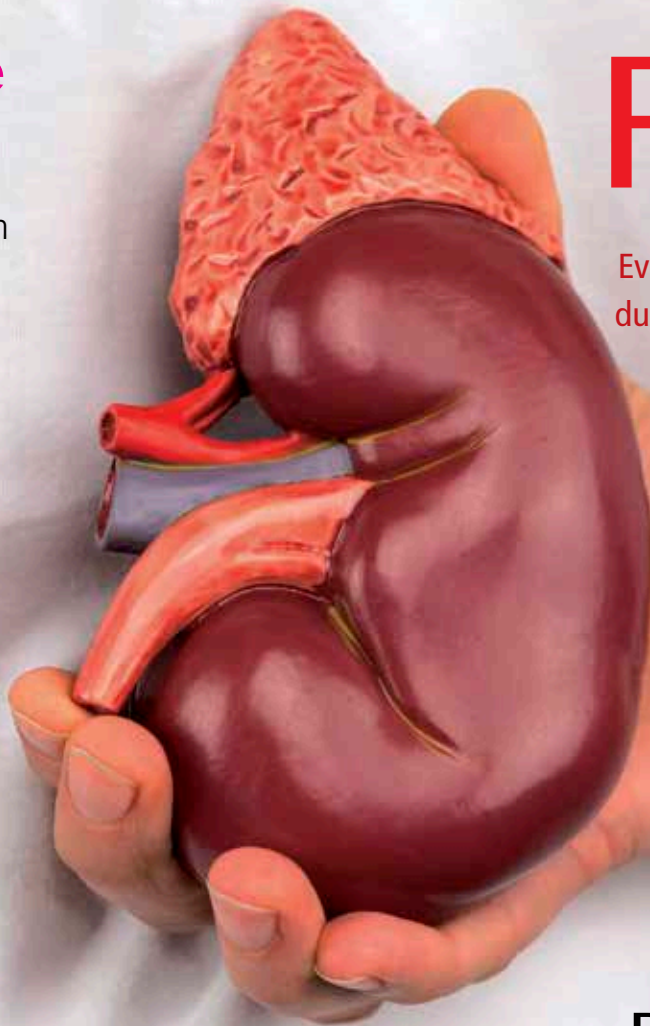
## SPECIAL STORY

# Women to the Fore

Gender related indicators under the National Family Health Survey (NFHS-4) have shown improvement over the years. The Health Ministry has launched a number of E-initiatives to help women improve their health and enjoy safe childhood as well as motherhood

# Fatal Failure

Every year nearly two lakh patients die due to kidney-related diseases in India, waiting for an organ transplant



## MALNUTRITION

# Deprived Childhood

A large number of children in India suffer from malnutrition resulting in underweight and stunting. Lack of maternal education in both slum and non-slum areas increases the incidence of nutritional deficiencies that are particularly critical in the first two years after birth

#BUDGET 2017-18

**THE CHANGE IN THE ECONOMY  
CAN CHANGE YOUR DREAM  
INTO REALITY**

FOR THE FIRST TIME GAURS PRESENTS

**GREEN VILLAS**

AT 32<sup>ND</sup> PARKVIEW, GYC



**GAUR  
YAMUNA  
CITY**

250 ACRE INTEGRATED TOWNSHIP AT YAMUNA EXPRESSWAY

- APARTMENTS | PLOTS | VILLAS | INDEPENDENT FLOORS
- COMMERCIAL SHOPS | EDUCATION | HEALTH CARE | COMMUNITY CENTRE
- RELIGIOUS BUILDINGS | SPORTS | SHOPPING & ENTERTAINMENT



ARTISTIC IMAGE

|   |  |   |   |
|---|--|---|---|
| <p><b>SIZES</b></p> <p>Plot: 102 Sq. Mtr: (121 Sq. Yard)<br/>Villa: 187.80 Sq. Mtr: ( 2021 Sq. Ft.)</p> | <p><b>ORIGINAL PRICE</b></p> <p><del>₹92.09 LACS ONWARDS</del></p> | <p><b>DISCOUNTED PRICE</b></p> <p>₹69.07 LACS ONWARDS</p> | <p><b>OFFER</b></p> <p>2 YEARS ASSURED RENTAL AND<br/>2 YEARS MAINTENANCE FREE AFTER<br/>POSSESSION</p> |
|---|--|---|---|

ACTUAL IMAGES



UNDER CONSTRUCTION 2/3/4 BHK APARTMENTS

MORE THAN 9 ACRES OF YAMUNA LAKE

YAMUNA DWAR

INTERNAL ROADS

VILLA NO. 14

Gaursons Realtech Pvt. Ltd.  
Site Office: Gaur Yamuna City, Sec-19, Sports City East,  
Yamuna Expressway, Distt. Gautambudh Nagar (U.P)

Corp. Office: Gaur Biz Park,  
Plot No.-1, Abhay Khand II, Indirapuram, Gzb.

**CALL: 0120- 434 3363  
92122 88887**

**CALL FOR FREE  
SITE VISIT**

ESSENCE

A COMPLETE HEALTH  
MAGAZINE

Volumn IV, Issue 3  
March 2017

**Advisory Board**

**Dr. A K Agarwal,**  
Professor of Excellence, Ex-President,  
Delhi Medical Council and Medical  
Advisor, Apollo hospital, New Delhi

**Dr Vinay Aggarwal.**  
Member,  
Medical Council of India

**Dr. S P Yadav,**  
Member,  
Medical Council of India

**Dr. J C Passey,**  
Director Professor,  
Maulana Azad,  
Medical College, New Delhi

**Dr. Suneela Garg,**  
Director Professor,  
Maulana Azad,  
Medical College, New Delhi

**Dr. H P Singh,**  
Sr. Child Specialist

**Raj Kumar Gupta,**  
Managing Director,  
Balaji Action Hospital  
& Research Center, New Delhi

**Editor & Publisher**  
Amresh K Tiwary

**Consulting Editor**  
Vishal Duggal

**Coordinating Editor**  
Sarvesh Tiwari

**Editorial Team**  
Abhigyan, Abhinav,  
Manisha Yadav

**Design Team**  
Aparna Thomas

<http://Facebook.com/doublehelical1>  
<http://twitter.com/doublehelical>

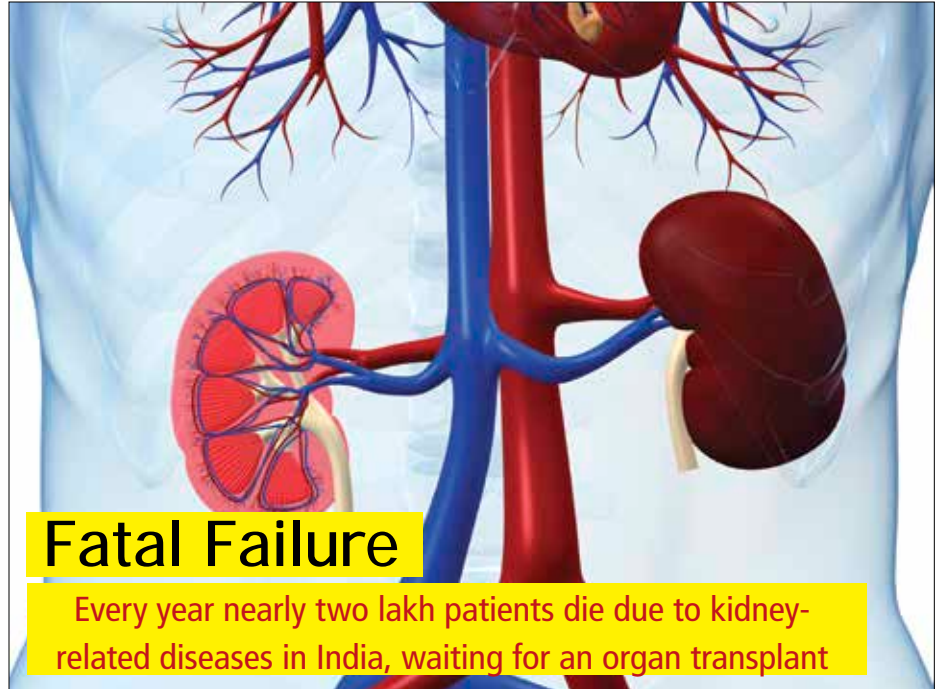
**Advertisements & Marketing**  
Gautam Gaurav, Abhinav Kumar  
Email:sales@doublehelical.com

All material printed in this publica-  
tion is the sole property of Double  
Helical. All printed matter contained  
in the magazine is based on the  
information of those featured in  
it. The views, ideas, comments and  
opinions expressed are solely of  
those featured and the Editor and  
Publisher do not necessarily subscribe  
to the same.

Double Helical is owned, printed and  
published monthly. It is printed at  
Polykam offset, Naraina Industrial  
Area Phase 1, New Delhi-110028, and  
published from G-1, Antriksh Green,  
Kaushambi, Ghaziabad-201 010.  
Tel: 0120-4219575, 9953604965.  
Contact us : dhelical@gmail.com  
Email: doublehelicaldesign@gmail.  
com, editor@doublehelical.com  
Website: www.doublehelical.com,  
www.doublehelical.in

20

**COVER STORY**



**Fatal Failure**

Every year nearly two lakh patients die due to kidney-related diseases in India, waiting for an organ transplant



06

**Towards a Healthier India**



14

**Deprived Childhood**



40

**Gasping for breath**



28

**Women to the Fore**



36

**Avoid Knee-Jerk Reaction**



44

**Cool Tips to Beat the Heat**

# Stage Set for National Health Awards'17 in New Delhi

**D**ear readers, As you are aware, Double Helical is engaged in the dissemination of knowledge and awareness about issues confronting the health and well-being of people and the challenges before the healthcare sector. Further, to acknowledge the extraordinary achievements of the outstanding doctors, medical institutions and allied professionals, we also organize national and state level awards pan-India.

We are pleased to announce that we are going to hold Double Helical National Health Awards in May, 2017 in New Delhi, for which we seek your support and blessings to make the event a success for the further advancement of this noble profession and betterment of the suffering humanity.

In keeping with our mission to regularly update you with the latest health news and views, you will read comprehensive and authentic coverage of health issues in the current issue. As part of World Kidney Day Special, this time we are covering the state of kidney treatment in India.

Every year nearly two lakh patients die due to kidney-related diseases in India with the number of kidney transplants in India averaging in the range of 3,000-3,500 per year whereas about 150,000 patients require kidney replacement. Transplant of one organ from one human being to another has always been a rigorous process which needs a lot of care.

There is an acute shortage of organs, and the gap between the number of organs donated and the number of people waiting for a kidney transplant is getting larger. The need of the hour is to establish more detection clinics and take steps to arrest deaths due to kidney failure.

As a Special story, Double Helical this time provides you exclusive coverage on National Family Health Survey-4, which aims at achieving the goal of a healthier India. The NFHS-4 has shown encouraging outcomes of concerted efforts and focussed interventions in the health sector in India. For instance, Infant Mortality Rate substantially declined over the period from 79 per 1,000 live births in NFHS-1 (1992-93) to 41 per 1,000 live births in NFHS-4; fewer children under five years of age are now found to be stunted and underweight, showing intake of improved nutrition, and households are now more inclined to use improved water and sanitation facilities.

The survey showed that almost all mothers now receive antenatal care for their most recent pregnancy and increasing numbers of women are receiving the recommended four or more visits by the service providers. More and more women now give birth in healthcare facilities and rates have more than doubled in some states in the last decade. More than nine in ten recent births took place in healthcare facilities in Andaman and Nicobar Islands, Andhra Pradesh, Goa, Karnataka, Puducherry, Sikkim, Tamil Nadu, and Telangana, providing safer environments for mothers and newborns.

But married women are less likely to be using modern family planning in eight of the First Phase states/Union Territories. There has been any increase in the use of modern family planning methods only in the states of Meghalaya, Haryana, and West Bengal. The decline is highest in Goa followed by Karnataka and Tamil Nadu. Despite the declines, about half or more married women are using modern family planning in eight of the 15 states/Union Territories.

Very interesting gender related

indicators under the NFHS-4 have shown improvement over the years. The Health Ministry has launched a number of E-initiatives to help women improve their health and enjoy safe childhood as well as motherhood. The Ministry of Health and Family Welfare (MoHFW) has released the results of the National Family Health Survey (NFHS-4), 2015-16.

Over the past decade, gender equality and women's empowerment have been explicitly recognized as the key not only to the health of the nation, but also to social and economic development. India's National Population Policy 2000 has 'Empowering Women for Health and Nutrition' as one of its recurrent strategic themes. Additionally, the promotion of gender equality and empowering of women is one of the eight Millennium Development Goals (MDG) to which India is a signatory.

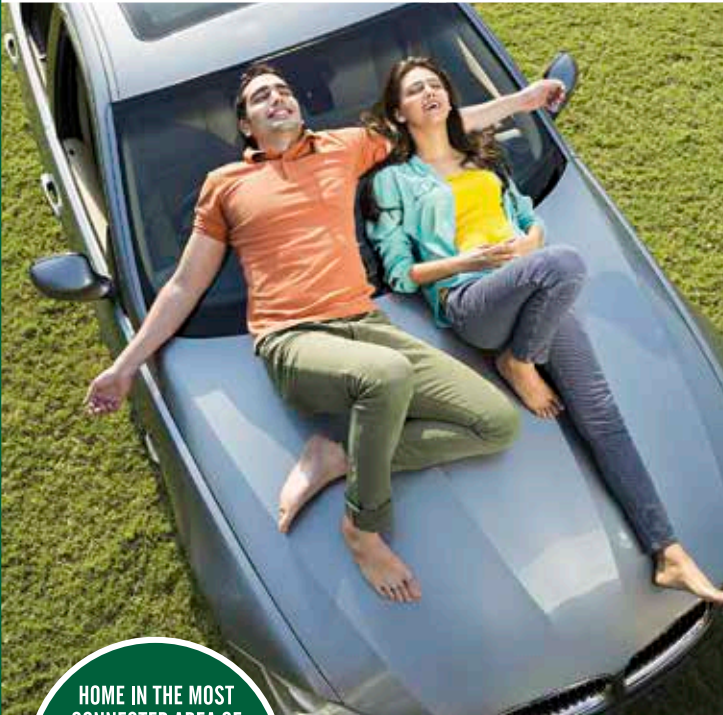
On World Hearing Day 2017, we provide you updated information on the latest trends in ear care. The Society for Sound Hearing is making a significant contribution towards effective delivery of primary ear and hearing care by organising frequent awareness and screening camps. An ear awareness and screening camp was recently organized by Society for Sound Hearing in collaboration with Department of Community Medicine and Department of ENT, Maulana Azad Medical College, Lady Harding Medical College, New Delhi and ALPS International and Ministry of Health & Family Welfare, Govt. of India at Nirman Bhawan, New Delhi.

