

# science VIEW

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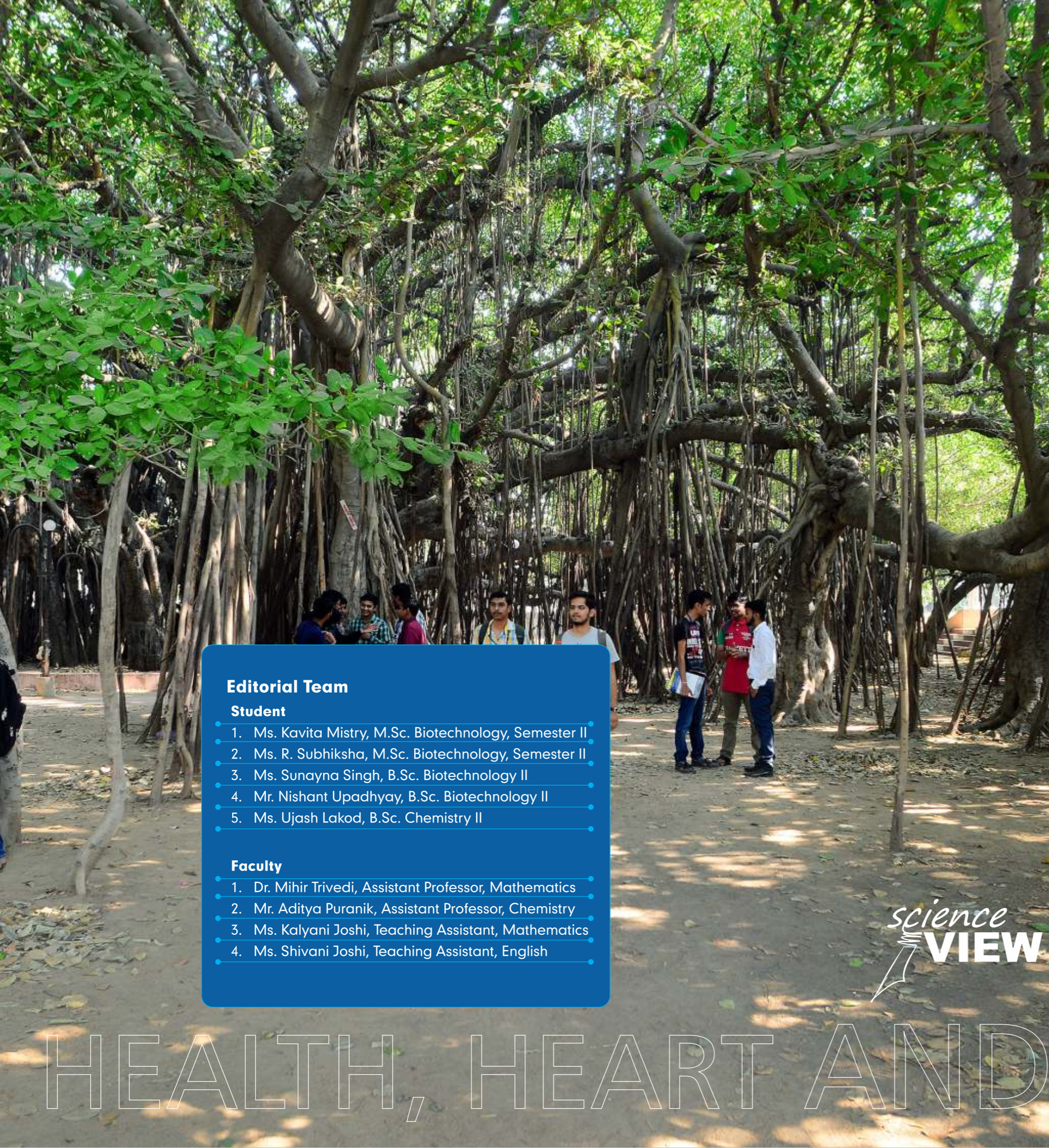


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HEALTH, HEART AND

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HYGIENE



## FROM THE EDITOR'S DESK:

**Dr. Mihir B. Trivedi**

Assistant Professor, School of Science  
& editor-in-chief, Science View

We are happy to release the sixth issue of GSFC University's e-Magazine – Science View. I feel fortunate to be a part of this issue of the magazine which is known to be a magazine for the student, by the student.

Since we all are facing the tougher time, It is the right time to spread the awareness about the importance of Health and Hygiene. According to the World Health Organization (WHO) good health is not merely the absence of disease; it is also a reflection of the social and mental well-being of people in a community. Thus, to providing good health to all, improvements in a community should aim not simply to reduce disease, but also to reduce social tensions and mental ill-health to acceptable levels.

Many factors influence health and some may have both good and bad influences. For example, surface water bodies can be beneficial as they can supply water for domestic and agricultural work, may be used for fishing and recreation, and can create a pleasant environment. However, they can also be breeding areas for insects and snails that transmit diseases such as malaria, dengue fever and schistosomiasis. Pollution of water bodies by humans also increases the risks to health.

Factors that influence health can be grouped as follows:

- The environment.
- The awareness of individuals and communities about health.
- Personal hygiene.
- Health care.
- Disease.

The awareness of individuals about health is fundamental to promoting a healthier village. If people do not understand the causes of ill-health and how they can improve their health they cannot make decisions about investing resources and time to improve their village, or about lobbying for outside assistance. Such awareness should be developed in all areas that influence health because the different influences are often interrelated. Unless people accept that they need an improved environment, better personal hygiene and better access to adequate health care, investments aimed at improving health may have only limited impact. It is also essential that community members are aware that improvements in their environment or hygiene need to be sustained to achieve long-term improvements in their health. Both community leaders and governments play important roles in developing this awareness. Working towards the same key criteria is to collect the information from the community.

