



# Double Helical

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## Beating the Blues

Depression is a disorder of the brain. It is not simply feeling down, but serious illness caused by changes in brain chemistry. Men and women of every age, educational level, and social and economic background are found to suffer from depression

**CANCER SPECIAL**



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Gautam Gaurav, Abhinav Kumar  
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Contact us  
Email: editor@doublehelical.com  
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# Fighting the Blues

**D**ear Readers,  
Thank you for your continued, unstinted support to Double Helical's journey to recount the various facets of healthcare in India. We are indebted to you for your keen interest, participation and suggestions for improvement in the magazine, which is a continuous process. As per our commitment to encourage instructive and incisive reporting in different fields of medical science, we again bring to you a bouquet of interesting stories in our July 2015 issue.

This time, we focus on depression as a cover story. It is high time that we realise that depression is a disorder of the brain, a serious illness caused by changes in brain chemistry. Men and women of every age, educational level, and social and economic background are found to suffer from depression. Alcohol and other substance abuse or dependence may also co-exist with depression. Research shows that mood disorders and substance abuse commonly occur together. Depression also may occur with other serious medical illnesses such as heart disease, stroke, cancer, HIV/AIDS, diabetes, and Parkinson's disease. The story brings out that people who have depression along with another medical illness tend to have more severe symptoms of both conditions, but the disease is not incurable.

The health column *Beating the Blues* written by Dr Partap Chauhan underlines that one can get rid of depression through Ayurveda as it prescribes therapies, lifestyle adjustments and herbal preparations to strengthen the mind when it comes to coping with life's challenges.

Pain management occupies critical

importance in cancer care. If inadequately controlled, pain can have a profoundly adverse impact on the patient and his or her family. We focus on cancer pain management, issues related to head and neck cancer as well as breast reconstruction as part of the special package written by experts. Patients with cancer have diverse symptoms, impairments in physical and psychological functioning, and other difficulties that can undermine their quality of life. Approximately 70 per cent of cancer patients suffer from cancer-related pain. The critical importance of pain management as part of routine cancer care has been forcefully advanced by WHO, international and national professional organizations, and governmental agencies. There are now very good treatments available for treating cancer-related pain. Patients afflicted with head and neck cancer often experience symptoms like a lump or sore (for example, in the mouth) that does not heal, a sore throat that does not go away, difficulty in swallowing, and a change or hoarseness in the voice. Yet, sometimes such patients may not show any of these symptoms. Or, these symptoms may be caused by a medical condition that is not cancer.

The exclusive story written by expert panellist Dr Suneela Garg takes a critical look at domestic violence and pregnancy. Pregnancy is supposed to be a time of peace and safety. A time where the family turns its thoughts towards raising the next generation and growing a healthy baby. Unfortunately for many women, pregnancy can be the beginning of a violent time in their lives. Domestic violence during pregnancy is a serious public health issue which threatens

maternal and foetal health outcomes. Domestic violence is defined according to World Health Organization (WHO) as psychological or emotional, physical, or sexual violence, or threats of physical or sexual violence that are inflicted on a woman by a family member: an intimate male partner, marital or cohabiting partner, parents, siblings, or a person very well known within the family when such violence often takes place in the home.

With an aim to create more awareness about HIV, the July issue deals with increasing trends of paediatric cancer. HIV continues to be a major global public health issue, having claimed more than 39 million lives so far. The virus has infected men, women and children in developed as well as developing countries.

According to the United Nations Program on HIV and AIDS (UNAIDS), 1.2 million people died from HIV related causes globally in 2014. There were approximately 36.9 million individuals living with HIV at the end of 2014 with 2.1 million people becoming newly infected. According to UNAIDS, the total estimated number of children under the age of 15 years living with this virus globally was 2.6 million at the end of 2014 with 0.22 million children newly infected and 600 children being infected daily. In 2014, 0.15 million children died from HIV related causes globally.

In addition to the above, you would love going through many good other well-written, researched and designed stories in this issue of your favourite magazine.

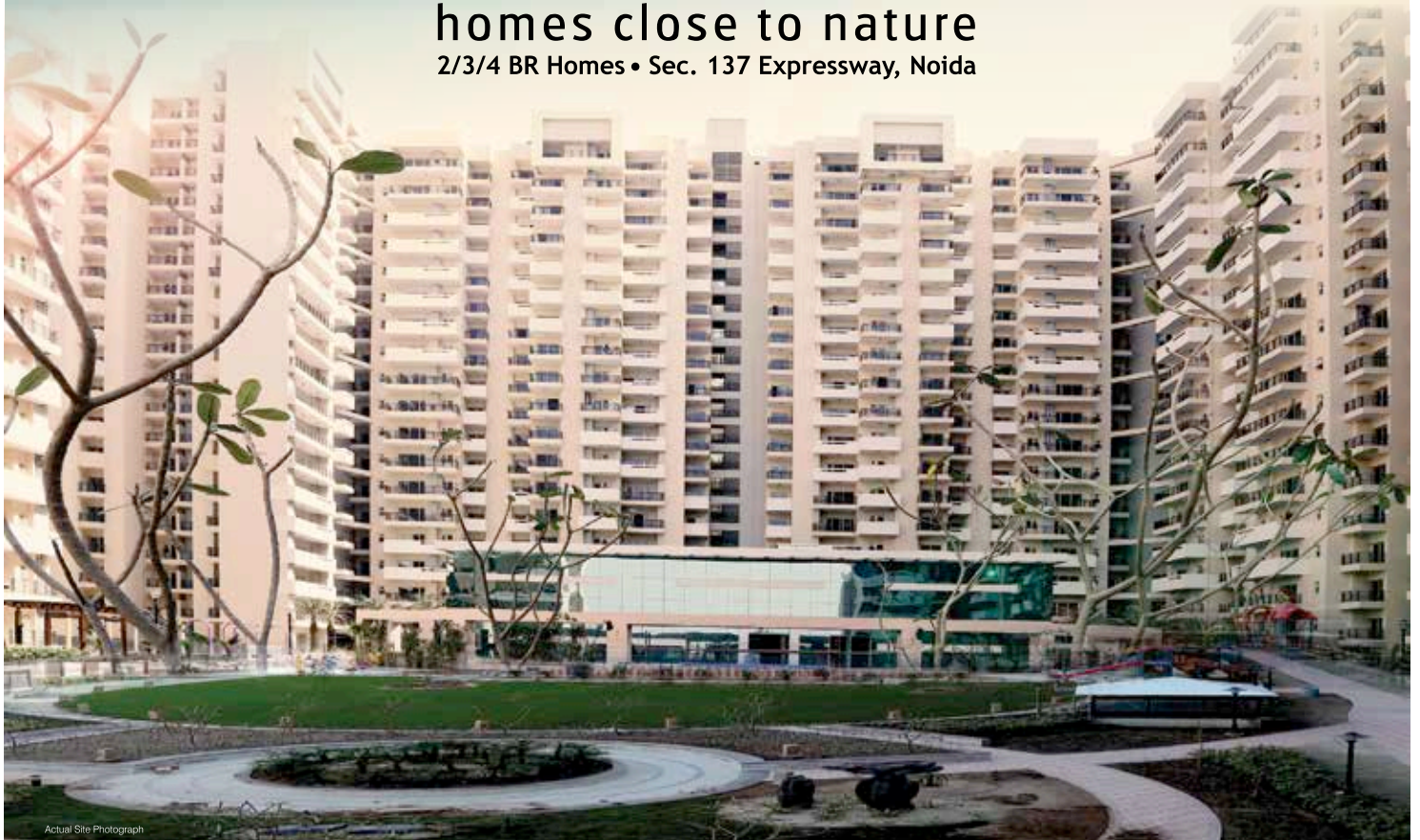
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**Amresh K Tiwary**  
Editor-in-Chief

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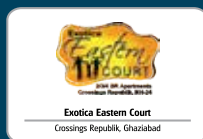
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# Warding off Blindness

Age Related Macular degeneration (ARMD) is a disease that causes progressive damage to the central part of the retina. Today, various treatments are used for management of this blinding condition

**BY DR. MAHIPAL S. SACHDEV**



**A**ge-Related Macular Degeneration (ARMD) is a leading cause of blindness in the elderly population. The prevalence is reported to be 1.2-1.4% in several population-based epidemiological studies. Currently, 25-30 million people worldwide are blind due to ARMD. With the aging world population, it is bound to increase significantly with serious socio-economic implications.

ARMD is caused by the degeneration

of the central portion of the retina called “macula”, which is responsible for fine vision. The exact cause of ARMD is not known but genetics seem to play a significant role.

There are two types of macular degeneration: dry and wet. The dry form is common and accounts for about 90 percent of all cases. Vision loss from dry macular degeneration occurs very gradually over the course of many years. Individuals with dry macular degeneration do not usually experience a total loss of central vision. However, it can become difficult to perform tasks that require fine-detail vision.

Wet ARMD accounts for about 10 percent of cases. In wet macular degeneration, new blood vessels grow (neovascularization) beneath the retina and leak blood and fluid. This leakage causes permanent damage to light-sensitive retinal cells, which die off and create blind spots in central vision.

Several strategies are today available to treat the wet form of AMD, which is responsible for significant visual loss. These treatment modalities however, are aimed primarily at preservation of vision only. Treatment decreases the rate of progression of the disease, but it can only partially reverse the degeneration that has already occurred.

Today, various treatments are used for management of this blinding condition to help in the preservation of vision for as long as possible. It is essential for patients, especially those over the age of 60 years who develop complaints of distortion of vision, decrease of vision for distance and /or near and a feeling of seeing a black spot in the central part of their visual field to have a check up from an eye specialist to rule out this condition, Since it is best treated when the effect on the visual function is less.

Many people develop macular degeneration as part of the body’s natural aging process. Less commonly, macular degeneration may be an inherited condition, as in the case of juvenile macular degeneration. Injury, infection, inflammation or extreme nearsightedness may also damage the



There are two types of macular degeneration: dry and wet. The dry form is common and accounts for about 90 percent of all cases. Vision loss from dry macular degeneration occurs very gradually over the course of many years

delicate tissue of the macula.

### PREVALENCE OF ARMD

Data shows that 1% of world’s population is affected by wet ARMD every year. That would account for 5 lakh people getting blind because of ARMD every year. US data shows that out of 20 crore population, two lakh people become blind every year. In India, around 30 lakh people are blind because of wet ARMD. This incidence is rising every year by 1 %.

### What Are the Symptoms of Macular Degeneration?

Macular degeneration can cause different symptoms in different people. Sometimes only one eye loses vision while the other eye continues to see well for many years. The condition may be hardly noticeable in its early stages. But when both eyes are affected, reading and close work can become difficult. You may experience one or more of the following symptoms.

- Colors look dim

- Words on a page look blurred.
- Straight lines look distorted, especially at the centre of vision
- A dark or empty area appears in the centre of vision.

### Risk Factors for Macular Degeneration

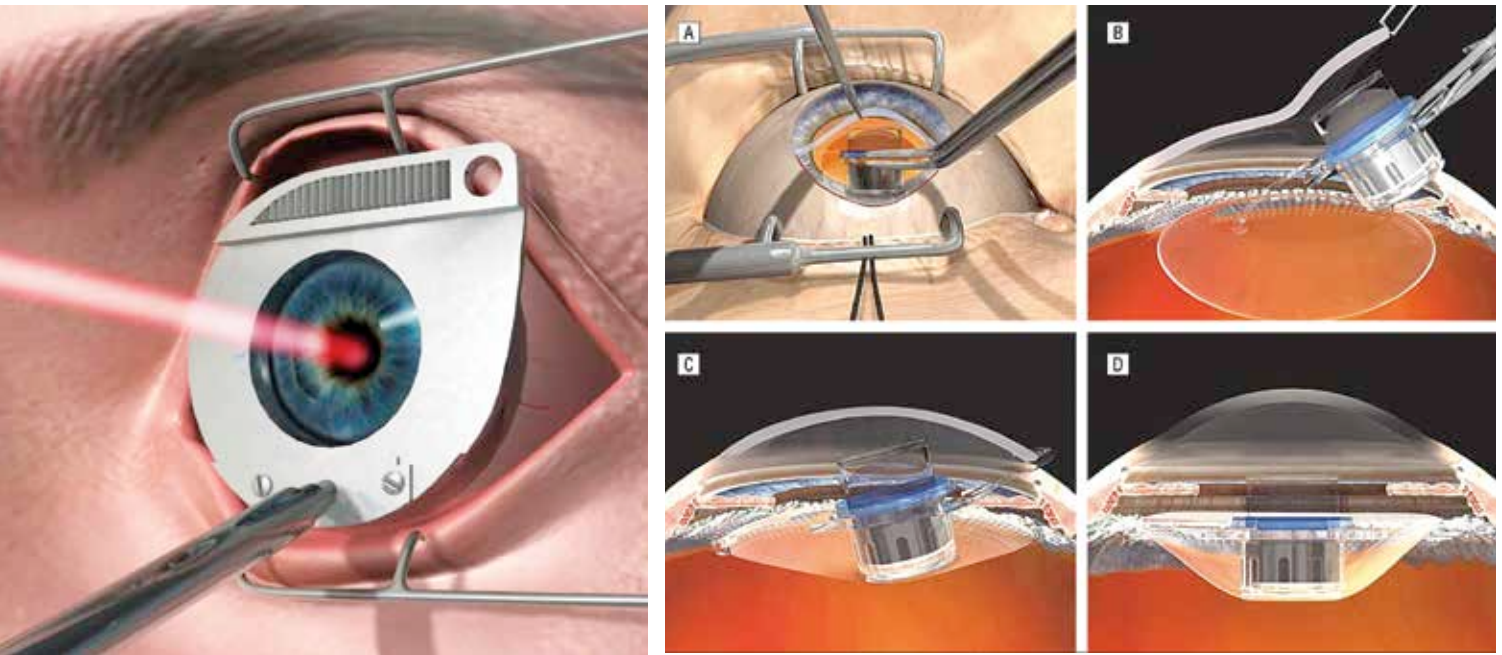
**Aging:** Approximately 10% of patients 66 to 74 years of age will have findings of macular degeneration. The prevalence increases to 30% in patients 75 to 85 years of age.

**Smoking:** The only environmental exposure clearly associated with macular degeneration is tobacco smoking. Beta carotene vitamin supplements were recently shown to help in slowing macular degeneration in a NIH supported study (AREDS).

