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A connection of hardwork with humility leads us to an inspiring journey of young innovator

by Harmanjot Singh

All about fitness - do's and don'ts

by Dr. Shubha. H.V

**It just takes fifteen minutes to be a hero and save three lives ...
What's stopping us from being one?**

by Dr. Archana Shetty

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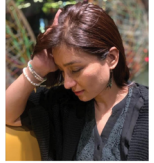
InnoHEALTH

PERSONA

Experience the inspiring journey of a mountaineer

Dr Anshu Jamsenpa is the first woman mountaineer who climbed Mount Everest twice within five days. She is also the first Indian woman in the world to climb Mt. Everest five times for this achievement she received Padma Shri in the year 2021. She was a lead actress in the movie 'Crossing Bridges' and is also a mother of two children. She is an inspiration for all those people who dare to dream and turn their dream into reality.

Dr. Deblena Bhattacharya, Associate Editor interviews her on the experiences she has gathered during her expeditions and those that have helped her to grow personally and professionally.



Dr. Anshu as an actress



Conquered Mt. Everest five times



Receiving Padma Shri from President of India

Q. When did the desire to climb Mt. Everest come to your mind? What planning you had gone through to undergo the mission and how much time did it take?

A. I was always an outdoor kind of a person. I've been drawn to nature and the mountains ever since I can remember. It was during my adventure course in Manipal that I seriously began thinking of taking up mountaineering as a career because mountaineering and adventure sports/tourism had tremendous potential in our region. I went for my basic course at the National Institute of Mountaineering at Uttarakashi and advanced course from

Himalayan Mountaineering Institute in Darjeeling. The instructors began encouraging me to think about climbing Everest as they were confident seeing my determination which initially came as a shock to me but helped in firmly planting the seeds of my passion for eventually climbing Everest. I began planning about climbing Everest after my advanced course was over and for the next one year I began meeting government officials and ministers in order to find my expedition. I had to sell my land and dig into my savings to come up with the required funds in order to finance the climb.

Q. Tell us about your journey and what hardships you have to endure to make your dream come true?
A. My struggles really began after finishing my advanced course. I wanted to fulfill my dream of climbing the highest mountain in the world, but climbing Everest is a very costly affair. I began going around meeting government officials, ministers and bureaucrats asking for any help and assistance I might get for my venture. I met everyone I could whom I thought might help me. But convincing people who weren't sure about my abilities in the first place was hard. There were days I couldn't sleep or eat properly. Most people I met gave me odd responses, barring a

few in Nepal a pre-Everest expedition to mount Nepal peak took place, by sheer chance I was chosen as one of the climbers of the expedition at the very last minute in place of another climber as again very few people believed I was capable. But I had faith in my skill and by the time the successful summit to Nepal peak was over, a lot of the climbers had changed their opinion on my climbing abilities.

I had to deal with a lot of people questioning my ability to climb Everest. Almost no one was convinced I could actually do it and many even came forward suggesting I was crazy and should just drop the whole thing. People began saying I would come back from Base camp itself I had to ignore all the naysayers and keep my focus on my goal and still kept struggling to generate funds for my expedition. It took quite a toll on me, mentally and physically. But I always believed in my dreams and somehow kept going.

Q. Being a mother and mountaineer how did you cope up with both these responsibilities?

A. My first and foremost responsibility is towards my children. My dreams and passion come after them. My children are my top priorities and being a mountaineer will always take a second seat to them. However I have also always been aware of the fact that females are treated unequally in society and I really wanted to set an example for my daughters that as women we can break the glass ceiling and not confine ourselves to societal norms and its narrow ways of thinking. Towards this end it was vital that I set a personal example for my daughters and for women in general through my actions that no dream is impossible.



I had to deal with a lot of people who were a bit unassertive about my ability to climb Everest.

I have had many long conversations with my daughters and talked to them about the positive impact that could be brought about in our society if I succeeded in my endeavours and the positive change that could take place in people's mindset about women going after their dreams. I have been very fortunate to have had two very understanding and mature daughters, who eventually began to understand their mother's passion to do something different and am very proud of them for motivating me. Their support has always encouraged me to chase my passion, although I have always had to go with a very heavy heart during my expeditions leaving my children behind knowing that I might not return.

Q. It is truly inspiring to balance the role of being a mother and also an ardent mountaineer. Your journey will motivate our readers. How did you feel when you have conquered Mt. Everest for the first time?

A. The first summit of Everest for me was a very unusual one. The weather had turned for the worst while climbing and a majority of climbers turned back from the basecamp. I couldn't see ahead clearly and kept fogging ahead through the packed weather and terrible visibility and it was only when my Sherpa Lalpa Ranganthom from behind me that we had reached the summit did I realise I had reached the top. I felt an immediate

goosebumps all over me when I realised I had truly summited Mt. Everest. But we couldn't savor the moment. The weather was terrible and there was a real danger of frostbite. We quickly unfurled the national flag, took pictures and descended back down. It was a moment I shall never forget. A deep feeling overtook me and I felt a very strong sense of connection to God at that moment. It's a feeling that I get whenever I summit any mountain.

Q. Was it there in your mind to climb Mt. Everest five times?

A. No, I never thought I would climb Everest so many times. Maybe it was fate. After my first successful summit, which I couldn't really savour because of the bad weather, I became self-assured by my fitness and climbing abilities. This brought a desire in me to climb the mountain again and even my Sherpa kept telling me that I should go in for a second summit attempt as I had the fitness and ability to do it.

Having climbed Everest twice, I began guiding young mountaineers everywhere which I always wanted to do and this brought me further opportunities to climb Everest.

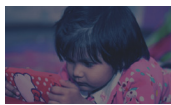
My final two climbs were a result of my desire to test my limits and to prove to myself that I could climb Everest the fastest that anyone has ever had.

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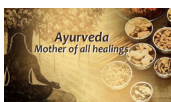
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Feedback and Testimonials

A very innovative way of making people aware of the advances and facts about medicine. Even a common Man can understand the concepts in magazine easily. Keep going. Well organized contents, attractive pictures and precise information about a lots of important topics.

Dr. Shubha H. V
Assistant Professor at Saphthagiri Medical College
India

Dear Team, I am very much thankful and grateful that I got my article published in your esteemed E-health magazine. Special thanks to the chief editor and the team who is behind "InnoHEALTH". Such a great platform where everyone can showcase and express their thoughts in the healthcare through your magazine.

Tamanna Sachdeva
Project officer at Dakshayani and Amaravati Health and Education
India

Very well laid out magazine and are article are so current and reader friendly.

Ramesh Kumar Nanjundaiya
Global Ambassador - INDIA at Silicon Valley Forum (SVF)
USA

I would like to express my gratitude to the chief editor and editorial team of "InnoHealth" for the excellent coverage in the magazine published. The positive exposure you gave me on the International Nursing day.

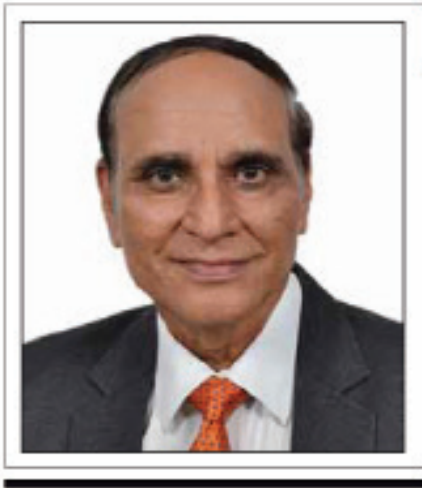
Neha Lal
Sr General Manager - OPs & HR at GCS Medical College
Hospital & Research Centre
India

Your magazine is an extremely useful resource in the field of healthcare innovation. Keep up the good work!

Dr. Kanchan Mukherjee
Professor - Centre for Health Policy, Planning and Management
Tata Institute of Social Sciences (TISS)
Mumbai, India

Very good Webinar, both from intent and presentation point of view.

Dr. Sanjib Dutta
Kolkata, India



Dr. V K Singh

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EXECUTIVE OPINION

“Startup India”

COVID-19 has given us many lessons by handling miseries and challenges given to mankind. It has forced us to innovate due to compulsions. The production of vaccines is one such big success story for India lauded by the world community. The impetus of the government encouraged the community to make devices by health startups and be “Atmanirbhar”. Many items we were importing are gone for export. Annual budget of 2022 has also encouraged innovators by incentives. The Prime Minister often speaks about innovations and participates in Hackathons and Ideathons conducted in the past by the Ministry of Education. The funding and prizes given to young innovators to motivate is the new norm of today. We also encourage such initiatives by publicizing through our magazine.

InnoHEALTH has a circulation of 93,000 readers. With multiple sources the funding in the present situation has become more convenient which was earlier a tough task. The behavior of the community has changed drastically that they are now transacting business with so ease in virtual/online mode which was not done in the past. We have entered the digital world by compulsion to organize events in virtual modes, teaching in class to election rallies are accepted online. While we lost something but also gained by not running organisations in physical mode.

We have progressed and brought innovations in fast track. India is home to 81 Unicorn with a total valuation of USD 279 billion of these 43 with USD 89 billion emerged last year. USA is top in number of Unicorn while India is fourth after China and UK. Media is reporting how we are added to every month's list of Unicorn and soon we will surpass 100 Unicorns. In Jan 2022 there were 46 companies in the world having decacorn status out of which India had four: Flipkart, BYJU's, Paytm and Swiggy. Let us not count on rosy pictures but to be successful analyse our failures too. IBM institute study finds that 90% of Indian startups fail within the first five years of inception. Innovation has become a buzzword lately but what we need to ensure the reduction in failure rate of innovations. Let us innovate to improve quality, reduce cost and import. It would generate more employment and create a better economy.

As quoted in my book: Alexander Blass, CEO of Innovation Institute of America, Inc. and winner of Top Innovator of the Year award said “It is no secret that many of the world's top innovators come from India. Within the past few decades, India has embarked upon an incredible transformation from an agrarian-based society to a knowledge-based economy. Along with the population growth came survival instincts and the need to be different, better and unique. One can see innovation everywhere in India, whether in large game changing innovations that garner lots of publicity, or in less obvious yet important incremental fashions”

We are celebrating 75 years of independence but simplified govt policies in the last few years and recent challenges have encouraged our younger generation of 11 to 12 years of age to innovate who have been awarded by the President/Prime minister every year. We also publicise their good work through our innovators' club meetings and magazine to let the ecosystem know and motivate others. The Prime Minister always talks of “Naya Bharat”, it is our duty as citizens to make our country of 1.3 billion population the best in the world. It should not be a country known for snake charmers and beggars but rather a country of innovators showing way to others.

“ The behavior of the community has changed drastically that they are now transacting business with so ease in virtual/online mode which was not done in the past. ”

“ Let us innovate to improve quality, reduce cost and import. It would generate more employment and create a better economy. ”

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PERSONA

A concoction of hardwork with humility leads us to an inspiring journey of young innovator

Harmanjot Singh, 14 year old student who has been conferred with the prestigious Pradhan Mantri Rashtriya Bal Shakti Puraskar Award 2021 under Innovation Category, the highest national civilian honor for children. He is also a Certified Full Stack Developer, Olympiad Gold Medallist and Young Member of the New York Academy of Sciences.

Dr. Debleena Bhattacharya, Associate Editor, interviews him about his inspirational journey to become the young innovator and his future plan.

Q. Congratulations for being awarded the young innovator under Rashtriya Bal Puraskar 2021. Enlighten us about your innovation.

A. My heartfelt gratitude for the wishes. I was awarded the Pradhan Mantri Rashtriya Bal Shakti Puraskar 2021 under Innovation category. The Raksha Women Safety App is made to ensure the safety of women. I have developed this app leaving no stone unturned to make the world a much safer place for women to work and live with utmost safety and no fear. An inspiration and idea came from my mother because she is also a working medical professional. At the same time we witness unpleasant incidents on females daily, which ignited my mind to develop this app.

Q. How does the app: RAKSHA-The Women Safety cater to the safety of the women during Pandemic and normal days?

A. The RAKSHA-Women Safety App caters to the safety of women through its SOS Emergency features mainly.



The application has a SOS Alert screen which comes with a special feature to call the police and other emergency women helplines instantly by clicking on the button. Also, in case of any unsafe

situation, tapping the message button raises an emergency SOS alert to the trusted contact selected by you. The SOS alert is in the form of SMS informing that you are unsafe and need help. Along-with, we can see nearby police stations on a Google Map based on the current GPS location with a feature to call them as well as get the directions. The app has a novel AI enabled ChatBot that can assist the user on how to use the application, at the same time providing valuable guidance in difficult situations. Apart from emergency features, it has valuable safety tips that every woman should know, informative tips with images to escape threat and be aware of the unpleasant circumstances, various purposeful self-defense videos and images which can guide and help women to learn self-defense and information regarding various laws to penalize the culprit for the offences against women.

Calmify Mental Healthcare App which will surely help people to cope with stress in a healthy way.

Q. Developing apps at such a tender age. Tell us a little about yourself and your family. Where do you come from? How did you learn about it?

A. I am a learner by passion, grade 9 student from Jammu. I am passionate and enthusiastic about applying computer programming in STEM education. I have won numerous medallions at International/ National/ Zonal level in Olympiads. My best friends are Computers, Physics and Maths. Besides this, I am an ardent fan of F1 Racing and Mobile Robotics. I love debating, quizzing and doing MUNs. We are a lovely family of 3 members, myself and my parents. My father's name is Dr. Harvinder Singh, a prosthodontist working as Director Academics in the Institute of Dental Sciences, Jammu. My mother's name is Dr. Mandeep Kaur who is a practising dental surgeon. My interest in the field of STEM can be traced back to my earlier school days when I was just 7. I remember it was my birthday when my uncle gifted me a desktop computer. My fascination with computers began at that moment. In the same year our school organized a science fair where I was supposed to make a project on a windmill and eventually it really came out very well and I won the prize. Here I got to know how physics is involved in our daily life which developed my interest in science (a subject full of interesting questions, fascinations, reasoning etc). This motivated me a lot and henceforth slowly and steadily, I became very inquisitive to learn new skills in the field of science and technology. I am always keen to participate in exhibitions, science fairs, competitive exams to test my knowledge to maximum and I am really enjoying them as it gives me an immense pleasure receiving accolades. This passion and curiosity to learn was boosted up even more when I achieved

International Rank 1 in Cyber Olympiad. Hence, I started learning high level programming languages from online platforms and tutorials especially during the corona lockdown and then developed the Raksha-Women Safety App to ensure the safety of women.