Whichever techniques are used it is essential that the information obtained reflects broad opinion in the community, is reliable and can be translated into action. Once the major causes of ill-health have been identified by the community and the necessary interventions agreed upon, the resources required must be identified. If the community lacks the necessary resources, representatives of the local government and NGOs can be contacted to discuss how best to carry out the improvements. It may be possible to prepare a proposal that identifies the work the community would like to undertake, how much the improvements would cost and the contributions community members themselves can make. The time and money required to keep improved facilities working should also be considered, because benefits may be short-lived if the community cannot afford to maintain improvements. It is important therefore to discuss with community members, local governments and NGOs the long-term requirements of improvements and whether they are affordable. This will help community members to select options most suited to community needs and resources.

Hygiene is typically thought of in terms of proper hand-washing, body washing, and facial cleanliness. Although these practices are essential to overall cleanliness and interrupting the spread of disease, another component of good hygiene consists of practicing good hygiene etiquette.

I would like to thank to all my team members who helped me during the course of making this issue successful. I also wish extend my gratitude to all faculties and wonderful students participated dynamically in materializing this magazine. I am also heartily thankful to university management for providing me such an opportunity, furnishing their support and encouragement.



# 1. HEALTH, HEART AND HYGIENE

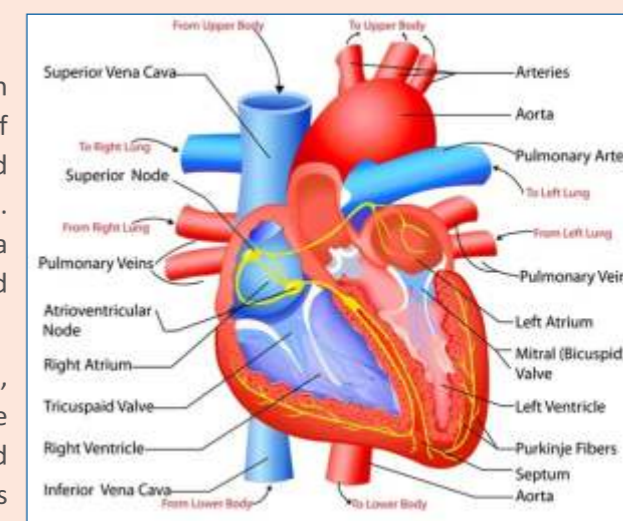
Sunayna Karamvir Singh  
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## Introduction About Heart - I

The heart is a muscular organ in most animals, which pumps blood through the blood vessels of the circulatory system. The pumped blood carries oxygen and nutrients to the body, while carrying metabolic waste such as carbon dioxide to the lungs. In humans, the heart is approximately the size of a closed fist and is located between the lungs, in the middle compartment of the chest. While, In fishes the heart is a folded tube, with three or four enlarged areas that correspond to the chambers in the mammalian heart. In animals with lungs amphibians, reptiles, birds, and mammals the heart shows various stages of evolution from a single to a double pump that circulates blood to the lungs and to the body as a whole

## Structure Of Heart - II

- ❖ The heart consists of several layers of a tough muscular wall, the myocardium. A thin layer of tissue, the pericardium, covers the outside, and another layer, the endocardium, lines the inside. The heart cavity is divided down the middle into a right and a left heart, which in turn are subdivided into two chambers.
- ❖ The upper chamber is called an atrium (or auricle), and the lower chamber is called a ventricle. The two atria act as receiving chambers for blood entering the heart; the more muscular ventricles pump the blood out of the heart. They pump oxygen-enriched blood into the body's organs, reaching even the smallest cells. Similar to the atria, valves also separate the ventricular chambers.
- ❖ Collectively-termed as semilunar valves, these are comprised of the pulmonary and aortic valves. The heart structure is made more complex because of the mechanisms that allow blood to be distributed throughout the body and return to the heart.
- ❖ Facilitating this continuous process are two types of blood vessels: veins and arteries. The vessels that bring oxygen-free blood back into the heart are called veins; those that bring oxygen-rich blood away from the heart and to other body parts are called arteries.
- ❖ Functioning in the left ventricle, the largest artery is called the aorta. The aorta is considered a main artery in the body. It further splits into two smaller arteries called common iliac arteries.
- ❖ With regular functioning, the heart can continuously supply a sufficient amount of oxygen to all parts of the body.





### Chambers of the Heart - III

The internal cavity of the heart is divided into four chambers:

- I. Right atrium
- II. Right ventricle
- III. Left atrium
- IV. Left ventricle

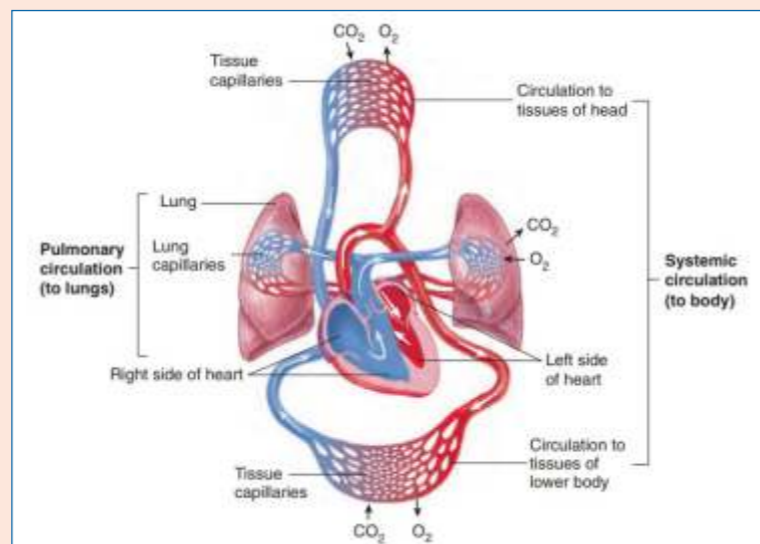
The two atria are thin-walled chambers that receive blood from the veins. The two ventricles are thick-walled chambers that forcefully pump blood out of the heart. Differences in thickness of the heart chamber walls are due to variations in the amount of myocardium present, which reflects the amount of force each chamber is required to generate. The right atrium receives deoxygenated blood from systemic veins; the left atrium receives oxygenated blood from the pulmonary veins.