**Family history of macular degeneration:** Macular degeneration appears to be hereditary in some families but not in others. Approximately one fourth of all late-stage macular degeneration appears to have a genetic basis. People who have first-degree relatives with late-stage macular degeneration develop macular degeneration at an increased rate at a relatively young age.

### Progression of Macular Degeneration

If there is macular degeneration in one eye, then the fellow eye is at a high risk of developing macular degeneration as well. The risk of the fellow eye developing macular degeneration was reported to be 55% in the AREDS and 38.7% in the Rotterdam Study.



## What treatments are available for Macular Disease?

### NUTRITION SUPPLEMENTS

Although the exact causes of macular degeneration are not fully understood, antioxidant vitamins and zinc may reduce the impact of the AMD in some people.

A large scientific study found that people at risk for developing advanced stages of AMD lowered their risk by about 25% when treated with a high dose combination of vitamin C, Vitamin E, beta carotene and zinc. Among those who have their either no AMD or very early AMD, the supplements did not appear to provide an apparent benefit.

It is very important to remember that vitamin supplements are not a cure of AMD, nor will they restore form the disease. However, specific amounts of these supplements do play a key role in helping some people at high risk of advanced AMD to maintain their vision.

### LASER SURGERY: PDT AND TTT

Recent studies have proven that selected patients have much less chance of significant visual loss if they are treated by laser photocoagulation than if they are not treated. It is

estimated that 20 percent of patients with the wet type of macular degeneration may be candidates for laser treatment. The treatment can successfully eliminate the abnormal blood vessels in approximately 50 percent of these patients. Unfortunately, despite the best treatment, the abnormal vessels in some patients cannot be obliterated. In the last 3-4 years, two new modalities of treatment have come, i.e., PDT and TTT for the membrane which are below the centre point of the eye (fovea) i.e. subfoveal.


Where conventional laser cannot be done, Photodynamic Therapy (PDT) is the treatment of choice. The aim of the treatment is to stabilize the existing vision. In PDT, a light-sensitive dye is injected into the bloodstream and is transported to the retina at the back of the eye. This chemical highlights the blood vessels that are growing abnormally.

A low energy or 'cold' laser beam is then shone onto the macula. This makes the chemical react and destroy the leaking blood vessels without damaging the healthy tissue around the affected area in the back of the eye. More than one treatment is usually required. Low fluence PDT is now used

which reduces the damage to the healthy retina.

**Low Vision Devices:** In advanced stages of ARMD, low visual devices like stand or handheld magnifiers help in making the day-to-day activities easier.

**Anti-angiogenic drugs-** In recent years a group of drugs (medicines) called anti-VEGF drugs have been developed. VEGF stands for 'Vascular Endothelial Growth Factor'. This is a chemical that is involved in the formation of new blood vessels in the macula in people with wet-ARMD. By blocking the action of this chemical, it helps to prevent the formation of the abnormal blood vessels that occur in wet-ARMD thereby preventing its complications.

These drugs are injected directly into the vitreous of the eye by a fine needle, and injections may be needed more than once at few weeks' interval to keep on with their effect. The main aim of treatment with Anti-VEGF drugs is to prevent wet-ARMD from getting worse. However, it seems that in some cases these drugs may actually restore some of the vision that has been lost. 

(The writer is Chairman and Medical Director, Centre for Sight, New Delhi)



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# Moist Menace

It is very important to protect your eyes against the threat of several infections in the rainy season. **BY DR RAJEEV JAIN**



### Preventing eye infection during Monsoon

- Splash some cold water in your eyes and timely visit a doctor.
- It is important that if you are suffering from any eye infection, don't wear contact lenses
- If you are taking any eye drops other than the one for infection, stop using it, until you get totally recovered from that infection.
- Wear sunglasses while going outside. Never take eye diseases lightly, as these tiny looking diseases can cause permanent harm to your eyes.

**M**onsoon has just arrived. Though it brings welcome relief from the scorching heat, it brings with it several bacterial and viral infections too. Typhoid, jaundice become common, so does eye infections like conjunctivitis, viral fungal eye infection, stye and several others.

Though awareness has increased about diseases but when it comes to eye's we take things lightly, though we should be as careful, if not more. Eyes need extra care during monsoons as the moist and humid conditions in monsoon are the most favourable time for bacteria to breed. One needs to be very careful about his/her personal hygiene in order to prevent occurrence of eye problems.

As always prevention is better than cure. First if you get drenched in rains, remember once you come back home you should wash your eyes with clean water and dry the sides of the eyes with dry towel. Don't rub eyes with dirty hands, such a habit is common among children. Keep kids away from

In case someone has been diagnosed with eye problems, avoid sharing his personal belonging like towel, handkerchief etc. Also, to build immunity, avoid eating food from outside and have fresh seasonal vegetables and fruits only

stagnated water. Another thing noticed in rainy season is that it is accompanied with high humidity and people wipe the areas around with handkerchief which is generally not that clean, it is best to use a tissue or if you can't let the sweat remain on your face or use fresh water if available. If one wears contact lenses, one should clean them thoroughly. If you like swimming, see that the pool and the area around the pool is absolutely clean as bacterial infection lurk around in unhygienic pools. In case someone has been diagnosed with eye problems, absolutely avoid sharing his personal belonging like towel, handkerchief etc. These are external measures. Also, to build immunity avoid eating food from outside and have fresh seasonal vegetables and fruits only.

Now, these are host of steps

advocated to prevent but despite all the precautions people still develop eye problems. First of all if you develop itchiness, just wash your eyes initially with cold water, if it subsides fine, if it does not, then please don't self-medicate or go to a nearest chemist and ask for eye drops. He will show his knowledge, but it is half knowledge and half knowledge can really be very dangerous. The best course is to see a physician and follow the medicine that he prescribes. Now even after this first step, the problem persists go and see a specialist.

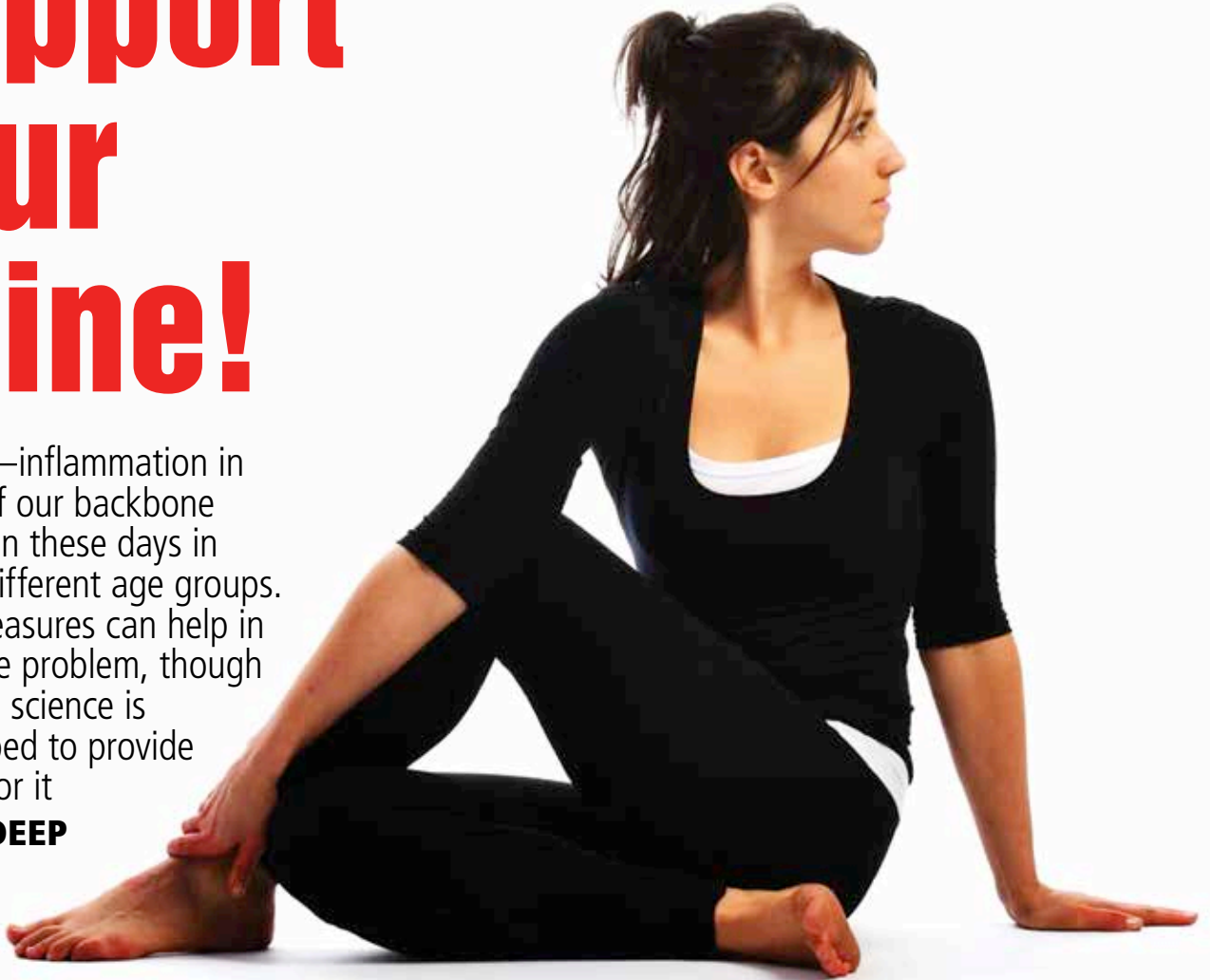
By following the above mentioned precautions, one can not only prevent the occurrence of eye infection but also can enjoy the rains without any worry. 🇮🇳

(The author is Eye Surgeon and Director, Save Sight Centre, New Delhi)

# Support your Spine!

Spondylitis –inflammation in the joints of our backbone – is common these days in people of different age groups. Lifestyle measures can help in avoiding the problem, though the medical science is well-equipped to provide treatment for it

**BY DR SUDEEP  
JAIN**



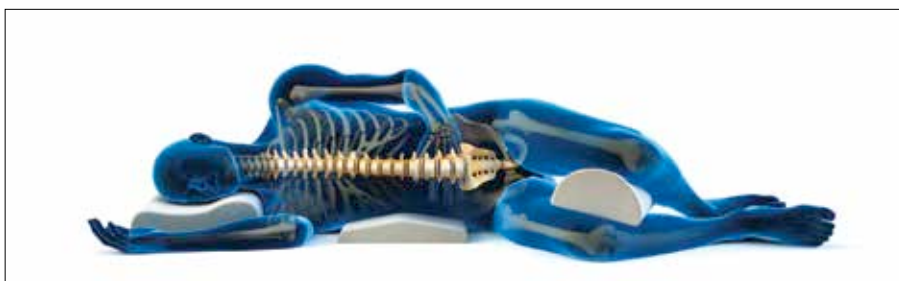
**Dr Sudeep Jain**

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

Spondylitis is a condition in which there is inflammation in the joints of our backbone. Our spine consists of a

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

Ageing is the main factor that causes spondylitis. In comparison to other joints, ageing process starts at a much



younger age in spine which makes even the middle aged people equally vulnerable. Also, there are many other factors that can trigger the problem like wrong body postures, lack of physical exercise, poor life style, obesity, smoking and consuming alcohol, uncontrolled diabetes, thyroid, high uric acid and cholesterol. People, who have to sit for long hours in same position, face the risk of developing spondylitis at a much younger age.

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

The problem of spondylitis is common these days in people of different age groups. Lifestyle measures like maintaining correct body posture at work as well as home, following a taking a healthy diet, avoiding stress

and staying positive always helps. All this can help in keeping our blood sugar, uric acid and cholesterol in control which are contributory factors for spondylitis. Adopting an active routine including walking, jogging, cycling, swimming yoga, etc can prevent early degeneration of our backbone.


Spondylitis can be painful but can be treated completely. One method is by physiotherapy, which involves ultrasonic massage, short wave and medium wave diathermy, interferential therapy (IFT), electrical stimulation of the nerves, acupressure and acupuncture, reiki, strengthening and

Our spine consists of a large number of complex joints stacked one above the other. In case of swelling in any of these joints, a person suffers from chronic pain of spondylitis

stretching exercises along with various drugs to replenish lubricating grease present in joints.

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

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

By adopting changes in our lifestyle, we avoid conditions like Spondylitis but even if we are diagnosed with one, we need not worry much as medical science today is well-equipped to give you suitable treatment. 

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

# Fatal Fixation

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

**BY DR SUNEELA GARG/DR CHARU KOHLI**

**A**lcohol consumption is a global phenomenon but it is now getting worldwide attention due to its harmful outcomes.

Alcohol is classified as psychoactive substance which produces dependence. It has not only important implications on health but social and economic aspects as well. There are a number of factors which determine alcohol consumption in a society.

Social factors like cultural practices, level of development, alcohol production, distribution and marketing strategies are important factors. In India, alcohol consumption on certain religious occasions and social gathering is an accepted norm. Similarly, consumption of alcoholic beverages is prevalent in many tribal and village societies around the world. Individual factors also play a role in the pattern of alcohol consumption. Age group, gender, socio-economic factors, education, certain occupation, familial tendency, peer pressure etc are individual determinants of alcohol intake. Early age of initiation of alcohol intake leads to higher rates of diseases due to abuse, accidents and injuries.