Q. What has motivated you to develop the app and who all have supported you?

A. In our daily lives, we come to know through newspapers, social media and television about various problems people have to suffer. I feel empathetic about core problems of our society and wish to find solutions by applying technology. This motivated me to develop the app for a social cause. My family and school have been very supportive and always motivated me to participate in various competitions and enhance my knowledge. My parents always stood as a strong pillar beside me, especially my mother, Dr. Mandeep Kaur, for shaping my thoughts with her vital inputs and constant support. I am grateful to all of them.

Q. Please let us know about other two apps Calmify dealing with mental healthcare and CyberBuddy developed by you ?

A. Emotional and mental health is important as it encompasses our psychological, emotional and social wellbeing. It plays a crucial role in the health of our relationships and allows one to adapt to changes in our life and cope with adversity. The Covid-19 pandemic has had a major effect on our lives. Many of us are facing challenges that can be stressful, overwhelming and cause strong emotions in adults and children. Considering this quintessential, I developed Calmify Mental Healthcare App which will surely help people to cope

with stress in a healthy way.

Cyber bullying is a growing social problem that has become all- too common in online communities. In fact, research indicates that one in five teens have been cyber bullied. Even in the midst of the covid 19 pandemic, cyber bullying is continuing to escalate. The more time children spend online or interacting with their phones, the more necessary tech monitoring becomes. Considering this as the need of the hour, I developed CyberBuddy-Anti Cyber Bullying App which will surely help people to cope up with their cyber bullying experiences and teach them how to use technology safely and responsibly. This will benefit them in the long run.

Q. What message do you want to convey to your generation and those who aspire to achieve the feats that you have done.

A. The message I would like to convey is that when we believe in our goals, that what we dream of can become reality, results will begin to follow. As it is said, "Thinking is the capital, Enterprise is the way, Hardwork is the solution. My motto is 'Living is Learning Everyday'.

Q. What are your future plans and where do you see yourself down the lane?

A. As I am a keen STEM Enthusiast, my ambition is to become a computer scientist with vision for all and hopefully serve our country on a global platform. I am really determined to focus myself on STEM and put my best efforts to achieve my goals as there is no alternative to effort and hardwork. My aim in life is "Learn and Grow".

The application has a SOS Alert screen which comes with a special feature to call the police and other emergency women helplines instantly by clicking on the button.

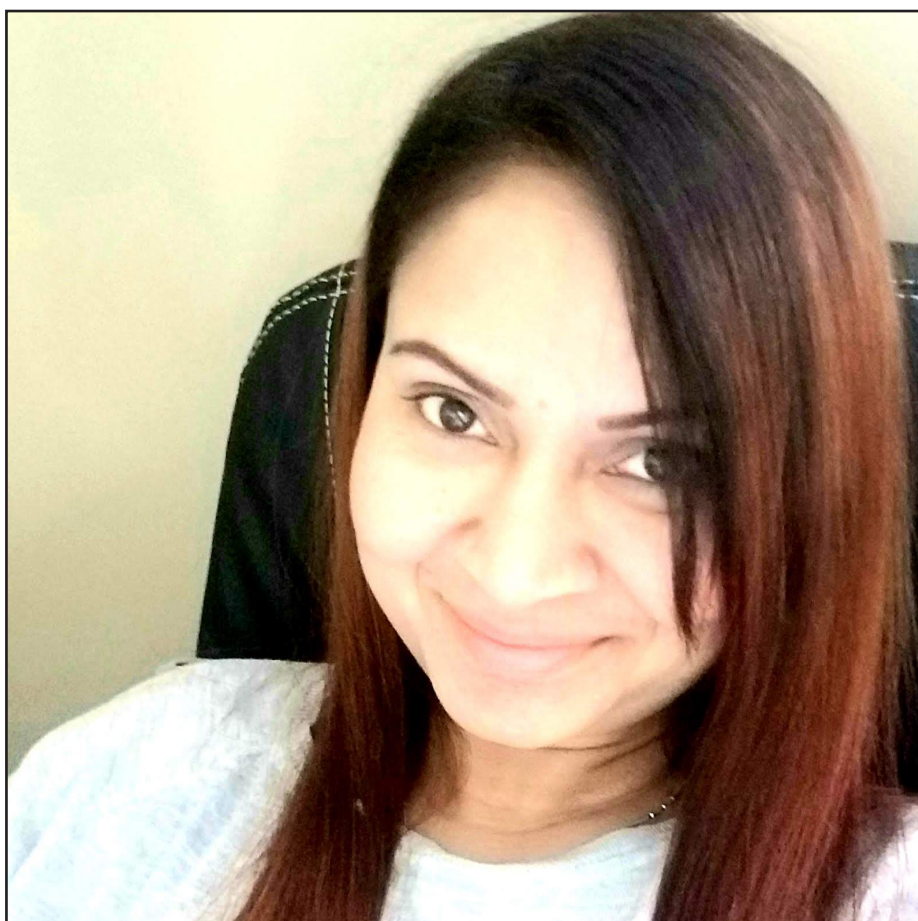
Exploring Photonic Energy as Crucible for Human Exploratory Research

■ Dr. Sarita Jaiswal

The very existence of human life on earth depends on the plants. One of the fundamental biochemical reactions, which makes plants autotrophic, is photosynthesis. It transforms celestial energy to chemical equivalents. The autotrophic plants not only transform this energy for their functioning but also store the excess in compact form, which we know as “starch”. We all are familiar with the principle of conservation of energy, “Energy can neither be created nor be destroyed, it can only be transformed.” In a plant’s chloroplast cells this transformation is completed with the generation of ATP, the ultimate currency for the existence of living organisms. In plants, the capture and storage of solar energy involves two separate reactions, termed the light and dark cycle of photosynthesis. The two mechanisms, which lead to the existence of life on earth, intrigued researchers for centuries.

In the light cycle solar energy powers chlorophyll electrons to move along a chain of different acceptors in the thylakoid membrane (also referred as electron-transport chain). The chlorophyll obtains its electrons from water (H₂O), producing O₂ as a by-product. To synthesize oxygen-generating organelle is definitely a charm for creation in synthetic plant biology. Julian Melchiorri, a graduate student in innovation design engineering at the UK’s Royal College of Art (2014), created the synthetic leaf, which produces oxygen, by absorbing light, water and carbon dioxide. This artificial leaf incorporates chloroplasts extracted from actual plant cells suspended in a material made from silk protein.

This artificial leaf is still far from the competing all leaf functions in



photosynthesis and performs only a part of the light cycle. During the electron-transport process, H⁺ is pumped across the thylakoid membrane, and the resulting electrochemical proton gradient drives the synthesis of ATP in the stroma. In the dark cycle, the ATP and the NADPH produced during the light cycle serve as the source of energy and reducing power

for generation of carbohydrate and ultimately fixing atmospheric CO₂. The carbon-fixation step begins in the chloroplast stroma and continues in the cytosol. It produces sucrose and many other organic molecules inside the plant’s leaf, which later get transferred to other parts.

These small steps in human’s evolution to achieve equilibrium with optimal utilization of photonic energy, will drastically transform every aspect of life, however, setting its timeline is not plausible yet.

In India, a research group led by Chinnakonda S Gopinath, a senior scientist at the Council of Scientific and Industrial Research's National Chemical Laboratory in Pune (2017) developed a leaf-like device capable of generating hydrogen fuel from water.

To create a system like chloroplast / mitochondria is the ultimate fancy in the area of synthetic biology. Artificial chloroplasts can power nonliving mini-reactors to produce molecules that living cells cannot. These mini synthetic reactors will be more efficient as their main objective is only processing with no energy partitioning to grow, reproduce or maintain other life-like functions. The entire system will focus on production of target molecules. Artificial photosynthesis can drive tiny, non-living, solar-powered factories that churn out therapeutic drugs. These artificial systems can even provide a solution for sequestering atmospheric CO₂.

There are six naturally occurring carbon fixation pathways in plants, which convert CO₂ to sugar. The carboxylase involved in bio-catalysis is key to its sustainability. In 2016, Tobias Erb and his group at the Max Planck Institute for Terrestrial Microbiology in Marburg, Germany, designed a seventh pathway for fixing CO₂, the crotonyl-coenzyme A (CoA)/ethylmalonyl-CoA/hydroxybutyryl-CoA (CETCH) cycle. This artificially designed pathway is 20% more efficient than natural classic CO₂ fixation cycles. Tobias with his colleague Tarryn Miller created an artificial chloroplast. They included spinach chloroplast membranes in the artificial system to carry out photosynthetic electron transport. CETCH cycle enzymes use that energy to break down CO₂ and convert it into glycolate. Glycolate can further be used for generating organic products.

In autotrophic plants, the excess energy (glucose/sucrose) transforms into compact starch granules and acts as storage deposit for later use. Evolution of human civilization very much relied on this converted energy format. The next advancing step in creating synthetic plants like biology is to generate starch from fixed CO₂. Starch is the backbone of the energy cycling of the planet earth. Plants

convert celestial energy in the process of photosynthesis and store it as starch in albino plastids termed as amyloplasts. Starch as an osmotically inert chemical form, stores carbon in highly dense nature (~1.6g cm⁻³). It is mainly composed of amylose and amylopectin. Amylose is essentially linear with few inter-dispersed branches while amylopectin is a highly branched glucan structure. Granule bound starch synthases (GBSS) is mainly involved in the enzymatic machinery of amylose synthesis. In contrast to this amylopectin synthesis if mediated by an array of biosynthetic enzymes including starch synthases (SSII, SSIII, SSIV), starch branching (SBEI, SBEII) and debranching enzymes (isoamylases and pullulanases).

An artificial cell-free chemoenzymatic starch synthesis from carbon dioxide can be a new route with the possibility to shift starch production from traditional agricultural cultivation to industrial manufacturing. Cai Tao from Tianjin Institute of Industrial Biology (TIB) (2021) created the artificial starch anabolic pathway by assembling 11 core reactions. Based on "building block" strategy model, researchers integrated chemical and biological catalytic modules to utilize high-density energy and high-concentration CO₂ in a biotechnologically innovative way. They further optimized this hybrid system using spatial and temporal segregation by addressing issues such as substrate competition, product inhibition, and thermodynamic adaptation. The artificial route can produce starch from CO₂ with an efficiency 8.5-fold higher than starch biosynthesis in maize, suggesting a big step towards going beyond nature. It provides a new scientific basis for creating biological systems with unprecedented functions.

The Anglo-Japanese research team in 2019 with Professor Erwin Reisner as the leading scientist of the Cambridge university created an artificial leaf prototype. The prototype used little solar

cells to absorb the light, water and carbon dioxide and generated syngas – specifically carbon monoxide and hydrogen. They further improvised it in the form of a leaf using cobalt photocatalyst. Instead of syngas this artificial leaf generates formic acid.

In India, a research group led by Chinnakonda S Gopinath, a senior scientist at the Council of Scientific and Industrial Research's National Chemical Laboratory in Pune (2017) developed a leaf-like device capable of generating hydrogen fuel from water. This device contains semiconductors stacked in a manner to simulate the natural leaf system. When light strikes the semiconductors, electrons move in one direction, producing electric current which further breaks down water to generate hydrogen. This palm size model can generate six litres of hydrogen fuel in an hour.

These small steps in human's evolution to achieve equilibrium with optimal utilization of photonic energy, will drastically transform every aspect of life, however, setting its timeline is not plausible yet. It is our next step towards resolving the energy crisis, resolving climatic change, food crisis and eventually, boosting human's expansion to utilize untapped resources of the universe.

Dr. Sarita Jaiswal is an accomplished Plant Scientist with +15 years of R&D experience with specialization in cereal & pulse crop biochemistry and genomics. She is Research Specialist at University of Saskatchewan, Saskatoon, Canada and served in different capacities for 10 years. She also works as a Regulatory Specialist. She is a two times young scientist (Indian Society of Plant Physiology & KK Nanda Foundation for Advancement of Plant Sciences) award winner. She is an Honorary Advisor to various reputed firms and reviewer of multiple Journals of International repute.

The next advancing step in creating synthetic plants like biology is to generate starch from fixed CO₂.

▶ INNOVATIONS

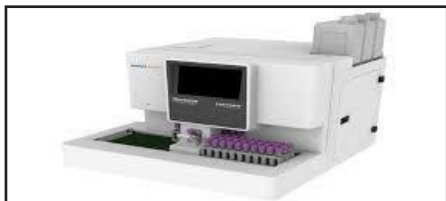
ADVANCED DIAGNOSTIC SOLUTIONS FOR HbA1c BASE ON HPLC TECHNOLOGY BY TRIVITRON HEALTHCARE

In the global diagnostic field many advancements are being made to effectively and efficiently manage diabetes. One such effort has been made by a leading Indian medical devices company, Trivitron Healthcare which has recently launched two innovative products named NANO H5 and NANO H 110 for the detection of HbA1c and Hemoglobin variant. Both NANO H5 and NANO H110 are high performance liquid chromatography analysers for the detection of HbA1c within 130 seconds. These analysers based on HPLC (high performance liquid chromatography) technology are going to be used to monitor thalassemia, diabetes and haemoglobin variants.

NANO H5 is a fully automated, compact HPLC analyser which uses ion exchange liquid chromatography for quantitative determination of the glycated haemoglobin (HbA1c) in human blood with processing time of 130 seconds that will speed up the turn around time in Laboratory. The product is equipped to process 5 samples at a time.

NANO H110 is also a fully automated, compact HPLC analyser which has a dual test mode for HbA1c test and haemoglobin variant detection. It comes installed with advance facilities like barcode scanner and cap piercing with a sample loading capacity of 110 samples at a time. This seems to be the USP of this product and is likely to make it more suitable for laboratories with medium to large workloads. These analysers are designed for precision and their compact size makes them user friendly.