There are many more interesting and thought-provoking stories in the March 2017 issue of your favourite magazine Double Helical. Happy reading!

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



# BE ON THE FAST LANE



HOME IN THE MOST  
CONNECTED AREA OF  
GURUGRAM  
**SECTOR  
95A**

It's the most preferred location of Gurugram with its proximity to the expressway, to offices where you can walk to work. Its abundant green cover and a host of exclusive features that redefine the conventions of Indian residences. With state of the art architecture by Deepak Mehta including thematic gardens, amphitheater and clubhouse, it redefines the concept of affordable housing. Welcome to the fast lane.

**2BHK  
Rs. 20.97 LAKHS  
ONWARDS**

**THE  
ROSELIA™**  
SECTOR 95A, NEW GURUGRAM

## LOCATION ADVANTAGE

- On State Highway 135 meter road.
- Easy and smooth connectivity from Pataudi road, Dwarka Expressway, NH8, KMP Expressway & IGI Airport.
- Adjacent to New Gurugram.
- 9km from Sultanpur National Park.
- Close proximity to educational and health institutions like Sharda International School, Colonel's Public School and Kamla Hospital.
- A paradise away from city noises, yet in close proximity of commercial sectors
- Premium Residential Colonies & Commercial Projects in close proximity.

EMD FINANCE AVAILABLE: BUSINESS ASSOCIATES:

**CALL 7053-121-121**



# Towards a Healthier India

The National Family Health Survey-4, conducted during 2015-16, has shown encouraging outcomes of concerted efforts and focussed interventions in the health sector in India. For instance, Infant Mortality Rate substantially declined over the period from 79 per 1,000 live births in NFHS-1 (1992-93) to 41 per 1,000 live births in NFHS-4; fewer children under five years of age are now found to be stunted and underweight, showing intake of improved nutrition, and households are now more inclined to use improved water and sanitation facilities. Read on for detailed findings of the survey...

**BY ABHIGYAN**



**T**he first phase of the National Family Health Survey (NFHS-4), 2015-16 in 15 States/Union Territories reveals that fewer children are dying in infancy and early childhood, while after the last round of survey in 2005-06, infant mortality has declined.

All 15 states/Union Territories have rates below 51 deaths per 1,000 live births, although there is considerable variation among the states/Union Territories. Infant mortality rates range from a low of 10 in Andaman and Nicobar Islands to a high of 51 deaths per 1000 live births in Madhya Pradesh. Better care for women during pregnancy and childbirth contributes to reduction of maternal deaths and improved child survival.

Almost all mothers have received antenatal care for their most recent pregnancy and increasing numbers of

women are receiving the recommended four or more visits by the service providers. More and more women now give birth in health care facilities and rates have more than doubled in some states in the last decade. More than nine in ten recent births took place in health care facilities in Andaman and Nicobar Islands, Andhra Pradesh, Goa, Karnataka, Puducherry, Sikkim, Tamil Nadu, and Telangana, providing safer environments for mothers and newborns.

Overall, women in the First Phase states/Union Territories are having fewer children. The total fertility rates, or the average number of children per woman, range from 1.2 in Sikkim to 3.4 in Bihar. All First Phase states/Union Territories except Bihar, Madhya Pradesh and Meghalaya have either achieved or maintained replacement level of fertility – a major achievement

in the past decade.

Full immunization coverage among children age 12-23 months varies widely in the First Phase states/Union Territories. At least 6 out of 10 children have received full immunization in 12 of the 15 states/Union Territories. In Goa, West Bengal, Sikkim, and Puducherry more than four-fifths of the children have been fully immunised. Since the last round of National Family Health Survey, the coverage of full immunization among children has increased substantially in the states of Bihar, Madhya Pradesh, Goa, Sikkim, West Bengal and Meghalaya.

Married women are less likely to be using modern family planning in eight of the First Phase states/Union Territories. There has been any increase in the use of modern family planning methods only in the states of Meghalaya, Haryana, and West Bengal.



## Obesity: Forerunner of metabolic dysfunction

According to a recent report of National Family Health Survey (NFHS) 2015-16, the high rates of obesity in general, and in some states/UTs in particular, create concern for future metabolic health. Obesity is the forerunner of metabolic dysfunction and predisposes to illnesses like diabetes and hypertension.

The NFHS reveals interesting data regarding the prevalence of metabolic syndrome in India. Perhaps the largest exercise of its kind in the world, NFHS assesses the health status of our nation. Traditionally, NFHS has focused on family planning, maternal and child health, nutritional markers of health,

and communicable disease risk factors. In keeping with recent changes in morbidity patterns,

NFHS has now begun to monitor metabolic health as well. This approach is welcome, as it helps assess the prevalence of various non-communicable diseases in India. NFHS uses robust methods to collate data regarding the health of the country and ensures accuracy by comprehensive, well-documented training of field staff.

The previous survey has recently reported findings from 15 Indian states and union territories (UT). The data related to metabolic health makes interesting reading. As part of its data

collection exercise, NFHS has measured body mass index (BMI), random blood glucose (RBG), and blood pressure in adults. BMI is greater than 18.5 and less than 25.0 kg/m<sup>2</sup>, for men and women, as well as urban and rural inhabitants separately. Gender-specific prevalence of adults with high blood sugar (greater than 140 mg percent) and very high blood sugar (greater than 160 mg percent) is given. Similarly, the prevalence of high blood pressure has been classified as mild, moderate, and severe, based on systolic and/or diastolic blood pressure.

The prevalence of obesity (BMI greater than 25 kg/m<sup>2</sup>) varies from



state to state, with Andaman and Nicobar Islands (AN) men and Puducherry women being the heaviest (38.2% and 36.7%), respectively. The heaviest states for men, after AN, are Puducherry (37.1%), Sikkim (34.8%), Andhra Pradesh (AP) (33.5%), and Goa (32.6%). Puducherry women are followed by Goa (33.5%) AP (33.2%), AN (31.8%), and Tamil Nadu (TN) (30.9%) as far as the prevalence of obesity is concerned. The least prevalence of male obesity is found in Meghalaya (10.1%), Madhya Pradesh (MP) (10.9%), Bihar (12.6%), West Bengal (WB) (14.2%), and Tripura (15.9%). The lowest percentage of obese women is reported from Bihar (11.7%), Meghalaya (12.2%), MP (13.6%), and Tripura (16.0%). The high rates of obesity in general, and in some states/UTs in particular, create concern for future metabolic health.

### **What is National Family Health Survey?**

The National Family Health Survey is a large-scale, multi-round survey conducted in a representative sample of households throughout India. Three rounds of the survey have been conducted since the first survey in 1992-93.

The Ministry of Health and Family Welfare (MOHFW), Government of India, designated the International Institute for Population Sciences (IIPS), Mumbai, as the nodal agency, responsible for providing coordination and technical guidance for the survey. IIPS collaborated with a number of Field Organizations (FO) for survey implementation. Each FO was responsible for conducting survey activities in one or more states covered by the NFHS.

### **Universal increases in mean marriage age**

In a context of rising marriage age for women and a compression of first birth intervals, the National Health Family Survey's study uses survival analysis, hazard models, and multivariate

decomposition techniques to investigate the influence of marriage age on the first birth interval over time, and the implications of both marriage age and first birth interval on the second birth interval. Secondly, the study assesses the influence of the gender context.

Marriage age has steadily risen for women in much of South and Southeast Asia, although different regions experience variation in average ages at marriage and rates of increase. A relationship between nuptiality patterns and certain fertility dynamics, specifically the initiation of childbearing and total fertility, is well established and there is an expected shortening of the first birth interval that coincides with later marriage. However, there is variation across countries in the first birth interval and its rate of change even when average marriage age is similar. Less known is whether marriage age or other factors exert more influence on the first birth interval, whether trends in marriage age and the first birth interval are universal or localized among selected subgroups of women, and to what extent compositional shifts contribute to changes in the first birth interval and the relative importance of marriage age to birth spacing beyond the first birth interval.

This study uses survival analysis, hazard models, and multivariate decomposition techniques to investigate the influence of marriage age on the first birth interval over time, and the implications of both marriage age and first birth interval for the second birth interval. In addition, attention is given to indicators that describe the gender context. The study analyzes these relationships in seven countries, four in South Asia and three in Southeast Asia that have experienced significant change in either age at marriage or the first birth interval, or both.

Demographic and Health Surveys data from over approximately a decade are used to examine changes in these

The decline is highest in Goa followed by Karnataka and Tamil Nadu. Despite the decline, about half or more married women are using modern family planning in eight of the 15 states/Union Territories.

Poor nutrition is less common than reported in the last round of National Family Health Survey. Fewer children under five years of age are now found to be stunted, showing intake of improved nutrition. In nine states/Union Territories, less than one-third of children are found too short for their age. While this reveals a distinct improvement since the previous survey, it is found that in Bihar, Madhya Pradesh and Meghalaya more than 40% of children are stunted.

Wasting is still very high by international standards in all of the states/Union Territories. Anaemia has also declined, but still remains widespread. More than half of children are anaemic in ten of the 15 states/Union Territories. Similarly, more than half of women are anaemic in eleven states/Union Territories. Over-nutrition continues to be a health issue for adults. At least 3 in 10 women are overweight or obese in Andaman and Nicobar Islands, Andhra Pradesh, Goa, Puducherry, and Tamil Nadu.

Indian families in the First Phase households are now more inclined to use improved water and sanitation facilities. Over two-thirds of households in every state/Union Territory have access to an improved source of drinking water, and more than 90% of households have access to an improved source of drinking water in nine of the 15 states/Union Territories. More than 50% of households have access to improved sanitation facilities in all First Phase states/Union Territories except Bihar and Madhya Pradesh. Use of clean cooking fuel, which reduces the risk of respiratory illness and pollution, varies widely among the First Phase states/Union Territories, ranging from only about 18% of households in Bihar to more than 70% of households in

dynamics over time. Significant increases in marriage age and significant decreases in the first birth interval (except in Cambodia) are observed, albeit at varying rates. Later marriage is associated with shorter first birth intervals but longer second birth intervals. Marriage age remains the most consistent influence on the first birth interval after controlling for birth cohort, gender context, and women's and husbands' characteristics. Compositional shifts toward later marriage contributes substantially (38%-89%) to declines in the first birth interval in Bangladesh, India, Nepal, Pakistan, Indonesia, and the Philippines, while a change in the effect of marrying later contributes to change in the first birth interval in India and Nepal. Marriage age continues to influence the second birth interval, after controlling for the length of the first birth interval and other covariates.

The study addresses these relationships in seven countries, four in South Asia and three in Southeast Asia which have experienced significant change in age at marriage, the first birth interval, or both in recent decades. Data from Demographic and Health Surveys are used from two points in time over approximately a 10-year period to examine changes in these dynamics over time. This study identified two distinct marriage patterns based on region: median completed age at marriage is low (during adolescent years) in South Asia and older in Southeast Asia. Similarly, the median completed age at first birth is lower and the difference between median age at first birth and marriage is longer in South Asia than in Southeast Asia. However, time trends are not contrasted consistently between the two regions, nor are they consistent with region. Instead, the pace of change has been variable. Marriage age has increased rapidly in Indonesia, Nepal, and Bangladesh, but has been slower elsewhere.

The difference between the median completed age at marriage and first birth has remained steady in Pakistan,



Cambodia, and the Philippines, but narrowed elsewhere. The mean marriage age has increased significantly in all study countries. With this increase, the first birth interval has become significantly shorter in four countries: Bangladesh, Nepal, Pakistan, and Indonesia. The decrease has been smaller in Pakistan and Indonesia. Meanwhile, the first birth interval has lengthened significantly in India and the Philippines while there has been no change in Cambodia. This study examines trends in marriage age across a range of indicators that describe the gender context, women's socio-economic and socio-cultural milieu, and husband's characteristics.

The study found universal increases in mean marriage age in South Asia (and Indonesia), across nearly all categories or levels of these indicators. However, marriage age increased at differential rates among groups in these countries. Increases in marriage age are localized in Southeast Asia within groups where marriage age was already higher, which means that differentials in marriage age grew wider by most characteristics in most countries. Trends in Indonesia, both in marriage age overall and across

subgroups of women, more closely resemble those observed in South Asia than in either Cambodia or the Philippines. The two countries where the first birth interval increased rather than decreased over time (the Philippines and India) manifest slightly different driving factors.

In India, the contributions to a shorter first birth interval of more women marrying at older ages are amplified by a shorter first birth interval at all ages of marriage. However, the effect of these shifts in both composition and rate is reversed by cumulative changes in rates. Women in selected occupations, with secondary and higher education, and Hindu women, among others, experience longer first birth intervals than in the past, and this results in slightly longer first birth intervals overall.

In the Philippines, contributions to shorter first birth intervals of more women marrying at older ages than in the past are reversed by cumulative changes in rates over time for certain subgroups. Most notably, the first birth interval has become longer among Roman Catholics (contributing 345% to the change in the first birth interval), women with any education, women in

the National Capital and two other regions, women who do not work, and those with husbands in professional occupations.

As with the first birth interval, marriage age is strongly significantly associated with the second birth interval, but the size of the effect is modest effect. Marriage age is associated with a 1.3-3.5% longer second birth interval in all seven countries. The effect is attenuated slightly when controls are added except in Pakistan, where the association is not significant. The result leads to the conclusion that marriage age influences not just the timing of the first birth, but also birth spacing, even after controlling for changes in birth cohort, the duration of the first birth interval, and other covariates.

The duration of the first birth interval is positively associated with second birth interval, except in Nepal. This influence is particularly strong for women with first birth intervals in the longest tercile. These women experience second birth intervals that are 5-20% longer than women whose first birth intervals fall in the shortest tercile. Similarly, women who were born in later birth cohorts experience longer second birth intervals than do women born 1960-69 in all countries except India and Pakistan.

In contrast, indicators that describe the gender context are poorly and inconsistently associated with longer second birth intervals, after marriage age, birth cohort, first birth interval, and other covariates are controlled. This finding would suggest that, to the extent that gender context influences birth spacing, it does so largely indirectly through these other factors. Husband's characteristics and women's place of residence are also inconsistently associated with the second birth interval. However, several socio-economic and socio-cultural indicators (education, wealth, and occasionally subnational region and religion) tend to be independently associated with the second birth interval, independent of other factors.