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

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

### Shocking Figures

As per the WHO, worldwide 3.3 million deaths result from harmful use of



Dr Suneela Garg

More and more counselling and rehabilitation centres should be opened for those in need all over the country. Those who recover should be integrated within the society without stigma and discrimination

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

### Cause and effects

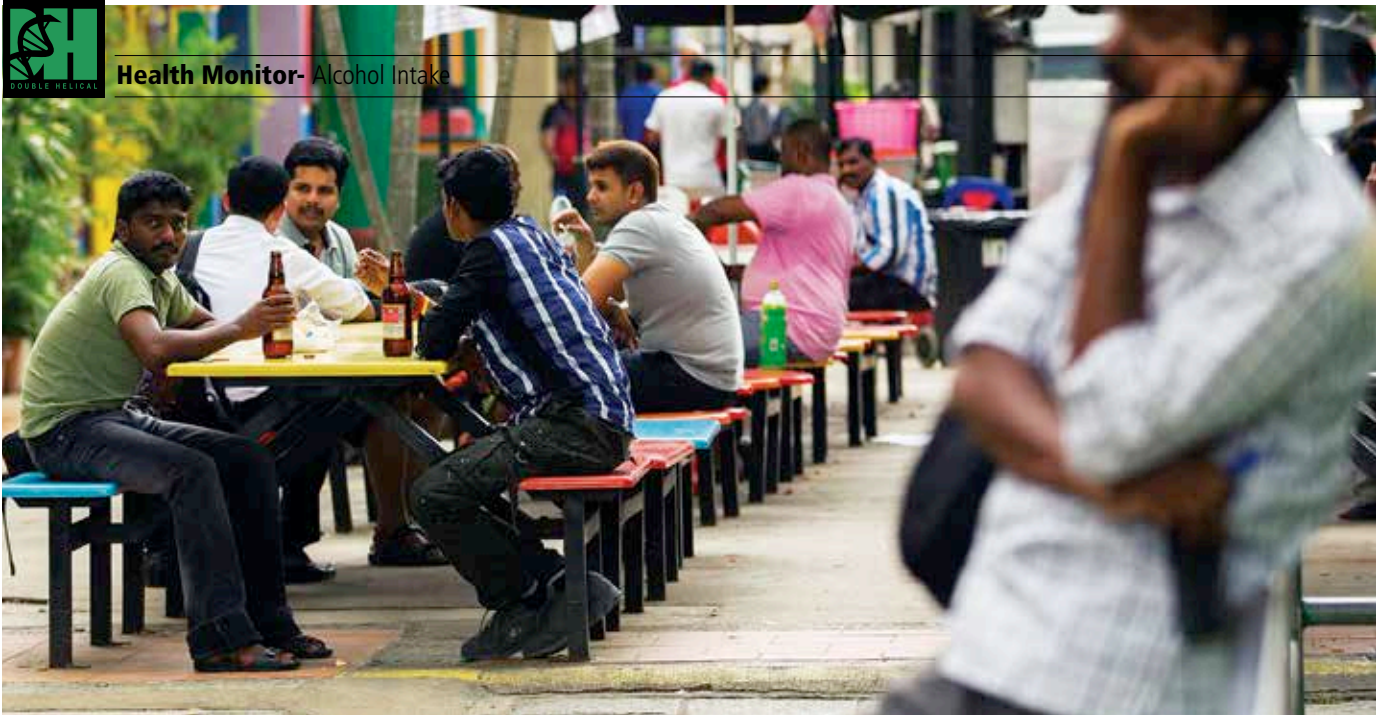
Alcohol is a causal factor in more than 200 diseases and injuries. There is a causal relationship between harmful use of alcohol and mental and



Dr Charu Kohli

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

- **Mental disorders:** Alcohol consumption leads to neuropsychiatric conditions called alcohol use disorders. Epilepsy, seizure disorder, depression and anxiety are directly attributed to alcohol consumption.
- **Gastrointestinal diseases:** Liver cirrhosis, pancreatic diseases are some examples.
- **Cancers:** One of the most serious effects of alcohol is cancer. Alcohol is causative factor for cancer of the mouth, pharynx, laryngeal cancer, oesophageal cancer, colon and rectum cancer, stomach cancer, kidney and urinary bladder cancers, liver cancer and female breast cancer.
- **Injuries and accidents:** Alcohol consumption is directly associated with road traffic accidents, gang violence and criminal activities. These may lead to severe injuries leading to disabilities and deaths.



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

### Prevention and control measures

The market forces which are promoting alcohol should be brought under


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

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

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

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

There are national prohibited days which are specific days when the sale of alcohol is not permitted. The government of India has established detoxification centres and counseling centers for people who need special care and rehabilitation. Although steps have been taken but they are not sufficient enough. Despite its negative effects on almost every aspect of life, alcohol consumption has remained a relatively low priority in public health policy in India.

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

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(The authors are senior experts in the Department of Community Medicines, Maulana Azad Medical Institute, New Delhi)



# Get into Shape again!



Breast reconstruction is the creation of a new breast shape (mound) using surgery. It may be done after removal of a whole breast or part of the breast. There are usually different options available for breast reconstruction

Women who have had a mastectomy need not despair. They may choose reconstructive surgery to rebuild the shape and look of their breast

**BY DR SHISHIR AGARWAL**

**T**he emotional and physical results of breast cancer are very different now from what they were in the past. Much more is known about breast cancer and its treatment. New treatments, as well as improved reconstructive surgery, mean that women who have breast cancer today have more choices and better outcomes. Many women with breast cancer choose surgery that removes only the tumour and an edge or margin of healthy tissue around it. This is called breast conservation surgery. But some women aren't able to have breast conservation surgery, or they prefer to have the entire breast removed. There are different types of mastectomies, some of which save the skin and even the nipple and areola.

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

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



Dr Shishir Agarwal

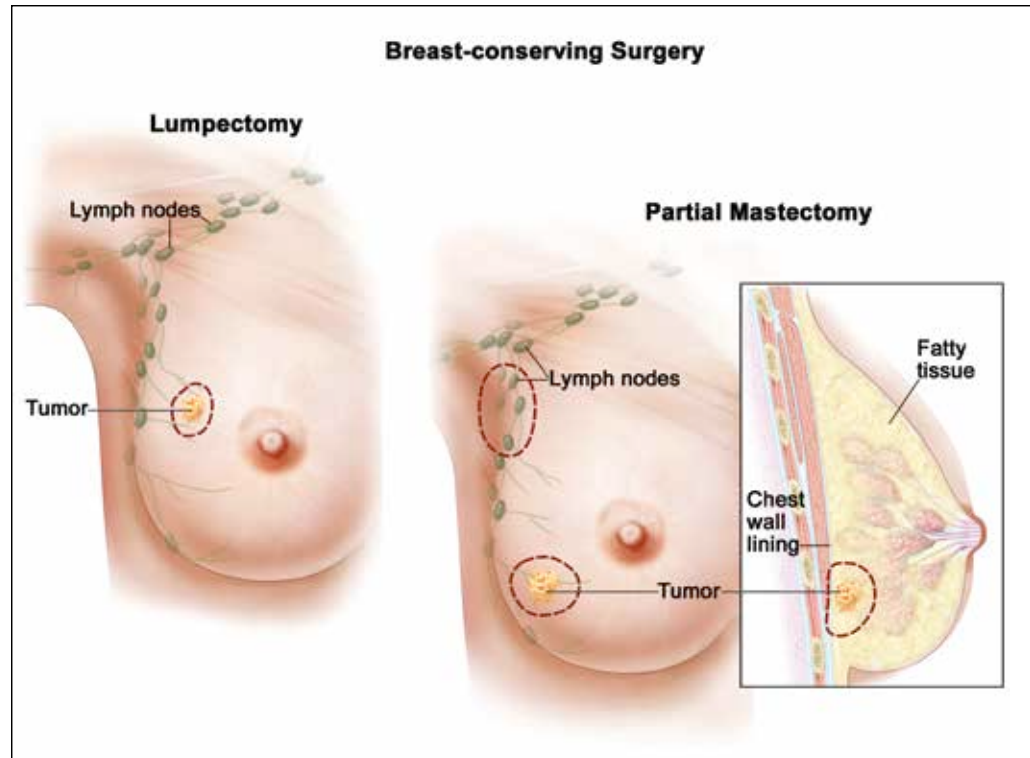
Delayed breast reconstruction means that the rebuilding is started later. This may be a better choice for some women who need radiation to the chest area after the mastectomy. Radiation therapy given after breast reconstruction surgery can cause problems like delayed healing and scarring.

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

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

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

Women choose breast reconstruction for many reasons such as to make their chest look balanced when they are



Women choose breast reconstruction for many reasons such as to make their chest look balanced when they are wearing a bra or swimsuit and permanently regain their breast shape

wearing a bra or swimsuit and permanently regain their breast shape. So, they don't have to use a form that fits inside the bra. They want to be happier with their bodies and how they feel about themselves

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

Breast reconstruction often leaves

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

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

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



you are fully informed.

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

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


Breast reconstruction is a large undertaking that usually takes multiple operations. Sometimes these follow-up

surgeries are spread out over weeks or months. If an implant is used, the individual runs the same risks and complications as those who use them for breast augmentation but has higher rates of capsular contracture (tightening or hardening of the scar tissue around the implant) and revisional surgeries.

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

reconstruction.

In a process that can take weeks to months, saline solution is injected to progressively expand the overlying tissue. Once the expander has reached an acceptable size, it may be removed and replaced with a more permanent implant. Reconstruction of the areola and nipple are usually performed in a separate operation after the skin has stretched to its final size.

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

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



# Indians at Risk

India has more diabetics than any other country in the world. The disease affects more than 62 million Indians, which is more than 7.1% of India's adult population.

**BY ABHIGYAN**

**D**iabetes is one of the diseases that affects the endocrine system. The pancreas produces the hormone insulin. In Type 1 diabetes, the insulin producing cells in the pancreas are destroyed. In Type 2 diabetes, insulin is still produced but the body becomes resistant to it. Diabetes may damage almost every tissue and organ of the body, the kidney being one of them. If neglected, a person could go into diabetic nephropathy. Albumin in the urine, blood urea and creatinine levels should be checked once a month. Diabetics should avoid painkillers. They should watch out for swelling of the feet, extreme fatigue, weakness and breathlessness. Obese children should also be screened for diabetes,

Diabetes is now highly visible across all sections of society within India. There is need for urgent medical intervention to mitigate the potentially catastrophic increase in diabetes in country's population in future. To reduce the disease burden that diabetes creates in India, appropriate government interventions and combined efforts from all the stakeholders of the society are required.

There are many causes for diabetes. One of the largest causes is lifestyle. Being overweight and lacking exercise can lead to diabetes, particularly in adults. Children who are obese when young have a much higher chance of getting type 2 diabetes than children who are not obese at a young age. Another cause of diabetes is high blood pressure and heart disease, which are also often caused by poor diet and lifestyle.

Obesity is one of the major risk factors for diabetes, yet there has been little research focusing on this risk factor across India. Despite having lower overweight and obesity rates, India has a higher prevalence of diabetes compared to western countries suggesting that diabetes may occur at a much lower body mass index (BMI) in Indians compared with Europeans. Therefore, relatively lean Indian adults



Diabetes can also cause difficulties during pregnancy such as a miscarriage or a baby born with birth defects. Out of an estimated 62.4 million diabetics in India, 4 to 21 per cent women suffer from gestational diabetes mellitus (GDM) — also called glucose intolerance or carbohydrate intolerance. It is a temporary form of diabetes in which the body does not produce adequate amounts of insulin to deal with sugar during pregnancy.

with a lower BMI may be at equal risk as those who are obese.

India has more diabetics than any other country in the world. The disease affects more than 62 million Indians, which is more than 7.1% of India's adult population. An estimate shows that nearly one million Indians die due to diabetes every year. The average age on

onset is 42.5 years. The high incidence is attributed to a combination of genetic susceptibility plus adoption of a high-calorie, low-activity lifestyle by India's growing middle class. A report says that if not controlled, India will see the greatest increase in people diagnosed with diabetes (102 million) by 2035.

There are an estimated 77.2 million people in India who are suffering from pre-diabetes. Pre-diabetes is a condition in which the patients have high blood glucose level but were not in the diabetes range. These people are at high risk of getting diabetes. The Indian Council of Medical Research (ICMR) estimated that the country already has around 65.1 million diabetes patients. Only China, with 98.4 million cases, has more diabetes patients globally.

Nearly 44 lakh Indians in their most productive years like aged 20 to 79 years — aren't aware that they are diabetic, a disease that exposes them to heart attack, stroke, amputations, nerve damage, blindness and kidney disease. The latest global figures on diabetes, released by the International Diabetes Federation (IDF), have raised a serious alarm for India by saying that nearly 52% of Indians aren't aware that they are suffering from high blood sugar. India is presently home to 62 million diabetics — an increase of nearly 2 million in just one year.

The World Health Organization (WHO) estimates that nearly 200 million people all over the world suffer from diabetes and this number is likely to be doubled by 2030. Even as nations mark World Diabetes Day on November 14 every year, WHO says about 80% of the diabetes deaths occur in middle-income countries. In India, there are nearly 50 million diabetics, according to the statistics of the International Diabetes Federation. As the incidence of diabetes is on the rise, doctors say, there is a proportionate rise in the complications that are associated with diabetes. They point out that it is a very crucial stage and awareness on the part of people and administration about diabetes is very essential, adding that people should be made aware and educated about their health and fitness level to reduce the number of patients in India.

The doctors believe when diabetes is not well controlled there is damage to the organs and the immune system is impaired. Foot problems occur in people with diabetes and can get serious very fast. Recent statistics show that approximately a quarter of all people with diabetes worldwide at some point during their lifetime will develop sores or breaks (ulcers) in the skin of their feet.

The symptom that you could easily miss is the unexplained loss of weight, all of a sudden feeling of fatigue, and problems with your vision, without the need for corrective lenses. The patient may go through bouts of extreme hunger as the body calls for more food to generate energy. They could also experience unexplained tingling in their feet and hands, including dry skin. If any of these symptoms of diabetes show themselves, it may be time to consult your doctor for evaluation and possible treatment.

According to Dr Vipin Mishra, Senior Consultant and head of Department of Diabetes and Endocrinology, Pushpanjali Crosslay Hospital, Vaishali, Ghaziabad, "If you have diabetes, no matter what type, it means you have too much glucose in your blood, although the causes may differ. Too much glucose can



If a patient with diabetes is planning to go the family way, it is absolutely vital that blood sugar is very tightly controlled throughout the pregnancy

lead to serious health problems. Hypothetically diabetes mellitus refers to a group of diseases that affect how your body uses blood sugar (glucose). Glucose is vital to your health because it's an important source of energy for

the cells that make up your muscles and tissues. It's also your brain's main source of fuel".

Dr Shalini Jaggi, Senior Diabetologist, Balaji Action Hospital, New Delhi, says, "These days diabetes is now found in persons as young as 15 years. Among the main reasons is sedentary lifestyle which has become ubiquitous now. About 17 million people suffer from kidney problems arising out of diabetes, but only a few could afford the costs of treatment. As such, the focus must be on enacting preventive measures such as promoting physical activity".