SOURCE: *cxotv.news*



GENE THERAPY FOR HEMOGLOBINOPATHIES

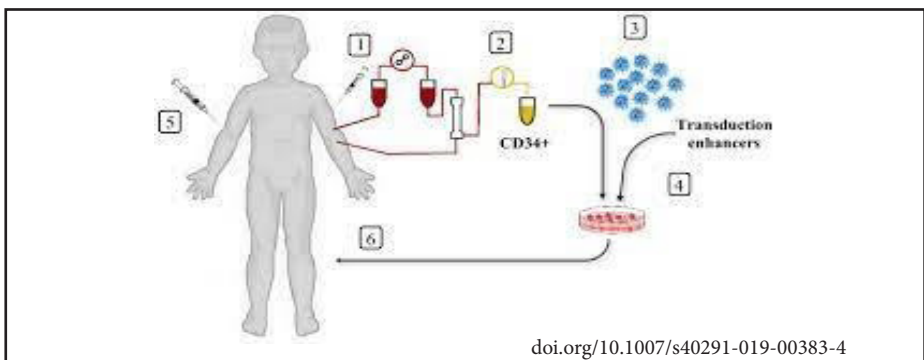
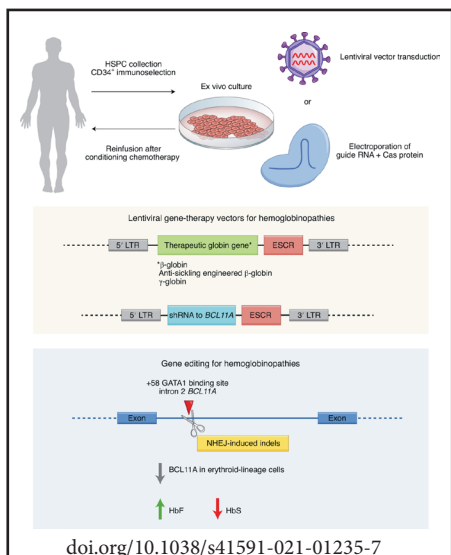
Amongst genetic disorders hemoglobinopathies are the ones that affect the structure or production of the haemoglobin molecule which is primarily the red protein responsible for transporting oxygen in the blood.

Most commonly occurring hemoglobinopathies are thalassemia and sickle cell disease. In the United States of America alone more than one lakh children are born with sickle cell disease and worldwide more than three lakh thirty thousand are born with either sickle cell disease or thalassemia. An experimental gene therapy has been brought in by a latest research which proposes that with treatment, those people who are suffering from these conditions have the potential

ability to make functional haemoglobin molecules also reduce the presence of sickled blood cells or ineffective blood cells in thalassemia and prevent associated complications.

This is one of the most talked about medical innovations of the year 2021 which is going to be a boon for the sufferers of hemoglobinopathies.

SOURCE: *PubMed*



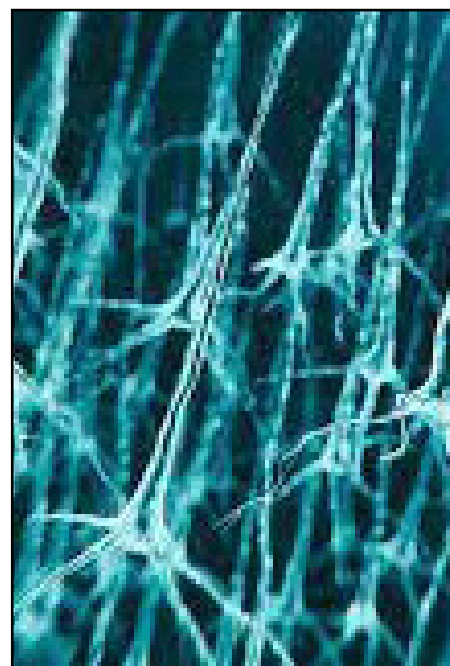
THE FIRST AND ONLY TREATMENT FOR PRIMARY-PROGRESSIVE MULTIPLE SCLEROSIS

Multiple sclerosis is a disease in which an individual's own immune system attacks the fatty myelin sheath which is a protective layer that covers the nerve fibres, causing communication problems between the brain and rest of the body resulting into a permanent damage or deterioration and eventually death. Data shows that nearly 15% of the the people suffering from multiple sclerosis experience a subset of the disease known as primary-progressive multiple sclerosis which is characterised by gradual onset and steady progression of signs and symptoms. Recently U.S.Food and Drug Administration (FDA) approved therapeutic monoclonal antibody with a novel target as the first and only treatment for primary-progressive multiple sclerosis patients.



The FDA ruled on ofatumumab in August 2020. But the only FDA-approved medication for the struggling subset of multiple sclerosis with the primary-progressive condition is ocrelizumab making it the only drug for such patients for whom no treatment existed so far.

SOURCE: healthleadersmedia.com



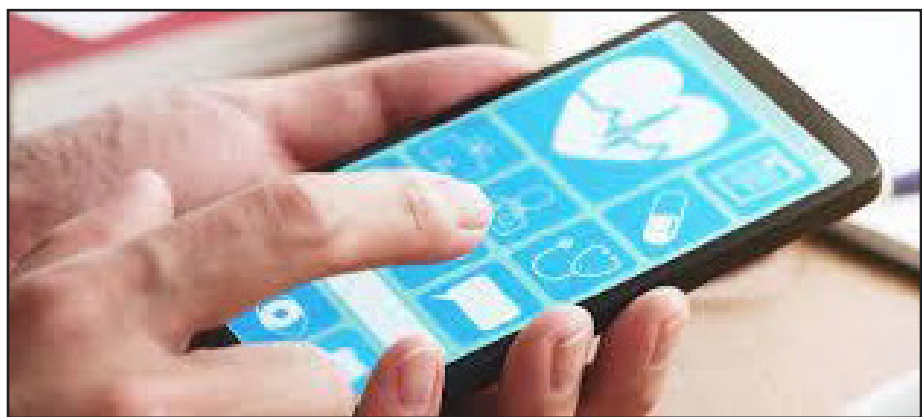
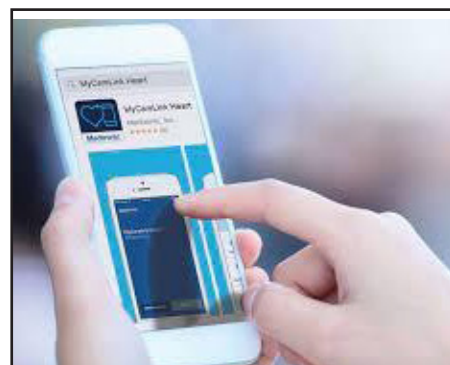
SMARTPHONE-CONNECTED PACEMAKERS

An industry leader in the medical devices space, Medtronic has made a breakthrough innovation by bringing in pacemakers and other implanted heart devices like defibrillators that can connect to a patient's mobile device or smartphone. The basic function of these implantable heart devices is to deliver electrical impulses to the heart muscle chambers to contract and pump blood to the body. So they are used to either prevent or correct arrhythmias (uneven, too fast or too slow heartbeats). Traditionally, pacemakers or defibrillators are monitored through a bed-side console that transmits the defibrillator or pacemaker data to the doctor. Though there are millions of patients worldwide who have these implantable devices in them but many of them lack the basic understanding of the device or its functionality as well as its adherence to remote monitoring that has been suboptimally used till date. So the bluetooth-enabled pacemakers can help bridge this gap and provide a remedy to these issues of disconnection between

patients and their cardiac treatment. These pacemakers have to be used with a mobile application which helps patients to have a greater insight into their health data from the pacemakers and transmit the health information to their treating doctors.

This innovation is being looked at as one of the most impressive breakthroughs in healthcare technologies for the year 2021.

SOURCE: news.medtronic.com



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BUBBLE CPAP-IDEAL FOR INCREASED LUNG FUNCTION IN PREMATURE BABIES

Frail and underweight babies who are born prematurely mostly require specialised care including ventilation for those born with infant respiratory distress syndrome (IRDS). So for IRDS, mostly and commonly infants are administered surfactant during mechanical ventilation, the drawback of which is that it can cause lasting injury to the lungs in preterm infants and may contribute to the development of chronic lung disease.

Bubble-continuous positive airway pressure(b-CPAP) on the other hand is a non-invasive ventilation strategy which minimises physical and subsequently the biotrauma for newborns with IRDS and is one of the methods by which continuous positive air pressure is delivered to a spontaneously breathing newborn to maintain lung volumes during expiration. b-CPAP helps to prevent derecruitment of alveoli, increasing the lungs' residual capacity and thus reducing the work of breathing in IRDS newborns.



When administered over a prolonged period, the oscillating pressure plays a very vital role in its safety and efficacy,

minimising the physical trauma and stimulates lung growth.

SOURCE: innovations.clevelandclinic.org



VACUUM-INDUCED TAMPONADE FOR POSTPARTUM HEMORRHAGE

One of the main causes for worldwide maternal morbidity and mortality is postpartum hemorrhage which is characterised by excessive bleeding after having a baby and it affects 1-5% of women who give birth. Mothers experiencing postpartum hemorrhage may require blood transfusions, long uncomfortable procedures, drugs with dangerous side-effects and even emergency hysterectomy with loss of fertility. It is a matter of great concern as its incidence is also on the rise, giving thrust to find new treatment approaches.

So far non-surgical interventions done at the site of bleeding has been limited to balloon devices which expand the uterus while compressing the bleeding site.

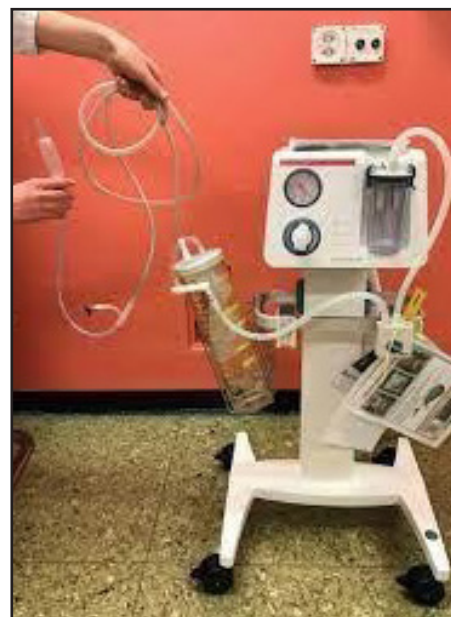
Taking a note of this rising problem, a single-centre, observational cohort study was conducted at the Department of Obstetrics, University Hospital Zurich,

Switzerland between 2017-2020. The result of which shows that vacuum-induced uterine tamponade by using a modified Bakri balloon system is a more successful treatment for postpartum hemorrhage. This newest advancement is a method that uses negative pressure created inside the uterus to collapse the bleeding cavity causing the muscle to close off the vessels.

66 women were treated with vacuum-induced tamponade, 2/3rd (44/66) of the women were treated with vacuum-induced tamponade due to uterine atony and 1/3rd (22/66) due to placental pathology. The median duration of vacuum application was 2.5 hours (interquartile range 1-4 hours). No adverse events directly related to vacuum-induced tamponade like perforation of the uterus, endomyometritis or anaphylaxis were observed. This method seems to provide a low-tech solution which has the

potential to be translated to developing nations with low resource availability.

SOURCE: ncbi.nlm.nih.gov



FIRST IN THE WORLD - EARLY STAGE OF AVASCULAR NECROSIS REVERSED BY ORAL RIVAROXABAN

Avascular necrosis is a rare disease associated with many factors which cause direct damage to the vasculature of the bone, direct injury to the bone or bone marrow which ultimately leads to mechanical failure of the bone. In simple terms it is the death of bone tissue due to lack of blood supply. Till date many pharmacological agents including statins, bisphosphonates, anticoagulants like aspirin, enoxaparin and vasodilators have been tried to prevent the progression of osteonecrosis without successful documentation by imaging. Thus nothing has been able to successfully reverse the disease or promote the growth of viable bone in the necrotic lesion.



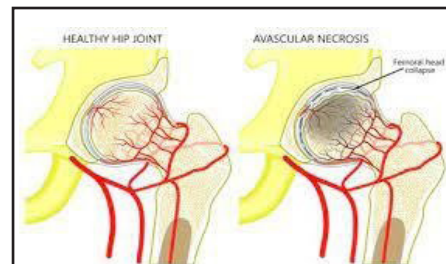
Recently a 56 year old female patient who presented herself at Moolchand Medcity, New Delhi, India with an early stage Avascular Necrosis was successfully

treated by the use of oral Rivaroxaban under medical supervision.



This is the first time in the world that a case of early stage Avascular Necrosis has been successfully reversed by oral Rivaroxaban. The patient was a known case of Type-2 diabetes mellitus, hypertension, obesity and dyslipidemia who came to the hospital with pain in her left hip joint and groin area for the past one month both at rest and aggravated by walking. There was associated limping too. In this case with the use of Rivaroxaban, a newer oral anticoagulant (NOAC) there was total revascularisation of the jeopardised head of the femur bone which was validated by serial MRI scans. The conservative treatment of the patient was done with a dosage of Rivaroxaban 10 mg daily with other symptomatic treatment.

One month after the treatment there was significant decrease in symptoms and the patient started to walk without assistance.



MRI pelvis done after 3 months of treatment showed no abnormality of the hip joint. MRI done after 6 months of treatment showed sustained recovery evident of remarkable successful reperfusion of jeopardised head of the femur with complete recovery from AVN which is revolutionary.

SOURCE: www.healthtechnology.in

Compiled by:

Dr. Avantika Batish, working as the Director Strategy and Healthcare at International Health Emergency Learning and Preparedness. She is also a guest faculty for MBA (HR) and MBA Healthcare Management at various B-Schools and is a soft skills trainer.

NEW COMPOUND TO HELP MAKE PPEs MICROBIAL RESISTANT

The fight against the COVID pandemic has got a new weapon in its arsenal with scientists developing a compound that promises to help make PPEs microbial resistant.

Lignin, which is a natural and a nontoxic biopolymer, is an emerging material for developing coatings, films, gels, adhesives, and adsorbents. It also acts as a capping, stabilizing, and reducing agent for fabricating nanomaterials. In the new study, a team of researchers at the Department of Biotechnology's Centre of Innovative and Applied Bioprocessing (DBT-CIAB), at Mohali have developed a lignin-based coating material, which when applied to a cotton cloth, was found to have antimicrobial properties.

The scientists started by developing a titanium dioxide (TiO₂) nanocomposite

by using lignin as the matrix. The product exhibited better antioxidant and antimicrobial properties when compared with lignin alone or commercially available Titanium dioxide nanocomposites by themselves. Subsequently, they prepared a lignin-based coating material. The compound was doped with the newly developed lignin- TiO₂ nanocomposites and with the commercial TiO₂ nanoparticles.