### Function of the heart - IV

Vaccines help develop immunity by imitating an infection. This type of infection, however, almost never causes illness, but it does cause the immune system to produce T-lymphocytes and antibodies. Sometimes, after getting a vaccine, the imitation infection can cause minor symptoms, such as fever. Such minor symptoms are normal and should be expected as the body builds immunity. Once the imitation infection goes away, the body is left with a supply of "memory" T-lymphocytes, as well as B-lymphocytes that will remember how to fight that disease in the future.

However, it typically takes a few weeks for the body to produce T-lymphocytes and B-lymphocytes after vaccination. Therefore, it is possible that a person infected with a disease just before or just after vaccination could develop symptoms and get a disease, because the vaccine has not had enough time to provide protection.

- ❖ The heart is the main organ in the circulatory system, the structure is primarily responsible for delivering blood circulation and transportation of nutrients in all parts of the body. This continuous task uplifts the heart's role as a vital organ whose normal operation is constantly required.
- ❖ The heart's blood-pumping cycle, called the cardiac cycle, ensures that blood is distributed throughout the body. The oxygen distribution process begins when oxygen-free blood enters into the heart through the right atrium, goes into the right ventricle, enters the lungs for oxygen refill and release of carbon dioxide, and transfers into the left chambers, ready for redistribution. About 5.6 liters of blood circulate the body, and three cardiac cycles are completed per minute.



- ❖ The performance of the heart could now be easily monitored when any cardiovascular problem or disorder is suspected. For instance, a regularly abnormal heartbeat or beats per minute are characteristic of a heart-related illness. This is because a heartbeat is a manifestation of the heart's oxygen-reloading process that is made up of two phases.
- ❖ The systole is a short period that occurs when the tricuspid and mitral valves close; the diastole is a relatively long period when the aortic and pulmonary valves close. The systole-diastole relationship is the reference in measuring blood pressure.
- ❖ Other ways of physically determining the heart's regular functioning are examining the pulse rate (beats per minute). An adult's normal heart rate is at 72 beats per minute, while children normally yield higher heart rates.

### Heart Tests - V

- ❖ Electrocardiogram (ECG or EKG): A tracing of the heart's electrical activity. Electrocardiograms can help diagnose many heart conditions.
- ❖ Echocardiogram: An ultrasound of the heart. An echocardiogram provides direct viewing of any problems with the heart muscle's pumping ability and heart valves.
- ❖ Cardiac stress test: By using a treadmill or medicines, the heart is stimulated to pump to near-maximum capacity. This may identify people with coronary artery disease.
- ❖ Cardiac catheterization: A catheter is inserted into the femoral artery in the groin and threaded into the coronary arteries. A doctor can then view X-ray images of the coronary arteries or any blockages and perform stenting or other procedures.
- ❖ Holter monitor: If a doctor suspects an arrhythmia, a portable heart monitor can be worn. Called a Holter monitor, it records the heart's rhythm continuously for a 24 hour period.
- ❖ Event monitor: If a doctor suspects an infrequent arrhythmia, a portable heart monitor called an event monitor can be worn. When you develop symptoms, you can push a button to record the heart's electrical rhythm.

### Conclusion - VI

- The left side of the heart pumps oxygenated blood from the lungs to body tissues.
- The right side of the heart pumps deoxygenated blood from body tissues to the lungs.
- The cardiac cycle begins with contractions of the left and right atria, which force blood into the left and right ventricles.
- The cycle continues when the left and right ventricles contract, sending blood to the body tissues and lungs, respectively. Pressure on the blood vessels leading from the heart is highest at this point and is measured as the systolic pressure.
- The final phase of the cardiac cycle occurs when the heart muscles briefly relax and allow blood from the lungs and body to flow into the left and right atria, respectively. Pressure on the blood vessels leading from the heart is lowest at this point and is measured as the diastolic pressure.
- Once blood has flowed into the atria, the cycle begins again.





2.

# HEALTH, HEART AND HYGIENE

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Health, heart and hygiene is the concept of achieving a better lifestyle. This article mainly focuses on 3H's to improve one's life.

## Health

Definition of health according to WHO "is a state of complete physical, mental and social well-being and not merely the absence of disease and infirmity". In general, a person's living environment is very important to his health and quality of life. People increasingly realize that health is maintained and improved not only through the advancement and application of health sciences, but also through personal and social efforts and wise lifestyle choices. According to the World Health Organization, the main determinants of health include socioeconomic environment, physical environment, and individual characteristics and behaviours of people.

Achieving and maintaining health is an ongoing process, shaped by the evolution of health care knowledge and practices, as well as personal strategies and organized interventions to maintain health.

- One way to maintain one's health is to intake a healthy diet with ample amount of nutrition.
- Physical exercises also help to maintain fitness and regulate metabolism of the body.
- Enough sleep is also a necessity to maintain a good health.

Many factors contribute to mental health problems, including:

- Biological factors, such as genes or brain chemistry
- Life experiences, such as trauma or abuse
- Family history of mental health problems



## Heart

The heart beats about 2.5 billion times in an average lifetime, pumping millions of gallons of blood to every part of the body. This steady flow carries oxygen, fuel, hormones, other compounds, and many essential cells. It can also take away metabolic waste. When the heart stops, basic functions fail, and some fail almost immediately.