Knowing causes of diabetes can help a person understand how best to treat



their symptoms, and help them understand how they got diabetes in the first place. While many causes of diabetes can be prevented, some causes are just the way the body is made, and the sooner a diabetes type can be diagnosed, the sooner a person can get back to normal health and take the measures needed to take care of oneself successfully.

Dr Anup Mohta, Director, Chacha Nehru Bal Hospital, East Delhi, says, “Another cause of diabetes is genetics. If a child’s parent has diabetes or if diabetes is common among other family members, a person’s chance of also having diabetes as they age is greatly

Pregnant women who are obese or have a history of abortions are more prone to gestational diabetes. It is, however, treatable through diet modification, taking the essential medications as well regular exercise.

increased. Mainly, type 2 diabetes is inherited, and this type of diabetes is easier to treat, unlike type 1 diabetes. However, even if diabetes is an inherited disease, there is no guarantee that a person will get it.”

### Stages of Diabetes


There are two stages to this disease, otherwise known as type 1 diabetes and type 2 diabetes, and they are caused when the pancreas does not produce enough insulin. A type 1 diabetic is more commonly found in younger adults and will require the use of insulin injections and a major adjustment in their diet. Type 2 diabetes is probably more common in adults; however, it is hardly ever

diagnosed until the patient is required to do a blood test for some other medical problem. A type 2 diabetic is usually a patient who is constantly fighting with weight problem.

The chronic diabetes conditions include type 1 diabetes and type 2 diabetes. Potentially reversible diabetes conditions include prediabetes when blood sugar levels are higher than normal, but not high enough to be classified as diabetes and gestational diabetes, which occurs during pregnancy but may resolve after the baby is delivered.”

Dr Shishir Narayan of Shroff Eye Hospital, New Delhi, says, “The eyes of a diabetic also need special attention and care. Regular eye check-ups are a must, the retina could get affected, and blood vessels in the eye could leak blood. Diabetes also produces early cataract. In extreme cases, the patient can lose eyesight.”

Those with long standing diabetes are at the risk of developing diabetic neuropathy and complications of diabetic foot. Round-the-year foot care can ensure that the chances complications are minimized. Diabetics, who were warned for years that their illness could cause blindness, are in for more bad news, as doctors have claimed that the patients are more likely to lose their hearing, too. Japanese research has found that hearing problems are far more common in diabetics than their healthy counterparts, even when other factors such as ageing and a noisy environment are taken into account.

The association of hearing impairment with diabetes is debatable, but it is believed that over time, high blood glucose levels can damage vessels (causing hearing loss). It’s thought that glucose damages the nerves and tissues in the ear, diminishing the ability to hear. Diabetic patients should be screened for hearing impairment from earlier age compared with non-diabetics, from the viewpoint of prevention of several health problems such as depression and dementia caused by hearing impairment. 





# Beating the Blues

Depression is a disorder of the brain. It is not simply feeling down, but a serious illness caused by changes in brain chemistry. Men and women of every age, educational level, and social and economic background are found to suffer from depression.

**BY AMRESH KUMAR TIWARY**

**M**anju, an 18-year-old student, started missing from her classes for days together, and her friends noticed that something is not right. She talked to her friend about the time she had been really depressed and had consulted her doctor.

Depression is a common but serious illness. Most who experience

depression need treatment to get better. The feelings like sadness, hopelessness, guilt, moodiness, angry outbursts, loss of interest in friends, family and favourite activities including sex drive point to the presence of depression. This also affects your thoughts, behaviour and your overall physical health.

During the treatment of treatment, it is found that other illnesses may come

on before depression, cause it, or be a consequence of it. But depression and other illnesses interact differently in different people. In any case, co-occurring illnesses need to be diagnosed and treated.

The most common behaviour patterns are withdrawing from people, substance abuse, missing work, school or other commitments and attempts to harm yourself. The persons who are



“All of us can expect to experience one or more of symptoms of depression on occasion. An occurrence of any one of these symptoms on its own does not constitute depression. When we suspect depression, we commonly look for clusters of these symptoms occurring regularly for two weeks or longer.”

**Dr N P Singh**, President, Hypertension Society of India, Pushpanjali Crosslay Hospital, Vaishali, Ghaziabad

under depression may face physical problems like tiredness or lack of energy, unexplained aches and pains, changes in appetite, weight loss and gain, changes in sleep – sleeping too little or too much and sexual problems.

Alcohol and other substance abuse or dependence may also co-exist with depression. Research shows that mood disorders and substance abuse commonly occur together. Depression also may occur with other serious medical illnesses such as heart disease, stroke, cancer, HIV/AIDS, diabetes, and Parkinson’s disease. People who have depression along with another medical illness tend to have more severe



symptoms of both depression and the medical illness, more difficulty adapting to their medical condition, and more medical costs than those who do not have co-existing depression. Treating the depression can also help improve the outcome of treating the co-occurring illness.

Most likely, depression is caused by a combination of genetic, biological, environmental, and psychological factors. Depressive illnesses are disorders of the brain. Longstanding theories about depression suggest that important neurotransmitters—chemicals that brain cells use to communicate—are out of balance in depression. But it has been difficult to prove this.

Brain-imaging technologies, such as magnetic resonance imaging (MRI), have shown that the brains of people who have depression look different than those of people without depression. The parts of the brain involved in mood, thinking, sleep, appetite, and behaviour appear different. But these images do not reveal why the depression has occurred. They also cannot be used to diagnose depression.

Some types of depression tend to run

in families. However, depression can occur in people without family histories of depression too. Scientists are studying certain genes that may make some people more prone to depression. Some genetics research indicates that risk for depression results from the influence of several genes acting together with environmental or other factors. In addition, trauma, loss of a loved one, a difficult relationship, or any stressful situation may trigger a depressive episode. Other depressive episodes may occur with or without an obvious trigger.

Research indicates that depressive illnesses are disorders of the brain. Depression is more common among women than among men. Biological, life cycle, hormonal, and psychosocial factors that women experience may be linked to women’s higher depression rate. Researchers have shown that hormones directly affect the brain chemistry that controls emotions and mood. For example, women are especially vulnerable to developing postpartum depression after giving birth, when hormonal and physical changes and the new responsibility of caring for a new-born can be overwhelming.



“Depression is a serious condition. It’s also, unfortunately, a common one. The World Health Organization characterizes depression as one of the most disabling disorders in the world, affecting roughly one in five women and one in ten men at some point in their lifetime.”

**Dr Vinay Agarwal**, Member,  
Indian Medical Association and  
CMD of Pushpanjali Crosslay  
Hospital, Vaishali

Some women may also have a severe form of premenstrual syndrome (PMS) called premenstrual dysphoric disorder (PMDD). PMDD is associated with the hormonal changes that typically occur around ovulation and before menstruation begins.

During the transition into menopause, some women experience an increased risk for depression. In addition, osteoporosis—bone thinning or loss—may be associated with depression. Scientists are exploring all of these potential connections and how the cyclical rise and fall of estrogen and other hormones may affect a woman’s brain chemistry.

Finally, many women face the additional stresses of work and home responsibilities, caring for children and ageing parents, abuse, poverty, and relationship strains. It is still unclear, though, why some women faced with enormous challenges develop depression, while others with similar challenges do not.

Men often experience depression differently than women. While women with depression are more likely to have feelings of sadness, worthlessness, and excessive guilt, men are more likely to be very tired, irritable, lose interest in

once-pleasurable activities, and have difficulty in sleeping.

Men may be more likely than women to turn to alcohol or drugs when they are depressed. They also may become frustrated, discouraged, irritable, angry, and sometimes abusive. Some men throw themselves into their work to avoid talking about their depression with family or friends, or behave recklessly.

Depression is not a normal part of ageing. Studies show that most senior citizens feel satisfied with their lives, despite having more illnesses or physical problems. However, when older adults do have depression, it may be overlooked because seniors may show different, less obvious symptoms. They may be less likely to experience or admit to feelings of sadness or grief.

Sometimes it can be difficult to distinguish grief from major depression. Grief after loss of a loved one is a normal reaction to the loss and generally does not require professional mental health treatment. However, grief that is complicated and lasts for a very long time following a loss may require treatment. Researchers continue to study the relationship between complicated grief and major

depression.

Older adults also may have more medical conditions such as heart disease, stroke, or cancer, which may cause depressive symptoms. Or they may be taking medications with side effects that contribute to depression. Some older adults may experience what doctors call vascular depression, also called arteriosclerotic depression or subcortical ischemic depression. Vascular depression may result when blood vessels become less flexible and harden over time, becoming constricted. Such hardening of vessels prevents normal blood flow to the body’s organs, including the brain. Those with vascular depression may have, or be at risk for, co-existing heart disease or stroke.



“Childhood depression often persists, recurs, and continues into adulthood, especially if left untreated. A child with depression may pretend to be sick, refuse to go to school, cling to a parent, or worry that a parent may die.”

**Dr Anup Mohta**, Director, Chacha Nehru Bal Chikitsalaya, East Delhi

Most older adults with depression improve when they receive treatment with an antidepressant, psychotherapy, or a combination of both. Research has shown that medication alone and combination treatment are both effective in reducing depression in older adults. Psychotherapy alone also can be effective in helping older adults stay free of depression, especially among those with minor depression. Psychotherapy is particularly useful for those who are unable or unwilling to take antidepressant medication.

Children who develop depression often continue to have episodes as they enter adulthood. Children who have depression also are more likely to have other more severe illnesses in adulthood.

According to Dr Anup Mohta, Director, Chacha Nehru Bal Chikitsalaya, East



Delhi, “Childhood depression often persists, recurs, and continues into adulthood, especially if left untreated. A child with depression may pretend to be sick, refuse to go to school, cling to a parent, or worry that a parent may die.” Older children may sulk, get into trouble at school, be negative and irritable, and feel misunderstood. Because these signs may be viewed as normal mood swings typical of children as they move through developmental stages, it may be difficult to accurately diagnose a young person with depression.

Before puberty, boys and girls are equally likely to develop depression. By the age of 15, however, girls are twice as likely as boys to have had a major depressive episode.

Depression during the teen years comes at a time of great personal change—when boys and girls are forming an identity apart from their parents, grappling with gender issues and emerging sexuality, and making independent decisions for the first time in their lives. Depression in adolescence frequently co-occurs with other disorders such as anxiety, eating disorders, or substance abuse. It can also lead to increased risk for suicide.

Depression, even the most severe cases, can be effectively treated. The earlier that treatment can begin, the more effective it is.

The first step to getting appropriate treatment is to visit a doctor or mental health specialist. Certain medications, and some medical conditions such as viruses or a thyroid disorder, can cause the same symptoms as depression. A doctor can rule out these possibilities by doing a physical exam, interview, and lab tests. If the doctor can find no medical condition that may be causing the depression, the next step is a psychological evaluation.

The doctor may refer you to a mental health professional, who should discuss with you any family history of depression or other mental disorder, and get a complete history of your symptoms. You should discuss when your symptoms started, how long they have lasted, how severe they are, and whether they have occurred before and if so, how they were treated. The mental health professional may also ask if you are using alcohol or drugs, and if you are thinking about death or suicide.

Once diagnosed, a person with depression can be treated in several



ways. The most common treatments are medication and psychotherapy.

According to Dr N P Singh, President, Hypertension Society of India, Pushpanjali Crosslay Hospital, Vaishali, “All of us can expect to experience one or more of these symptoms on occasion. An occurrence of any one of these symptoms on its own does not constitute depression. When we suspect depression, we commonly look for clusters of these symptoms occurring regularly for two weeks or longer, and impacting functional aspects of the person’s life.”

In medical terms, depression is a real illness that impacts the brain. Anyone suffering from depression will tell you, it’s not imaginary or all in your head, depression is more than just feeling down. It is a serious illness caused by changes in brain chemistry. Research tells us that other factors contribute to the onset of depression, including genetics, changes in hormone levels, certain medical conditions, stress, grief or difficult life circumstances. Any of these factors alone or in combination can precipitate changes in brain chemistry that lead to depression’s many symptoms.

Says Dr Vinay Agarwal, Member,

Indian Medical Association and CMD of Pushpanjali Crosslay Hospital, Vaishali, “Depression is a serious condition. It’s also, unfortunately, a common one. The World Health Organization characterizes depression as one of the most disabling disorders in the world, affecting roughly one in five women and one in ten men at some point in their lifetime.”

Men and women of every age, educational level, and social and economic background suffer from depression. There is no area of life that does not get affected when depression is present. Marriage, parenting, friendships, careers, finances – every aspect of daily living is compromised by this disease. Once an episode of depression occurs, it is also quite likely that it will recur. And the impact of depression can be even more severe when it occurs in combination with other medical illnesses such as diabetes, stroke, or cardiovascular disease, or with related disorders such as anxiety or substance abuse.


Says Dr Suneela Garg, Director Professor, Department of Community Medicines, Maulana Azad Medical College, New Delhi, “The problems caused by depression are made worse by the fact that most people suffering

from the disease are never diagnosed, let alone treated. The good news is that when depression is promptly identified and treated, its symptoms are manageable and there are many effective strategies for living with the disease.”

Depression and bipolar disorder are both treated most effectively in their earliest stages when symptoms are less severe.

“Although scientists agree that depression is a brain disorder, the debate continues about exact causes. Many factors may contribute to the onset of depression, including genetic characteristics, changes in hormone levels, certain medical illnesses, stress, grief, or substance abuse. Any of these factors alone or in combination can bring about the specific changes in brain chemistry that lead to the many symptoms of depression, bipolar disorder and related conditions,” adds Dr Suneela Garg.

Together with a healthcare provider, you can find out whether what you are experiencing is depression or bipolar disorder, and chart a course to feeling and functioning better. Prior to engaging your doctor or healthcare provider, you may find it helpful to know more about how depression and bipolar disorder are diagnosed. Experts commonly employ a series of questions called a screening tool to identify depression.

Lifestyle changes, including improvements in sleeping and eating habits, physical activity and stress reduction have also proven very helpful in managing symptoms of depression. Dr Vinay Agarwal adds, “There are several strategies for treating depression. Depending upon each individual’s characteristics and symptoms, healthcare professionals may employ one or more types of psychotherapy that rely upon a sequence of interpersonal treatment sessions with a trained professional. In addition, clinicians may suggest that a patient try one of a number of different medications.” 