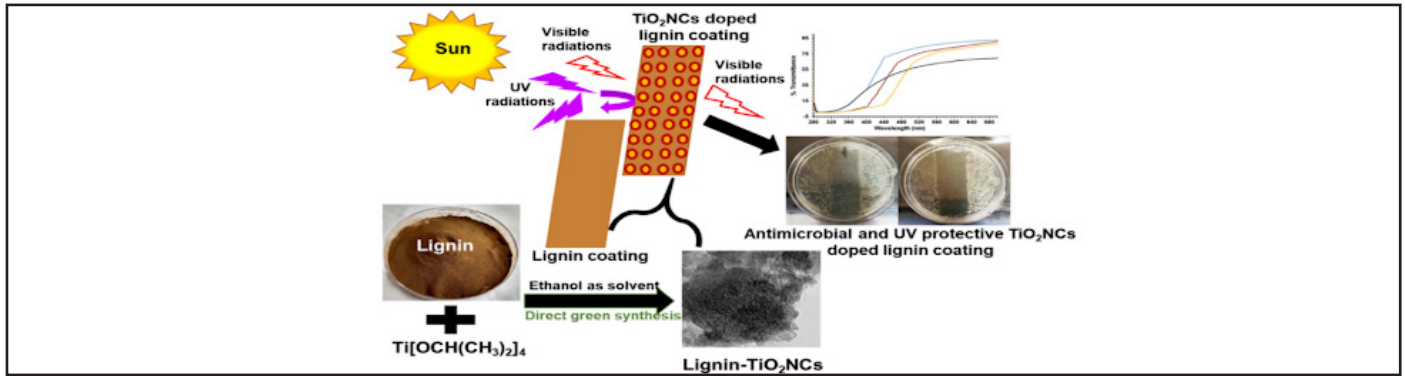
Comparative studies were performed among all the lignin coatings, both doped and undoped. The analysis showed that the lignin coating consisting of 5% w/w lignin based TiO₂ nanocomposites exhibited promising antimicrobial potential.

A report on the findings has been published in ACS Sustainable Chemistry and Engineering, which is a journal of

the American Chemical Society. The study team consisted of Jayeeta Bhaumik, Ravneet Kaur, Neeraj S. Thakur, and Sanjam Chandna.

SOURCE: Indiasciencewire





S&T MINISTER LAUNCHES AI-BASED WATER PURIFICATION PROJECT

Union Minister of State (Independent Charge) Science & Technology; Minister of State (Independent Charge) Earth Sciences; MoS PMO, Personnel, Public Grievances, Pensions, Atomic Energy and Space, Dr Jitendra Singh has launched a start-up of IIT alumni that uses Artificial Intelligence for water purification at an affordable cost.

The Gurugram based company’s patented system, ‘Clairvoyant’ uses artificial intelligence to optimise purification systems and predict future breakdowns. This helped to remotely manage, update, and repair each system in real time. They have also developed clean drinking water solutions in the form of Water ATMs, which combine Internet of Things (IoT) technology with solar energy to provide clean drinking water. The water ATMs used solar energy to pump water from rivers, wells, ponds, or groundwater depending upon the location. The water is then treated with appropriate technology to make it potable. With this innovation, the cost of purified water is expected to be brought down to as low as 25 paise per litre.

On the occasion, an MoU was also signed between Technology Development Board (TDB), a statutory body of Department

of Science & Technology, Government of India and M/s Swajal Water Private Limited, the start-up company, which has been founded by ex-IITians.

Dr Jitendra Singh welcomed the financial support extended to Swajal by TDB and said that his Ministry is committed to reaching out to potential small and viable start-ups having skill and talent pool but lacking resources. He asked the CEO & Co-founder of Swajal, Dr Vibha Tripathi, to scale up this technology to help achieve India’s ambitious target of providing clean drinking water to all by 2024, as envisaged by Prime Minister Narendra Modi.

The Minister said that apart from the Central Government’s initiatives like National Rural Drinking Water Programme (NRDWP) and Jal Jeevan Mission, the private sector should come forward in a big way with state-of-the-art tech solutions to cover nearly 14 Crore households where clean drinking water is yet to reach.

Referring to Prime Minister’s 75th Independence Day speech, where he said that in just two years of the Jal Jeevan Mission, more than four and a half crore families have started getting water from taps, Dr Jitendra Singh said that the

Ministry of Science and Technology is positively contributing to Prime Minister Narendra Modi’s Vision and Mission of “Har Ghar Nal Se Jal”.

Dr. Srivari Chandrashekhar, Secretary DST & Chairperson TDB, pointed out that this project is a combination of new emerging technologies IoT and AI, combined with renewable solar energy to cater to the need for pure drinking water in villages and remote areas.

Shri Rajesh Kumar Pathak, Secretary, TDB, said that the project will empower communities to plan and monitor their drinking water needs with community ownership and will get affordable, accessible, reliable, and clean drinking water 24x7 throughout the year. TDB is committed to supporting such innovative technologies for mass utility.

“With the financial support from Technology Development Board, a social impact start-up like Swajal could do wonders. We are looking forward to covering more states in India at the earliest,” said Dr Vibha Tripathi, CEO & Co-founder, Swajal.

SOURCE: *Indiasciencewire*



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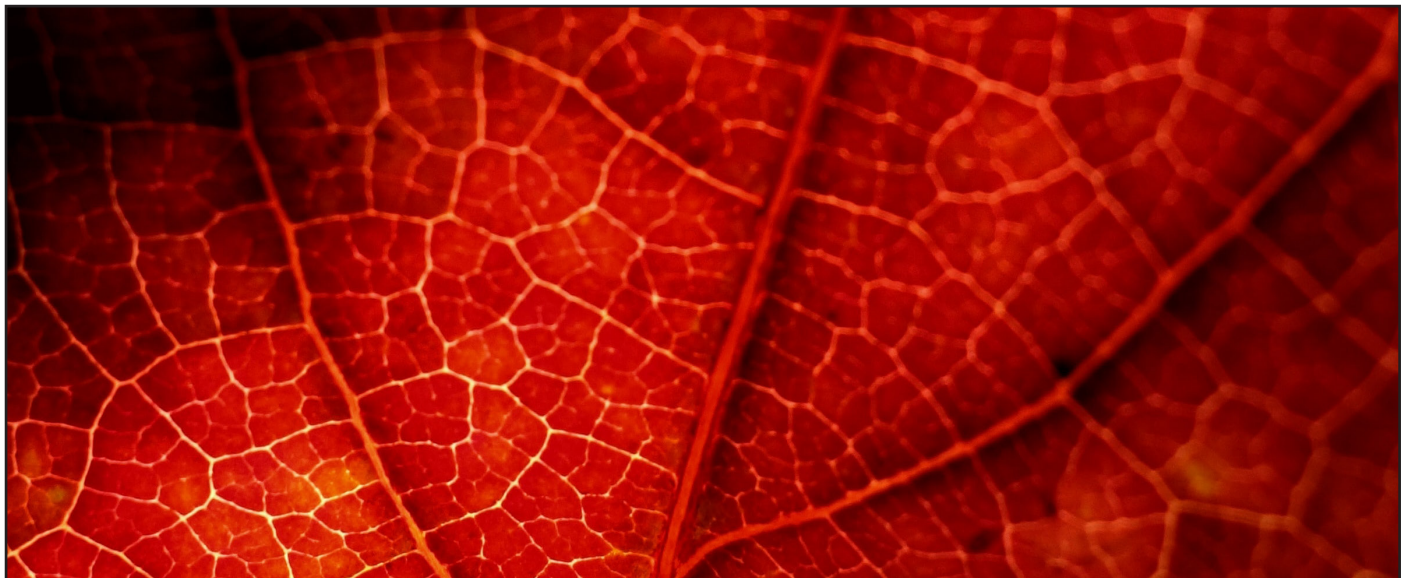
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► WELL BEING

It Just Takes Fifteen Minutes to be a Hero and Save Three Lives... What's Stopping us from Being one?

■ Dr. Archana Shetty



The human brain has left no stone unturned to unravel mysteries of medical science and find cure to even the knottiest diseases. However, there is one thing yet to be conquered: To generate blood - A wonder drug that cannot be manufactured by even the best of pharma companies. This medicine can only be transferred from the abundant to the needy. A statistical survey done in 2000 has revealed that around 11 million blood donations are collected in India every year against the required 13.5 million leaving a gap of nearly 2 million. With the pandemic having set in, the demand supply gap has been increasing more than ever which needs to be bridged. One way to achieve the same is to motivate and create awareness among eligible young donors which is the intent of this write up. There is a one liner well heard of 'A pint of

blood can save three lives? Ever wondered how? Time to unfurl the answer...

Q. What and how much are you actually donating when giving blood?

A. A healthy donor has around 5 to 6 liters of blood in his/ her body. A single episode of blood donation simply means taking out 300 to 350 ml, which gets replenished within the next three months. In other words, if our body has 10 pints a single episode of blood donation is just giving 1 pint. Blood collected is actually 'whole blood'. The wholesome blood includes white blood cells, red blood cells, platelets, coagulation factors and liquid part (plasma) combined altogether. This is stored by adding special preservatives in blood banks to extend its shelf life and is delivered to patients as and when

needed. Shelf life of blood components varies depending on the type: five days for platelets, thirty-five to forty days for the red cells and up to one year for plasma.

Q. How does a single unit of blood save multiple lives?

A. Unlike decades ago, the advent of automation and technology has now made it possible to separate whole blood into components and preserve each one separately. Post donation, within a maximum span of six hours the whole blood is centrifuged in a special equipment at blood banks under temperature controlled sterile settings and separated into plasma, platelets, and packed red blood cells.

When needed White blood cells and cryoprecipitate can also be selectively extracted as per patients demands. Each component is stored in separate bags under optimal conditions.

Packed red blood cells are high in oxygen content and are used to increase hemoglobin levels and in cases of hemorrhage to make up for blood loss.

The plasma replenishes the fluids lost in cases like burns and is also a source of coagulation factors which help in the normal clotting process. Platelets are particles which play an important role in hemostasis, prevent bleeding from vessels and are used in thrombocytopenic patients like those with viral illness like dengue. The white blood cells are extracted when specifically asked for by a process called apheresis. Heart & brain surgeries,

bone marrow and organ transplants, burn victims, patients undergoing other major surgeries, women facing unexpected complications during delivery, inherited blood disorder for patients with sickle cell anaemia and thalassemia patients are the most in need of blood transfusion.

Facts, Inhibition and Attitude towards blood donation

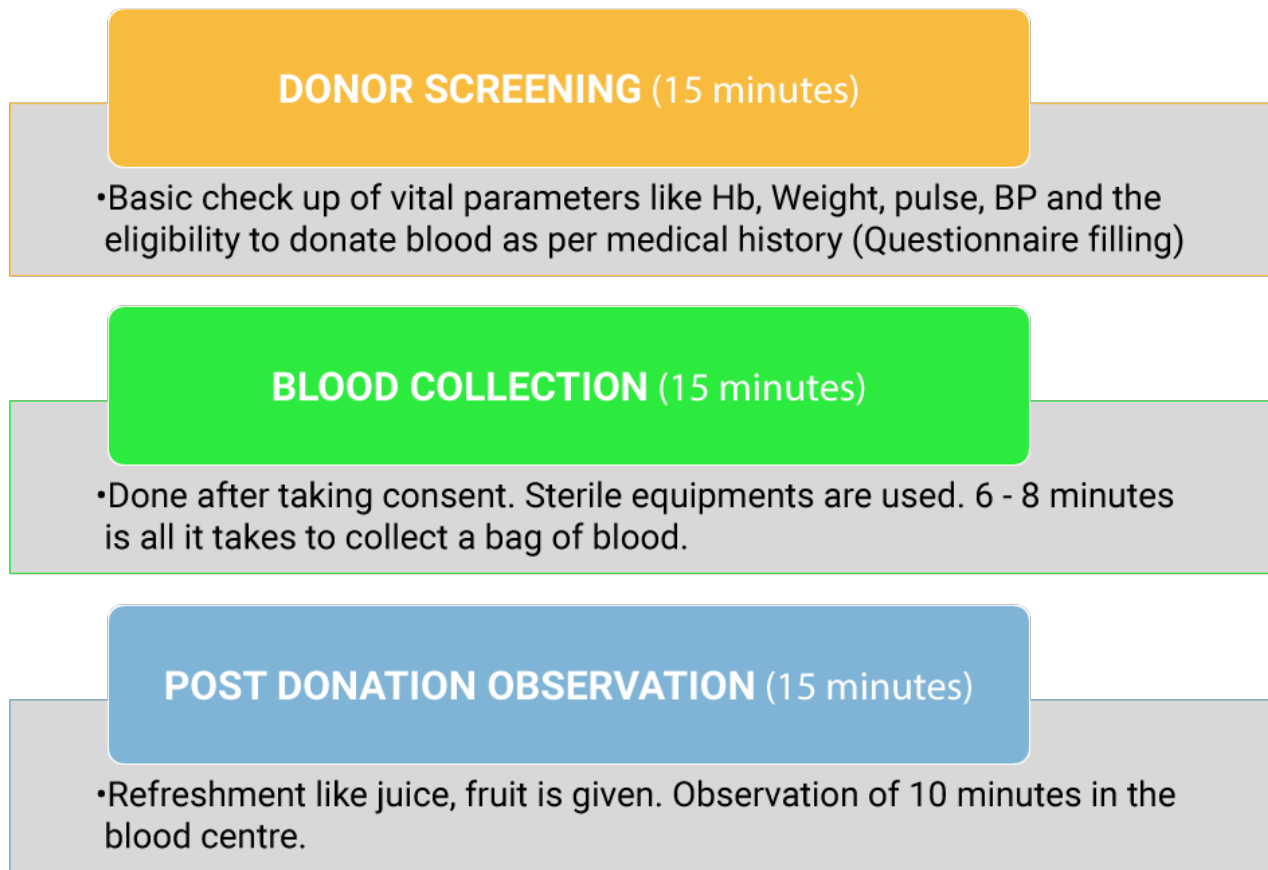
As per WHO 38% of reported voluntary blood donors are under the age of 35, hence insists countries focus on creating awareness to donate among this age group. Knowledge plays a key role in blood donation as half knowledge or misconceptions can defer one from donating blood and also spread wrong information among peers. A study by Bharadwaj and group (2019) has shown that there is a positive attitude towards the

voluntary blood donation among youths in our country from both medical and non-medical educational backgrounds. In spite of having an optimistic attitude only a few donate due to lack of knowledge and awareness about the modes to donate blood.

Q. How much time will it take to donate blood?

A. A common misconception is regarding the duration taken for one to donate blood. An entire episode of blood donation is over within an hour! Many blood banks across the country have slots and timings that help reduce waiting time by booking an appointment. A few centers collect blood by direct walk in.

Below is a quick overview of a blood donation process.



The blood banks first provide a questionnaire for the donor to be filled regarding his or her basic personal details and medical history. A brief overview and pre-transfusion counselling is given to the donor by the staff. After basic tests like checking hemoglobin, blood pressure and temperature screening, if the donor is

fit to donate it just takes 10 to 15 minutes to collect the blood. Post-donation the donor is asked to rest for ten minutes, during which some light refreshment or fresh fruit is given to replenish the energy. A certificate is given as a token of appreciation and for documentation purposes to the donors. The donor is

advised to keep the bandage on the arm for six hours, drink plenty of fluids, defer from lifting heavy weights, smoking and alcohol intake for the next 24 hours. A gap of three months for males and four months for females is ideal between blood donations.