Tamil Nadu and more than 80% of households in Puducherry and Goa. The success of the first National Family Health Survey, conducted in 1992-93, in creating an important demographic and health database in India has paved the way for repeating the survey.

The second National Family Health Survey (NFHS-2), undertaken in 1998-99, is designed to strengthen the database further and facilitate implementation and monitoring of population and health programmes in the country. As in the earlier survey, the principal objective of NFHS-2 is to provide state and national estimates of fertility, the practice of family planning, infant and child mortality, maternal and child health,

and the utilization of health services provided to mothers and children. In addition, the survey provides indicators of the quality of health and family welfare services, women's reproductive health problems, and domestic violence, and includes information on the status of women, education, and the standard of living.

Another feature of NFHS-2 is measurement of the nutritional status of women. Height and weight measurements, which were available only for young children in the earlier survey, were extended to cover all eligible women in NFHS-2. In addition, ever-married women and their children below age three had their blood tested for the level of haemoglobin, using the Hemo Cue instrument. Through these blood tests, for the first time the survey provides information on the prevalence of anaemia throughout India. In two metropolitan cities, Delhi and Mumbai, a further test was done for children below age three to measure the lead content in their blood. The survey also measured the extent to which households in India use cooking salt that has been fortified with iodine.

The NFHS-2 survey covered a representative sample of more than 90,000 eligible women age 15-49

# National Family Health Survey-4 (Survey Period- 2015-16)



## Information collected from

- 6 lakh households, 7 lakh women and 1.3 lakh men
- for the first time provide district level estimates

The results by and large reflect that concerted efforts and focussed interventions in the health sector are translating to improved outcomes.

## NFHS-3 was conducted during 2005-06.

### Key highlights:

#### 1. Infant mortality rate (IMR)

- IMR declined from 57 to 41 per 1,000 live births between NFHS-3 and NFHS-4.
- IMR has declined substantially in almost all the states during the last

decade.

- In Tripura, West Bengal, Jharkhand, Arunachal Pradesh, Rajasthan and Odisha: dropped by more than 20 percentage points.
- Infant mortality substantially declined over the period from 79 per 1,000 live births in NFHS-1 (1992-93) to 41 per 1,000 live births in NFHS-4.

#### 2. Institutional births

- Dramatically increased by 40 percentage points from 38.7 percent in NFHS-3 to 78.9 percent in NFHS-4.
- Increase of 34.1 per cent institutional births in public facility.
- Each of the Empowered Action Group (EAG) states and Assam have experienced more than a 40 percentage point increase.
- Targeted approach through Janani Suraksha Yojana (JSY) has paid off.

#### 3. Mothers who had at least 4 ANC visits

- The proportion of women who received at least 4 antenatal care visits for their last birth has increased by 14 percentage points from 37 percent to 51.2 percent over the decade (2005-15).
- Substantial increase of 20 or more percentage points in 7 states.
  1. West Bengal (38 percentage points),
  2. Chhattisgarh (31 percentage points),
  3. Himachal Pradesh and Odisha (25 percentage points each),
  4. Assam (23 percentage points),
  5. Jammu & Kashmir (21 percentage points) and
  6. Gujarat (20 percentage points)

#### 4. Total Fertility Rate (TFR)

- TFR declined to 2.2 children per

woman from 2.7 in NFHS-3 moving closer to replacement level of 2.1.

- Considerable decline in the TFR in each of the 30 states in India.

#### **Maximum decline observed in**

- Uttar Pradesh (1.1 child)
- followed by Nagaland (1.0 child)
- Arunachal Pradesh and Sikkim (0.9 child each)
- Rajasthan, Madhya Pradesh and Meghalaya (0.8 child each)

#### **Decline of TFR**

- by 0.5 children per woman between NFHS-1 (1992-93) and NFHS-2 (1998-99),
- by 0.2 children per woman from NFHS-2 (1998-99) to NFHS-3 (2005-06);
- by 0.5 children per woman between NFHS-3 and NFHS-4.

#### **Overall, the level declined by 1.2 children per woman from NFHS-1 to NFHS-4.**

#### **5. Children age 12-23 months fully immunized (BCG, measles and 3 doses each of polio and DPT)**

- Increased by 18 percentage points from 44 percent in NFHS-3 to 62 percent in NFHS-4.
- full immunization coverage increased in
  1. Punjab, Bihar and Meghalaya (29 percentage point each),
  2. Rajasthan, Uttar Pradesh, Jharkhand and Chhattisgarh (28 percentage points each),
  3. Odisha (27 percentage points) and
  4. West Bengal (20 percentage points).

#### **6.Children age 12-23 months who received most of vaccinations**

- Fully immunised: up by 18.5%
- Received BCG: up by 13.7%
- Received 3 doses of DPT: up by 23.1%
- Received measles vaccines: up by 22.3%
- Vitamin A dose: up by 43.7 %

#### **7.Sex ratio at birth (females per 1,000 males)**

- Improved from 914 to 919 at the national level over the last decade.
  1. Highest in Kerala (1,047),
  2. Followed by Meghalaya (1,009)
  3. Chhattisgarh (977)

#### **8.Children under 5 years who are stunted and underweight**

- Decline in percentage of stunted children: 10 percentage points
- Decline in percentage of underweight children: 7 percentage points
- This is a consequence of improved child feeding practices and focus on nutritional aspects of children.

#### **9.Substantial decline prevalence of anaemia among children age 6-59 months**

- Declined from 69 per cent in NFHS-3 to 58 per cent in NFHS-4.
  1. maximum decrease in Assam (34 percentage points),
  2. Chhattisgarh (30 percentage points)
  3. Mizoram (26 percentage points)
  4. Odisha (20 percentage points)

#### **10.Children under age 3 years breastfed within one hour of birth**


- Substantial increase of 19 percentage points between NFHS-3 and NFHS-4

#### **11.Family Planning Methods**

- Unmet needs for Family Planning has shown a decline pointing towards increased outreach of family planning methods.
- Contraceptive prevalence rate among currently married women increased
  1. by 7 percentage points from NFHS-1 (41 percent) to NFHS-2 (48 per cent)
  2. By 8 percentage points from NFHS-2 to NFHS-3 (56 percent).
  3. However, the contraceptive prevalence rate decreased by 2 percentage points from NFHS-3 to NFHS-4 (54 percent) but pill and condom usage have shown increasing trend.



from 26 states that comprise more than 99 percent of India's population. The data collection was carried out in two phases, starting in November 1998 and March 1999. The survey provides state-level estimates of demographic and health parameters as well as data on various socioeconomic and programmatic factors that are critical for bringing about desired changes in India's demographic and health situation.

The survey provides urban and rural estimates for most states, regional estimates for four states (Bihar, Madhya Pradesh, Rajasthan, and Uttar Pradesh), separate estimates for three metro cities (Chennai, Kolkata, and Mumbai), and estimates for slum areas in Mumbai. The survey used uniform questionnaires, sample designs, and field procedures to facilitate comparability of the data and to achieve a high level of data quality. Preliminary reports with selected results were prepared earlier for each state and presented to policymakers and 12th programme administrators responsible for improving health and family welfare programmes in most states. 



# Deprived Childhood

A large number of children in India suffer from malnutrition resulting in underweight and stunting. Lack of maternal education in both slum and non-slum areas increases the incidence of nutritional deficiencies that are particularly critical in the first two years after birth

**BY TEAM DOUBLE HELICAL**



In the recent era, India has seen several advances in health care. In the late 90s, liver transplants were not done in India. The programme kicked off in 2000s, showed slow progress in the initial one decade but later multiple centres emerged in various parts of the country.

Nutritional deficiencies in India are evident right from the time of birth. Stunting and underweight rise rapidly in the first two years of life. The proportion of children stunted rises sharply from 0 to 20 months of age peaking at 59 percent.

Thereafter, the proportion of children fluctuates between 48 percent and 60 percent. The proportion of children who are underweight also rises rapidly for the first 20 months of life to 47 percent. At older ages, the proportion of underweight has a similar pattern of fluctuation as observed for stunting, but at a lower level. The proportion of children wasted rises from 24 percent in the first month of life to 32 percent at one month of age, and generally declines thereafter.

About one out of every six children age 38-57 months is wasted. The decline in wasting with age is a result of the more rapid increase in stunting than in underweight with increasing age. The first two years of life is a critical period in the growth and development of children, but it is clear that nutritional deficiencies generally worsen during that period.

In response to this age pattern found in earlier National Family Health Surveys (NFHS) as well, the Government has reoriented its Integrated Child Development Services (ICDS) programme, expanding the programme from its almost exclusive focus on children age 3-6 years to include younger children. However, children in India continue to suffer from serious nutritional problems during the early childhood years. Good child care practices are influenced by the mother's education.

In India, 49 percent mothers of children under five years of age have never attended school and only 9 percent have completed 12 or more years of schooling. Maternal education has a strong inverse relationship with all three measures of nutritional status. For every measure of nutritional status, nutritional deficiencies decrease steadily with rising education of the mother. The percentage of children who are underweight is almost three times as high for children whose mothers have no education than for children whose mothers have completed at least 12 years of education. The educational differentials are almost as large for stunting.

Almost half of children under age five years (48



percent) are chronically malnourished. In other words, they are too short for their age or stunted. Stunting is a good long-term indicator of the nutritional status of a population because it does not vary appreciably by the season of data collection or other short-term factors, such as epidemic illnesses, acute food shortages, or shifts in economic conditions.

Acute malnutrition, as evidenced by wasting, results in a child being too thin for his or her height. One out of every five children in India under age five years is wasted. Forty-three percent of children under age five years are underweight for their age. Underweight status is a composite index of chronic or acute malnutrition. Underweight is often used as a basic indicator of the status of a population's health.

The NFHS-3 design permits an examination of the nutritional status of



# Anaemia in children

In NFHS-3, anaemia in children was measured in the field with a drop of blood from a finger stick using the Hemo Cue HB201+ analyzer. Three levels of anaemia were distinguished based on the level of haemoglobin: mild anaemia (10.0-10.9 grams/decilitre), moderate anaemia (7.0-9.9 g/dl), and severe anaemia (less than 7.0 g/dl). Anaemia is characterized by the lack of an adequate amount of haemoglobin in the blood. A low level of haemoglobin interferes with the ability of the blood to carry oxygen from the lungs to other organs and tissues. Anaemia in young children results in increased morbidity from infectious diseases, and it can result in impairments in coordination, cognitive performance, behavioural development, language development, and scholastic achievement. Anaemia can be caused by a nutritional deficiency of iron and other essential minerals and vitamins, as well as infections such as malaria and sickle cell disease. Seven out of every 10 children age 6-59 months in India are anaemic.

Three percent of children age 6-59 months are severely anaemic, 40

percent are moderately anaemic, and 26 percent are mildly anaemic. Anaemia testing was not conducted in Nagaland due to local opposition to blood collection. 16 Anaemia among children is widespread throughout India. The prevalence of anaemia varies from 38 percent in Goa to 78 percent in Bihar. More than half of young children in 24 states have anaemia, including 11 states where more than two-thirds of children are anaemic. Seven percent of children in Rajasthan and Punjab are severely anaemic, more than twice the level in India as a whole. Almost half of children in Uttar Pradesh, Bihar, Chhattisgarh, Andhra Pradesh, Madhya Pradesh, Rajasthan, and Haryana are moderately or severely anaemic.

According to NFHS, about 20 million children are not able to receive exclusive breastfeeding (EBF) for the first six months, and about 13 million do not get good, timely and appropriate complementary feeding along with continued breastfeeding.

Over the past several years, India has failed to witness any remarkable progress in infant feeding practices, with only a small increment being





recorded in EBF rates amongst infants 0-6 months of age – from 41.2% in 1998-99 (NFHS-2) to 46.3% in 2005–2006 (NFHS-3). The rate of early initiation of breastfeeding stands abysmally low at 24.5%, while the median duration of EBF among last-born children is as brief as two months. Further the rate of EBF drops progressively from 51% at 2-3 months of age to 28% at 4-5 months of age.

In a recent Annual Health Survey conducted in India from 2010 to 2013 covering all the 284 districts (as per 2011 census) of 8 Empowered Action Group (EAG) states (Bihar, Uttar Pradesh, Uttarakhand, Jharkhand, Madhya Pradesh, Chhattisgarh, Odisha and Rajasthan) and Assam [4], the percentage of children breastfed within one hour of birth was observed to vary from 30% in Bihar and Uttar Pradesh to around 70% in Assam and Odisha. Children exclusively breastfed for at least 6 months ranged from 17.7% in UP to 47.5% in Chhattisgarh. Complementary feeding is introduced in only 53% infants between 6–8 months, with only about 44 % of breastfed children being fed at least the minimum number of times

recommended. Overall, only 21% of breastfeeding and non-breastfeeding children are fed in accordance with the infant and young child feeding (IYCF) recommendations.

WHO/UNICEF have emphasized the first 1000 days of life i.e., the 270 days in-utero and the first two years after birth as the critical window period for nutritional interventions. As the maximal brain growth occurs, malnutrition in this critical period can lead to stunting and suboptimal developmental outcome. The optimal and appropriate infant and young child nutrition practices and strategies are essential. Breastfeeding should be promoted as the gold standard feeding options, antenatal counselling individually or in groups organized by maternity facility or mother support group (MSG) should prepare expectant mothers for successful breastfeeding and all normal newborns (including those by caesarean section) skin-to-skin contact should be initiated in about 5 minutes of birth in order that baby initiates breastfeeding in an hour of birth.

The method of 'Breast crawl' can be adopted for early initiation. In case of

operative birth, the mother may need extra motivation and support. Skin-to-skin contact between the mother and new born should be encouraged by 'bedding in the mother and baby pair'. Mother should communicate, look into the eyes, touch and caress the baby while feeding. The new born should be kept warm by promoting Kangaroo Mother Care and promoting local practices to keep the room warm. Baby should be fed "on cues". The early feeding cues include sucking movements and sucking sounds, hand to mouth movements, rapid eye movements, soft cooing or sighing sounds, lip smacking, restlessness etc. Crying is a late cue and may interfere with successful feeding. Babies should be breastfed at least 8 to 10 times in 24 hours till lactation is established (1 to 2 weeks) indicated by frequent urination, stooling and adequate weight gain. A sleepy baby can be easily woken up by removing blankets, removing clothes.

#### **Malnutrition in adults**

Malnutrition in adults can be assessed using the body mass index (BMI), which is defined as weight in kilograms divided by height in metres squared ( $\text{kg}/\text{m}^2$ ). A BMI below 18.5 indicates chronic energy deficiency or under nutrition. Adults with a BMI below 18.5 are considered to be too thin for their height. Adults with a BMI of 25 or higher are considered to be overweight or obese. A normal weight for height is indicated by a BMI of 18.5-24.9. Thirty-six percent of women and 34 percent of men are undernourished, with a BMI less than 18.5, indicating a high prevalence of nutritional deficiency.