# **Defeat Depression with Ayurveda**

You can get rid of depression through Ayurveda that prescribes therapies, lifestyle adjustments and herbal preparations to strengthen the mind when it comes to coping with life's challenges

**BY DR. PARTAP CHAUHAN**



**W**ith the stresses and strains of modern life, a growing number of people these days find themselves in low spirits. They display tendencies such as depression, anxiety, irritability, insecurity or a general feeling of dissatisfaction. Ayurveda has paid serious attention to such problems and has formulated effective methods of treatment. Depression is referred to as *mano avasad* in Ayurveda.

#### Causes

Genetic, environmental, cognitive and personality factors are usually blamed for causing mood disorders such as depression. Stress many times precipitates this problem. Recent studies in modern science have revealed that depression results from an imbalance of neurotransmitters in the brain.

In Ayurveda, imbalance in psychic energies (*sattva, rajas, tamas*) supported by imbalance of

physical energies (*vata, pitta, kapha*) are believed to cause various mental disorders. This applies to depression as well. Lack of mental discipline, indulgence in negative thoughts and activities and negative emotions, such as hatred, anger, etc. are known to cause imbalance in psychic energies which in turn leads to diseases like depression.

#### Symptoms

- **Fatigue**
- **Sleep disturbances**
- **Irritability**
- **Difficulty to concentrate**
- **Feeling of worthlessness**
- **Social isolation**

#### Ayurvedic View

Depression usually indicates reduced *sattvik*

Genetic, environmental, cognitive and personality factors are usually blamed for causing mood disorders such as depression. Recent studies in modern science have revealed that depression results from an imbalance of neurotransmitters in the brain





energy and aggravation of rajasic and tamasik energies. Weakened ojas energy (which is the essence of all dhatus) often contributes to this problem. Prana vayu (life force energy) is responsible for proper functioning of the mind. Weakened ojas disturbs the prana vayu which then fails to stimulate the mind. Lack of energy, sluggish movements, slow talking, irritability, anxiety, lack of self-esteem, feeling of worthlessness and reduced sex drive generally reflect weakened ojas. On the other hand sadness, despair, and lack of interest in life indicate heightened rajasic and tamasik influences.





Ayurveda advises therapies, lifestyle adjustments and herbal preparations that clear and strengthen the mind allowing us to cope with life's challenges more effectively and also bring positivity to our lives at all levels.

#### Diet & Lifestyle Advice

- Quite a few patients of depression give history of bad lifestyle, improper food habits, addictions, lack of discipline in personal life and unsocial attitude. So, maintaining good lifestyle, food habits and discipline acquire lot of significance when it comes to psychiatric disorders such as depression.
- Getting up early enough in morning, avoiding late nights, doing physical exercises, playing games and outdoor activities help to keep the mind in a positive state.
- Eating fresh foods, vegetables, seasonal fruits and avoiding alcohol,


non-vegetarian and fast foods, and maintaining regular food timings is good for mental health.

- Ensure that you take meals in a relaxed mental state and atmosphere. Avoid hot discussions and watching during meals.
- Making prayers, reading spiritual texts, reading good literature, listening to thought provoking lectures, hearing mantras and music also help to improve mental strength.
- Yoga, Pranayama and meditation are well known for enhancing mental and spiritual strength.
- One must also look at their social support system and make an effort to improve social ties to enjoy a positive mental state.

#### Home Remedies

- Boil 1 tablespoon rose petal in 1 cup of water for 2 minutes, let it cool. Add 1/2 teaspoon of rock

candy (Mishri) to it and drink twice a day to uplift your mood.

- Take one teaspoon of asparagus powder with half a teaspoon of honey twice a day along with warm milk, it works as a great brain tonic.
- Take one teaspoon of ashwagandha powder with a spoon of pure ghee. It is very effective in depression.
- Boil celery seeds, green cardamom powder, cinnamon powder and rose petals in equal amount in a glassful of water for 20-30 minutes. Strain it and add ½ teaspoonful powder of rock candy, let it cool down and drink lukewarm twice a day.
- Have 1 teaspoon of licorice root powder with water in an empty stomach in the morning. This is mentioned as a medhya rasayana (a mind rejuvenator) in Ayurveda. 

(The author is Ayurvedacharya and Director at Jiva Ayurveda)

# Coping with Pain

Pain management occupies critical importance in cancer care. If inadequately controlled, pain can have a profoundly adverse impact on the patient and his or her family

**BY DR G N GOYAL**



**P**atients with cancer have diverse symptoms, impairments in physical and psychological functioning, and other difficulties that can undermine their quality of life. Approximately 70 per cent of cancer

patients suffer from cancer-related pain. If inadequately controlled, pain can have a profoundly adverse impact on the patient and his or her family. The critical importance of pain management as part of routine cancer care has been forcefully advanced by WHO,

international and national professional organizations, and governmental agencies. There are now very good treatments available for treating cancer-related pain.

Patients with advanced cancer have more severe pain, and many cancer

survivors have pain that continues after cancer treatment ends. Although cancer pain cannot always be relieved completely, there are ways to lessen pain in most patients.

There are many causes of cancer pain, but often cancer pain occurs when a tumour presses on nerves or body organs or when cancer cells invade bones or body organs. Cancer treatments such as



chemotherapy, radiation, or surgery also may cause pain.

The symptoms of cancer pain vary from person to person. The amount of pain may depend on the type of cancer, the stage or extent of the disease, and the person's pain threshold (tolerance for pain). Pain can range from mild and

occasional to severe and constant.

About one-third of patients being treated for cancer experience pain, which can take many forms. It may be short-lived or long-lasting, mild or severe, or affect one or a few organs, bones or organ systems. Since each patient's pain is unique, cancer pain management treatment plans must be tailored to address individual needs.

Narcotic pain relievers require a prescription and may be used along with mild pain relievers for moderate to severe pain. If there are tingling and burning pain, certain antidepressants are used to relieve pain even if the person is not depressed.

Most cancer pain occurs when a tumour presses on bone, nerves or

Patients with advanced cancer have more severe pain, and many cancer survivors have pain that continues after cancer treatment ends.

Although cancer pain cannot always be relieved completely, there are ways to lessen pain in most patients

organs. The pain may vary according to location. For example, a small tumour located near a nerve or the spinal cord may be very painful, while a larger tumour elsewhere may not cause discomfort. The treatment-related pain like chemotherapy, radiotherapy and surgery can cause pain. Also, certain painful conditions are more likely to occur in patients with a suppressed immune system, which often results from these therapies. Relieving post-operative pain helps people recuperate from surgery more quickly and heal more effectively.

Prospective surveys indicate that as many as 90% of patients could attain adequate relief with simple drug therapies, but this success rate is not achieved in routine practice. Inadequate management of pain is the result of

various issues that include undertreatment by clinicians with insufficient knowledge of pain assessment and therapy; inappropriate concerns about opioid sideeffects and addiction; a tendency to give lower priority to symptom control than to disease management; patients under-reporting of pain and non-compliance with therapy; and impediments to optimum analgesic therapy in the healthcare system.

It's important to start cancer pain treatment as early as possible to get the most benefit. The majority of people with cancer will experience pain at some time or another. The pain can result from the cancer itself, or from the cancer's treatment. In addition, some people who have been cured of their cancer can continue to suffer from pain. To improve the management of cancer pain, every practitioner involved in the care of these patients must ensure that his or her medical information is current and that patients receive appropriate education.

Some drugs like morphine may be used to help patients feel calm or fall asleep. Treatments such as imagery or relaxation can also help control pain and anxiety related to treatment. Knowing what will happen during the procedure and having a relative or friend stay with patient may also help lower anxiety.

Morphine dose escalation was observed in about one-half of the patients being cared for until death, whereas the other half had stable or decreasing doses over the course of treatment. Wide dissemination of WHO guidelines among doctors is necessary to effect a clear improvement in the treatment of the many patients suffering from cancer pain in the clinical and home setting.

Acetaminophen and non-steroidal anti-inflammatory drugs (NSAIDs) may be used to relieve mild pain. They may be given with opioids for moderate to severe pain. Acetaminophen also relieves pain, although it does not have the anti-inflammatory effect that aspirin and other NSAIDs do.

Opioids may be used to relieve



Dr G N Goyal

moderate to severe pain. Some patients with cancer pain stop getting pain relief from opioids during long-term therapy. Larger doses or a different opioid may be needed if your body stops responding to the same dose. Tolerance of an opioid is a physical dependence on it. Opioid doses can be safely increased by doctor as needed for your pain, without causing addiction.

There are several types of opioids like Morphine which is the most commonly used opioid for cancer pain, apart from Hydromorphone, Oxycodone, Oxymorphone, Methadone, Fentanyl etc. The doctor prescribes these drugs in order to control pain in the best possible manner.

Receiving opioids on a regular schedule helps manage the pain and keeps it from getting worse. The amount of time between doses depends on which opioid is being used. The correct dose is the amount of opioid that controls your pain with the fewest side effects. The dose will be slowly adjusted until there is a good balance between pain relief and side effects. If opioid tolerance does occur, it can be overcome by increasing the dose or changing to another opioid.

Says Dr G N Goyal, Senior Oncologist, Sri Balaji Action Hospital, “Cancer pain, or the discomfort that stems from cancer and its treatment, can be controlled most of the time. There are different medicines and methods



Radiation therapy treatment reduces pain by shrinking a tumour. A single dose of radiation may be effective for some people. Certain nerve blocks, temporary or permanent, may help relieve some painful conditions. Implanted pain pumps can also provide relief in some patients

available to control cancer pain. People who have cancer and are feeling pain need to inform their doctor immediately. The earlier pain treatment is started, the more effective it may be.”

#### Medication for Cancer Pain

Cancer pain is very treatable. About nine out of 10 cancer pain patients will

find relief using a combination of medications. Many medicines are used for cancer pain management. Some drugs are general pain relievers, while others target specific types of pain. Most pain drugs require a prescription.

Most pain medicine is taken by mouth (orally). Oral medicines, either in pill or liquid form, are easy to take and usually cost less than other kinds of medicine. Other methods for administering pain drugs include:

The doctors may recommend certain non-drug treatments for cancer pain management to supplement pain medication. These treatments will help make your medicines work better and relieve other symptoms, but they should not be used instead of medication.

Some patients have pain that is not relieved by medicine. In these cases, other treatments for cancer pain management can be used to reduce pain. Radiation therapy treatment reduces pain by shrinking a tumour. A



The type of pain experienced influences the choice of medications and their use. Some of the factors that influence the treatment choices include the location of the pain and the severity of the pain which may be sharp, tingling or aching

single dose of radiation may be effective for some people. Certain nerve blocks, temporary or permanent, may help relieve some painful conditions. Implanted pain pumps can also provide relief in some patients.

A person with well-managed pain has an improved quality of life. They are likely to sleep better and have more energy during the day. Being as active as possible also reduces the risk of ailments like pneumonia, blood clots and bedsores, which are associated with immobility. The foundation of cancer pain management is regular medication. Combining medications to gain maximum benefit is common. Radiotherapy, surgery, hormone therapy and chemotherapy – if successful in reducing tumour size – may also relieve pain. Other techniques that may be helpful include relaxation therapies and acupuncture.


The type of pain experienced influences the choice of medications and their use.

Some of the factors that influence the treatment choices include the location of the pain and the severity of the pain which may be sharp, tingling or aching.

It is important to know whether the pain is persistent, or comes and goes and what activities or events make the pain worse. Pain relief can be provided by a range of medications for example opioids like codeine and morphine. Some of the side effects may include nausea, vomiting, drowsiness and constipation. There is no danger of addiction if medicines are taken for pain relief purposes. There are several newer opioids available, so one can usually be found to suit. Many people worry about taking opioids, because they are afraid to become addicted or think they should wait until they are very ill before they use these drugs. Evidence shows that it is far better to find a suitable opioid and use it regularly from the time when your pain becomes constant

The pain caused by cancer is usually

constant. It is best to take the prescribed doses of pain-relieving medications regularly, rather than wait for the pain to strike. If your pain is well managed, you are less likely to take large doses.

Most people have questions and concerns about taking opioid medications. These questions are best discussed with a pain specialist. Specialist nurses and doctors are available in most large hospitals, who can sit and discuss your concerns with you. They usually work in palliative care teams and can be contacted through the hospital switchboard. Deep physical and mental relaxation reduces anxiety and can help a person to better cope with pain. The doctor may be able to recommend reputable therapists. 

(The author is Senior Consultant, Interventional Pain Management Specialist at Sri Balaji Action Medical Institute and Action Cancer Institute, New Delhi)



# War against Cancer

Surgery is the oldest type of cancer therapy and remains an effective treatment for many types of cancer. Minimally invasive surgery is in increasing demand these days for cancer treatment but it is a specialised technique requiring years of intense training

**BY TEAM DOUBLE HELICAL**

**C**ancer is a group of several hundred entities that can begin almost anywhere in the body. It happens when normal cells in the body change from their native state and grow uncontrollably. These cells may form a mass called a tumour. A tumour can be either malignant (cancerous, meaning it can spread to other parts of the body) or benign (noncancerous). However, some cancers do not form solid tumours. These are called haematological

malignancies. These include leukaemia, most types of lymphoma and myeloma (cancer of the plasma cells in the bone marrow, the spongy tissue inside of bones).

The diagnosis of cancer begins when a person reports any unusual symptoms. After discussing a person's medical history and his or her symptoms, the doctor will perform various tests to find out the cause of the ailment. However, many times a person with cancer has no symptoms. Sometimes a doctor

diagnoses cancer after a cancer screening test in an otherwise healthy person. Examples of screening tests include a colonoscopy, a mammogram, and a pap test. The results of these tests may necessitate additional tests to confirm or disprove the result of the screening test. Less often, cancer is diagnosed when a person undergoes a medical test for another reason. For most cancers, a biopsy is the only way to make a definitive diagnosis.

The cancer treatment options that the

doctor recommends depends on the type and stage of cancer, possible side effects, and the patient's preferences and overall health. In cancer care, different doctors often work together to create a patient's overall treatment plan that combines different types of treatment. This calls for a multidisciplinary team.

Surgery in cancer remains the most effective of all options available for cancer treatment. In fact, surgery has a part to play at all stages from the diagnosis to palliation. Cancer surgery is a highly specialised branch requiring years of intense training, a multidisciplinary team and good paramedical backup.

### Role of Surgery

Surgery is the removal of the tumour and surrounding tissue during an operation. A doctor who specialises in surgical treatment of cancer is called a surgical oncologist. The goals of surgery vary. It is often used to remove all or some of the cancerous tissue after diagnosis. However, it can also be used to diagnose cancer, find out where the cancer is located, whether it has spread, and whether it is affecting the functions of other organs in the body. In addition, surgery can be helpful to restore the body's appearance or function or to relieve side effects.