Q. Where do I find an opportunity to donate blood?

A. Many studies have shown that the youth of our country, though willing, are unbriefed about the means to donate the blood. Given below are a few simple opportunity that motivate the donors.




QUICK FACTS AND CLARIFICATIONS

So now that we get to know the modes to donate, let us get our facts right about blood donation..



Blood collected is actually ‘whole blood’. The wholesome blood includes white blood cells, red blood cells, platelets, coagulation factors and liquid part (plasma) combined altogether. This is stored by adding special preservatives in blood banks to extend its shelf life and is delivered to patients as and when needed.

MYTHS		FACTS
I'm a vegetarian. I don't have enough blood to donate.		Can donate. A balanced diet is all it takes to restore the volume donated.
Donating blood is a time-consuming task.		On an average the entire process lasts for not more than an hour!
Too much blood is taken from my body.		Only an average of 350 ml is drawn compared to the 5 – 6 liters of blood in your body!
Donating blood weakens my immunity.		The immune system in no way is affected by this.
I am on medications, cannot donate blood		Not all medications are contraindicated for donation. You can still donate after clarification.

<p>HIV and other infections can be contracted from donation.</p>		<p>Sterility is maintained at all steps, with a new sterile needle being used for every donor.</p>
<p>I'm a female : cannot donate blood</p>		<p>All females fulfilling basic donor eligibility can donate (other than durations of breastfeeding, pregnancy, periods and abortions)</p>
<p>No one has asked me to donate!</p>		<p>The need for donated blood is always there. Read below to see how you can make a change!</p>

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As per WHO 38% of reported voluntary blood donors are under the age of 35, hence insists countries focus on creating awareness to donate among this age group. Knowledge plays a key role in blood donation as half knowledge or misconceptions can defer one from donating blood and also spread wrong information among peers.

So, the next time you donate remember that you have saved three lives because.....

From your one donated blood unit you would have literally provided a bag of red blood cells for an anaemic lady or a trauma patient with massive bleeding who is being operated in your vicinity, one unit of platelet for a patient having dengue and a unit of fresh plasma for a farmer who has had a snake bite wound and has landed in casualty.

Let us work together for a better world, let us not only be aware but also spread the awareness among our near and dear ones about the need of coming forward and finding opportunities for donating blood. As another calendar year 2022 makes its beginning, incorporate this one also in your 'TO DO' list of resolutions for the new year. To donate blood and save a life.

' Let Blood Wait For The Patient And Not Patient For Blood '

Dr. Archana Shetty, is currently working as a Blood Transfusion Officer and Associate Professor in the Department of Pathology at CDSIMER under the aegis of Dayananda Sagar University. With a teaching and diagnostic experience of over 12 years she is actively involved in blood transfusion services at the hospital.



All About Fitness Do's and Don'ts

■ Dr. Shubha. H.V

-A small step towards being the best version of ourselves.....

I welcome all my readers to this beautiful journey- A journey not merely from “FAT TO FIT” but towards “HEALTH, HOPE AND HAPPINESS”!!!

Not so long ago, the word “fitness” was limited to only a particular group of people like celebrities, athletes, swimmers, dancers etc. But in today's contemporary world, it is really astonishing to see that every common man talks about fitness and is determined to be fit. So what does fitness actually mean???

“Fitness” is a broad term. It means something different to each person. It is infact a very personal term. In general, fitness is the ability to live a full and balanced life. It breeds self-reliance and keeps man mentally alert. Physical fitness is also essential for human beings to adjust well with their environment as their mind and body are in complete harmony.

In 1967, H.Harrison Clarke, who has significantly contributed in the field of physical education and is the author of multiple books on physical education defined fitness as “The ability to carry out daily tasks (work and play) with vigour and alertness without undue fatigue and with ample energy to enjoy leisure time pursuits and to meet unforeseen emergencies”.

But in today's fast-paced world where everything is INSTANT-from instant food (whether healthy or not), instant news (fake or otherwise), instant google answers (many a times creating confusion) to instant money transfer (though filled with security issues), everyone has forgotten that the beauty of life lies in focusing on “**Being in the Present**”.

According to my observations, there are two groups of population. One group of the population, especially the youngsters, expect instant fitness failing to understand the fact that it could turn out to be dangerous. They forget the fact that “**PATIENCE IS THE KEY**”.

The saddest part is that with the beginning of new year and with a list of resolutions in mind, the overzealous, instant gratification selves of this group of people emerge and they do too much exercise in order to make up for the lost time. They can be called the “**FITNESS FREAKS**” and they develop an unhealthy obsession with staying healthy.

It's going to be a journey. It's not a sprint to get in shape”

-Kerri Walsh Jennings

The other group of population are those who do not want to start any type of physical exercise, at any point of time and they just keep postponing. They are known as the “**SEDENTARY**” population and are defined as those expending less than 10% of their daily energy in the performance of moderate to high intensity activities. This attitude is harmful for the generation. In today's rush, they fail to realize that health is a precious asset until it has been depleted. The start is what stops most people especially in matters related to fitness.

Start where you are, use what you have, do what you can.

-Arthur Asle

Now, I leave it to the readers to decide about which group of population they belong to. There is also one last group of population about which I have not mentioned. These are the people who have already started with the fitness activities but are still left with lot's of confusion in their minds and infact are strong believers of some common ‘myths’ as ‘facts’ associated with fitness. The purpose of my article is basically to throw some light over these myths, misconceptions and misbeliefs and to highlight some **DO'S AND DON'TS** about fitness in a simple, comprehensible and lucid way.

Irrespective of the type of person you are, here goes the list of some **DO'S AND DON'TS** about fitness for all.



DO'S

1. Always get a physical examination and consult experts:

Everybody is different and every person reacts to muscle strain in a different way. So kindly consult your physician for a general health check up before you engage yourself in any kind of new exercise or fitness workouts. Never hesitate to take advice from experts (physical therapist or personal trainer). Make sure you do the exercise safely and effectively.

2. Be determined and set your goal:

The best investment you can ever make is in your health. When you feel like quitting, always think about the reason for your initiation.

3. Do it for yourself:

Fitness is not about being better than someone else, it is all about being better than you used to be. Being the best version of oneself.

4. Set aside time for exercise:

Put all your excuses aside and make time

for exercise. One hour of workout is just 4% of your whole day. Cut the time you use for browsing through WhatsApp and social media pages or the time you use for playing some online games to make time for exercise.

5. Make it a habit:

Research shows that frequent, early repetitions of certain behaviours, such as exercise, make it more likely to become something you do automatically. Once you see the results, it becomes an addiction. Fitness is more about mental than a physical challenge.

6. Take rest at regular intervals:

According to the performance and well-being coach George Anderson- "For most of the people especially beginners, periods of recovery between sets or intervals allows for higher intensity, better quality movement, lower risk of injury and a greater training stimulus that is likely to lead to superior results". Remember that "**Soreness is never a sign of good workout**". Less rest never means that you are working hard. Pain always

signals that something is not working properly. Overexertion signs are fatigue, muscle soreness, dehydration, exhaustion. Overexertion can cause injuries like muscle sprains, strains and tears, tendinitis, Carpal Tunnel Syndrome, Joint dislocations, herniated discs, stress fractures etc.

7. Always keep yourself hydrated:

There is always the risk of dehydration especially while working out in hot, humid weather and during rigorous prolonged workouts due to excessive sweating. Severe dehydration could be dangerous as it can create electrolyte imbalances and strain the muscles.

8. Record your improvements:

Always keep a track of your improvements whether physical or mental as they give a sense of pride in your accomplishments and motivate you to continue in your path towards fitness without any hindrance.

The other group of population are those who do not want to start any type of physical exercise, at any point of time and they just keep postponing. They are known as the "SEDENTARY" population



DON'TS

1. Do not get obsessed with fitness:

There lies a darker reality behind the fitness fanatics. Especially with the ongoing COVID pandemic, we are exercising now more than ever. But everything in moderation is best. Everything that exceeds the bounds of moderation has an unstable foundation. These days the “fitness trackers” and devices of various brands like Apple, Samsung, Fitbit, Huawei are used ubiquitously and they have occupied almost everyone’s wrists. According to a recent report by Glasgow-based general practitioner Dr. Des Spence, all health-tracking devices were contributing to an ‘unhealthy health-obsessed generation’ (also published in British Medical Journal).

2. Never start off too hard:

It is always better to take small steps. A journey of a thousand miles always begins with a single step. Don’t be overwhelmed and do not binge on exercise. Slow down and start again after you feel refreshed and rejuvenated. Moderate exercise has shown to improve the immune system while excessive exercise could suppress it. According to the Centers for Disease Control and Prevention (CDC), increased workouts don’t assure health benefits. Experts say that extreme exercises may also lead to heart damage and heart rhythm disorders. One study found that repeated extreme exercises can remodel the heart, thickening the heart walls and

scarring tissue.

YOU DON'T HAVE TO BE EXTREME, JUST BE CONSISTENT



3. Don't just focus on weight loss:

It’s quite common for the beginners to check their weight on the weighing scale after every workout and keep a track of even a gram increase or decrease in weight. Don’t make weight loss your sole marker of success. You will lose weight slowly. Target on fat loss rather than on weight loss because as you become fitter, you will gain muscle and become more toned –muscle weighs more than fat. So the process is definitely a slow one.

4. Do not starve/ Don't binge:

Make sure to give your body the right nutritious food to fuel your workouts. Women are at risk for what is known as the “female athlete triad” that includes: loss of menstruation, osteoporosis and eating disorders. These symptoms arise from a combination of overexercise and calorie restriction. Also there is an eating disorder known as “Orthorexia nervosa” that involves an unhealthy obsession with

eating foods that one considers as healthy.



Lastly, I would also like to add that Fitness has no age limits. It is not limited to workout routines, equipment or machinery. You could choose your own way to be fit. Even simple house cleaning or dancing or short walking can be preferred for staying fit. Fitness can be found at your fist. Yes, clenching a smiley ball in your fist is also a way of exercising.

It’s never too early or too late to work towards being the healthiest and best version of you.

I would conclude with these beautiful lines:

*“Train like an athlete
Eat like a nutritionist
Sleep like a baby
Win like a champion”.*

So let’s all begin our journey towards *Health, Hope And Happiness.....*

According to the Centers for Disease Control and Prevention (CDC), increased workouts don’t assure health benefits. Experts say that extreme exercises may also lead to heart damage and heart rhythm disorders.



Dr. Shubha. H.V is a pathologist working as Lab head in SRL diagnostics, Fortis hospital, Rajajinagar, Bangalore

► IN FOCUS

Public Health reforms post Independence and new challenges - A need for strengthening public health care system in India

■ Dr. Sameer Ul Haq



India is a big country and is currently passing through demographic, economic, epidemiological and environmental transition. During independence India was left with crippled economy, devastated health care system and over-population. But post independence, there has been development in various fields like economy, healthcare,

communication, transport and connectivity etc. In the public health field there were developments post 1947 and

some of the major important milestones are only mentioned here.

There is a strong evidence that economic inequality and disparity among people is related to worse health outcomes.

1. Formation of Bhole Committee in 1946:

In 1946, a committee (Health survey and development committee) was formed known as Bhole Committee. This committee gave some important recommendations which were implemented only after 1947;

- Integration of preventive measures in every sector (Personal Hygiene, hand washing, environmental hygiene, Sanitation and disposal of waste)
- Development of PHC's (more focus was on remote and rural areas)
- Recommendations were made for changes in medical education curriculum.

2. Indian Public Health Association in 1956:

Indian Public Health Association (IPHA) was established in 1956 at Kolkata. This association helps the government to frame policy and promote public health measures in the country to provide best possible health care services to its citizens. IPHA also serves its role in publishing journals and articles in public health and preventive medicine.

3. Medical Education Committee in 1960:

Medical education committee was established in 1960 to upgrade and reform medical education in the country. It was established primarily to reform the curriculum of the medical students.

Medical education committee was named as the Medical Council of India and then changed to the National Medical Commission in 2020 through an ordinance bill.

4. National Institute of Health and Family welfare in 1977:

NIHFW was established in 1977 by merging two national institutes. The institute aims at addressing various issues on health and family welfare through various departmental collaboration like Health administration, adult education, epidemiology, health management, hospital administration, Human development, family planning and demography. The main focus is around the major issues in line with Millennium Development Goals (MDGs).

5. Public Health Foundation of India:

PHFI was established in 2006 to strengthen training and education of public health professionals, research and policy development, affordable health care technologies, health promotion and formation of prioritised health settings in the area of public health in the country.

6. National (Rural, Urban) Health Mission:

National Rural and Urban Health Mission was started in 2005 to provide health care services both at rural and urban levels. The goals of the NR & UHM include reduction in Infant Mortality Rate (IMR) and Maternal Mortality, universal access to integrated and comprehensive public health services, child health, water, sanitation and hygiene and prevention and control of communicable and non-communicable diseases. It was later changed to the National Health Mission in 2013.

Major Achievements in Public Health post Independence

- In the past five decades, life expectancy has increased from 50- 69 years (72 years in females and 69 years in males).
- Infant mortality rate came down from 57 to 30 per 1000 births (as of 2020).
- Fertility rate decreased from 5.5 to 2.2 live births (as of 2020).
- Establishment of PHC'S and CHC'S as part of rural primary health care.
- Prevention of maternal deaths due to improved institutional deliveries and better trained health attendees.
- Antenatal screenings to eliminate neonatal risks.
- Child health and nutrition through Food Fortification under National Food Security Act (NFSA – 2013).
- India is a Polio free country.(Declared Polio free in 2014)
- Target already set for Malaria and TB eradication.

- Malaria control through National Malaria Control Policy 1950.

- Establishment of DOTS program for TB eradication.

- HIV AIDS control through National Aids Control Organization (NACO).

- Swachh Bharat Abhiyan, Cleanliness Drive Campaign was launched in 2014 to control open defecation and aimed at environmental Hygiene, personal hygiene and to reduce spread of diseases in the community. (**A great example of which is Asia's Cleanest Village in Mawlynnong, Shillong-Meghalaya**)

- To provide clean and easily accessible tap water to every household through the Jal Shakti Program (Har Ghar Jal Program).

- National Immunisation program for all children below 5 years to reduce mortality and morbidity.

• National Action Plan for Antimicrobial resistance (AMR):

Antimicrobial resistance is an upcoming public health challenge. To prevent this, a National Action Plan was drafted in 2017 to counter Antimicrobial Resistance. The main objectives of the National Action Plan include public awareness, surveillance and collaborative efforts to counter AMR e.g. prescription is mandatory for most of the over-the-counter (OTC) drugs to prevent self medication which is probably a basic cause of AMR.