Therefore it is necessary to take care of our heart. Although many people develop some form of cardiovascular disease (a collective term for all diseases that affect the heart and blood vessels) as they age, this is not inevitable. A healthy lifestyle, especially starting at a young age, can greatly help prevent cardiovascular disease. Lifestyle changes and medications can kill trends that harm the heart (such as high blood pressure or high cholesterol) before they cause damage. If injury occurs, various drugs, procedures, and equipment can help support the heart.

## Hygiene

Hygiene is one of the most important factors to ensure a healthy lifestyle. Keeping your surroundings clean and tidy is a way of achieving it. As there are millions of microbes in our environment, it is harmful for us to provide them a breeding ground by keeping places dirty. These microbes multiply and can be pathogenic causing various diseases.

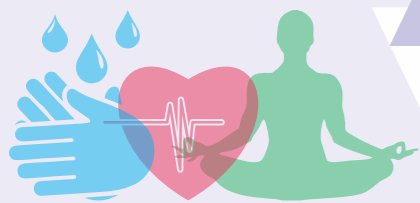
Hygiene is a series of practices to maintain health. According to the World Health Organization (WHO), "Sanitation refers to conditions and practices that help maintain health and prevent the spread of diseases." Personal hygiene refers to keeping the body clean. Hygiene activities can be divided into the following categories: household and daily hygiene, personal hygiene, medical hygiene, sleep hygiene and food hygiene. Household and daily hygiene includes hand washing, respiratory hygiene, household food hygiene, kitchen hygiene, bathroom hygiene, laundry room hygiene and family medical hygiene.



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3.

# HEALTH: INFINITE CAPITAL IN ONES LIFE

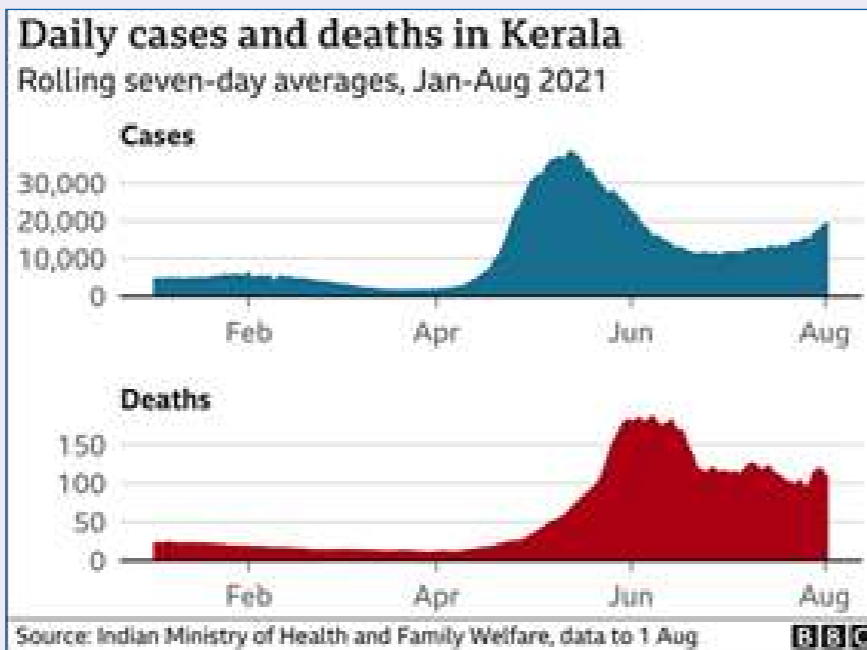
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“YUKAHARAVIHARASYA YUKTACHESTASYA KARMASU,  
YUKTASVAPNAVABODHASYA YOGA BHAVATI DUHKHAHA”

- By Bhagwan Shri Krishna  
In: Shrimad Bhagwad Gita  
(adhyay 6 Shloka 17)

This small shloka of Shrimad Bhagwad Gita tells about how one can live a healthy life. This shloka tells “The one whose diet and movements are balanced whose actions are proper, whose hours of sleeping and waking up are regular and who follows the path of meditation, is the destroyer of pain and unhappiness.” Ayurveda which became popular in medical science with using of technologies also describe health in small Hindi word “SWASTHA”(स्वास्थ्य), on separating this word into 2 parts “SWA”(i.e. one self) and “STHA”(i.e. to be situated) we get full meaning of “SWASTHA”-‘One who is situated in oneself is healthy’. In simple words it means one who knows oneself, knows their health and mind. Their senses most able to know the happiness in oneself, their mind should feel relax and main point their soul should be content, is the healthy and happiest person. As we visualize in your daily life, life has become complicated in sense of mental and physical tension. Man became too busy to have a small sight on their health. People run blindly in way of hard work and for increasing bank balance only. They think if any hospital issues or job issues or any personalized problem occurs they have at least money to overcome their issues, but it is wrong for thinking to overcome problems occurring in life. Money is not the only way to overcome the problem in our life. If we just watch people around in our society they fall ill due to (one common reason) stress and tension. Now a question arises from where this stress developed? Is stress a disease or any virus? No, it is a simple overthinking of anything at any time. Let us go in depth for it. In 21st century people had forget the proper lifestyle of living. Back in life of our ancestors, they use to follow a complete regular routine of life i.e. to waking up and go to sleep at a fixed time, eating lunch-dinner on time, practicing yoga and meditation, satisfied with what they had so they feel relax about everything. They were content with their surrounding thing so there is not a question of stress. They follow as same thing told in Bhagwad Gita shloka mentioned above in starting.