The location where you have surgery depends on the extent of the surgery and how much recovery is needed. Surgery may be performed in a doctor's office, clinic, surgical centre, or hospital. Outpatient surgery means that you do not need to stay overnight in the hospital before or after surgery. Inpatient surgery means that you do need to stay in the hospital overnight or longer to recover after the surgery.

### Types of surgery

**Diagnostic:** For most types of cancer, biopsy is the only way to make a definitive diagnosis. During a surgical biopsy, the surgeon makes a cut in the skin and removes some or all of the suspicious tissue. There are two main types of surgical biopsies. An incisional biopsy is the removal of a piece of the suspicious



area for examination. An excisional biopsy is the removal of the entire suspicious area, such as an unusual mole or a lump.

After a biopsy, the tissue removed is examined under a microscope by a pathologist. A pathologist is a doctor who specialises in interpreting laboratory tests and evaluating cells, tissues, and organs to diagnose disease. The pathologist provides a pathology report to the surgeon or oncologist, who makes the diagnosis.

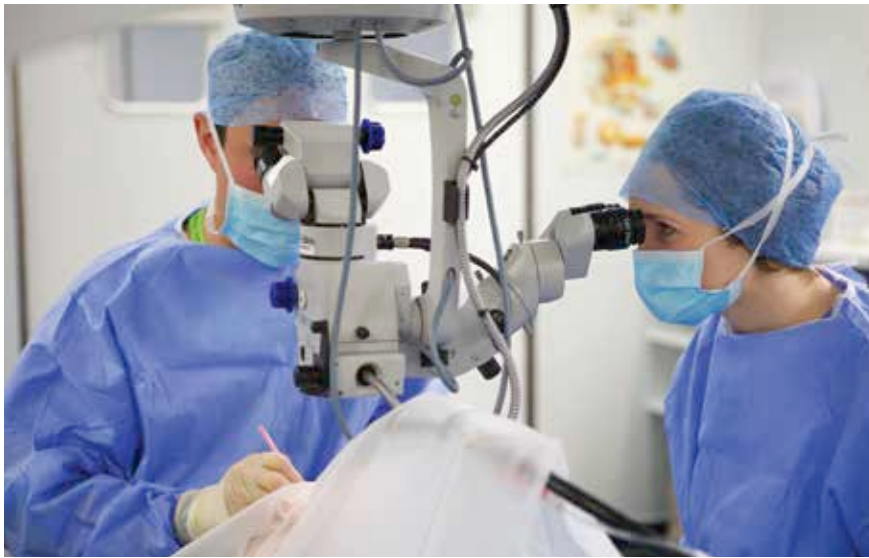
**Staging:** Staging surgery is performed to find out the size of the tumour and if or where it has spread. This often

includes removing some lymph nodes, which are tiny, bean-shaped organs that help fight infection, near the cancer to find out if it has spread there. Together with the physical examination, biopsy, and results of laboratory and imaging tests, this surgery helps the doctor decide which kind of treatment is best and predict the patient's prognosis, that is, the chance of recovery.

**Tumour removal:** Also called curative or primary surgery, the removal of the tumour and some of the tissue surrounding the tumour is the most common type of cancer surgery. The tissue surrounding the tumour is called the margin. Tumour removal may be the only treatment, or it may be combined with chemotherapy, radiation therapy, or other treatments, which may be given before or after surgery.

Conventional surgery requires large cuts, called incisions, through skin, muscle, and sometimes bone. However, in some situations, surgeons can use surgical techniques that are less invasive, which may speed up recovery and reduce pain afterwards.

In cancer care, different doctors often work together to create a patient's overall treatment plan that combines different types of treatment. This calls for a multidisciplinary team



**Debulking:** When the complete removal of a tumour is not possible or might cause excessive damage to the body, surgery is used to remove as much of the tumour as possible. Other treatments, such as radiation therapy or chemotherapy may sometimes also be used to shrink the remaining cancer.

**Palliation:** Palliative surgery is used to relieve side effects caused by a tumour. It plays an important role in improving quality of life for patients with advanced cancer or widespread disease. Surgery may be used to help relieve pain or restore physical function if a tumour presses on a nerve or the spinal cord, blocks the bowel or intestines, or creates pressure or blockage elsewhere in the body. Surgery may be used to help stop bleeding. Certain cancers are more likely

to cause bleeding because they occur in areas with a high concentration of blood vessels, such as the uterus, or organs in which the tumours are fragile and can easily bleed when food and waste products pass through, such as the esophagus, stomach, and bowel. In addition, bleeding may be a side effect of some drugs used to treat cancer.

When surgery is needed to stop bleeding, a common technique is suture ligation, which involves tying blood vessels using surgical thread. Surgery may be used to insert a feeding tube or tubes that deliver medications. If the cancer or cancer treatment has made it difficult to eat, a feeding tube may be inserted directly into the stomach or intestine through the abdominal wall. Or a tube may be inserted into a vein to deliver pain medication or chemotherapy.

Surgery may be used to prevent broken bones. Bones weakened by cancer or cancer treatment can break easily and often heal slowly. Inserting a metal rod may help prevent fractures of weak bones and relieve pain during healing.

**Reconstruction:** After primary cancer surgery, surgery may be an option to restore the body's appearance or function. This is called reconstructive or plastic surgery. Reconstructive surgery may be done at the same time as surgery to remove the tumour. Or, it may be done later after a person has healed or received additional treatment. Examples of reconstructive surgery include breast reconstruction after a mastectomy and surgery to restore a person's appearance and function after surgery to the head and neck area.





**Prevention:** Some surgery is performed to reduce the risk of developing cancer. For example, doctors often recommend the removal of precancerous polyps in the colon to prevent colon cancer. In addition, women with a strong family history of breast or ovarian cancers or known mutations to the BRCA1 and BRCA2 breast and ovarian cancer genes may decide to have a mastectomy, which is the removal of the breast, or an oophorectomy, which is the removal of the ovaries, to lower the risk of developing breast or ovarian cancer in the future.

### Types of minimally invasive surgery

Conventional surgery often requires large incisions. However, in some situations, surgery can be performed through one or

more small incisions, which typically results in shorter recovery times and less pain afterwards. Below are some examples of minimally invasive procedures and surgeries:

**Laparoscopic surgery:** The doctor performs surgery through small incisions in the skin using a thin, lighted tube with a camera. For example, a laparoscopy refers to a minimally invasive surgery of the abdomen, and mediastinoscopy and thoracoscopy are terms used when the same type of procedure is performed in the chest.


**Laser surgery:** The doctor uses a narrow beam of high-intensity light to remove cancerous tissue.

**Cryosurgery:** The doctor uses liquid

nitrogen to freeze and kill abnormal cells.

**Mohs micrographic surgery also called microscopically controlled surgery:** The dermatologist shaves off a skin cancer, one layer at a time, until all cells in a layer appear to be normal cells when viewed under a microscope.

**Robotic Surgery:** This is the latest in minimally invasive techniques of cancer surgery in which the operating surgeon uses a robotic system to perform the surgery. The surgeon is sitting comfortably on the console at some distance while the robot is performing the operation based on the instructions of the surgeon. This system has several advantages like better magnification, degrees of movement, 3D vision and faster rehabilitation. However, the steep cost is the limiting factor.

**Endoscopy:** The doctor inserts a thin, flexible tube with a light and camera on the tip, called an endoscope, into an opening of the body (such as the mouth, rectum, or vagina) to examine the internal organs. During an endoscopic procedure, it is possible to remove samples of potentially abnormal tissue for further examination. 



# Costly Habits



People who excessively drink alcohol or use tobacco are at much greater risk for developing head and neck cancers than teetotalers and non-smokers

**BY A K AGARWAL**

**P**atients afflicted with head and neck cancer often experience symptoms like a lump or sore (for example, in the mouth) that does not heal, a sore throat that does not go away, difficulty in swallowing, and a change or hoarseness in the voice. Such people often experience the above-mentioned symptoms or signs. Yet, sometimes such patients may not show any of these symptoms. Or, these

Many head and neck cancers arise after prolonged exposure to known risk factors such as tobacco, alcohol, and cancer-causing agents in the workplace. These cancers are generally considered preventable

symptoms may be caused by a medical condition that is not cancer.

Because many of these symptoms can be caused by other noncancerous health conditions as well, it is important to receive regular health and dental screenings. This is particularly important for people who routinely drink alcohol or use tobacco products or have used them in the past.

In fact, people who use alcohol or tobacco should receive a general

screening examination at least once a year. This is a simple, quick procedure in which the doctor looks in the nose, mouth, and throat for abnormalities and feels for lumps in the neck. If anything unusual is found, the doctor usually recommends a more extensive examination.

If cancer is diagnosed, relieving symptoms remains an important part of cancer care and treatment. This may also be called symptom management, palliative care, or supportive care. People should talk with their healthcare expert about symptoms you experience, including any new symptoms or a change in symptoms.

“Most head and neck cancers begin in the squamous cells that line the moist surfaces inside the head and neck. Tobacco and alcohol use, and human papillomavirus infection are important risk factors for head and neck cancers.”

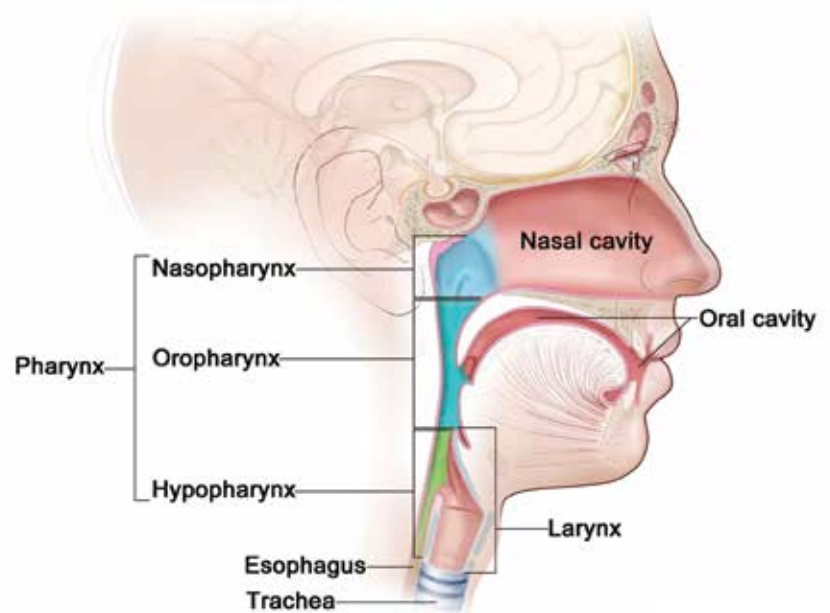
Rehabilitation and regular follow-up care are important parts of treatment for patients with head and neck cancers. Cancers of the head and neck are further categorised by the area of the head or neck in which they begin.

“Cancers of the brain, the eye, the esophagus, and the thyroid gland, as well as those of the scalp, skin, muscles, and bones of the head and neck, are not usually classified as head and neck cancers. Sometimes, cancerous squamous cells can be found in the lymph nodes of the upper neck when there is no evidence of cancer in other parts of the head and neck. When this happens, cancer is called metastatic squamous neck cancer with unknown primary”.

Many head and neck cancers arise after prolonged exposure to known risk factors such as tobacco, alcohol, and cancer-causing agents in the workplace. These cancers are generally considered preventable. Others such as parathyroid cancer are not associated with any preventable risk factor. Some people who develop head and neck cancers have no known risk factors.

People who use tobacco (including cigarettes, cigars, pipes, and smokeless tobacco) or drink alcohol excessively are at much greater risk for developing head and neck cancers. An estimated 85 percent of head and neck cancers are linked to tobacco use. A smoker’s risk of developing cancer of the larynx (voice box) or hypopharynx (the top portion of the esophagus) is up to 35 times higher than that of a non-smoker. Heavy use of alcohol raises the risk of those cancers two to five times. Those who smoke and drink

## Understanding Oral Cavity



**O**ral cavity includes the lips, the front two-thirds of the tongue, the gums, the lining inside the cheeks and lips, the floor (bottom) of the mouth under the tongue, the hard palate (bony top of the mouth), and the small area of the gum behind the wisdom teeth. The pharynx (throat) is a hollow tube about 5 inches long that starts behind the nose and leads to the esophagus. It has three parts: the nasopharynx (the upper part of the pharynx, behind the nose); the oropharynx (the middle part of the pharynx, including the soft palate [the back of the mouth], the base of the tongue, and the tonsils) and the hypopharynx (the lower part of the pharynx).

The larynx, also called the voice box, is a short passageway formed by cartilage just below the pharynx in the neck. The larynx contains the vocal cords. It also has a small piece of tissue, called the epiglottis, which moves to cover the larynx to prevent food from entering the air passages.

The paranasal sinuses are small hollow spaces in the bones of the head surrounding the nose. The nasal cavity is the hollow space inside the nose. The major salivary glands are in the floor of the mouth and near the jawbone. The salivary glands produce saliva.



heavily may raise their risk to 100 times that of non-users.

Men are two to three times more likely than women to develop a head or neck cancer because of their greater use of tobacco and alcohol. However, women are catching up: the rates of head and neck cancers found in women have been rising for several years.


There are many risk factors for cancers of the head and neck. The people who use paan (betel quid) in the mouth should be aware that this habit has been strongly associated with an increased risk of oral cancer. Poor oral hygiene and missing teeth may be weak risk factors for cancers of the oral cavity.

Use of mouthwash that has high alcohol content is a possible, but not proven, risk factor for cancers of the

Making certain lifestyle changes can significantly lower a person's risk of developing head and neck cancer. Quitting smoking can also help, even for those who smoked for many years

oral cavity. Certain industrial exposures, including exposures to asbestos and synthetic fibres, have been associated with cancer of the larynx, but the increase in risk remains controversial.

Making certain lifestyle changes can significantly lower a person's risk of

developing head and neck cancer. Quitting smoking can also help, even for those who smoked for many years. People who already have a head and neck cancer and quit using tobacco can reduce the risk of developing a second tumour by as much as 60 percent. People who are exposed to toxic fumes and dust in the work place or in other environments can reduce the risk of head and neck cancer by wearing protective face masks. Companies can also install air-filtering systems to minimise employees' exposure to harmful fumes and dust. 