Overweight and obesity are emerging problems in India. Thirteen percent of women and 9 percent of men are overweight or obese. The simultaneous occurrence of over nutrition and under nutrition indicates that adults in India are suffering from a dual burden of malnutrition. Only 52 percent of women and 57 percent of men have normal weight for their height.



# Infant & Young child feeding

BY DR MANISHA YADAV

**U**nder nutrition is a contributory factor to 1/3rd to half of all deaths taking place in children under 5 years of age. As per an estimate, 43% of children in India are underweight & 48% children are stunted. Stunted children not only falter in physical but also in cognitive growth as well under weight. Prevalence is increasing rapidly from birth to age 20-23 months.

As the first 1000 days are a regarded as window of opportunity for survival



& development in children, investment in nutrition is important during this time.

Under nutrition during this time leads to severe stunting, which is largely irreversible.

Therefore, breast feeding for 6 months can prevent 13% of the under-5 deaths and in addition to complimentary feeding; it can prevent additional 6% under-5 death mortality. Breast feeding is regarded as most effective intervention for child survival particularly to address major conditions like diarrhoea/infections & pneumonia.

Recommendations for appropriate feeding of new born & children under 2 years of age:-

- Early initiation of breast feeding immediately after birth, i.e., within an hour.

- Exclusive breast feeding for 6 months: - During these 6 months no water / fluid or other foods are allowed. Although ORS/drops/nutrition minerals & other medicines can be given when required.

- Timely initiation of complimentary feed: - solid/semi solid & soft foods after 6 months of age.

- Continued breast feeding for 2



years & beyond along complimentary feeding i.e. after 6 months onwards.

- Appropriate complimentary feeding for children from 6 to 23 months of age (while continued to breastfed )

- Feeding for children during & after illness

- Grains/roots/legumes/Nuts
- Dairy products
- Fresh food (meat/ fish/ poultry)
- Egg products
- Vitamin-rich fruits & vegetables
- Other vegetables.

#### Age 6 - 8 months

- Need to be fed minimum 2 meals/day + breast feeding .Depending on the appetite can be offered 1-2 snack)

- Calories Needed = 300 cal in addition to breast milk.


- Can start = Thick Porridge & mashed potatoes. Start initially by 2-3 table spoons & then gradually to ½ of 250 ml cup.

- Total iron requirement = 5 mg/day.

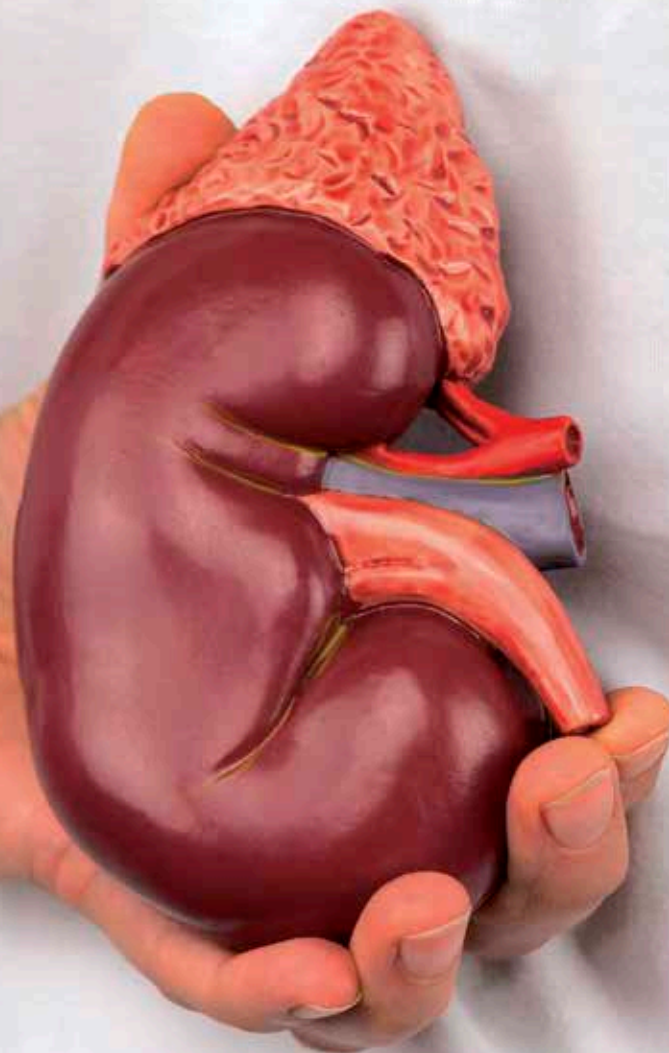
- Amount of green leafy vegetables = 25 g/ day.

**The author is Medical Practitioner,  
New Delhi**

children for each of eight cities and for slum and non-slum areas in those cities (Delhi, Chennai, Hyderabad, Indore, Kolkata, Meerut, Mumbai, and Nagpur). Among the eight cities, the prevalence of underweight is highest in Indore (39 percent) and lowest in Hyderabad and Kolkata (20-21 percent).

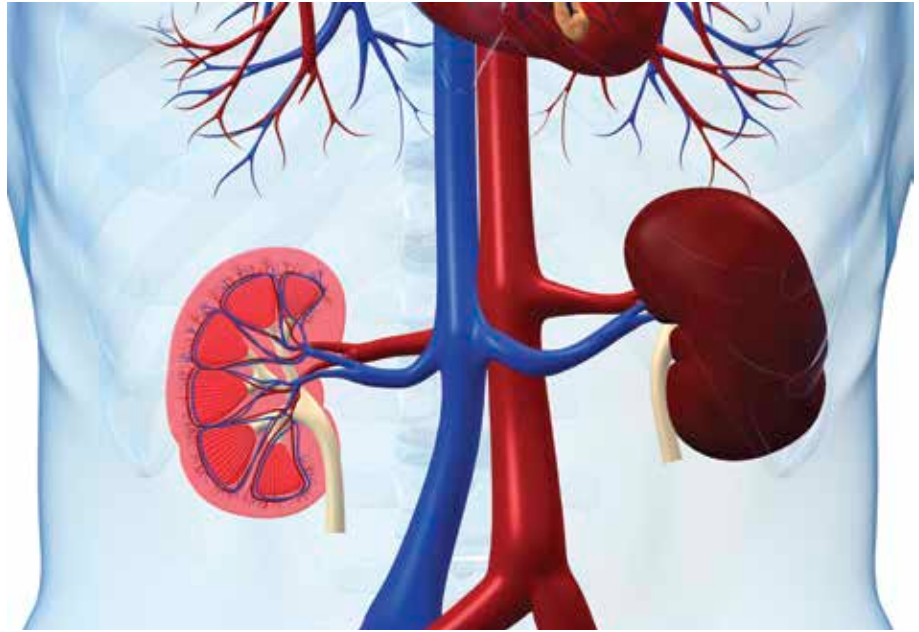
In every city except Meerut, underweight is much more prevalent in slum areas than non-slum areas. However, even in non-slum areas of the eight cities, the prevalence of underweight is substantial (16-37 percent). In Indore, half of the children in slum areas are underweight and 19 percent are severely underweight. More than 4 out of every 10 children in Mumbai, Meerut, and Delhi are stunted. Stunting is generally higher in slum areas than non-slum areas, but there is almost no difference in Hyderabad, and the differences are relatively small in Chennai, Meerut, and Mumbai. The prevalence of wasting is extremely high in both slum and non-slum areas of Indore. The slum/non-slum differentials in wasting are small in most cities. 

# Fatal Failure



Every year nearly two lakh patients die due to kidney-related diseases in India, waiting for an organ transplant

**BY AMRESH KUMAR TIWARY**



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

According to a study, two persons every five minutes or roughly two lakh people die due to kidney-related diseases in India every year. There is an acute shortage of organs, and the gap between the number of organs donated and the number of people waiting for a kidney transplant is getting larger. The need of the hour is to establish more detection clinics and take steps to arrest deaths due to kidney failure.

#### **Increasing Incidence of Kidney Disease in India**

With the number of kidney transplants in India averaging in the range of 3,000-3,500 per year whereas about 150,000 patients require kidney replacement. Transplant of one organ from one human being to another has always been a rigorous process which needs a lot of care.

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

#### **How does Kidney Disease Occur?**

The kidneys are two bean-shaped organs located on either side of the spine just below the rib cage. Each one is about the size of a fist. Their main function is to filter and remove excess waste, minerals and fluid from the blood by producing urine.

When your kidneys lose this filtering ability, harmful levels of fluid and waste



**Dr. Rajesh Agarwal,**  
Nephrologist, Sri Balaji  
Action Cancer Hospital

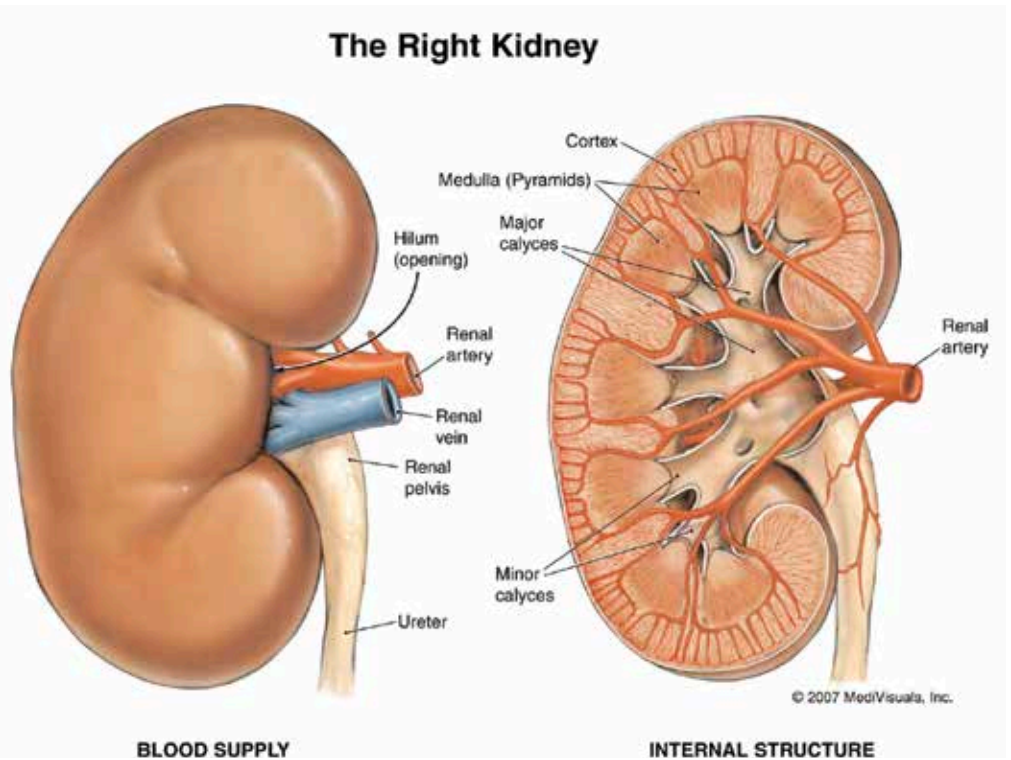


accumulate in your body, which can raise your blood pressure and result in kidney failure (end-stage renal disease, which is also known as end-stage kidney disease). End-stage renal disease occurs when the kidneys have lost about 90 percent of their ability to function normally.

#### **Diseases Aggravating Kidney Problem**

Common causes of end-stage renal disease include diabetes, chronic, uncontrolled high blood pressure, obesity, Chronic glomerulonephritis — an inflammation and eventual scarring of the tiny filters within your kidneys (glomeruli). Obesity is a major contributor to kidney disease. As per a report, India ranks 3rd (first is USA and the second China) as a most obese country in the world. About 220 to 40 percent people in India are obese. Out of this, 5 percent have morbid obesity. Through BMI (Body Mass Index) you can measure your level of obesity. BMI of 23 to 25 is considered as normal, while 25 to 29 is considered to be overweight and obese respectively.

Increasing occurrence of diabetes



especially type2 is a major risk of kidney problem. If not controlled, India will be world the capital of diabetes by 2040. This is because people with diabetes tend to have other long-standing medical conditions, like high blood pressure, high cholesterol, and blood vessel disease (atherosclerosis). People with diabetes also are more likely to have other kidney-related problems, such as bladder infections and nerve damage to the bladder.

### **The State of Kidney Transplants in India**

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

supported through dialysis in order to purify the blood. Therefore, we can say that the criticality of kidney transplant is comparatively less.

Transplant, as an option, has successful outcomes, and the number of people needing a transplant is expected to rise steeply due to an ageing population and an increase in organ failure.

A kidney transplant costs about Rs 3-4 lakh depending on nature of cases and facilities being provided by hospitals with a lifetime monthly post-operative care costing at least Rs 10,000. Tracking the rate of LKD is important as the worldwide prevalence of end-stage renal disease is increasing and a global trend can help countries evaluate their performance. India is in an unenviable position when it comes to the disease burden, implementation of the Organs Act and preventing kidney rackets that frequently rock the nation. If pushed further to two per million population, then 4,400 kidneys could be retrieved, dramatically reducing the burden on living donors.