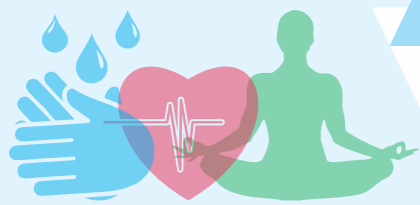


If there is no stress about anything so there will be no tension for any future problem that may occurs and results in healthy and happy life. In today's fast life people are hurry to have increase in money rather than to see in oneself i.e. health. Lifestyle had changed, became different in compare to our ancestors life. Now, today people go to work do too much of work in sense to get capital, forget to have a time to time food and finally get health issues like acidity, vomiting, headache. And in a hectic lifestyle that causes stress plays a major role in responding to all the diseases whether it is diabetes, unhappiness or brain stroke. It is determined that around 45% of people fall ill due to stress not because of any disease or virus. In recent time from march 2020 corona had destroyed the daily routine of life, results in too much of death, further well educated employs became unemployed, poverty had took place, people suffers salvation due to not getting of food , and many more pandemic took place throughout the world. But as vaccines are launched cases of corona got decreased but there is rate of increased in covid patients (who had suffered and who are facing it) death. It is not because of incomplete treatment but because of tension of hospital bills, financial problem after recurred, whether he had to face death, what after about their family, who will stand behind their family, this all questions made people get stress and as too much of stress results in brain stock or heart attack as a death. As news of increased in corona and death due to it at kerala viral, and it was noticed that around 23% people die due to mental stress, in fact they are getting best treatment in hospitals. Mental stress is one of worst disease in human life to which neither medicine nor vaccines can be developed or introduced by great experienced doctors.

### Conclusion;

Today's generation people don't understand what they want, is it their capacity to satisfy that need, just closed eyes follows what other people does and they want to do more than other people does. This competition push them down in stress and they forget to see what they made their health condition on blind following of others. Its main thing to do in life –Get satisfied with what you have not became jealous what other have. As per data around 33% people report for experiences stress and around 77% people have effect on their physical health due to load of mental stress. It is quoted everywhere that “Health is wealth” i.e. if u have good health by physically and mentally then you will never get stress, if you never get stress you can able to do work properly and can get good source of income. How can we get good health, this question arises in everyone's mind? Just follow regular routine of life as our ancestors use to do. There is only difference in our life and our ancestors life that they did work at farms and we are doing at companies or having own business. The best happiness you will get so that your whole stress (if you get little percentage in a day) is that spend some hours of a day with family or friends where you get relaxed because this some hours with family or friends get you removed out from stress. As we known if there is decreased in stress there is decreased in tension, decreased in mental-physical problem, and results in good and healthy life. Another best suggestion what holy books and Ayurveda tells is to have yoga in daily routine. Yoga keeps our unconscious mind stable, make our soul content, gave a way to think deeply without stress.





# 4. HEALTH, HEART AND HYGIENE

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The health and hygiene are the two factors that plays an important role in human's life. The life span of human beings is mostly based on the individual's health. The health is maintained by taking hygienic food at proper interval of time. Cleanliness ensures a healthy mind and physique. A person with clean habits can destroy his/her destructive desires and dirty ideas with ease. Conclusion: Cleanliness is not the responsibility of only one person however; it is the responsibility of each and every person living in the home, city and country. Good personal hygiene is one of the best ways to protect yourself from getting illnesses such as gastroenteritis and the common cold. Washing your hands with soap removes germs that can make you ill. Maintaining good personal hygiene will also help prevent you from spreading diseases to other people.

## Healthy Aging

What is healthy aging? It means more time doing what you love, whether that's traveling, finding new hobbies, or spending time with family. Get the facts.

## Introduction

If you feel young on the inside, you probably want to make sure you continue feeling young on the outside, too.

The good news: Healthy aging is achievable.

No matter what you love to do—whether it's work, play, travel, spend time with your family, or develop new hobbies—you'll find tips on healthy aging that'll keep you on the go and feeling good.

We've gathered valuable information, including expert advice and the latest research on longevity, and put it all in one convenient place.

Want to know more about living longer? How about managing memory issues? We've got insight on that, too.



If you're having any medical issues or questions about aging, make sure you speak with your healthcare provider (HCP). They can work with you to help you live a healthier and more active life.

If you're having any medical issues or questions about aging, make sure you speak with your healthcare provider (HCP). They can work with you to help you live a healthier and more active life.



## Longevity

What is healthy aging? Can you really take steps to live longer or improve your quality of life? While your genes play a major role, there are lifestyle changes you can make to boost your health. Read on to find out how some simple modifications can help get you there.

## Aging & Memory Issues

You've misplaced your glasses again. And where are those car keys?

Everybody loses track of things now and again. But when you find yourself doing it over and over, you may be wondering whether it's just a normal consequence of aging or a sign of something more concerning? Learn the facts about dementia and other diseases related to brain function, as well as how diet and exercise may help your brain work better.



## Heart

The heart is one of the body's most essential organs.

The heart is the body's engine room, responsible for pumping life-sustaining blood via a 60,000-mile-long (97,000-kilometer- long) network of vessels. The organ works ceaselessly, beating 100,000 times a day, 40 million times a year—in total clocking up three billion heartbeats over an average lifetime. It keeps the body freshly supplied with oxygen and nutrients, while clearing away harmful waste matter.

The fetal heart evolves through several different stages inside the womb, first resembling a fish's heart, then a frog's, which has two chambers, then a snake's, with three, before finally adopting the four-chambered structure of the human heart.

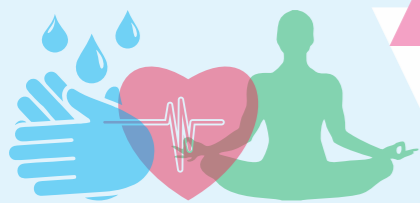
## Function:

About the size of its owner's clenched fist, the organ sits in the middle of the chest, behind the breastbone and between

the lungs, in a moistened chamber that is protected all round by the rib cage. It's made up of a special kind of muscle (cardiac muscle) that works involuntarily, so we don't have to think about it. The heart speeds up or slow downs automatically in response to nerve signals from the brain that tell it how much the body is being exerted. Normally the heart contracts and relaxes between 70 and 80 times per minute, each heartbeat filling the four chambers inside with a fresh round of blood. These cavities form two separate pumps on each side of the heart, which are divided by a wall of muscle called the septum. The upper chamber on each side is called the atrium. This is connected via a sealing valve to the larger, more powerful lower chamber, or ventricle. The left ventricle pumps most forcefully, which is why a person's heartbeat is felt more on the left side of the chest.