(The author is Professor of Excellence and Renound ENT Surgeon Maulana Azan Institute of Medical Science, New Delhi)

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# Fatal Fumes



Lung cancer, one of the most deadly cancers, has reached almost epidemic proportions in India owing to the increased prevalence of air pollution. Increased vehicular traffic and industrial pollution seems to be adversely affecting the environment and causing serious concerns

**BY ABHIGYAN**

**A**njali Srivastava, a 45-year-old social worker, used to work for the education of slum children. But the biggest tragedy struck her when she was diagnosed with lung cancer. She never smoked in her life. However, she was a victim of passive smoking due to her husband's smoking habits. Smoking is the cause of several harmful diseases such as cancer, long-term (chronic) respiratory diseases, and heart disease, leading to premature death.

As per available data, approximately 20% of all male deaths and 5% of female deaths among Indians between the ages of 30-69 is caused due to smoking. Tobacco smoke is made up of more than 7,000 chemicals, including over 70 known to cause cancer (carcinogens). As many as 90% of lung cancer patients develop their disease because of smoking.

But Anjali's doctors informed her that lung cancer is not just a result of passive smoking but another threat to lungs that has emerged in recent times is air pollution. Since Anjali had to work under extreme conditions on outdoor locations, it was quite probable that her cancer was a result of the tremendous air pollution in the environment.

Lung cancer is one of the most deadly cancers of the present times. It is a tumour in the lungs characterized by uncontrolled growth of abnormal cells in tissues of the lung that start off in one or both lungs; usually in the cells that line the air passages. These tumours are of two types, benign tumours – the ones that remain in one place and do not spread and malignant tumours – the ones that keep spreading into other parts of the body.

With the increase in the number of tumours they keep on becoming larger in size, impeding the lung's ability to provide the bloodstream with oxygen.

The most common symptoms of lung cancer are:

- Cough - that stays and gets worse eventually.



“With a million new cases being reported every year, cancer seems to be tightening its grip on India. Ageing population, unhealthy lifestyle, use of tobacco and related products are few major reasons identified as precursor to the rise in mortality due to lung cancer.”

**Dr. Rajesh Jain**, Sr. Onco Surgeon,  
Action Cancer Hospital

Cough can be accompanied by blood sometimes

- Chest Pain – increased when laughing or coughing
- Breathing Problems - Shortness of breath
- Weakness - getting tired easily and becoming weak, resulting in weight loss and drop of appetite, hoarseness
- Bronchitis & Pneumonia – either it doesn't go, or it keeps coming back.

**Non-small cell lung cancer** can be



“When we blame smoking to be the cause of lung cancer, an astonishing fact comes across us. There has been a great rise in the numbers of lung cancer among women over past 20 years. This might prove air pollution to be a bigger threat to the disease.”

**Dr. Amit Aggarwal, Sr.**  
Consultant in Medical Oncology  
Department, BLK Super Specialty  
Hospital

treated with a surgery, chemotherapy, radiotherapy or a combination of all, depending upon the stage of cancer. However, **Small cell lung cancer** is mostly treated with chemotherapy, radiotherapy and other medications as surgery is not suitable for this as it already spreads when diagnosed.

Recent study by Indian Council of Medical Research (ICMR) under its National Cancer Registry Program claims deaths due to cancer saw a rise of 6 percentage points between 2012 and 2014. On an average, around 1300 people die due to cancer daily. Says **Dr. Rajesh Jain, Sr. Onco Surgeon, Action**

**Cancer Hospital,** “With a million new cases being reported every year, cancer seems to be tightening its grip on India. Ageing population, unhealthy lifestyle, use of tobacco and related products are few major reasons identified as precursor to the rise in mortality due to lung cancer.”

Lung cancer is the second most common form of cancer in India. It has reached almost epidemic proportions owing to the increased prevalence of smoking in the country. Another cause of concern is pollution. Increased vehicular traffic and industrial pollution in India seems to be adversely affecting the environment and causing serious concerns, say health experts. Respiratory problems and lung cancer incidents seem to be on the rise in the country due to severe air pollution.


Almost 90 percent of all lung cancer cases globally are associated with smoking, irrespective of the fact that the person is an active smoker or a passive one, as both are dangerous. Heavy exposure to metals like asbestos, radon, uranium or arsenic is another reason causing lung cancer. However, the disease may also run in family genes. A study reveals that people with the rare inherited **T790M**

mutation of the epidermal growth factor receptor (EGFR) gene have higher

chances of getting lung cancer. But environmental pollution has led to a steep rise in lung cancer among Indians in the 45 to 55 age group.

Air pollution kills about 7 million people worldwide every year, according to a report of a research conducted by World Health Organization. It occurs due to the interference of harmful gases, dust and smoke into the atmosphere deteriorating the quality of the air in the atmosphere, making it unsuitable for breathing. But with growing population and urbanization, one has to survive in these conditions, making themselves more vulnerable to lung cancer. In fact, out of the 20 most polluted cities in the world, 13 are in India, with Delhi topping the chart, reports WHO.

While in 1990 one woman was diagnosed with the disease for every three men, the figure has doubled to two for every three male cases. According to research, lung cancer increased up to 94.1% in 2013 compared to 16402 women affected by it in 1990. In case of men the increase in percentage is 62 in 2013 while 45333 men were victims of lung cancer in 1990. However it is quite difficult to identify the early symptoms of lung cancer. Dr. Amit Aggarwal, Sr. Consultant in Medical Oncology Department, BLK Super Specialty Hospital, says, “When we blame smoking to be the cause of lung cancer, an astonishing fact comes across us.

There has been a great rise in the numbers of lung cancer among women over past 20 years. This might prove air pollution to be a bigger threat to the disease.” 







# Good for your heart

There has been a growing preference for using minimally invasive surgical technique to perform complicated and complex operations. It is a safe and broadly applicable technique for performing a wide range of heart procedures

**BY DR RAKESH CHUGH**



In recent years, there has been a growing trend toward using minimally invasive surgical techniques to perform complicated and complex operations. Minimal invasive techniques have, therefore, been applied to many procedures, such as gall bladder removal, operations on the reproductive organs, urological operations, and more recently, heart valve repair and replacement as well as by-pass operations. Minimally invasive surgery uses only a small incision through which tools are inserted into the

patient, with the tool being manipulated from outside the patient. Video is often used so the surgeon can view the surgical site.

Minimally invasive surgery has several advantages over other techniques including: less trauma to the patient, smaller incisions, less post-operative pain, quicker recovery time, shorter time spent in the intensive care unit, as well as other advantages that will occur to those skilled in the art.

Minimally invasive heart surgery is a safe and broadly applicable technique for

performing a wide range of complex heart procedures, including single or multiple heart valve procedures, bypass surgery, and congenital heart repair through small incisions in performing operations.

Minimally invasive heart surgery improves cosmetic results. Rather than a prominent 10-inch scar down the middle of the chest, patients are left with smaller marks to the side of the ribs. For women, in many cases, this scar is completely unnoticeable as it sits below the breast.

In minimally invasive cardiac surgery, surgeons perform heart surgery through small incisions in the right side of your chest, as an alternative to open heart surgery. The surgeons operate between the ribs and don't split the breast bone, which results in less pain and a quicker recovery for most people. In minimally invasive surgery, your heart surgeon has a better view of some parts of your heart than in open heart surgery. As in open surgery, minimally invasive heart surgery requires stopping your heart temporarily and diverting blood flow from your heart using a heart-lung machine.

In the hospital, reduced post-operative discomfort enables patients to quickly begin a shorter recovery process. Most patients ambulate more easily and participate more actively in their personal care. Additionally, this approach lowers risk of complications like bleeding, infection and eliminates the risk of external non-union.

Under minimally invasive heart surgery, the doctor will work with you to determine whether minimally invasive heart surgery is an option. If you've had prior heart surgery or heart disease, you generally aren't a candidate for minimally invasive heart surgery. Your doctor also may perform tests and review your medical history to determine whether you're a candidate for minimally invasive heart surgery.

In people for whom minimally invasive heart surgery is appropriate, risks and complications are rare. Minimally invasive heart surgery includes robot-assisted heart surgery and thoracoscopic heart surgery. In both types of procedures, surgeons reach your heart through small



In minimally invasive cardiac surgery, surgeons perform heart surgery through small incisions in the right side of your chest, as an alternative to open heart surgery. The surgeons operate between the ribs and don't split the breast bone

incisions between the ribs of your chest.

From the remote console, your surgeon's hand movements are translated precisely to the robotic arms at the operating table, which move similarly to the human wrist. A second surgeon and surgical team assists at the operating table, changing surgical instruments attached to the robotic arms.

In thoracoscopic surgery (sometimes referred to as a mini-thoracotomy), your surgeon inserts a long, thin tube (thoracoscope) containing a tiny high-definition video camera into a small incision in your chest. Your surgeon repairs your heart using long instruments inserted through small incisions between

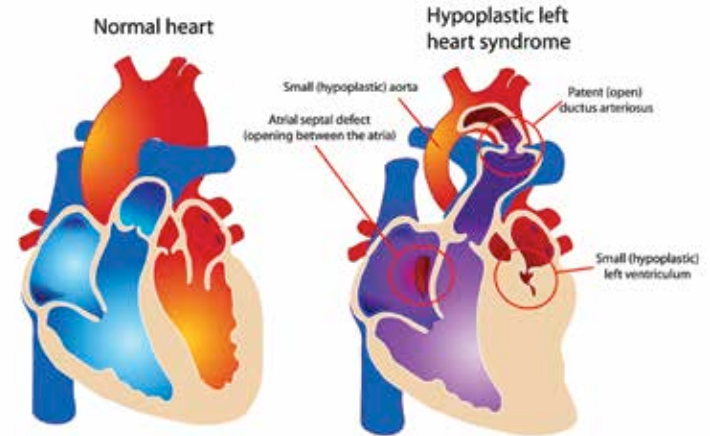
your ribs.

Minimally invasive heart surgery (also called keyhole surgery) is performed through small incisions, sometimes using specialized surgical instruments. The incision used for minimally invasive heart surgery is about 3 to 4 inches instead of the 6- to 8-inch incision required for traditional surgery.

Off-pump/beating heart bypass surgery allows surgeons to perform surgery on the heart while it is still beating. A medication may be given to slow the heart during surgery, but the heart keeps beating during the procedure. This type of surgery may be an option for patients with single-vessel disease (such as disease of the left anterior descending artery or right coronary artery).

Traditionally, surgery is performed using a heart-lung bypass machine. This machine allows the heart's beating to be stopped, so the surgeon can operate on a surface that is blood-free and still. The heart-lung bypass machine maintains life despite the lack of a heartbeat, removing carbon dioxide from the blood and replacing it with oxygen before pumping it around the body.

During off-pump/beating heart surgery, the heart-lung machine is not used. The surgeon uses advanced operating



After a minimally invasive procedure, patients recover more quickly than from sternotomy and suffer fewer complications.


Most patients can expect to resume everyday activities within a few weeks of their operation. After surgery, patients are administered an anaesthetic pain pump and drains that will be removed prior to discharge. Patients are encouraged to move around as much as possible after their operation to recover quickly. Once discharged from hospital, patients require no further post-operative assistance.

Eliminating the need for median sternotomy greatly reduces the trauma and pain associated with open-chest surgery and improves quality of life for patients. In the hospital, reduced post-operative discomfort enables patients to quickly begin a shorter recovery process. Most patients ambulate more easily and participate more actively in their personal care. Additionally, this approach lowers risk of complications such as bleeding, infection and eliminates the risk of sternal non-union.

The nature of minimally invasive surgery demands several criteria that should be considered for any item used in minimally invasive surgery. This disclosure will focus on fasteners and tools used to place fasteners in a minimally invasive surgical technique. Specifically, this disclosure will focus on the techniques for using tools and

fasteners in minimally invasive heart valve replacement surgery. For example, the fastener should be capable of expeditious use, with speed being important for many reasons. However, even though speed is important, the fastener must be capable of reliable and secure placement, since a non-secure fastener can have undesirable results. Still further, any item used for minimally invasive surgery, like any item used for any surgery, should have the confidence of the surgeon.

This requires any new item to be usable with techniques and tools that are familiar to the surgeon so that he or she need not make large changes in a technique they are already familiar with. It has been observed that surgeons are comfortable in making only incremental changes in technique rather than large scale and sweeping changes in technique.

In many minimally invasive procedures, access to the surgical site is of paramount concern. The instruments should be designed to have a minimum bulk and to facilitate action that the surgeon can no longer accomplish with his hands due to restricted access. Since the surgeon will have limited access and visualization of the site, it is important that the tools being used facilitate this procedure as much as possible. In addition, since the access is so limited, methods must be effective. 

(The author is expert in minimal invasive cardiac surgery at Balaji Action Hospital, New Delhi)

Minimally invasive heart surgery (also called keyhole surgery) is performed through small incisions, sometimes using specialized surgical instruments. The incision used for minimally invasive heart surgery is about 3 to 4 inches instead of the 6- to 8-inch incision required for traditional surgery

equipment to stabilize (hold) portions of the heart and bypass the blocked artery in a highly controlled operative environment. Meanwhile, the rest of the heart keeps pumping and circulating blood to the body.

Most cardiac operations today are performed through a sternotomy, which involves splitting the entire breastbone. Minimally invasive cardiac surgery encompasses a variety of operations performed through incisions that are substantially smaller and less traumatic than the standard sternotomy.



# BARRIERS & CHALLENGES

Paediatric HIV is a major problem in the India with most children acquiring the deadly virus from their HIV-infected mothers during pregnancy, birth and breast feeding. But such children remain the least focused group as they share the burden of the epidemic at an early age

**BY DR SUNEELA GARG/DR. PIYUSH KUMAR GUPTA**

**T**he human immunodeficiency virus (HIV) that causes Acquired Immunodeficiency Syndrome (AIDS) continues to be a major global public health issue, having claimed more than 39 million lives so far. HIV has infected men, women and children in the developed as well as the developing countries.

### Global perspectives relating to HIV/AIDS:

According to the United Nations Program on HIV and AIDS (UNAIDS), 1.2 million people died from HIV related causes globally in 2014. There were approximately 36.9 million individuals living with HIV at the end of 2014 with 2.1 million people becoming newly infected. According to UNAIDS, the total estimated number of children under the age of 15 years living with this virus globally was 2.6 million at the end of 2014 with 0.22 million children newly infected and 600 children being infected daily. In 2014, 0.15 million children died from HIV related causes globally.