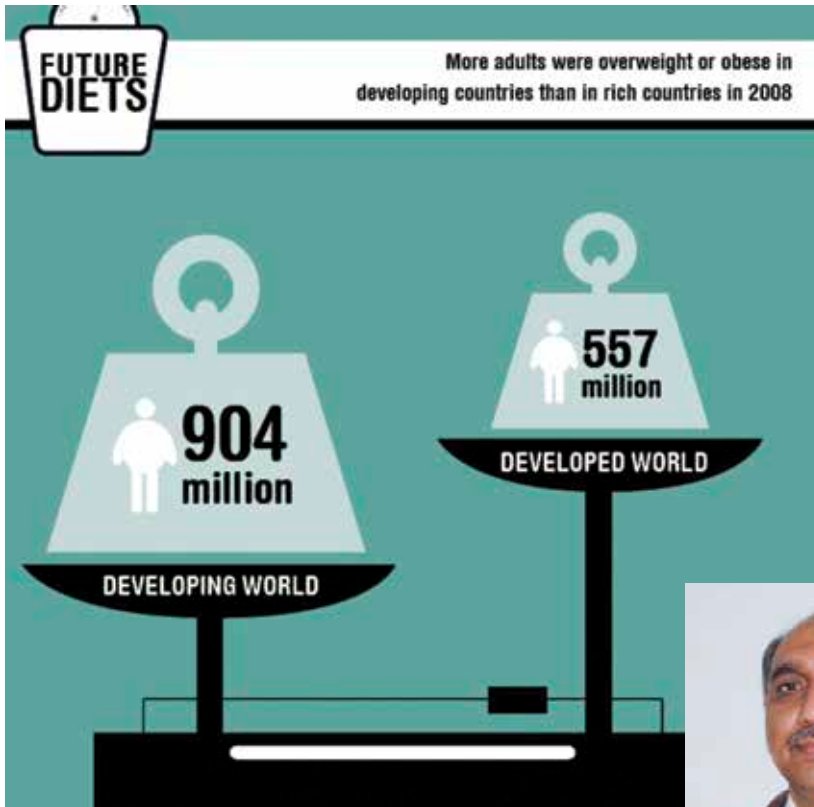
Although there is no national registry so that one can know about

how many kidney transplants occur in India, Multi Organ Harvesting Aid Network Foundation in Chennai estimates the number of transplants per year to be in the range of 3,000-3,500, with barely 5 per cent coming from the brain-dead. The annual requirement is about 150,000. The LKD rates in two-thirds of the 69 nations surveyed have been growing at 50 per cent over the last decade, but India remains stuck at the same level due to lack of health insurance, and institutional and financial support.

### **Kidney donation in India**

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

There have been several news reports about organ trafficking in



India, putting the spotlight on the shortage of donors. Against the global requirement of about 600,000 each year, only 60,000 kidney transplants are done in India. And, of the 150, 000 to 200,000 people who need transplant, only 3,500 get it. This scarcity will grow rapidly in the coming years because of an increasing lifespan, rising incidence of end-stage kidney disease, and wrong legislative policies.

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

transplant.”

“ U n d e r Transplant of Human Organs Act, 1994, the Union health ministry has come up with a composite set of guidelines to deal with such issues. But it needs to develop a number of government healthcare institutions in India where legal issues and cost factors should be negligible for kidney transplant,” Dr Rajesh Agarwal, said. “It’s not easy to find donors in the case of kidney transplant. The aim of the facility should be to serve the poorest of the poor, build proper medical expertise and build the system’s capacity. The number of candidates waiting for a kidney transplant has increased day by day. Over the past few years, several proposals have been designed to increase overall transplant benefit by incorporating a measure of transplant outcome, while maintaining access to transplant for all candidates, have been considered,” said **Dr S P Yadav, Senior Urologist and Member, Medical Council of India, New Delhi.**

Based on the Kidney Donor Profile Index (KDPI), kidney allocation in the right direction allows longest expected survival of both donors and recipients. It depends on a clinical formula that classifies donor kidneys based on how long they are likely to function once transplant is done. The access to transplant is enhanced for certain populations by calculating waiting time from the dialysis start date. This should successfully address two major problems in kidney allocation: allocation of kidneys from ideal donors to recipients with short expected survival and the use of kidney from less than ideal donors to those expected to live for a long time.

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





hospitals, and summon the concerned managerial and medical, paramedical staff involved in the procedure,” added Dr S P Yadav.

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

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

and general public more aware of these laws.”

#### **Causes of Kidney Disease**

The most common causes of kidney disease include diabetes, high blood pressure, and hardening of the arteries (which damages the blood vessels in the kidney). Some kidney diseases are caused by an inflammation of the kidneys, called nephritis. This may be due to an infection or to an autoimmune reaction where the body's immune or defence system attacks and damages the kidneys. Other kidney diseases like polycystic kidney disease are caused by problems with the shape or size of the kidneys (anatomic disorders), while other kidney diseases interfere with the inner workings of the kidneys (metabolic disorders). Metabolic kidney disorders are inherited from both parents, consequently, they are rare.

The two bean-shaped kidneys are located on either side of the body, just underneath the ribcage. The main role of the kidneys is to filter out waste

products from the blood before converting it into urine. Kidneys play one of the most vital functions in our body. Sometimes, the kidney may lose its ability to function properly. In extreme cases, they may cease to work. Such a condition is called kidney failure. In such extreme cases, kidney transplant is believed to be the most viable option in the long run.

#### **Need for Kidney Transplant**

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

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

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

According to **Dr N P Singh, Senior Nephrologist, Max Superspecialty Hospital, Vaishali, Ghaziabad**, "Patients usually require dialysis when the waste products in their body become so high that they start to become sick from them. The level of the waste products usually builds up slowly.



Doctors measure several blood chemical levels to help decide when dialysis is necessary. The two major blood chemical levels that are measured are the "creatinine level" and the "blood urea nitrogen" (BUN) level. As these two levels rise, they are indicators of the decreasing ability of the kidneys to cleanse the body of waste products."

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

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



indicated even though the creatinine clearance has not fallen to the 10-12 cc/minute level."

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

**Procedure of Kidney Transplant Surgery**

As per a report, about 800 million chronic kidney patients are detected in India per year. About 3000 kidney transplants are performed every year and many more could be performed if more kidneys were available. The success rate for kidney transplants is excellent and higher than for other kinds of organ transplants at affordable cost. The transplanted kidney provides enough kidney

function. After a successful transplant, there is no need for dialysis, provided the transplant continues to work well. The patients who have a successful transplant should feel better and have more energy. There may, however, be a need to watch their diet to protect the kidney.

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

The transplant surgery lasts five



hours on average. The donor kidney will be placed in the lower abdomen and its blood vessels connected to arteries and veins in the recipient's body. When this is complete, blood will be allowed to flow through the kidney again. The final step is connecting the ureter from the donor kidney to the bladder. In most cases, the kidney will soon start producing urine. Depending on its quality, the new kidney usually begins functioning immediately. Living donor kidneys normally require 3–5 days to reach normal functioning levels, while cadaveric donations stretch that interval to 7–15 days. Hospital stay is typically for 4–7 days. If complications arise, additional medications (diuretics) may be administered to help the kidney produce urine.

The immunosuppressant drugs are used to suppress the immune system from rejecting the donor kidney. These medicines must be taken for the rest of the patient's life. Blood levels must be monitored closely and if the patient

seems to have declining renal function, a biopsy may be necessary to determine whether this is due to rejection or cyclosporine intoxication. Grapefruit can decrease the proper metabolism of many drugs, and therefore decrease/ or almost cancel out the effect of many critical drugs given after kidney transplants. Therefore, grapefruit products and certain other citrus products must be avoided.


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

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

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

#### **Ethical Angle to Kidney Transplant**

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

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





# Women to the Fore

Gender related indicators under the National Family Health Survey (NFHS-4) have shown improvement over the years. The Health Ministry has launched a number of E-initiatives to help women improve their health and enjoy safe childhood as well as motherhood

**DR SUNEELA GARG/ DR ARVIND GARG**



**E**nvironment 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. 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.

The Ministry of Health and Family Welfare (MoHFW) has released the results of the National Family Health Survey (NFHS-4), 2015-16. Over the past decade, gender equality and women's empowerment have been



explicitly recognized as the key not only to the health of the nation, but also to social and economic development. India's National Population Policy 2000 has 'Empowering Women for Health and Nutrition' as one of its recurrent strategic themes. Additionally, the promotion of gender equality and empowering of women is one of the eight Millennium Development Goals (MDG) to which India is a signatory. Goal 5 of the Sustainable development goals (SDGs) is related to gender equality. The pairing of the two concepts of women's empowerment and gender equality into one MDG implicitly recognizes that gender equality and women's empowerment are two sides of the same coin: progress toward gender equality requires women's empowerment and women's empowerment requires increase in gender equality.

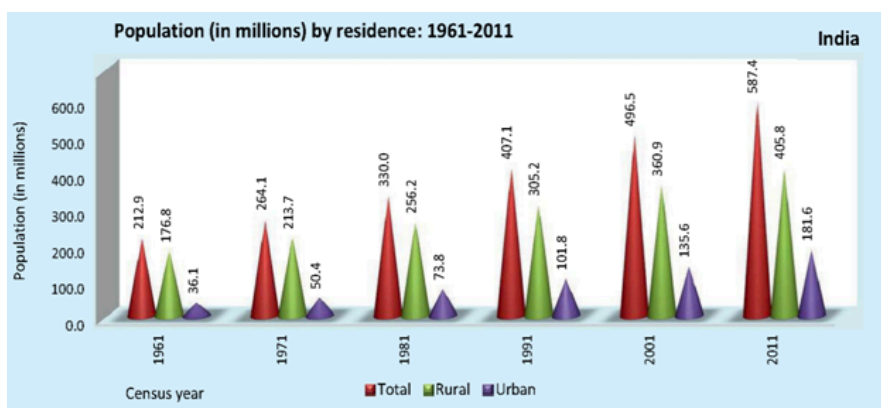
The following are the data relevant to gender as per the Census and NFHS-4.

Nearly 587 million women are there in the country as per 2011 census. The survey shows the trend of population of women in India over the years.

Most of the gender related indicators have shown improvement over the years. As compared to a sex ratio (0-6years) of 914 in NFHS-3, it has improved to 919 in NFHS-4. Literacy rate among the women improved from 55.1% in NFHS-3 to 68.4% in NFHS-4. Proportion of women who had more than 10 years of schooling improved from 22.3% in NFHS-3 to 35.7% in NFHS-4. Women who had married before 18 years of age decreased from 47.4% (NFHS-3) to 26.8% (NFHS-4).

Nearly 84% (NFHS-4) of the currently married women participated in household decisions as compared to 76.5% in NFHS-3. However, the proportion of women who were paid in cash for the work done in the last 12 months decreased marginally from 28.6% in NFHS-3 to 24.6% in NFHS-4. Women who experienced spousal violence decreased from 37.2% (NFHS-3) to 28.8% (NFHS-4).

### FEMALE POPULATION AS PER CENSUS 2011





### Gender related indicators in NFHS-4

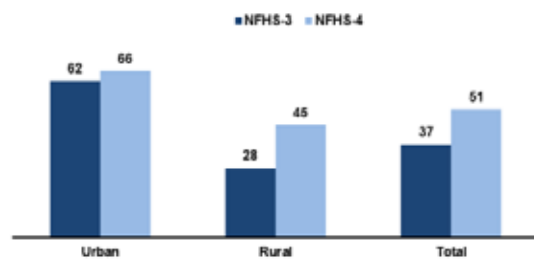
| Indicators   | NFHS-4 |       |       | NFHS-3 |
|--|--------|-------|-------|--------|
|  | Urban  | Rural | Total | Total  |
| Sex ratio of the total population (females per 1,000 males)                              | 956    | 1,009 | 991   | 1,000  |
| Sex ratio at birth for children born in the last five years (females per 1,000 males)    | 899    | 927   | 919   | 914    |
| Women who are literate (%)   | 81.4   | 61.5  | 68.4  | 55.1   |
| Women with 10 or more years of schooling (%)   | 51.5   | 27.3  | 35.7  | 22.3   |
| Women age 20-24 years married before age 18 years (%)                                    | 17.5   | 31.5  | 26.8  | 47.4   |
| Women age 15-19 years who were already mothers or pregnant at the time of the survey (%) | 5      | 9.2   | 7.9   | 16     |

### Indicators related to Women's Empowerment and Gender Based Violence

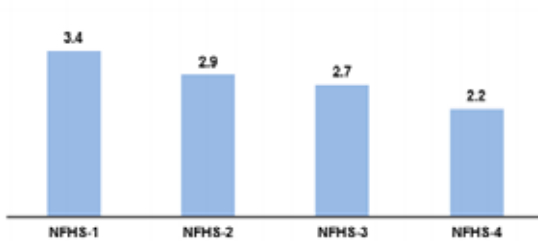
| Indicators   | NFHS-4 |       |       | NFHS-3 |
|--|--------|-------|-------|--------|
|  | Urban  | Rural | Total | Total  |
| Currently married women who usually participate in household decisions (%)                     | 85.8   | 83    | 84    | 76.5   |
| Women who worked in the last 12 months who were paid in cash (%)                               | 23.2   | 25.4  | 24.6  | 28.6   |
| Ever-married women who have ever experienced spousal violence (%)                              | 23.6   | 31.4  | 28.8  | 37.2   |
| Women owning a house and/or land (alone or jointly with others) (%)                            | 35.2   | 40.1  | 38.4  | NA     |
| Women having a bank or savings account that they themselves use (%)                            | 61     | 48.5  | 53    | 15.1   |
| Women having a mobile phone that they themselves use (%)                                       | 61.8   | 36.9  | 45.9  | NA     |
| Women age 15-24 years who use hygienic methods of protection during their menstrual period (%) | 77.5   | 48.2  | 57.6  | NA     |



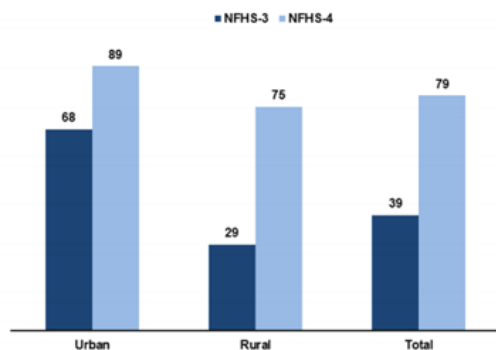
**Trends in At Least 4 Antenatal Care Visits**  
Percentage of last births in the past five years



**Fertility Trends**  
Total fertility rate  
(children per woman)



**Trends in Institutional Births**  
Percentage of births in the past five years



Proportion of women having a savings bank account had also increased from 15.1% (NFHS-3) to 53% in NFHS-4.

Indicators pertaining to reproductive health and family welfare have improved over time. The total fertility rate has dropped to 2.2; the total proportion of women who had 4 ANC had increased to 51% and the total proportion of women with institutional births had increased to 79%.

**With this background let us see how E-technology has been used to help improve health indicators.**

### 1. ANMOL Mobile app

An ANM caters to a population of 3,000-5,000 and her work primarily involves providing primary health services around maternal and child health, family planning, nutrition and immunisation programmes. Collecting health care data is an extremely important part of their job and an ANM captures around 200 key indicators related to health, nutrition and immunisation of pregnant women, mothers and new born children in their hard-bound paper registers. Most of the work hours of the ANM are spent in manually copying the data from one register to another. Taking into account the issues faced by ANMs and to improve the overall standards of child and maternal health service provision in India and related data collection, the ministry of health and family welfare, with support from UNICEF, has introduced an android based tablet based application ANMOL. It ensures improvement in data quality, since the data is





entered “at source” by health service providers themselves. It helps in authentication of the records of field workers and beneficiaries, as the application is Aadhaar-enabled. GOI plans to roll it out to all 293,000 ANMs in a phased manner. It has been successfully piloted in Andhra Pradesh.