When the heart contracts, the chambers become smaller, forcing blood first out of the atria into the ventricles, then from each ventricle into a large blood vessel connected to the top of the heart. These vessels are the two main arteries. One of them, the pulmonary artery, takes blood to the lungs to receive oxygen. The other, the aorta, transports freshly oxygenated blood to the rest of the body. The vessels that bring blood to the heart are the veins. The two main veins that connect to the heart are called the vena cava.





## Blood Delivery

Since the heart lies at the center of the blood delivery system, it is also central to life. Blood both supplies oxygen from the lungs to the other organs and tissues and removes carbon dioxide to the lungs, where the gas is breathed out. Blood also distributes nourishment from the digestive system and hormones from glands. Likewise our immune system cells travel in the bloodstream, seeking out infection, and blood takes the body's waste products to the kidneys and liver to be sorted out and trashed.

Given the heart's many essential functions, it seems wise to take care of it. Yet heart disease has risen steadily over the last century, especially in industrialized countries, largely due to changes in diet and lifestyle. It has become the leading cause of death for both men and women in the United States, claiming almost 700,000 lives a year, or 29 percent of the annual total. Worldwide, 7.2 million people die from heart disease every year.

## Hygiene- Another Form of Godliness

It is said, "Hygiene is next to godliness." It is because we can achieve nothing physically, mentally or spiritually if we are unclean in our body, mind, or soul. Nobody likes an unclean child or adult and a clean one is loved, desired and respected everywhere.

First of all, we should keep our body clean. We should have a daily bath with toilet soap or shampoo well-applied to all parts of our body and hair so that not a speck of dust or a drop of perspiration keeps sticking to us. We will feel unpleasant and lethargic instead of being alert. Hygiene is also very important for good health. A large number of bacteria keep sticking to our bodies and clothes.

If we do not wash them regularly, we can acquire several diseases. Dirty and unwashed clothes are not only a source of bad smell, but also, these are hotbeds for disease causing germs. We should brush our teeth and comb our hair regularly.

Similarly, we should cut our nails frequently as many germs enter our body through our fingers or toes. We should also protect our feet from dust and must put on socks and shoes. It is very important that the utensils, in which we take our meals, are neat and clean. The drinking water should be pure and clean and preferably filtered.

We should also keep our houses and environment clean. At a higher level, we can say, that apart from cleanliness and purity of body, purity of mind is also essential. We should learn how to develop only noble thoughts in our mind.

For that purpose, we should keep good company and must read pure and noble literature. It is the duty of parents and teachers to teach the lesson of cleanliness to the children so that they grow up as great and useful citizens and members of society.

## Conclusion

Thus we can say that Health, Heart and Hygiene is important of us.



# 5. GOOD HEALTH – WHAT? HOW?

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What is health? Health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity.

We live in a world where our life is stressful. We have to go to college, prepare for exams, tuitions etc. and for maintaining this daily routine, we need a healthy and focused mind. As time goes on, we have changed, our lifestyle has changed, and we are more prone to eating junk rather than eating healthy home cooked food. Unhealthy eating can be harmful and can lead to different illness.

Most people often make mistake by skipping meals or by doing excessive exercise in order to lose weight. Eating medicines, a cup of soup, or just one meal in a day will not help maintain a healthy body. It will slow down your metabolism and lead to gaining more weight, which will lead to you feeling tired and stressed. An unhealthy and unfit lifestyle also results in premature death. Obesity and lack of physical fitness set the stage for diabetes, heart disease, and other serious health problems.

We should eat good nutritious food which is rich in proteins and vitamins. It will help in body growth, give energy, and boost our immune system. Healthy food habits help in preventing various illness. Having organic or food containing fiber helps in cleaning the body. Playing various outdoor games helps the body to maintain fitness. Regular morning walks to keep you fresh as well as fit. Drinking water is also an important part of having a fit and healthy body.

A good mental health can be achieved by talking about your feelings, regular exercise, eating well, keeping in touch with people, asking for help, doing something you are good at, and accepting who you are.







## 6. HYGIENE

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Hygiene is the most vital part and our foremost duty as responsible citizens. Hygiene is responsible for our health so it's our priority to take it seriously and never take it for granted. Whenever there is hygiene and cleanliness good health lies there. Only hygiene is not only important for us to live healthily but it is also beneficial for an upcoming generation too and they will also get a wide time gap to nurture and enrich their respective lives. Being surrounded by a Hygienic environment helps us to remain away from all the illnesses and diseases. Taking into account the current global situation which is becoming worse and worse day by day hygiene is the only best option we can have at present because wherever there is hygiene there is no chance of any bacteria or virus that would develop over there. And there is a very famous saying that cleanliness is next to godliness which means that God resides only there where there is hygiene and cleanliness. Bringing out the current problems of global warming which the world is facing since decade can also be treated and prevented by the hygiene. Good humans create a hygiene environment and a hygiene environment creates a better world for everyone.

Animals too face problems by improper disposal of the garbage and losing their lives so our small steps towards hygiene would be beneficial to them too.

Not only for our surroundings but hygiene is important everywhere so by taking small steps and changes towards it would make remarkable changes in our world and our upcoming generations will have something for which they will praise us. Hygiene is compared to offering prayers to God.

To conclude we can say that it's our religion to have hygiene around ourselves and also around us to have benefits related to health wealth and prosperity.



## 7. HEALTH, HEART AND HYGIENE

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What do you understand by the term health? A person from a nonscientific background might answer- if someone does not acquire or is not infected by any disease he or she may be considered healthy. This definition is correct but incomplete. According to the world health organization, health is a state of complete physical mental, and social well-being and not merely the absence of disease or infirmity. For instance, if a person has unacceptable behavior towards someone or towards any other group of people or if a person performs activities that are not accepted by society then he or she may not be considered a healthy individual.