• Public Private partnership:

Public Private partnership is important to restructure the poor quality health sector. Modern health care systems and services can only be achieved through public private partnership.

• Universal Health Coverage through PM- JAY:

Pradhan Mantri Jan Arogya Yojna (PM-JAY) was launched in 2017 through National Health Policy. It is aimed to provide universal health coverage, free and easily accessible health care services and to provide free health insurance coverage to the poor in order to meet the requirements of Sustainable Development Goal's (SDG's).

India is presently going through a state of transition environmentally, economically, demographically and epidemiologically in terms of health. Since last decade, unprecedented economic development particularly in terms of Gross Domestic product (GDP) is significantly visible, but unfortunately this progress has created disparities between the rich and the poor. There is correlation between economy and health outcomes. There is a strong evidence that economic inequality and disparity among people is related to worse health outcomes. This in turn widens the gap between the rich and the poor and has damaging health and social consequences. Financial and social security measures are being implemented by the Government to bridge economic inequalities but there is need to do more. Presently India is having a triple burden of disease;

- *Some unfinished Infectious diseases and their disease burden like TB*
- *The challenge of non communicable Diseases (NCDs) which are linked with lifestyle changes and behaviour*
- *Emergence of new infections due to population growth causing epidemics and pandemics.*

In addition to these, the health care system is already substandard and needs to be strengthened to enable it to confront these challenges. In the health sector, India has made remarkable progress over the past decades. The life expectancy reached 67 years in males and 69 years in females, and infant as well as under-five mortality rates have declined subsequently over the years. Diseases, like polio, tetanus have been eradicated due to successful vaccination programs and effective community participation. In spite of this progress made, communicable diseases and their burden is expected to continue and to remain a major public health problem in the coming decades. Besides endemic diseases such as HIV/AIDS, Tuberculosis (TB), Malaria, and neglected tropical diseases, the communicable disease outbreaks will continue to challenge public health. Also vector-borne diseases, such as dengue and acute encephalitis syndrome, are of particular concern and need effective intervention. Antimicrobial resistance is one of the biggest public



health challenges currently. This has arisen due to uncontrolled drug policy and it must be tackled with all efforts in upcoming years. In addition, non-communicable diseases are now the leading cause of death in the country, contributing to 60% of deaths. Noncommunicable diseases (NCDs) like Heart disease, cancer, diabetes, and chronic pulmonary diseases are leading ones. Approximately 80% of all deaths are due to these four diseases. These diseases have multiple causal factors like smoking, alcohol, unhealthy diet, and lack of exercise. Also important concern is the maternal mortality ratio and infant mortality rate (IMR) which still remain unacceptably high as compared to other South Asian Neighbouring countries except Pakistan. The IMR, which was 81 in 1990, according to the World Health Organization (WHO), declined to 30 Per 1,000 live births as of 2019. According to the sample registration system (SRS) report as of 2018 the IMR is 36 per 1,000 live births. Since mortality rates have

declined significantly but the rate of incidence is still high, compared to that being achieved by other South Asian neighbours with exception of Pakistan.

Diseases, like polio, tetanus have been eradicated due to successful vaccination programs and effective community participation.

A Framework to Strengthen Public Health Sector: COVID-19 Fallout

COVID-19 pandemic caused deleterious effects and is devastating nations and has incapacitated the health systems of nations globally. Nations weren't fully prepared and the pandemic has been carried out with great losses both physically and economically. On one hand Developed nations were bearing the after effects of COVID-19 while on other hand developing countries are still taking steps to control the pandemic while facing economic hardships.

Universal health coverage is needed more than ever to recover from the effects of the current pandemic more importantly in developing countries like India. Post pandemic lessons need to be learnt which I already have mentioned especially for developing economies like India where the public healthcare system is not up to the mark.

COVID-19 pandemic has emphasized the need for strengthening public health care systems globally. The fate of COVID-19 pandemic in countries with well-established health systems stresses on the need for a strong public health system that goes beyond hospitals and health establishments. Government should take measures to develop sustainable capacity to respond to rapidly spreading epidemics and must recognize overlooked public health services as vital, and adequately finance them as part of the UHC model. The current framework is aimed to highlight the key concerns in the public healthcare system of India and areas that need prioritization learned from the pandemic.

WHO Leadership: An important element to support developing world

The World Health Organization, the world's health body, has emphasized the importance of national health, works on its planning and monitors critical functions to improve health systems

globally. There should be a sophisticated and robust approach to deal with any kind of pandemic without political interests and WHO should work on this uniquely and be autonomous. Developed nations need to fund this organisation without any interests and more focus should be emphasized to developing countries (South East Asia, Middle East and Africa). WHO needs to adapt a policy to fund the developing countries with economic packages to counter economic hardships due to pandemic.

A national action plan for pandemic preparedness should be formulated for developing countries while taking all the key factors (economy, geography, climate change, population, health system) in account. India has already enforced many acts like Epidemic Diseases Act, Disaster Management Act, Essential Commodities Act, Healthcare Establishment Act, etc. as part of the action plan. Unfortunately many of such acts have their own drawbacks and these need to be modified for the current scenario.

Health care system and its Financing

The healthcare model in India was designed and aimed to provide basic health services as primary care to the population (prioritizing women's and children's health). But it came out more as an "Out of Pocket model" where the rich acquire high quality health care services and the poor suffer due to economic hardships and unreasonable high cost of private hospitals. To support the health care system and services, the Government of India launched Ayushman Bharat Scheme under National Health Policy 2017. It is aimed at two core issues, free accessible Health services under Health and Wellness Centres and free access to health insurance coverage under National Health Protection Scheme (NHPS). Health and Wellness Centres are working as foundation of the health system to provide basic primary care, free essential drugs and diagnostic services to all the citizens, whereas National Health Protection Scheme is working on to provide financial services to poor

and vulnerable families which arises due to high costs at secondary and tertiary care hospitalization. The National Health protection Scheme should ensure financial protection also for marginal people when they seek treatment during pandemics.

The Indian government's expenditure on health is merely around 2%, one of the lowest in the world. More than 60% of households in urban areas, and 50% of households in rural areas consult private hospitals when they need medical attention. During the pandemic, health expenditures rose because of the high cost offered by the private healthcare system which is unfortunately not regulated by the government. Health care budget should be given priority along with the education sector (prioritising maternal education). Policies should be made to invest in the health care sector, priority should be made to rural areas, up-gradation of hospitals to modern levels, all technological advancements should be made available and easily accessible and finally there should be Public private partnership which is an important step to formulate sophisticated modern health care system.

Strengthening Public Health System

There is an immediate need for strengthening the public health system in India with priority focused on building public health professionals. Healthcare workers need to be strengthened by continuous capacity building and training in public health fields. There should be Public health laws to ensure active participation of the private health sector and other health related sectors. The country's public healthcare system should have technological advancements with an easy accessibility and applicability to people. There is a need for cooperation between local and state public health agencies with the centre, in order to apply guidelines at its first phase and on priority basis. There should be robust and sophisticated mechanisms for data sharing especially during outbreaks. This will prove beneficial during challenging times.

The country's public healthcare system should have technological advancements with an easy accessibility and applicability to people.

Moreover there is a need to come up with policy development for public health education in India. Master of Public Health(MPH), which is a two year Master's program mainly aimed at education of health care workers in the public health field. There's more that needs to be done in terms of financing the public health education sector. Unfortunately uptil now there is no governing body or council to represent this field. There should be immediate action devised by the government.

Health care workforce

Manpower is important for every system to work properly. Public health care system can't cope with the current challenges without a health care workforce. India has had a shortage of healthcare workers from the beginning and it still persists, as was visible during the pandemic. In order to

cope up with the current challenges and a future policy, the government of India should come up with a policy to educate, train other health care workers (AYUSH, Nursing). The training should be focused mainly on modern medicine skills. Alternatively these professionals can be posted at rural areas to cope up with the shortage of health care workers and can also prove handy in challenging times like during pandemics.

Pandemics like COVID-19, Influenza, HIV have timely reminded us that public health systems are core social institutions for any country. The government has already made policies to overcome the issues in the public health system through schemes like the National Medical Commission Act, 2019, Pradhan Mantri Jan Arogya Yojana etc. However, there is more to be done to sophisticate the public health care system like in

developed countries. First step is to go with an adequate investment in health care for creating a health system that can withstand any kind of public health challenges, can deliver universal health coverage at all levels by all means and can meet the targets of the Sustainable Development Goals.

Dr. Sameer Ul Haq is an MBBS graduate and is pursuing Master's in Public Health at Indian Institute of Public Health Shillong. He has many achievements to his badge in various fields like Public Health, Global Health, Epidemiology besides having Clinical skills too.

PERSONA

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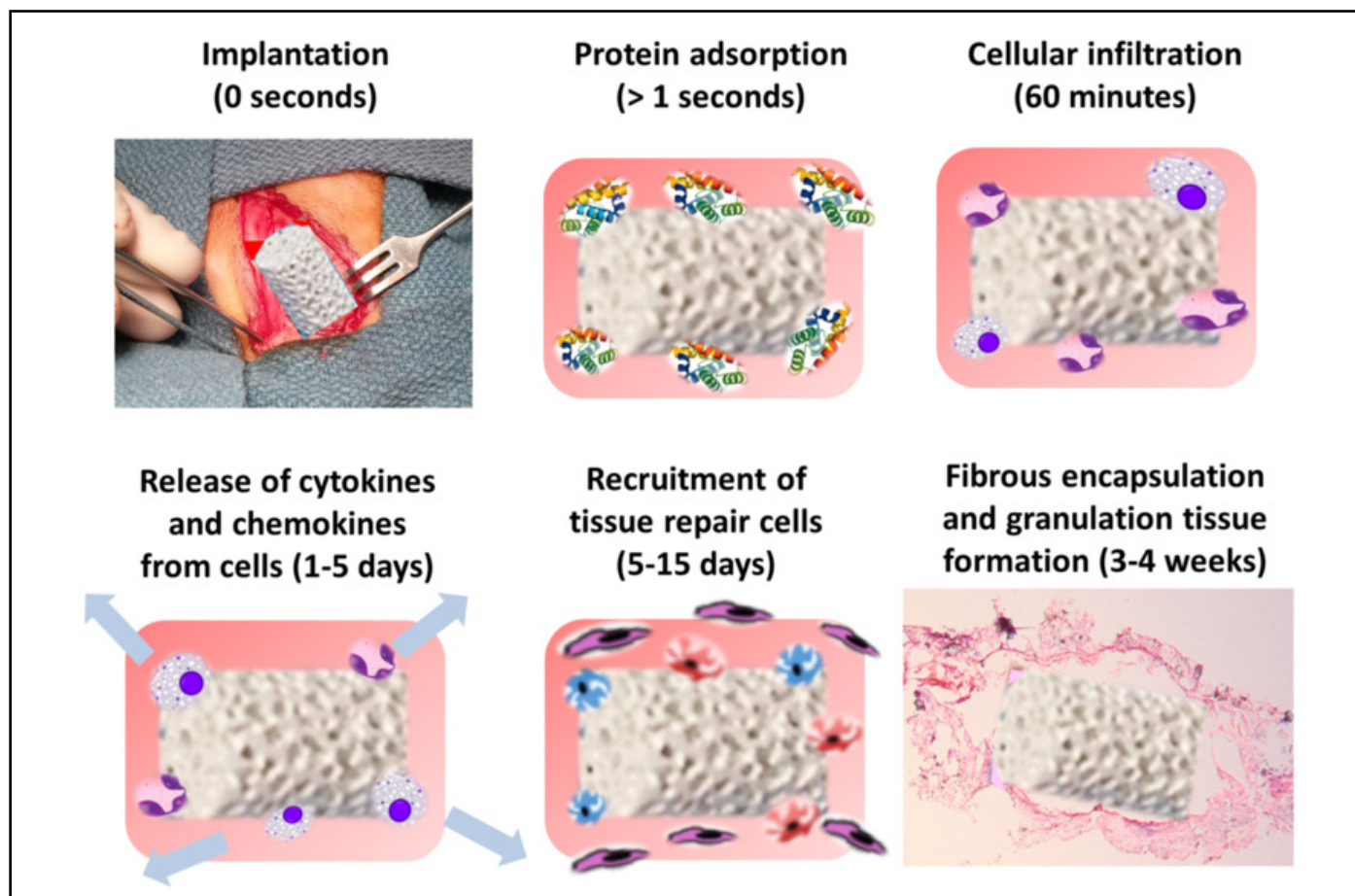
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Dental Biomaterials and its Market Growth

■ Pallavi Brahmankar



Biomaterials, including dental biomaterials, have become essential components in modern medicine. Dental biomaterials are the materials or devices that need to be used within the oral cavity for the diagnosis and treatment of oral or dental conditions, diseases, and disorders.

As advancements in medical technology are taking place, the Journal Biomaterials (Elsevier), updates the definition of biomaterials as; the substance engineered to take a form, which either alone or as part of any composite system, interacts with components of living tissue to lead the course of any diagnostic or therapeutic procedure.

Dental biomaterials are largely used to replace and treat damaged or lost teeth, tooth substance, and jawbone.

They are also useful for filling cavities, crowns, implants, bridges, and removable prosthetics. These materials generally include resin-based materials, ceramics, and metallic materials.

In general, there are three types of dental biomaterials which are bioinert, bioactive, and biodegradable.

• **Bioinert materials:**

These materials do not interact with the tissue or environment in which they are positioned.

• **Bioactive materials:**

On the other hand, these materials directly interact with their surrounding environment where the material binds chemically to hard or soft tissue. These tissues are the once which induce the

release of a biological substance, or those which improve the healing ability of a tissue.

• **Biodegradable materials:**

These materials offer distinct advantages for a limited time period and generally degrade at a rate similar to tissue regeneration.

Dental biomaterials are largely used to replace and treat damaged or lost teeth, tooth substance, and jawbone

Natural biomaterials are classified as polysaccharide-based (cellulose, chitosan), protein-based (collagen, gelatin), and tissue-derived (decellularized heart valves, blood vessels) materials.

Moreover, there are five main classes of dental biomaterials that include polymers, natural materials, metals, bioceramics, and composites.

1. Polymers

This one is the largest class of biomaterials and are harvested from natural resources such as plant and animal materials or synthesized in a laboratory. Cellulose and sodium alginate are the examples of polymers derived from plant material, whereas collagen, hyaluronic acid, and heparin are the polymers derived from animals.