## **2.Mobile app of Mission Indradhanush**

Mission Indradhanush Mobile App is the brainchild of Immunization Technical Support Unit (ITSU). The main objective of Mission Indradhanush App is to provide a user friendly interface to track the progress made under Mission Indradhanush by different states in a more comprehensive but less cumbersome manner.

The Mission Indradhanush Mobile App is a tool with the help of which immunization officers at different levels in national/state/district level will be able to showcase their performance in different rounds of Mission Indradhanush. The content and data available through this mobile app will be equally useful for policy makers, program managers at state and district level, immunization experts and general public as well. The data for each of the 201 districts is regularly updated by Mission Indradhanush Control Room placed at ITSU and made available through this Mobile App after each round of Mission Indradhanush.

The Mission Indradhanush Mobile App keeps its user updated with all the information generated on and round Mission Indradhanush over Twitter, Facebook and on Mission Indradhanush website. The information updated on these

platforms is dynamically updated and users can see latest information without having to login to these social media platforms. The information appears on the app with just a tap on the icon.

## **3.Kilkari Project**

The government has launched the Kilkari (meaning baby noises), a mobile voice message service that delivers weekly messages to families about pregnancy, family planning, nutrition, childbirth and maternal and child care, on every Friday. The database for the Kilkari programme will be taken from the successful Mother and Child Tracking System (MCTS) to monitor pregnant women and babies. As per plans, every woman registered with MCTS will receive weekly messages relevant to the stage of pregnancy and age of the infant. In all, 72 free audio messages, each of about two-minute duration, will reach targeted beneficiaries from the fourth month of pregnancy until the child is a year old. In the first phase, the Kilkari application is expected to benefit 1.84 crore pregnant women/newborns in Jharkhand, Odisha, UP, Uttarakhand and in some districts of Madhya Pradesh and Rajasthan. The Bill and Melinda Gates Foundation has provided the mobile phone application for Kilkari and mobile academy; the latter is a 240-minute free training module for ASHAs. RailTel Corporation of India Ltd, a mini ratna company, has been selected to provide data centre services for hosting the apps, while Reliance Communications will provide connectivity.

## **4.Mobile Academy:**

In order to meet the shortage of skilled medical staff at the ground level, the Centre has launched Mobile Academy which offers a course via voice messaging for upgrading the medical and health skills of Accredited Social Health Activists (ASHA). ASHA are mostly local married women, brought in medical and health service stream in 2005-06 under National Rural Health Mission (NRHM) with five-phased training programme. About 58000 ASHAs working across Rajasthan would get benefit of upgrading their medical and health skills through this Mobile Academy course. The registration in the Mobile Academy course is through a toll free number (18003101704) where any ASHA can get registration for the course. It is an eleven lessons voice messaging course with 44 questions and the course is free for the ASHAs registered in ASHA Soft, an online system which facilitates the department. After completion of any of the eleven lessons, ASHA would be asked four questions and following answering them correctly, she would be promoted to next lesson. For qualifying the course, ASHA, after completing all eleven lessons, must attempt 44 questions and must obtain more than 50 per cent marks to get academy course certificate. This certificate would be issued by the Directorate, medical and health. ASHA would get priority for ANM course, PHC ASHA supervisor and for other government added schemes. The course would also help meet the shortage of skilled medical staff at CHC and




PHC level.

**5.Swasth Bharat Mobile application**

The access to authentic health information is the primary right of the citizen. Providing authentic Health information to the society is arguably one of the most important factors in improving health outcomes. Inadequate or poor health information can increase the risk of hospitalization or even disease burden. MoHFW through its e-governance initiatives is launching a mobile application “Swasth Bharat Mobile Application” to empower the citizens to find reliable and relevant health information. The application provides detailed information regarding healthy lifestyle, disease conditions (A-Z), symptoms, treatment options, first aid and public health alerts. The application “Swasth Bharat Mobile Application” is an Android based mobile application, which can be installed on any device with Android OS version 2.3 or above. The application will

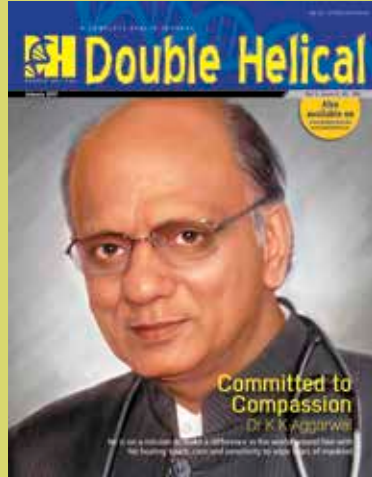
be launched soon for other popular platforms.

**Conclusion:**

- E- Communication is a powerful tool
- Safe Motherhood and Safe childhood are the backbone of the country
- NFHS-4 indicators show improvement in many areas, however much is left to be desired
- E-initiatives to help women improve their health are being piloted across the country.
- Fusion of Science and Technology with health interventions linking grass root level workers to policymakers will address the gender gap and go a long way in improving health indicators. 

(The authors are Director-Professor and Head, Department of Community Medicine, Maulana Azad Medial College, New Delhi, and Head of Paediatrics, Apollo Hospitals, Noida)

# Your Guide to **Healthy Living**



**Subscribe to Double Helical Magazine Now**

## Subscription Offer

| Duration (year) | Issue | Newsstand Price INR | Subscription Price INR | Savings Price INR |
|-----------------|-------|---------------------|------------------------|-------------------|
| 1               | 12    | 1200                | 1020                   | 180               |
| 2               | 24    | 2400                | 1920                   | 480               |
| 3               | 36    | 3600                | 2520                   | 1080              |

### Please fill this form in Capital Letters

First Name..... Last Name.....  
 Designation/Profession.....  
 Mailing Address.....  
 City..... Postal Code.....  
 State..... Country.....  
 Telephone..... Fax.....  
 Email..... Website.....  
 I/We would like to subscribe for      1       2       3       Year  
 I am enclosing a cheque/DD No. .... Drawn on ..... (Specify Bank)  
 Dated.....In favour of Double Helical Pvt. Ltd. payable at  
 Ghaziabad For Rs .....only

### Advertisements & Marketing

Abhinav Kumar, Gaurav Gautam  
 Email: doublehelicaldesign@gmail.com, sales@doublehelical.com

All material printed in this publication is the sole property of Double Helical. All printed matter contained in the magazine is based on the information of those featured in it. The views, ideas, comments and opinions expressed are solely of those featured and the Editor and Publisher do not necessarily subscribe to the same.

Double Helical is owned, printed and Published monthly. It is printed at Polykam offset, Naraina Industrial Area Phase 1, New Delhi-110028, and published from G-1, Antriksh Green, Kaushambi, Ghaziabad-201 010. Tel: 0120-4219575, 9953604965.

Contact us  
 Email: editor@doublehelical.com, doublehelicaldesign@gmail.com  
 Website: www.doublehelical.com, www.doublehelical.in





# Avoid Knee-Jerk Reaction



Let your knees not give you sleepless nights. Knee replacement is today one of the most successful techniques that has improved the lives of millions of patients

**BY DR AMAN DUA/  
DR DHARMESH KHATRI**

**W**ith development of latest technology, the knee replacement surgeons in India have created a reputation for conducting groundbreaking surgeries. Medical travelers from around the world visit India every year with various knee problems. The quality that sets Indian knee surgeons aside from others is that they are not only good in communicating with the patients but are also good listeners. They provide a beforehand guide about the details and requirements of the procedure, helping the patients to be ready for the surgery both mentally and physically.

Knee replacement surgery is removing a damaged joint and putting in a new one. We usually suggest a knee replacement to improve how you live as replacing a joint can relieve pain and help you move and feel better. Knee replacement may be an option when non-surgical interventions such as medication, physical therapy, and the use of a cane or other walking aids no longer help alleviate the pain.

Other possible signs include aching in the joint, followed by



### **WHEN TO GO FOR KNEE REPLACEMENT**

- **Your pain persists or recurs over time**
- **Your knee aches during and after exercise**
- **You're no longer as mobile as you'd like to be**
- **Medication and using a cane aren't delivering enough relief**
- **Your knee stiffens up from sitting in a car or a movie theatre**
- **You feel pain in rainy weather**
- **The pain prevents you from sleeping**
- **You feel a decrease in knee motion or the degree to which you're able to bend your knee**
- **Your knees are stiff or swollen**
- **You have difficulty walking or climbing stairs**
- **You have difficulty getting in and out of chairs and bathtubs**
- **You experience morning stiffness that typically lasts less than 30 minutes (as opposed to stiffness lasting longer than 45 minutes, a sign of an inflammatory condition called rheumatoid arthritis)**
- **You feel a "grating" of your joint**



periods of relative relief, pain after extensive use; loss of mobility; joint stiffness after periods of inactivity or rest; and or pain that seems to increase in humid weather. We help to determine which type of knee surgery is most appropriate. We also decide that knee replacement surgery is not appropriate if you have an infection, do not have enough bone, or the bone is not strong enough to support an artificial knee. We generally try to delay total knee replacement for as long as possible in favour of less invasive treatments. With that being said, if you have advanced joint disease, knee replacement may offer the chance for relief from pain and a return to normal activities.

Knee replacement is a routine surgery performed on more than 600,000 people worldwide each year. More than 90% of people who have had total knee replacement experience an improvement in knee pain and function. Deciding whether or not to get knee replacement surgery is difficult. Discussing with patients for their



treatment options, it is essential to help the patients to choose whether this is the right option for them.

Top knee surgeons in India are not only highly qualified but also have huge experience of performing thousands of successful knee surgeries. The operations and treatments that knee specialists offer include total and partial knee replacement, arthroscopic knee surgery, and knee ligament reconstruction (including anterior cruciate ligament reconstruction). The knee replacement also gives a new life to patient who come with unbearable pain and are not able to stand on their own feet.

Every replacement is performed in different formats usually known as partial and total replacement, depending on the condition of the patient. After being thoroughly investigated, patients undergo surgery but due to severe Osteoporosis and associated knee deformity, constrained implants are generally used for revision surgery.

In a particular case, rehabilitation

protocol was altered for patients. Initial concentration was on the range of movement & strength building of muscles. Nearly after a month, patients started to stand gently with utmost care to stimulate muscle. Nearly 6 weeks to 2 months later, they used walker and gradually due to sheer willpower and good physiotherapy, they regained their strength and in 6 months now they are independently mobile without support. This is different from our usual protocol whereas patient is made to stand within 6 hours after surgery and start walking within 24 hours. Patient is independently mobile without support in an average 6 weeks.


The knee has the responsibility of supporting the entire weight of the body which makes it particularly prone to stress and strain. People world-wide are affected by knee problems. This problem is commonly found among people over 50 years of age and those who are overweight. Other reasons of knee pain can be health issues like bursitis, arthritis, tears in the ligaments,

osteoarthritis of the joints, or infections.

Each year, millions of people undergo knee surgery and how quickly they recover depends on many factors such as their age, the severity, location of the injury and preexisting conditions, such as arthritis. Knee surgery typically refers to total knee replacement, or knee arthroplasty. Knee replacement surgery can be performed arthroscopically or in an open fashion. Special techniques and latest implants ensure restoration of natural movements. It covers major surgeries like total and partial knee replacement surgery and less invasive procedures like knee arthroscopy.

The main aim of knee surgery is to increase the mobility and to reduce the pain associated with knee injuries and diseases. Knee replacement is today one of the most successful operations in medicine and has improved the lives of millions of patients. Patients often ask about the correct time to have a knee replacement.

One of the most effective means of treatment is physical therapy. The most effective therapy is called closed-chain quadriceps strengthening. With this therapy, the foot is planted on the floor to strengthen the large thigh muscles. This often improves the way the knee cap moves through the knee joint, decreasing pain and increasing ability to function. Weight loss is also a very effective means of dealing with knee arthritis.

When we speak about weight, we usually speak about the body mass index (BMI), which is a ratio of weight to height that can be calculated using online calculators. People with a body mass index above 30 should consider weight loss to see whether that improves symptoms before embarking on any kind of joint replacement. In simple terms, knee replacement is a surgical procedure most often performed to relieve the pain and disability. 

(The authors are Senior Consultants, Joint Replacement Unit, Sri Balaji Medical Institute, New Delhi)

# Gasping for breath

Household as well as ambient air pollution is the leading cause of mortality and disability adjusted life years (DALYs) in India. There is a need for reducing sources of emissions, improving access to clean fuel and raising public awareness about health effects of air pollution

**DR SUNEELA GARG/ DR NEHA DAHIYA/  
DR ARVIND GARG**



**E**nvironment 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. 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.

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







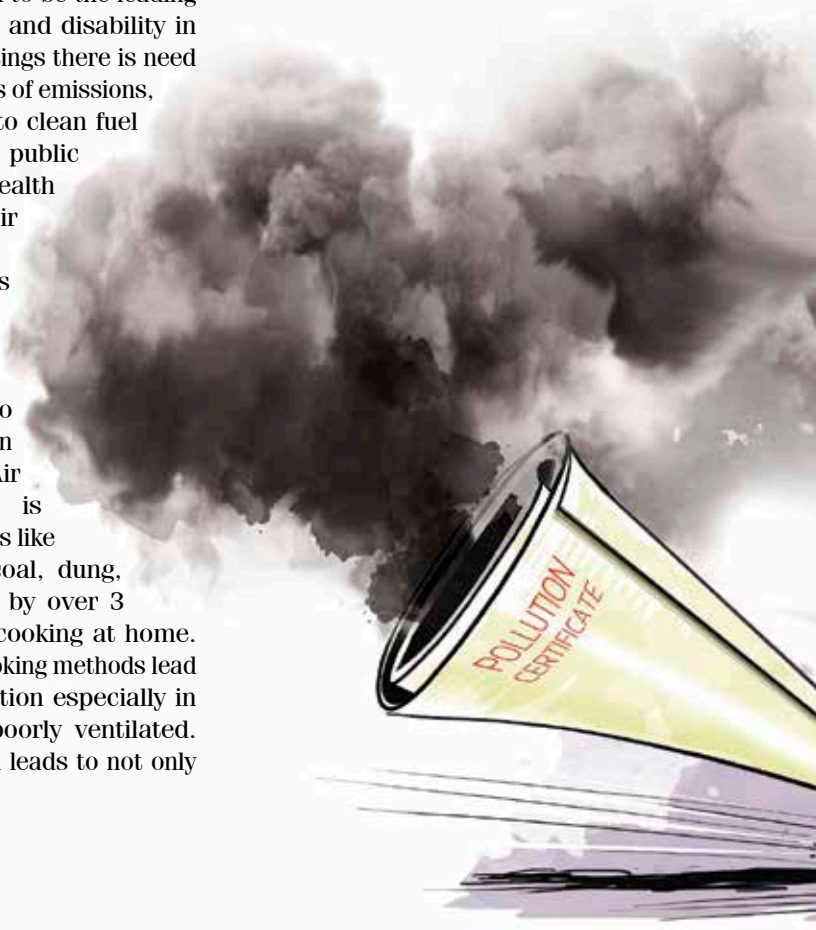
air pollution contributed to nearly 3.5 million deaths and a loss of 3.5% DALYs globally (2010). Ambient air pollution contributed to another 3.1 million deaths and 3.1% DALYs. The ambient ozone pollution had a lower effect than the above and led to 0.2 million deaths and 0.2% DALYs in 2010.