Maintaining good physical health is also an utmost requirement. Both the conditions of malnutrition and overnutrition come under the category of being unhealthy. A person should be physically fit to remain healthy. It is the diet of a person which makes him/her fit or unhealthy. The number of calories you take in and the manner in which you utilize them are the most important deciding factors of either being fit or unhealthy. Everyone should have an idea about their diet, particularly what when and how should they eat so as to remain healthy.

Moreover, a person should have a low tendency to acquire an infection in order to remain physically healthy. If someone is vaccinated thoroughly throughout their childhood then it is expected that he or she will catch fewer infections. Hygiene is one of the important factors which plays a role to maintain the physical health of a person. Maintaining good hygiene is directly proportional to having good health. Poor hygiene leads to different sorts of infections and diseases. Bathing daily washing hands regularly, wearing washed clothes, usage of sanitizers and masks, usage of sanitary pads by women during menstruation all comes under good hygiene practices. Last but not least we should also keep our surroundings clean. When we ensure cleanliness around us, an overall package of healthy hygiene is generated.

We all should believe that the heart is one of the most important organs of our body. It is the first formed organ of our body. It is the first formed organ of our body in all of us but still, we neglect to examine the health of our heart. When was the last time you had a heart check-up? Certainly, we all would be unable to remember. During our entire lifetime, we eat oily stuff and then around the age of sixty reality hits us when the doctor says that we have a blockage in a capillary of our heart. The point that I want to make here is we should take care of ourselves and our loved ones as well as of our hearts as it is one of our loved ones too. There should be regular clinical check-ups especially related to the heart as it is the engine of our body. Lastly, I would like to sum up my article by giving emphasis on the fact that by maintaining three H's – Health, Heart and Hygiene, an individual can live a long, prosperous and beautiful life.





## 8. HYGIENE

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Hygiene, a topic which has been in lime light from the past two years. Washing and sanitizing hands has become important just as it is important to us to updated our social media status, whenever we are out. At times we may feel lazy to follow a proper hygiene, but doing so can greatly influence our life, health, body and surroundings. Hygiene is an important part of lifestyle which is practiced, to maintain health and to prevent spread of disease. Now let us understand more about hygiene.

Firstly, we all know that germs and bacteria cause disease, but what are these germs? These are small organisms which are not visible to human eye due to there microscopic size. Some germs may be living such as, protists, fungi and some may be non-living like, viruses, prions or viroids. These germs multiply very quickly, a study shows that one germ can multiply up to 8 million in one day. But their reproduction and life are greatly influenced by the environment they receive. A clean and hygienic body may resist germs easily, wherein an un-hygienic may suffer from disease. Here comes a very important topic called as personal hygiene.

Personal hygiene includes the choice of habits to maintain cleanliness, like taking bath, washing hands, cutting nails, brushing tenths, etc. the germs on our body to due to lack of hygiene can cause serious disease like, Ringworm, Diarrhea, Tooth decay, Head lice, Scabies and many more. Research shows that washing hands with soap and water could reduce deaths from diarrheal disease by up to 50%. In a day we unconsciously touch our mouth, eyes, ears a lot of time without realizing the amounts of germs we intake. This germs travel into our bodies and can become active and cause ill-ness. Thus, it is important to maintain personal hygiene.

Hygiene at home and everyday life is also really important. The sources of germs in homes can be our cloths, rotten food, water or our pets. Still water in toilets, drainage pipe, sinks can support the growth of bacteria. When food in exposed in air, microorganisms land on it and start to breaking it in order for their own use. Due to oxygen the growth of microorganisms enhances, such as molds and yeasts. Our pets can also cause us disease like campylobacter infection, rabies, ringworm, etc. Giving them proper bath, and vaccine time to time, can give them and us a healthy life. Washing and drying hands, stop touching things unnecessarily, cleaning toilet, covering your mouth while sneezing, keeping your surroundings clean, eating hygiene food, small habits like this can greatly improve our everyday hygiene.

The meaning of hygiene is to keep yourself and your surroundings clean, in order to avoid diseases and infection. But hygiene isn't only about cleanliness. It is about the habits we adapt to maintain a proper hygiene, to understand the factors affecting it and to take safety measures. Taking out some time from our life and maintaining a proper hygiene, can really help us to live a healthy, happy and long life, don't you want to live a life like that?



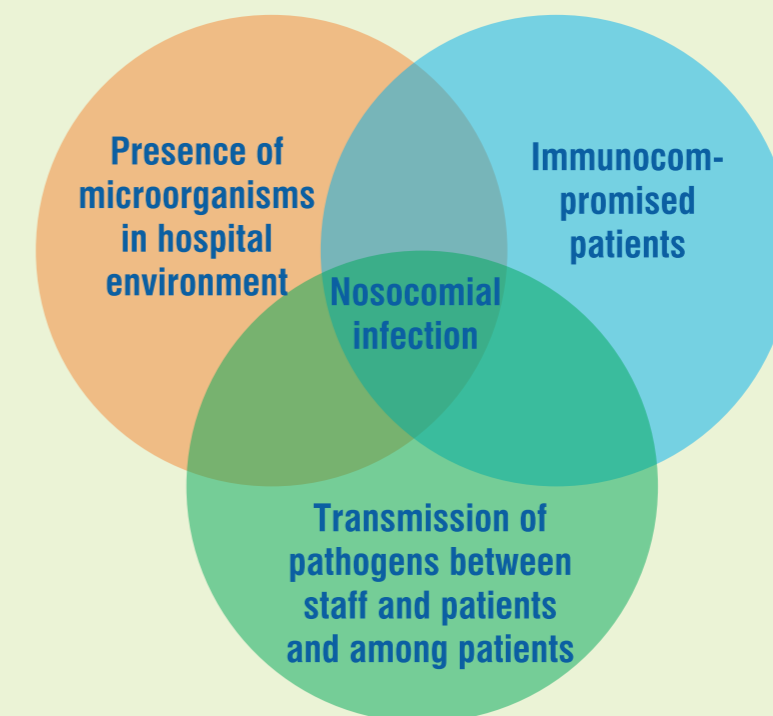
## 9. DRUG RESISTANCE PART I: WHAT ARE NOSOCOMIAL INFECTIONS?