Besides, polymers synthesized in a laboratory are produced by the copolymerization of conventional monomers and they can be worked to suit almost any environment. These materials can be biocompatible, hydrophilic or hydrophobic, non-absorbable or biodegradable, and so forth. Due to their flexibility, structural changes can easily occur upon introduction to a biological environment and that's why they are an ideal component of controlled drug release systems. Polyamides, polyethylene, and poly (D,L-lactide-co-glycolide) are some of the examples of synthetic polymers.

2. Natural materials

These materials put forward distinct advantages as compared to the synthetic materials including bio-compatibility, remodelling, and biodegradability.

Natural biomaterials are classified as polysaccharide-based (cellulose, chitosan), protein-based (collagen, gelatin), and tissue-derived (decellularized heart valves, blood vessels) materials. In addition, they function at a molecular

level and not the macroscopic level. But, due to their complex structure, more complex strategies often gets essential for their manipulation to attain the desired function.

3. Metals

There is archaeological evidence of gold being used in dentistry as early as 1600 BC in Egypt which suggests that metallic biomaterials have been used in medical treatment for over a century. Stainless steel, aluminium, titanium, and cobalt-chromium (Co-Cr) are some of the examples of metal biomaterials.

Biomedical applications of these materials in dentistry include dental implants, or dental prosthetics (crown, denture, and bridgework). Although the metals remain bioinert in most cases, surface modifications (such as those in dental implants) allow interaction with the biological system and make them bioactive.

4. Bioceramics

Bioceramics could be bioinert (e.g. aluminium and zirconia), or bioactive (e.g. hydroxyapatite and bioactive glass) or biodegradable (e.g. tricalcium phosphate). In Dentistry, these Bioceramics are used for periodontal treatment, maxillofacial reconstruction, and endodontic treatment.

5. Composites

These biomaterials have two or more essential materials that are either synthetic (such as dental composite filling materials) or natural (such as bone). They may also be either particulate or fibrous, or both, in nature.

Composites have the ability to manipulate the manufacturing process to yield the desired material properties similar to polymers. These can be employed in both hard and soft tissue applications.

Now, if we look at some details about the dental biomaterial market, it is supposed to grow at a CAGR of 7.52% in the forecast period 2021 to 2028 as per the Data Bridge Market Research analysis.

Here are a few key factors that are expected to boost the growth of the dental biomaterial market in the forecast period.

- Increasing prevalence of dental disorders
Rising geriatric population,
- Rising dental tourism in developing countries,
- Rising disposable income in developing countries,
- Rising expenditure on dental and oral care,
- Growing number of dental clinics,
- Increase in adoption of novel adhesives.

Moreover, a rising shift towards newer materials and products, rising modernization, rising growth in emerging countries, and technological advancements in the healthcare sector and rising research and development activities in the market will also create new opportunities for dental biomaterials market in the forecasted period of 2021-2028. The major players in the dental biomaterials market are BIOLASE, Danaher, Inc., Institut Straumann AG, and Dentsply Sirona.

Pallavi Brahmkankar works in a Market Research Company and has interest in healthcare prospects.

Composites have the ability to manipulate the manufacturing process to yield the desired material properties similar to polymers.

I'm an Angel without wings! Can you give back my wings????

■ Chandni Bhilwara



Be the 'change' you want to see in this world ~ Mahatma Gandhi

Change is the law of nature. What is today shall be different from what it would be yesterday or tomorrow. When this 'change' happens on its own we see it as an opportunity. When 'change' hits us unexpectedly we can also consider it as an opportunity to improve what needs improvement & growth and 'change' what needs to be changed.

Our nurses were deemed heroes and angels during this pandemic. Their endless efforts and selfless serving & caring attitude with a behavior of accepting the challenges with much more maturity as well as a prompt action is only found in media & papers rather than the

actual scene from the clinical side. People frequently use the word -Angel to express gratitude to nurses.

However, the public is still unaware of the nurse's journey, which begins with her continuous preparation to become a well-qualified nurse. By the great investment of their time & hard work, they achieve their expertise with great endeavor and commitment.

A nurse is that person whose expertise lies in the basic program of nursing and they are certified by the medical council to practice nursing in their country.

The recognition that nurses should get is often hampered by their attitude that they

are just a nurse. Additionally, there is a lack of public awareness about their role in healthcare, which needs to be made visible and explicit in the near future. The noble profession of nurses enriches them with etiquettes and develops the qualities of integrity, compassion and competence with which they can work confidently in any scenario.

The COVID-19 pandemic has strengthened the discussions and people have started recognizing the effort of a Nurse with an evident public support. This will eventually break the stereotype against the nursing profession.

Their endless efforts and selfless serving & caring attitude with a behavior of accepting the challenges with much more maturity as well as a prompt action is only found in media & papers rather than the actual scene from the clinical side.



Numerous countries give a round of applause and send cards to express their gratitude. According to WHO, nurses are not only doctors' assistants, but separate health professionals with their own policies and protocols. As a result of this kind of initiation, nurses may be able to distinguish the scope and boundary of the nursing profession and become independent practitioners in many areas. In day-to-day life, nurses began looking for opportunities in the media where they get highlighted for their skill, knowledge, and compassion along with a chance to reframe their own views about their careers.

Pandemic has opened the doors of nursing knowledge, experience, and advice. The basic care and survival of patients with COVID-19 depends on practice and performance.

Even with the mental agony of seeing a huge number of patients suffering and dying in front of them, nurses overcome the situation and continue with the same care without fail. This act of mental agility and strength makes this profession so endearing and thought provoking. Nurses themselves need rest and mental peace so it is important to balance the support among all the health care professionals.

Ability to plan around professional commitments is the key strategy to nurse's professional life balance. After overcoming this emergency, it could be both achievable and life-changing for many nurses around the world.

Even after COVID-19, nurses will continue to play a prominent role. Their expertise in handling crises is both legitimate and has influenced the public with a powerful voice for a better future for health care. In

times of pandemics, nurses must adhere to protocols and standards that protect their professional obligations and ethics, and ensure that equity and fairness are maintained for all concerned.

The government and private sectors need to plan now for a future where there are adequate nurses, all nursing positions are filled, and the nursing workforce is well-paid, and highly respected for the important services they are providing and being an important part of nurses' lives.

Chandni Bhilwara works as Nurse Educator at Fortis Escort Heart Institute, New Delhi. Has received certification from various national and international institutes.

Even with the mental agony of seeing a huge number of patients suffering and dying in front of them, nurses overcome the situation and continue with the same care without fail.

► RESEARCH

How do Yoga and Holistic Health correlate?

■ Javleen Girdhar



Holistic health refers to the establishment of a link between the mind, body, and spirit, and the true meaning of Yoga is “union”—the union of the mind, emotions, and body. Yoga is more than just losing weight. It adds value and harmony to the body while also having a favourable effect.

Those looking for a holistic approach to their health should try yoga. It will help them to manage their mental and emotional problems while also improving their physical health. Everything is connected and one will feel completely rejuvenated after yoga.

Physical and breathing exercise, as well as meditation, boost general health. Yoga is a holistic system in itself. Yoga positions are designed to focus on the body while

also lowering stress and improving health. It also helps to keep the mind and body in sync.

Holistic wellbeing strikes a balance between physical and emotional well-being. It focuses on various aspects of life. If one adopts a holistic health strategy in their life, they will notice improvements in their emotional, psychological, and spiritual well-being. After learning about the holistic health method, many have been able to overcome stress, sadness, addiction, and low self-esteem. The benefits of yoga are solicited by the amount of balance, body awareness, and concentration, incorporated in one's life and further promotes healthy aging.

The balanced mind helps us in understanding the needs of our mind and

body, and also the propensity to develop a disease-free, healthy and beautiful body. A body free of disease and discomfort, both physically and emotionally.

It is a therapeutic method that frequently entails the use of a variety of complementary medicines and alternative healthcare methods. This method assumes that a person's environment has an impact on him or her. As a result, it is preferable to choose nutritious foods over junk food or an unhealthy lifestyle over natural remedies. People want immediate results at the expense of long-term consequences. They do not live a complete and healthy lifestyle and do not benefit from the pure energy, vigour, and tone that god offers.

The benefits of yoga are solicited by the amount of balance, body awareness, and concentration, incorporated in one's life and further promotes healthy aging.



Any person's mental attitude is influenced by what he chooses to hear or see, as well as what he wants to learn from the experience. Researchers have proven that lifestyle decisions, whether made deliberately or unknowingly, cause illness or early mortality. Consumption of excessive sugar, coffee, or embracing unfavourable mental attitudes such as

anger, stress, or the use of drugs, alcohol, cigarettes, or a lack of exercise on a daily basis will degrade one's personality in the long run.

Holistic health therapies take into account a variety of conditions and gradually but steadily enhance various levels. Holistic health is a continuous process that

involves a variety of lifestyle factors such as diet, sleep, exercise, and daily routine. It assists the individual in supporting the body's natural healing system and allowing them to begin living happily. It creates a state of equilibrium in which a person begins to accept responsibility for his or her own optimal health.

Researchers have proven that lifestyle decisions, whether made deliberately or unknowingly, cause illness or early mortality.

Javleen Girdhar has a passion for holistic health approaches that extends beyond fitness. She is an educator and trainer for dietitians and nutritionists.

Yoga, Meditation and Ayurveda- India's three invaluable gifts to the world

■ Riccha Arora

Yoga, Meditation and Ayurveda are three of India's invaluable gifts to the world. These are part of the ancient wisdom passed down from generation to generation for thousands of years and today have become an integral part of Indian culture and tradition. One

can be curious about how these ancient old practices have still managed to remain relevant in today's time. The answer lies in their deep-rooted connection with the life process which is directly proportional to nature's functioning. Recent studies and scientific research have shown several

benefits in physical fitness and mental health by including the trio in one's life.

Here is an in-depth understanding of Yoga, Meditation and Ayurveda and their importance in our daily routine.



Yoga

Although there is no proof of who discovered this unique style of exercise, its origin can be traced to the Indian civilization over five thousand years ago. The word Yoga comes from the Sanskrit word Yog which means union. It is said by making Yoga part of our daily routine we unite our consciousness with the universal consciousness.

Pranayamas and Asanas are the two fundamental components to make the practice effective. The inhalation and exhalation of breath is known as Pranayama and the body position in which the breathing pattern takes place is known as the Asana. By bringing flexibility in the body and controlling the regulation of the breathing sequence can cure many common diseases like Diabetes, Blood Pressure, Osteoporosis, Arthritis,

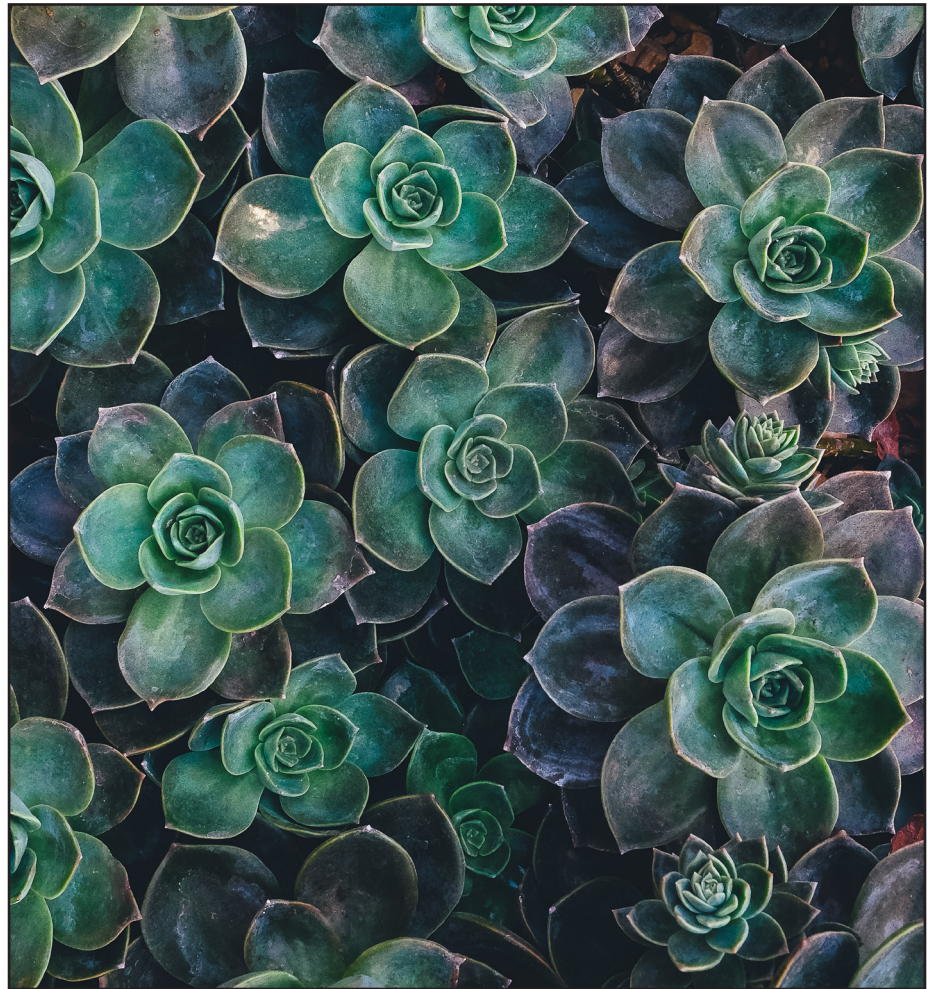
Asthma, to name a few. It also brings strength, endurance alongwith a youthful body and a glowing face. In ancient times Yoga was taught as an ascetic discipline in India but today it is getting famous around the world and being practised by every section of society for its impeccable results.

By bringing flexibility in the body and controlling the regulation of the breathing sequence can cure many common diseases like Diabetes, Blood Pressure, Osteoporosis, Arthritis, Asthma, to name a few.

Meditation

Meditation is a unique practice to strengthen the ability to concentrate and awaken the consciousness long lost in the chaotic circles of thoughts. It emphasises the importance of the ‘power of now’ i.e the importance of being present at the moment. Regular practice of meditation can bring tremendous changes within us. Not only does it help in reducing all sorts of mental illnesses and heart ailments but it also opens the door to new possibilities in terms of finding a perspective in life, realising our full potential, and most importantly liberating us from the chain of negative thoughts which are the root of all our downfalls in life.

For thousands of years, monks of the east have been practising meditation to deepen their understanding of life and penetrate through the clouds of mystical forces. Great sages and peers have always said that meditation is a key to opening the third eye. While giving clarity in perception, strengthening intuition, improved concentration and decisiveness, the third eye can bring you to the state of blissfulness away from desire & sadness and unlock the door of spirituality.