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 burden 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 leads to not only



health effects but also has adverse social and environmental effects.

**Household energy and 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 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 leads 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 d



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 PM2.5 in Delhi are way above the normal levels. The annual PM 10 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 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, Community Medicine, Maulana Azad Medical College, New Delhi and Apollo Hospital, Noida)





# Skin Care in Summer

When the scorching sun burns your skin, it's Ayurveda that can help you avoid the heat and keep your skin healthy. Learn about the structure of skin, related diseases and the ways to tackle them

**BY AYURVEDACHARYA DR PARTAP CHAUHAN**

**C**ome summers and everyone starts looking for ways to avoid the sun. Umbrellas, hats and sunscreens become the norm, especially for those who remain outdoors during the day. After all, it is in this season that the

powerful rays of the sun can lead to severe skin-related complications such as sunburn, redness, irritation, rashes, acne outbreaks, and more.

According to Ayurveda, summer is the season when the sun is strong and increases heat in the body, which is one of the main causative factors

of skin problems. To ensure your skin remains healthy in this scorching heat, you need to take good care of it by using the right herbs and Ayurvedic remedies.

## **UNDERSTANDING THE SKIN**

The skin is a sensory organ that



guards our body, acts as an insulator, regulates body temperature, and protects us from harmful radiations of the sun. In order to repair damaged skin, you first need to understand the structure of your skin and analyze the factors that are damaging it.

According to Sushruta Samhita, an ancient Ayurvedic textbook, the skin is made of seven layers. Vitiating of the doshas affects one or more of these layers, giving rise to different skin diseases. The list of seven layers of skin and diseases which originate from them are as follows:

- First: Avabhasini - Pimples, Acne
- Second: Lohita - Moles, Dark Circles, Black Pigmentation
- Third: Shweta - Eczema, Allergic Rashes
- Fourth: Tamra - Different types of Leprosy
- Fifth: Vedini - Herpes
- Sixth: Rohini - Cancer, Tumor, Elephantiasis
- Seventh: Mamsadhara - Abscess, Fistula

### **TACKLE SKIN DAMAGE WITH AYURVEDA**

There could be several internal and/or external factors that are spoiling the beauty of our skin and making it look unhealthy. However, there are simple ways to counter these factors and restore the health of your skin. Let's examine some of them here:

#### **SUN**

Excessive exposure to skin in the summer season damages our skin. The qualities of the sun (hot, sharp and penetrating) correspond to the attributes of the Pitta Dosha and this is why most people face Pitta-related skin problems in this season. Moreover, prolonged exposure to the sun also leads to increase in Vata, which is the prime cause for drying of skin.

To prevent the rays of the sun from damaging your skin, apply a good herbal sunscreen lotion (preferably

containing Aloe Vera) on exposed parts of body. Wear full-armed cotton clothes, hat and sunglasses when you move out in sun. Also, drink plenty of water to keep the skin moisturized and replenish the fluid lost due to perspiration.

#### **AIR-CONDITIONING**

In summers, most of us leave no opportunity to get closer to the air conditioner. Be it at office, in the car or at home, the use of ACs has increased like never before. However, most of us do not realize that cooling devices like air conditioners don't just control the temperature in the room, they also reduce the moisture levels in the surroundings, leading to drying of skin. Apart from that, spending long hours in the AC prevents sweating, which is the body's natural process of eliminating toxins in summers. When the skin becomes dry, it loses its natural moisture and becomes susceptible to infections.

In order to prevent dry skin, make



sure you moisten the skin regularly. Stop the use of harsh soaps and instead go for herbal soaps or mild cleansers. Applying Aloe Vera gel after bath can also be helpful. To soothe dry skin, you can try this excellent home remedy: Mash half an avocado or papaya and mix it with few drops of fresh lime juice and spread this paste over the cleansed skin. Leave it untouched for about 10-15 minutes. Then, wash the skin alternatively with warm and cold water. You can do it once or twice a week.

### AIR POLLUTION

In summers, hot and dry winds are a common phenomenon in several regions of the world. Indians especially get exposed to air pollutants like dust, smoke and dirt, which clog the pores of the skin and cause several problems, such as pre-aging of skin, eczema, allergies, and more.

To counter the effects of air

pollution, apply a good herbal moisturizer that can act as a barrier between the skin and pollutants. Also, remember to cleanse the skin properly using rose water when you are back home. You can also try this home remedy: Take 1 tbsp of un-boiled milk, dip a small pad of cotton wool in this and rub on the face gently. Leave this on for 15 minutes and then wash with cold water.


### DIET AND LIFESTYLE

Faulty dietary habits and irregular lifestyles are invariably one of the topmost reasons for skin problems. Most people consume junk and packaged food in excess, do not exercise daily, spend long hours sitting in one position, and don't have a fixed sleep schedule. Moreover, due to the increasing competition and expenses, most of us lead stressful lives. This results in Pitta and vata aggravation, which in turn leads to diminished glow of skin, dark circles, wrinkles, acne, blackheads, and

decreased blood circulation.

To ensure that your skin retains its healthy glow, you will have to make changes in your diet and lifestyle. The following tips can be helpful:

- Ayurveda recommends that you establish a regular bedtime and morning routine. Go to bed by 10pm and get up by 6am. The time after 10pm is known as Pitta time, and if you stay awake in those hours, you could fall prey to Pitta imbalance. Get at least 7- 8 hours of sleep daily.
- Make sure you exercise for at least 15-30 minutes daily, preferably in the outdoors. It improves the circulation of blood and ensures that your vital body organs get ample Prana Vayu (life-giving oxygen). Moreover, when you exercise, the body sweats profusely, helping your skin breathe freely.
- Drink plenty of fresh water daily as it helps to eliminate toxins and keep your digestive system strong. It also helps in preventing dehydration by balancing the water content in our body.
- Let fresh fruits and vegetables, fruit juices and salads occupy major portion of your diet as they have high nutritive value and provide glow to the skin.
- Avoid sweets, chocolates, junk food, deep fried, oily and spicy foods, tobacco, drugs and alcohol as they are known to aggravate Pitta Dosha.

Always remember, most skin problems have deep-rooted causes. Hence, the use of local creams or antibiotics can only mask the symptoms. Specific Ayurvedic treatment comprising the right diet, lifestyle and specialized herbal formulations is the only way to destroy such diseases from their roots. So, adopt Ayurveda, and enjoy healthy, glowing skin all summer! 

(The author is Director, Jiva Ayurveda, New Delhi)



# Cool Tips to Beat the Heat

Summer brings its own set of problems. But you can face the sweltering heat of summer with a smile, and safeguard yourselves from summer ailments by following a few tips from Double Helical's panel of experts...

**S**cared of summer heat, skin eruptions, sweat and thirst? Overcome all summer problems with these cool solutions and beat the summer heat before it beats you.

After the relaxing spring climate, we are experiencing a gradual increase in heat signifying the onset of grishm ritu - the summer season. From here on, the temperature will keep on rising till it reaches the sweltering stage. So, when things heat up outside, are you

prepared to stay in balance this summer? Apart from switching on your fans, coolers and ACs, what are your options to stay calm, composed and cool?

Technology might help you to stay cool inside your home or office but you



will eventually have to face the heat outside. When things are heating up outside, the key to balance is to find ways to cool down inside – physically, mentally and emotionally.

**Dr Chandan Kedawat, Sr. Consultant, PSRI Hospital, New Delhi,** suggests that in order to prevent yourself from summers attack you should stop consuming alcohol, smoking, oily and spicy food this summer. Instead a person could opt for fruits with the highest water content like watermelon, strawberries pineapple, etc. Also you can prefer lemonade, coconut water, curd, etc as well. By consuming these, you can safeguard yourselves from summer ailments. Any carelessness in unhygienic eating habits or drinking impure water can cause diarrhea, jaundice, etc. Therefore, a person should always intake purified or clean water or he/she might boil water before drinking and avoid street food or junk food as well. Parents should





educate their children to drink lots of water in school as well as in the house.

“You should protect yourself from the sun and refrain from outdoor activities during the hottest part of the day. Eat juicy fruits such as melons and pear or drink a glass of lemon water to keep your body cool from within. Remember to drink lots of water to keep your body adequately rehydrated. Wear sunglasses or cap to protect your eyes and head from the harsh rays of the sun. Also you should drink a lot of cool pure water to replenish your body moisture lost to heat during summer. Keeping your body hydrated is vital during this season.” Dr Kedawat added.

Summer brings it with a host of symptoms like excessive body heat, dehydration, sweating, skin rashes, sunburns, acne, diarrhea, and of course irritation, lethargy and short fuses. **Ayurvedacharya Dr Partap Chauhan, Director Jiva Ayurveda** provide below a few easy tips to maintain optimum balance of mind and body in summer and enjoy the season's positive aspects.

### COOLING BATHS

A cooling bath is the best way to start a ‘cool’ day. This is the first thing that you do in the morning, so make the best of it. Bathe with cold water. Take fresh or dried leaves of mint and boil for half an hour. Strain the liquid and let it cool down. After taking your bath, apply this liquid on your entire body, especially those parts where you experience more perspiration. Mint has cooling, refreshing and astringent effects on the skin and is also helpful in relaxing your mind.

Alternately, you can use rose petals or rose essence oil in your bath. If you are using rose petals, let it soak overnight in your bath tub or water. Rose has refreshing and cooling effects on the body and the mind. It also helps to exfoliate your skin, leaving it soft, supple and radiant, while protecting your skin from sunburns.

With an invigorating, refreshing and cooling bath, you are ready to face the



sweltering heat of summer with a smile.

### COOLING DIET

A cooling Ayurvedic diet in summer includes a lot of fruits and vegetables that are sweet, juicy, bitter and astringent in nature. Among fruits melons, pears, cherries, mangoes and grapes are beneficial. Also, vegetables such as broccoli, zucchini and asparagus have cooling effects. Use cucumber in your salads. Avoid spicy and sour foods in summer. Use cooling spices such as mint, fennel, anise and cardamom in your preparations. You should also avoid food with heating properties such as tomatoes, hot peppers, radishes, onions, garlic and spinach.

### COOLING EXERCISES

Swimming is a healthy and wonderful exercise for summer - it's not only cooling and soothing for the body but also helps in toning and strengthening body muscles. Morning walks in the park and evening strolls are both relaxing for the body and mind during this season. Also, in Ayurveda, Shitli Pranayama is recommended for instilling coolness, brightness and peacefulness in the body and mind.

### SERENE LIFESTYLE

Stress and overwork aggravates the symptoms and overheating effects of summer. Working on deadline-oriented activities, lack of time for oneself, work pressure, and long commutes are more stressful during the heat of summer. You should plan out your work and learn some time management tips to complete your tasks on time, so that you can spend enough time with your family and friends. Learn to balance work with leisure. Enjoy fun and leisurely activities in weekends and take some time to enjoy and appreciate life. Plan a vacation to a cool and serene hill station. Devote some time to meditation to relax your mind and keep stress at bay.

### PROTECT YOURSELF FROM THE SUN

According to Ayurveda, summer is considered to be a pitta predominant season where the energetic principles of fire and water are the strongest. Pitta dosha is driven and aggravated by solar force. Ayurveda considers this a time of dehydration that occur both inside and outside the body. Following Ayurvedic principles based on pitta pacification measures to balance what is predominant in the environment during summer will help you to enjoy this season in the best of health and spirit. 🌿



# Mitigating Hearing Impairment

Society for Sound Hearing is making a significant contribution towards effective delivery of primary ear and hearing care by organising frequent awareness and screening camps



**O**n the occasion of World Hearing Day 2017, an ear awareness & screening camp was organized by Society for Sound Hearing in collaboration with Department of Community Medicine and Department of ENT, Maulana Azad Medical College, Lady Harding Medical College, New Delhi and ALPS International and Ministry of Health & Family Welfare, Govt. of India at Nirman Bhawan, New Delhi.

It was inaugurated by CK Mishra, Secretary, Ministry of Health & Family Welfare, Govt. of India. While Dr. Promila Gupta, DDG, Ministry of Health and Family Welfare, Govt. of India, facilitated the conduct of the screening programme along with Dr A.K. Agarwal, Professor of Excellence, former Dean, MAMC, New Delhi, President, Sound Hearing 2030 and Dr Suneela Garg, Director-Professor & Head, Community Medicine, MAMC, New Delhi and Hony Secretary General, Sound Hearing 2030.

As part of screening program, 286 beneficiaries were screened. 57% of the people screened were females while 43% were males. The age of the patients varied from 25 years to 60 years. The participants were first screened for hearing problem using case history sheet. This was followed by ear

examination by ENT specialists and those requiring audiometric assessment were further evaluated in a separate room by audiometrists from ALPS International. Out of the total people screened, 21.53% of the people were found to have some form of ear morbidities.

Out of the total of 286 individuals screened, records of 195 individuals were analysed since the remaining did not submit the records. The results of 195 individuals showed that diminished hearing was seen in 19 individuals (10%), wax impaction in 14 individuals (7%) Chronic Suppurative Otitis Media in 9 individuals (5%) and normal in 153 individuals (78%). All the beneficiaries screened were counselled by doctors from Maulana Azad Medical College, Delhi. The patients who were found to be suffering from ear problems were referred for further treatment to government hospitals in Delhi.

Ear infections occur most commonly in young children because they have short and narrow Eustachian tubes. Infants who are bottle-fed also have a higher incidence of ear infections than their breastfed counterparts. Other factors that increase the risk of developing an ear infection are altitude, changes, climate changes, exposure to cigarette smoke, pacifier use and recent illness or ear infection.