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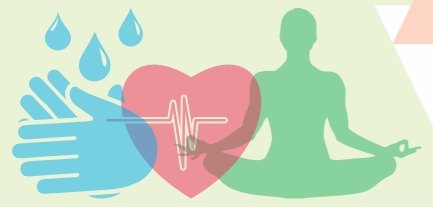
According to the World Health Organization (WHO), Nosocomial infections (also known as “Hospital-acquired” infections) are defined as “An infection occurring in a patient in a hospital or other health care facility in whom the infection was not present or incubating at the time of admission. This includes infections acquired in the hospital but appearing after discharge, and also occupational infections among staff of the facility” [1]. The symptoms of these infections are generally detected in the patient(s) within or more than 48 hours of the length of stay of the patient(s) in the healthcare facility [2].

Nearly 2 lakh individuals are affected annually in the U.S from nosocomial infections and around 90,000 deaths are recorded each year, priming the severity of these infections [3]. Nearly 4 million people are affected in Europe alone [4]. Additional studies have also revealed that nearly 5-10% of all patients admitted in various healthcare facilities across Europe and North America suffer from Nosocomial infections, with Asia and Africa accounting for 40% of such cases [4,5].

Numerous types of healthcare-acquired infections are prevalent which are caused by either direct or indirect contact between the patients and source [6]. The principal sites for the incidence of nosocomial infections include the respiratory tract, bloodstream, surgical sites/ areas undergoing invasive procedures and Urinary tract infections [7]. This has solicited an elevated change in the existing remedial procedures for the treatment of the patient(s) admitted in these facilities.







Several factors have attributed to a high risk of susceptibility on the patients from attack by these opportunistic pathogenic microorganisms, thereby resulting in the upsurge of monetary (in the range of 4.5 to 5.7 billion dollars US per year), morbidity and mortality threats upon the individuals admitted in these healthcare facilities [8,9]. Some of the principal ones are listed below:

1. Prolonged and irrational usage of conventional antimicrobial agents, resulting in the development of antibiotic resistant pathogenic strains.
2. Incapability of the staff personnel/ infection control department in the maintenance of the mandatory sterile conditions in the health care facility.
3. Reduced inherent immunity of the patient leading to increased susceptibility towards pathogenic microorganisms.
4. Inadequate knowledge of the sophistication and complexity of the treatment procedures followed at the healthcare facilities.
5. Absence of proper guidelines and policies for the elementary infection control protocols, etc.

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10.

## LIMB DONATION: INDIA EMERGING AS A CENTRE OF EXCELLENCE

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Shreya, a 19 year old tragically lost her hands in an accident. A year later she visited the Amrita Institute of Medical Sciences (AIMS) in Kochi as it was the only centre in Asia that had conducted successful hand transplants. She registered for transplant, but the chances of getting a donor were rare.

But miraculously, Sachin a 20 year old had been declared brain dead and his family had agreed to donate his organs including his hands. Shreya's blood type matched his. It took over 13 hours, a team of 20 surgeons and 16 anesthesia specialists to successfully attach the hands to Shreya's body.

For a year and a half, Shreya underwent intensive physiotherapy. Initially the hand felt heavy, it was bulky. But, in the last 3-4 months, there is a remarkable change, the hands are becoming more feminine: fingers are becoming leaner, wrist is smaller, colour of hands have changed to match the rest of her skin tone.

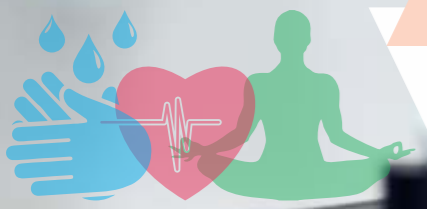
“Very few countries in the world have the capability to conduct hand transplants more so in Asia. India is now one of them. However, neither the potential recipients nor the donors or their families are much aware that hand transplants are now possible in the country. Thousands of hand amputees continue to lead the life of a cripple without realizing that with hand transplants, they can get as much as 95 percent of hand functionality back and lead a normal, productive life. It is not the shortage of skills but the shortage of donors that are the main challenge in hand transplants in the country.” Said Dr. Subramania Iyer, HOD, Plastic & Reconstructive Surgery, Amrita Institute of Medical Sciences, Kochi, who led the team of surgeons which successfully conducted India's first-ever hand transplant in 2015.

“Hand transplants are not life-saving but life-altering. They are entirely different from other transplants – the age, color, size, sex and even skin color of the recipient and donor need carefully matching. The complex surgery is conducted by a team of 25 surgeons and 12 anesthetists across 14 to 16 hours. There is only an 18-hour window in which the donor's hands must be transplanted. The surgery today costs about Rs 20 lakhs, and the patient needs to stay in the hospital for a month.”

Arms are harvested from a brain-dead donor. Each tendon, artery, nerve and vein is identified and tagged. The bones are then connected with metal plates to the body of the recipient, and a total of 25 tendons, 2 arteries, 6 nerves and 5 veins are carefully reattached.

“India is emerging as a center of excellence in organ transplants. While there is lot of awareness about donation of organs like cornea, liver and kidneys, not many people know that hands can be donated too. Hand transplants is an evolving field less than 20 years old, yet it has the potential to contribute significantly to medical tourism.”





Anviksha