Sub-Saharan Africa is the most affected region with 25.8 million people living with HIV in 2014. The Asia-Pacific region carries the second greatest burden of this disease with 5 million people living with HIV and 0.34 million people becoming newly infected in 2014. The estimated number of children living with HIV in the Asia-Pacific region is 0.2 million of which 21,000 children are newly infected.

According to WHO 23% of children in need received treatment in 2013 as compared to 37% for adults, pointing to a larger gap between services for adults and children living with HIV.

### HIV/AIDS in Indian perspective:

According to UNAIDS, the estimated number of people living with HIV/AIDS in India were 2.1 million in 2014. Of these women constituted 39% (0.75 million), while children comprised 7% (0.14 million). The adult (15-49 age-groups) HIV prevalence at national level has continued its steady decline from estimated level of 0.41% in 2001 to 0.3%



Dr Suneela Garg



Dr. Piyush Kumar Gupta

India is estimated to have the third highest number of estimated people living with HIV/AIDS, after South Africa and Nigeria, with around 0.11 million annual new HIV infections among adults and around 14,500 new HIV infections among children in 2011

in 2014. Still India is estimated to have the third highest number of estimated people living with HIV/AIDS, after South Africa and Nigeria, with around 0.11 million annual new HIV infections among adults and around 14,500 new HIV infections among children in 2011.

As per 2012-13 estimates, the four high prevalence states of South India (Andhra Pradesh, Karnataka, Maharashtra and Tamil Nadu) account for 53% of all HIV infected population in the country. Prevalence of paediatric HIV is also high in these states. A study reported prevalence of 11.2% among hospitalized children in 2002 in Mumbai while in New Delhi reported 8.9% in 2006. Thus, paediatric HIV is a major problem in the Indian context.

### Route of transmission of paediatric HIV/AIDS:

As a result of scaled-up HIV prevention services, the annual number of newly infected children in 2014 was reduced to 0.26 million in low- and middle-income countries which was 35% lower than in 2009. As most children acquire HIV from their HIV-infected mothers during pregnancy, birth and breast feeding, either or both of their parents are infected with HIV and the parents of infected children are more likely to die and thus render the children orphans.

The predominant mode of transmission of HIV in children is vertical but there seems to be a variation in rates by demographics in Mother to Child Transmission (MTCT) route of HIV infection in India. It is different from different studies ranging from 70-98%. Probable transmission through blood transfusion, and use of non-disinfected hairdressing implements such as clippers, shaving blades and scissors was also recorded. Use of unsterile needles for intramuscular injections is a common practice prevalent in rural, semi-rural, and urban slums where majority of the population resides and patronizes informal healthcare providers for their health needs. Sexual abuse is another risk factor and highly prevalent although often unreported - girls may be sexually

abused by men who are infected with HIV.

### Main challenges:

Most significant shortcoming in the response to paediatric HIV remains the woefully inadequate prevention of mother-to-child-transmission (PMTCT), allowing a large number of children to be born with HIV in the first place, in spite of it being largely preventable.

Sexual transmission of HIV being the most common route of acquisition, children remain the least focused group and they share the burden of the epidemic at an early age. Children affected by HIV/AIDS have to face many problems as in addition to their own illness, the parents of the child also usually suffer from HIV/AIDS and they may not be able to provide proper nutrition and treatment for the child. When children start developing clinical manifestations and needing treatment, they have to travel long distances for accessing care and support at tertiary institutions. This places an extra burden on patients, who are already struggling to cope with their illness. In many families they act as caregiver for sick parents who have AIDS. An increasing number of households are headed by children.

UNICEF finds that infection can lead children to drop out of school; infection of parents can lead children to engage in child labour in order to survive. Many children who were orphaned were highly exposed to abuse, exploitation and neglect because of loss of a parent(s) or guardian. They experienced a great deal of social stigma as well as discrimination. This resulted in children being marginalized from essential services such as education and health.

There are multiple barriers to ART adherence and follow up as (i) Financial barriers - unemployment and economic dependency, (ii) social norm of attending family rituals and fulfilling social obligations (socio-cultural barriers) (iii) patients' belief, attitude and behaviour towards medication and self-perceived stigma, and (iv) long waiting period, doctor-patient relationship and less time devoted in counselling at the centre.

In rural areas, a major issue is an all-



pervasive stigma and the resultant discrimination at all levels not only within the family and community but also in school and even healthcare service facilities. The discriminatory attitude of service providers discourages both children and their parents to access the ART centers. In many cases, this leads to non-disclosure of the HIV positive status of the child, thus keeping the child away from available services and interventions. Some other factors are also associated with delayed entry such as being diagnosed at earlier calendar years but reporting late, being diagnosed after knowing that the mother was HIV positive, belonging to lower communities, age <18 months, female gender, and living >90 minutes from the ART center.


Over-dosage (heavy pill burden), cost and access to transportation, lack of understanding of the benefit of taking the medication and lack of nutritional support are also the barriers to adherence to Highly Active Anti Retro-Viral Therapy (HAART).

### What we can do?

A focused effort is, therefore needed to address issues like illiteracy, lack of awareness and limited access to Information, Education and Communication (IEC). The gross lack of awareness about paediatric ART services in the rural areas and also the fact that these services are being provided free of charge by the government need to be addressed by a rural and child-focused IEC strategy. In

addition, media planning to bridge the information and knowledge gaps on the availability of pediatric ART is crucial.

In order to avoid significant family expenses for travel, testing, and treatment of Opportunistic Infections (OI), "...innovative methods to bring ART to doorsteps through creation of Link ART Centres (LAC) or making ART and testing facilities available in Community Care Centres (CCC) can be the alternative for dealing with this situation. Linkages with rehabilitative services and some Income Generation Programme (IGP) activities especially designed for the rural population could be a big encouragement." Training of doctors, paramedics and counsellors in paediatric orientation and counselling skills is, therefore, of paramount importance for providing meaningful ART.

In addition, policymakers could ensure programme integration related to HIV and AIDS. Private sector involvement – institutions including non-governmental organisations (NGOs) with health delivery systems where the state can act as regulator – in the paediatric HIV programme is recommended for improving the coverage and delivery of goods and services involved in standardised treatment. Civil society can play a strong role in prevention, care and support services. 

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



# Vision 2020

## The Right to Sight-India

**V**ision 2020- The Right to Sight- India organized the 11th Annual Conference on the theme based on Excellence in Eye Care: Learning & Practices at Moradabad, Uttar Pradesh.. The recently held two-day program offered four tracks and a common session to include topics that were a balanced mix of both clinical and non clinical. All the sessions had been designed to be highly practical and focused on drawing learning and best practices from eye care institutions and other related organizations that implemented community ophthalmology programmes successfully across the country.

The Conference was attended by delegates from various government and non- government organizations such as Ministry of Health & Family welfare, WHO, CBM, Dr. R. P. Centre for Ophthalmic Sciences, Indian Institute of Public Health, Sightsavers, Sankara


Eye care institutions, LV Prasad Eye Institute, Aravind Eye Care System, UNICEF and other experts in the field of eye care

As Vision 2020 is an important partner of Sound Hearing 2030, Dr Suneela Garg (Director Professor, Department of Community Medicine, Maulana Azad Medical College & Coordinator, Society for Sound Hearing) and Ms Deeksha Khurana (Programme Officer, Society for Sound Hearing) attended the Conference.

### ACTIVITIES CARRIED OUT AT THE CONFERENCE

Dr Suneela Garg was invited for a session titled “Comprehensive and Cost Effective Eye Care through Outreach” which was scheduled on 6th June 2015. Dr Garg delivered a presentation on “Barriers and challenges to access of eye and ear care” with focus on assessment of human resources for delivering eye and ear care services. Deeksha Khurana

presented the findings of “Evaluation of integrated eye and ear project” of Dr. Shroff’s Charity eye hospital, New Delhi and Biratnagar Eye Hospital, Nepal. The session was chaired by Suraj Senjam from Dr RP Centre AIIMS and Mr Kamlesh Guha from Siliguri Greater Lions Eye Hospital and moderated by Ms Mamta Singh from Mission for Vision.

During the Conference, IEC material developed by Sound Hearing 2030 and WHO was displayed at the Conference Venue. Dr Garg and Deeksha Khurana also shared with the audience the report of “Evaluation of Primary Ear & Hearing Care (PEHC) project” of Dr Shroff’s Charity eye hospital and the proceedings of the recently concluded First World Congress on Ear & Hearing Care. During the conference, discussion was also carried out with a few private eye care hospitals which were interested in implementing the integrated eye and ear care project at their facilities. 

# Pregnancy in Peril

Domestic violence during pregnancy is a serious public health issue with grave implications for the woman being abused as well as her baby

**BY DR SUNEELA GARG/M S SHILPI BARIAR**



M S Shilpi Bariar

**P**regnancy is supposed to be a time of peace and safety. A time where the family turns its thoughts towards raising the next generation and growing a healthy baby. Unfortunately for many women, pregnancy can be the beginning of a violent time in their lives.

Domestic violence (DV) during pregnancy is a serious public health issue which threatens maternal and foetal health outcomes. Domestic

violence is defined according to World Health Organization (WHO) as psychological or emotional, physical, or sexual violence, or threats of physical or sexual violence that are inflicted on a woman by a family member: an intimate male partner, marital or cohabiting partner, parents, siblings, or a person very well known within the family when such violence often takes place in the home. The prevalence of Domestic violence against pregnant women varies widely in the national and



international reports, ranging from 1.2 to 66%. Further, the overall prevalence of DV during pregnancy in less developed countries is higher (27.7%) than that in developed countries (13.3%).

### What all constitutes domestic abuse or violence?

Domestic violence doesn't necessarily have to be physical. It's important to understand that abuse is a pattern of behaviour in which physical violence and emotional coercion are used to gain and maintain power or control in a relationship. Abuse may be continuous, or it may be a single incident of assault. Abuse may be physical, sexual, psychological/emotional or economic. For instance, abusers may try to control, limit, and delay or deny a woman's access to healthcare practitioners and pre-natal providers. They may also refuse sex on the grounds that the pregnant body is unattractive, refuse access to food, and threaten to leave her. They may refuse to support a woman financially during her pregnancy or birth, refusing to allow her access to money to buy food and supplies, or force her to work beyond what is reasonable for her current endurance.

It should also be noted that for some women, their very pregnancy may itself be a form of abuse: a pregnancy conceived through sexual assault, marital rape, or from the woman's inability to negotiate contraceptive use. In fact, a fact sheet produced by the Pan American Health Organization states that women whose pregnancy is unintended or unwanted are four times more likely to suffer increased abuse. In abusive relationships, women and young girls are often forbidden to use contraceptives. Often used as a form of coercion and control, this type of dominance may even be an abusive partner's way to commit the woman to the relationship through pregnancy. Just as an abuser may control a woman's decision to continue her pregnancy, he or she may intimidate a woman into having an abortion. Some abused women may choose to have abortions out of fear.



In order to have a healthy pregnancy and baby, mother must be free of violence and fear. If the pregnant lady is experiencing domestic violence, it is important to contact healthcare providers for help

### Signs of domestic violence during pregnancy

Domestic violence isn't restricted to women of a particular race, religion, education, class, or sexual orientation.

Abused women come from all backgrounds and socio-economic areas. Yet, because of a fear of reprisal, embarrassment, and ignorance of shelters and sources of financial assistance, many victims are afraid to disclose their abuse. Such factors make it difficult to determine who has been abused.

Signs that a pregnant woman has been or is being abused may include: a delay in seeking pre-natal care, reluctance or refusal to attend pre-natal education, unexplained bruising or damage to her breasts or abdomen, continued use of or addiction to substances such as cigarettes, drugs or alcohol—all known to be harmful



during pregnancy, recurring or unexplained psychosomatic illnesses, and history of physical illness.

### How do victims typically respond to violence in pregnancy?

Victims of Domestic abuse often respond in equally devastating ways, engaging in self-destructive behaviour (such as alcohol and substance abuse) that risk harming both themselves and their baby. Because abusers maintain control of their victims through socially isolating them, abused women are often unable to access the support of family, friends, local services and statutory agencies. Embarrassed that their intimate partner is an abusive person, many will not seek out medical attention, attend pre-natal classes, or attend post-natal care. In addition, because of the heavy toll of domestic abuse on victims' self-esteem, victims may also suffer from depression, anxiety, panic attacks, eating disorders, and an increased

Domestic violence isn't restricted to women of a particular race, religion, education, class, or sexual orientation. Abused women come from all backgrounds and socio-economic areas

dependence on their abuser. Some may even attempt—and sadly, achieve—suicide as a means of escaping an abusive situation.

### The effects of domestic violence on health of mother and child

Domestic Violence is harmful not only to the woman being abused, but also to her baby, particularly if she is suffering physical and sexual abuse. Such attacks can cause foetal fractures and cause injuries or ruptures of the pregnant woman's uterus, liver, or spleen.


Studies have shown that during pregnancy, an abuser's attacks will generally focus on the breasts, abdomen, and genitals, resulting in serious consequences on the mother, foetus, and newborn and giving rise to maternal mortality and morbidity. It's linked to an increased risk of miscarriage, low birth weight, foetal injury, and foetal death.

### Violence also increases the baby's risk of:

Weighing too little at birth; having trouble nursing or taking a bottle; having sleeping problems; being harder to comfort than other babies; having problems learning to walk, talk and learn normally; experiencing lasting emotional trauma; being physically and sexually abused and being hurt during a fight.

In order to have a healthy pregnancy and baby, mother must be free of violence and fear. If the pregnant lady is experiencing domestic violence, it is important to contact healthcare providers for help. There are a variety of community resources available that will help to develop a safety plan for mother and baby.

### Intervention a step towards empowerment

Healthcare professionals or public health practitioner need to involve themselves in the prevention and treatment strategy of domestic violence in pregnancy. Having a sound knowledge base of the prevalence (family health risks related to domestic violence), indicators, and referral resources is crucial. To intervene in domestic violence requires planned interventions. By asking routinely, the healthcare professional may begin to proactively address domestic violence. An instant "cure" may not be achieved with the victim in a violent relationship; however, success may be defined as small steps toward empowerment. 

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

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