Ear infections occur when one of patient's Eustachian tubes becomes swollen or blocked and fluid builds up in its middle ear. Eustachian tubes are small tubes that run from each ear directly to the back of the throat. The causes of Eustachian tube blockage include allergies, colds, sinus infections, excess mucus, tobacco smoking and infected or swollen adenoids (tissue near tonsils that trap harmful bacteria and viruses).

Mild pain or discomfort inside the ear, a feeling of pressure inside the ear that persists, fussiness in young infants, pus-like ear drainage and hearing loss are common symptoms of ear infections. These symptoms might persist or come and go. Symptoms may occur in one or both ears. Chronic ear infection symptoms may be less noticeable than those of acute ear infections.

Children younger than six months who have a fever or ear infection symptoms should see a doctor. Always seek medical attention if your child has a fever higher than 102 degrees or severe ear pain. Childhood onset hearing loss can be congenital or as a sequel to infections such as otitis media, meningitis, rubella etc. Adult onset hearing loss can be a result of age (presbycusis) and noise induced hearing loss. WHO classification classifies hearing impairment according to pure tone averages in the better hearing ear. The following table shows the WHO grades in hearing impairment. There are over 360 million persons in the world living with disabling hearing loss. Out of these 32 million are children. Many more suffer with lesser degrees of hearing loss. Most of those with hearing loss live in developing countries. Amongst the countries of the WHO South-East Asia region, the prevalence of disabling hearing loss varies from 4.2% to 16.6%.The reported prevalence in India is 6%. Based on this, it is estimated that over 70 million persons in India are living with hearing loss equal to or greater than



moderate degree.

In recently held awareness camps, experts including Dr. M. Meghachandra Singh, Director-Professor, Department of Community Medicine, Dr Vipra Mangla and others examined ears of govt employees. Most of them complained redness, air bubbles, or pus-like fluid inside the middle ear, fluid draining from the middle ear, a perforation and a bulging or collapse in the eardrum

According to **Dr A.K. Agarwal, Professor of Excellence, Former Dean, MAMC, New Delhi, and President, Sound Hearing 2030,** hearing loss is one of the most common sensory impairments affecting the

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

Morbidities which are associated with hearing loss, such as impacted wax and chronic otitis media are frequently encountered in the community. Chronic suppurative otitis media (CSOM) is one of the most common infectious diseases of childhood. It is characterized by

presence of persistent discharge from the ear. The prevalence of this condition varies from 1% to 46% across the world.

As per WHO, 65–330 million individuals across the world are suffering with ‘draining ears.’ More than half of those of those affected with CSOM develop significant hearing loss. Not only does this cause long-term effects on the development of language, auditory and cognitive skills, but it is also associated with many dangerous and life-threatening complications. This morbidity accounts for 28,000 deaths (in one year) and a disease burden of over 2 million DALYs. Over 90% of the burden is borne by countries of South-east Asia and Western Pacific regions,

Africa, and ethnic minorities in the Pacific Rim.

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

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

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

Persons with ear morbidities, such as suppurative otitis media, otitis media with effusion and wax impaction can be benefitted through a variety of medical and/or surgical interventions. Those who do not benefit from such management techniques can be effectively rehabilitated, if suitable actions are initiated early. Use of




hearing devices, such as hearing aids and cochlear implants can help many. Others may benefit from sign language education and other modalities.

A possible barrier to timely diagnosis and care is the lack of awareness about ear and hearing conditions. Most parents experience difficulties in recognizing hearing loss in their children. Delay in diagnosis and management of congenital hearing loss leads to significant adverse impact on the linguistic and academic outcome.

A variety of unhealthy beliefs and practices regarding ear care and ear conditions are widely prevalent in community. Self-cleaning of ear, use of home remedies and stigma attached to ear problems contributes to the high prevalence of these morbidities. Added to this is the lack of information about the consequences of common ear morbidities and their treatment. The situation is further aggravated by a lack of suitable human resources for ear and hearing care and poor availability of the required services at grassroots level. The paucity of services for primary ear care along with a lack of training resources, adds to the growing burden

of ear diseases and hearing loss.

World Health Assembly passed a resolution in 1995 for prevention of deafness which focuses on developing primary ear and hearing care services within countries, integrated within its primary health care system. The resolution encouraged the WHO Member States to develop their own programmes for prevention of deafness, which target its common causes through a primary health care system approach. India took its first step in this direction with the implementation of the National Programme for Prevention and Control of Deafness.

The programme is currently being run in over 220 districts of India. Delhi was one of the pilot states which initiated the programme in two of its districts in 2006. The programme includes training and capacity development of human resources and provides suitable care for ear diseases and hearing loss at the primary and secondary levels of health care. There is a need to step up efforts towards effective delivery of primary ear and hearing care along with advancements in the field with affordable high tech care 



# National Seminar Deliberates on Wider Representation of Women Leaders in Science and Technology

**D**istinguished women scientists, researchers, entrepreneurs and other professionals engaged in scientific field discussed ways to ensure equal participation of women by creating an enabling environment, to promote their leadership in science and technology and reach out the benefits of science and technology for improving the quality of life of women.

Vigyan Prasar under the Department of Science and Technology in collaboration with Department of Biotechnology (DBT) organized the two-day National Seminar on Women Leadership in Science and Technology: Opportunities & Challenges on the occasion of International Women's Day 2017.

Union Minister for Science and Technology and Earth Sciences Dr Harsh Vardhan while inaugurating the seminar expressed confidence about the capabilities of women & appreciated the committed and compassionate nature of women. He strongly suggested increasing representation of women in science related programmes and said that a larger-scale programme should be organized next year with better representation of women in science.

Dr Manju Sharma, Former DBT Secretary and one of the of the iconic



women leaders in science stressed that mentoring, conducive environment, support of academies, belief in capabilities of women are crucial to escalate women leadership in science and technology.

Mental and biological barriers need to be overcome to increase women's participation in science, Professor K Vijay Raghavan, Secretary Department of Biotechnology pointed out. He also added that a change of attitude is needed to provide women with a support system to help them function as professionals efficiently.

Conceived in the wake of the declaration of February 11 as the International Day of Women and Girls in Science, the seminar witnessed discussions on opportunities and challenges for professionally qualified women scientists to contribute to the landscape of insights in this area. The seminar dedicated its efforts to the spirit of excellence demonstrated by women in science and technology.


The UN statement for International Day of Women and Girls in science

states that equal participation of women and girls in the fields of Science is a critical right and a means by which women can achieve their aspirations in life.

The convergence of women leaders in science from different parts of India helped share experiences and recommendations on ways to escalate efforts and create long lasting impact in the area.

The areas of discussions during the seminar included:

1. Opportunities and Challenges in Science and Technology in Research and Academics
2. Opportunities and Challenges in Science and Technology in Start-ups and Entrepreneurship:
3. Science and Media Advocacy:
4. Gender Aspects in Science Policy:
5. Improving the Quality of lives of Women through S&T Science and Technology

There were many illustrious women scientists and entrepreneurs present in the national seminar who presented their views and shared their experiences in their respective areas. 



## Health Ministry Takes Initiatives on Increasing Oral Health Awareness

**O**n the occasion of “World Oral Health Day,” the Union Health Ministry recently launched the Information, Education and Communication (IEC) material along with the National Dental and Oral Health Information IVR portal including a toll free number (1800-11-2032) for addressing oral health queries.

Faggan Singh Kulaste, Minister of State for Health and Family Welfare, said, “Oral health is integral to the overall health of a person and will contribute to the all-round development of the nation.” C K Mishra, Secretary (Health and Family Welfare) and Dr Jagdish Prasad, Director General of Health Services and other senior officers of the Ministry were also




present at the event.

He stated that India has taken huge strides in the healthcare sector by initiating new programmes to improve the health outcome of the country and it is now amongst those nations that have dedicated programme on oral health. The minister further said that raising awareness about dental health is a need of the hour and these information

initiatives will go a long way in encouraging people to adopt positive and healthy habits.

C K Mishra, Secretary (H&FW) stated that oral diseases are becoming the leading health problems which are attributable mainly to rapidly changing lifestyles, widespread use of tobacco and increased consumption of alcohol. He added that the Ministry is integrating the oral health programme with other programmes so that adequate steps can be taken to mitigate the conditions arising from poor health.

Also present at the function were Manoj Jhalani, Joint Secretary, Lav Agarwal, Joint Secretary, Ministry of Health and Family Welfare, and senior officers of the Ministry and All India Institute of Medical Sciences, Delhi. 





## Max Hospitals organises a conclave International Women's Day



**M**ax Hospitals, Vaishali (Ghaziabad) and Patparganj, New Delhi, celebrated International Women's Day with a conclave focusing on encouraging women to pay attention to their emotional well-being. A two hour session with the spiritual teacher and inspirational speaker, Sister Shivani (Brahma Kumari) on 'Caring is healing' had approximately 800 attendees. Present at the event were Dr Gaurav Aggarwal, Unit Head, Max Hospital, Vaishali along with Harsh Trivedi, Unit Head, Max Hospital, Patparganj, New Delhi.


The conclave underscored the importance of adopting a healthy lifestyle cannot be stressed enough in today's day and age. Proactive health check-ups can

help in early-stage diagnosis of common lifestyle diseases like diabetes, blood pressure, high cholesterol levels, and cancer enabling better control and treatment.

This is especially critical in the case of women's health, with a recent study by ASSOCHAM, identifying that 68% working women suffer from lifestyle ailments like obesity, depression, chronic backache, diabetes and hypertension. Health problems like breast problems, weight gain, irregular, heavy and painful periods are commonly observed in women. Long hours and working under strict deadlines cause up to 75% of working women to suffer from depression or general anxiety disorders, compared to women with lesser levels of psychological demands at work.

The most common health problems

that women today are dealing with are breast cancer, which is responsible for 1% of deaths worldwide. Stroke, diabetes and hypertension are the two most common causes of stroke. Also junk food, lack of exercise, excessive work pressure and no-diet control are the other reasons.

Polycystic ovary disease is yet another issue that has become one of the most common female endocrine disorders affecting women of age between 12-45 years. It is a condition in which there are many small cysts in the ovaries, which can affect a woman's ability to conceive. Weight problems, fluctuating weight due to unhealthy lifestyle habits and ignoring their own health problems have been responsible for rising incidence of obesity among women. 



## Columbia Asia Hospital acquires Serene Senior Care

**S**eattle-based Columbia Pacific, owner of Columbia Asia Hospital Group, one of the largest and fastest-growing healthcare providers in Asia, has acquired Serene Senior Care, a leading senior housing operator in India. With this, Columbia Pacific will undergo a significant expansion of its India senior housing portfolio over the next five years.

Columbia Pacific, a family of private asset and investment management companies, also owns and operates hospitals and senior care facilities across Asia, including the Columbia Asia hospital company in India and Southeast Asia.

To begin with, the first two senior


housing communities that Columbia Pacific will build are planned in Bangalore. Within five years, Columbia Pacific is planning to more than quintuple the number of the units Serene Senior Care has under management, to 5,000 units.

Serene Senior Care currently operates 735 residential units in four senior housing communities in South India, with a presence in Chennai, Puducherry and Coimbatore. Serene plans to expand to 1,700 units under Columbia Pacific by fall 2017.

The company operates and provides services to India senior care communities in which residents purchase their own retirement villas, apartments or houses. Serene's services include meals,

preventive health care, wellness classes, maintenance and security.

P Viswanathan, MD, Serene Senior Care, said, "With the decades of experience and expertise of Columbia Pacific, we are well positioned to provide India's senior population with communities built to the highest international standards".

Serene, under Columbia Pacific ownership, has aggressive expansion plans in India, which is projected to be the world's most populous country by the next decade, with a fast-growing senior population and an emergent middle class. Already the country has an elderly population of 100 million, more than the population of the United Kingdom and Canada combined. 

**OWN YOUR PIECE OF HEAVEN**  
**AT LESS THAN 1/3RD THE PRICE OF NEARBY GURGAON SECTORS**

**INVEST IN PLOTS IN THE NEW ERA OF INDIAN ECONOMY**  
**THE PRICE OFFERED TODAY WILL BECOME A DREAM SOON**  
Construction by Larsen and Toubro, World Leader in Construction

Proposed POD Taxes on Sohna Road

Functional 6 lane KMP Expressway & Approx. 1500 acres IMT Sohna within 5 minutes distance

Awarded Gold rating by Ministry of Environment & Forest

**Group Housing Condominiums, Villas, Plots, Offices, Retail, Schools, & Hospitals**



**Plots starting under 58 Lacs\***

**Approx. 165 acres Township**  
**Phase-1 Plots, Delivered**

### Green Features

- Roof top Solar power generation & Customized solar Powered Homes
- Solar street lighting & Rain Water Harvesting
- Recycled water for Flushing & Landscape
- Over 10,000 trees & maximum green area

### Location Advantage

- Approx. 20 Min. drive from Gurgaon & 30 Min. from Rajiv Chowk. Approx. 14 km from proposed 150 mtr wide New Golf Course Ext. Rd. Adjacent to IMT- Sohna, Approx. 1700 acres HSIIDC Industrial Township.
- Close proximity to Commercial hubs on KMP Expressway
- Located near Delhi-Mumbai Dedicated Freight Corridor.

### Smart City Concept

- Wi-Fi Enabled City
- Zero Discharge
- Central City monitoring CCTV Cameras
- Gurgaon's First Integrated township planned in accordance with India's vision of creating smart cities

### Social Infrastructure

- Crèches, Colleges, Dispensaries & Nursing Homes etc. Recreational and Club facilities
- Adjacent to Upcoming Sports City
- Durable & Long-lasting Roads
- Underground electrical wiring instead of aerial

**9289221401 | sms RAHEJA to 56677 | www.raheja.com**



# luxury beyond excellence

**EXOTICA**  
**fresco**™ 

homes close to nature

2/3/4 BR Homes • Sec. 137 Expressway, Noida

#### OUR AMENITIES

- Located in Lush Greens of sector-137 Expressway Noida
- Two side open project with Splendid View
- Beautiful landscaped central garden
- Grand entrance with water feature
- High end clubhouse equipped with all modern amenities
- Most modern security system



Corporate Office: H-63, Sector-63 Noida-201301 | Ph: 0120-491-5555

[www.exotichousing.in](http://www.exotichousing.in) • [info@exotichousing.in](mailto:info@exotichousing.in)

**CALL: 8010-137-137 • SMS: EXO to 53030**

All specifications, design, layout, condition are only indicative and any of these can be changed at the discretion of the builder.  
These are purely conceptual and constitute no legal offering. 1 sq.mt. = 10.766 sq. ft. \*Terms & Conditions Apply

Follow us on :