Ayurveda

Ayurveda is the oldest form of medicine coming from the roots of ancient India. Based on the integrated approach of creating a balance between body, mind and soul, the treatment of Ayurveda begins with the treatment of Internal purification. It is the amalgamation of organic remedies that involves Yoga, meditation, massage therapy and a herbal

diet. Just like a unique fingerprint, every individual has a particular pattern of energy that lies in the mind, body and soul. Ayurveda works in the direction of proper regulation of these energies. Vatta (the energy of movement), Pitta (the energy of metabolism and digestion) and Kapha (the energy of the structure) are the three basic energy forms, the imbalance of which causes diseases according to Ayurveda. Many people use

Ayurveda as a complementary treatment in combination with allopathic treatment to heal completely from a particular disease.

The ultimate goal of Yoga, Meditation and Ayurveda is to help one lead a healthier and balanced life. They may not give instant results but will surely bring a positive change within.



Regular practice of meditation can bring tremendous changes within us.

Riccha Arora is a homemaker and a mother of two year old. She has had a passion for writing from a very tender age and also writes in blogs on parenthood & travel.



Podcast

Building the next level of content consumables



What is a podcast?

An on-demand way of designing content, providing an inclusive two way audio communication/discussion/debate over a subject of interest.

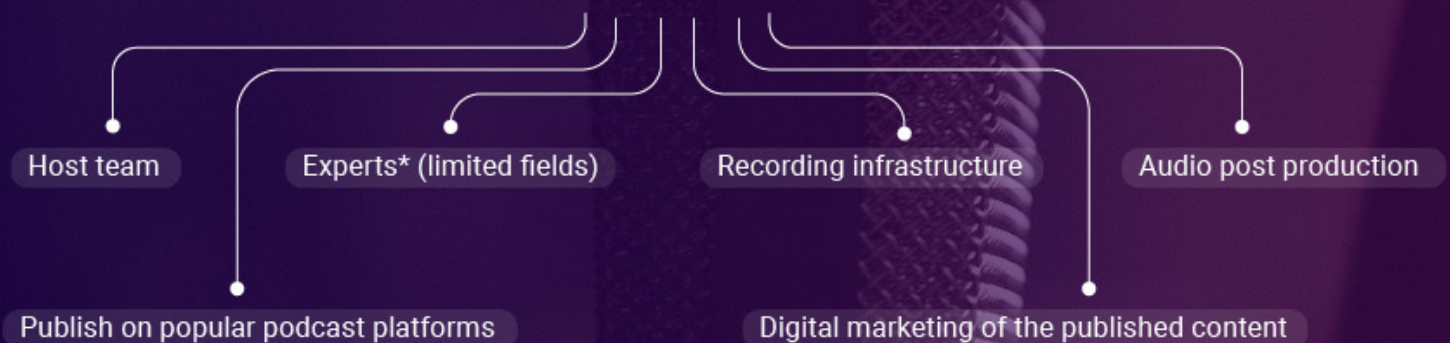
Why a podcast?

- Minimal attention, maximum consumption making podcasts time efficient
- On demand, making content, consumption friendly
- Two way communication, making podcasts more personal
- Live and pre-recorded formats, making podcasts flexible
- Frugal, making podcasts cost effective

Why InnovatioCuris?

Our forte is healthcare innovation digital content generation. We hosted over 50 podcast related episodes in the audio and video spectrum, interviewing and handling panels involving high profile individuals and organisations. Our 95,000+ healthcare community receives podcasts on a monthly basis making it an excellent channel for your podcast propagation.

What do we offer?



Pricing

₹ 50,000 INR / episode

To tailor your podcast series, visit bit.ly/ic-podcast-eoi

► NEWSCOPE

LATEST NEWS IN HEALTHCARE

ALKEM LABORATORIES LTD. TO LAUNCH STATE OF THE ART TECHNOLOGY FOR DIABETIC FOOT ULCER MANAGEMENT FOR THE FIRST TIME IN INDIA

With sedentary lifestyle there is an increase in number of diabetic patients in India and around the world. Diabetic foot ulcer is a major complication of diabetes mellitus that is often ignored. The upcoming new technology can bring a revolution in the diabetes treatment and can thus prove to be a major aid to people suffering from such a condition.



Alkem Laboratories Ltd. (Alkem) hereby announces to launch a unique patented technology for the treatment of Diabetic Foot Ulcer (DFU) in India. The solution would be based on disruptive 4D Bioprinting technology, which would be used to treat deep, non-healing chronic wounds and is expected to be launched in the Indian market in the latter half of 2022 post regulatory approval.

This advanced technology for DFU management has a high scope of preventing amputations in diabetic patients. This technology will be available at affordable rates to Indian patients at a time when there is no definitive treatment for DFU in India.

India currently has approximately 77 mn diabetes patients, the second highest in

the world. A diabetic foot ulcer is one of the most significant and devastating complications of diabetes and is defined as a foot affected by ulceration that is associated with neuropathy and/or peripheral arterial disease of the lower limb in a patient with diabetes. Approximately, 12-15% with diabetes suffer from DFU at least once in a lifetime. 5-24% of them will finally lead to limb amputation within 6-18 months after the first evaluation. The risk of foot ulceration and limb amputation increases with age and the duration of diabetes.

Alkem has collaborated with Rokit Healthcare Inc. to commercialize the technology in India to help reduce amputation amongst DFU patients considering the negative impact of amputation on a patient's quality of life and the associated economic burden on

the healthcare system.

Sandeep Singh, Managing Director, Alkem Laboratories Ltd. , stated, "In India, Diabetes is one of the major healthcare challenges. The challenge in itself is so huge that diabetic foot ulcers often get ignored. Approximately 1 lac people have to undergo amputation every year and compromise on their quality of life. To address the problem, Alkem has collaborated with Rokit Healthcare Inc., a global regenerative solutions company, to bring out novel solutions for the management of diabetic foot ulcers."

Adding further, Sandeep asserted, "Alkem, over the years, has always been at the forefront in delivering high-quality patient care, through its innovation and patient-centric initiatives."

Established in 1973 and headquartered in Mumbai, Alkem (NSE: ALKEM, BSE: 539523) is a leading Indian pharmaceutical company with global operations, engaged in the development, manufacture, and sale of pharmaceutical and nutraceutical products. The Company

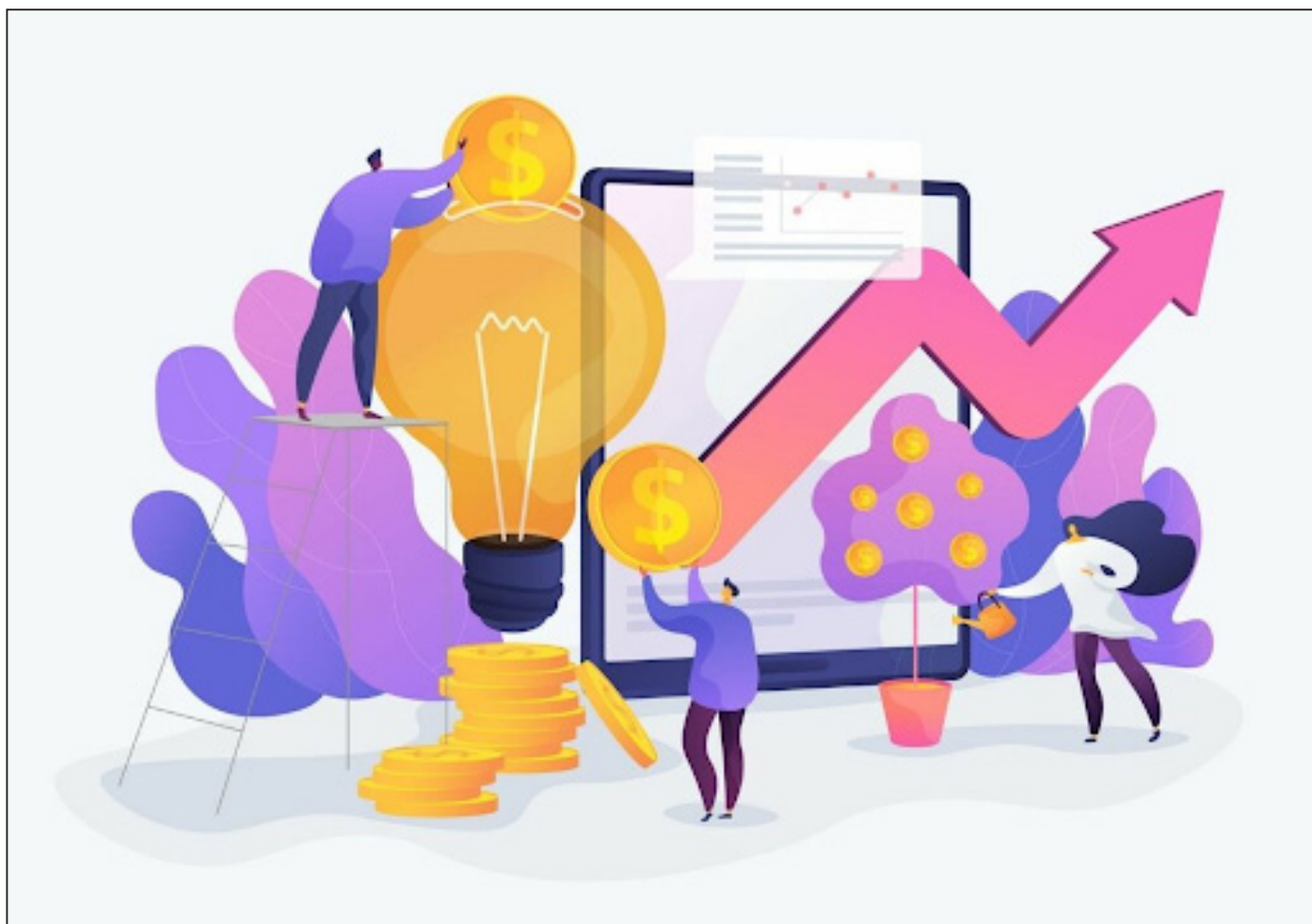
produces branded generics, generic drugs, active pharmaceutical ingredients (APIs), and nutraceuticals, which it markets in India and International markets. With a portfolio of more than 800 brands in India, Alkem is ranked the fifth largest pharmaceutical company in India in

terms of domestic sales (Source: IQVIA March 2021). The Company also has presence in more than 40 international markets, with the United States being its key focus market.

SOURCE: *theprint.in*

ANGEL NETWORK AGILITY VENTURES LAUNCHES SECTOR-AGNOSTIC INR 450 Cr FUND

If you are a startup working in the field of education, technology, healthcare, e-commerce, automobiles, electric vehicles, robotics, agri-tech and manufacturing, then this news would be of interest to you. Global angel network firm Agility Ventures has launched a sector agnostic fund which is a SEBI approved fund. This could give new startups an opportunity to grow faster and better in their industry.



“After launching Fluid Ventures (a D2C focused VC fund) last year, this is exactly the kind of fuel needed to roll-out our plans for 2022. After having invested in five companies through Fluid Ventures, ambitious about deploying INR 75 crore this year through Agility Ventures angel fund,” said Dhianu Das, cofounder of Agility Ventures.

about \$6.2 Bn had been raised by 62 funds across categories (VC, Debt, CVC, Micro VCs) to back the rising Indian startup economy last year. Of these 62 funds, nine are Corporate Venture Capital funds (or CVCs) and 12 are Micro VCs.

“The interesting thing about raising the kind of angel fund that has been approved by SEBI is that it is sector-agnostic and

does not limit itself to co-investments. This model also simplifies the financing process without changing the core style of the angel network. In fact, it adds to the pre-existing angel investor’s style of financing,” said Prashant Narang, cofounder of Agility Ventures.

SOURCE: *inc42.com*

OnePlus INDIA ROLLS OUT SLEW OF INITIATIVES ON MENTAL HEALTH

Most of us know OnePlus as one of the leading mobile companies; but with this new initiative, it can definitely leave its mark otherwise. OnePlus India has rolled out a series of initiatives as part of its ongoing mental health and wellness campaign. This could be another step in joining the league where the companies are nowadays taking care of the mental health of their employees and customers thereby making a debut in the healthcare world.



OnePlus India has rolled out a series of initiatives as part of its ongoing mental health and wellness campaign. The programmes include sessions with experts on healthy eating and emotional well-being, meditation sessions on practicing mindfulness, as well as yoga sessions with cardio-based benefits and building energy.

“We are also planning webinars with industry experts on creating greater awareness of our personal investment towards mental health. We look forward to engaging with our employees through ‘daily mindfulness challenge’ contests and fun activities centred on this theme in order to build greater community awareness,” Vikram Kapur, director of HR department, OnePlus India.

The curated mental health sessions are an extension of the company’s current series of wellness initiatives that aim to support and aid employee wellness and help

maintain a positive work environment.

The firm has also introduced free physical fitness and yoga sessions along with mental health counselling and therapy sessions that are complemented by diet consultations, to ensure that employees’ mental and physical health is taken care of, and they are provided with adequate stress-relief mechanisms. Employees also get special ‘pitstop’ leaves where teams come together to take a day off without the guilt or burden of the rest of the team working.

OnePlus India currently has more than 500 employees working from its Bengaluru and Hyderabad offices. During the first half of 2021, it witnessed over 40% y-o-y increase in its workforce growth in India, accounting for both direct and indirect jobs, including its service and retail sectors.

The company has also set up a new camera lab at its R&D facility, which has seen

dedicated contributions from the local team of engineers who have been recruited to work full time at the camera lab. This team of engineers in India have also been working closely with global R&D teams as well as other global stakeholders to build camera innovations and contribute significantly towards the OnePlus Nord 2 5G, the most recent addition to the Nord line-up of smartphones.

“As part of our expansion efforts, our biggest upcoming project is the OnePlus Experience Store in Bengaluru which will be the largest OnePlus Experience Store globally. Here, we are looking to build a team of more than 50 dedicated towards running operations for the massive store,” said Kapur.

SOURCE: economictimes.indiatimes.com

INDIAN FINTECH LEGALPAY CREATES HEALTHCARE FUND FOR RETAIL INVESTORS

India's first and only alternative investments platform specialising in legal and debt financing opportunities, has launched a Special Purpose Vehicle (SPV) focused on the healthcare sector for retail investors wishing to invest and provide fractional super-secure financing to companies under insolvency that have substantial assets. LegalPay is building a litigation finance platform using which an entity can transfer the burden cost to a third party. The platform also aims to ease the financial burden of litigation. LegalPay helps plaintiffs cover legal fees, working capital and beyond with non-recourse litigation funding.



FinTech startup LegalPay has rolled out an interim finance healthcare-focused fund for retail investors.

The fund will be available to those willing to invest a minimum of Rs 10,000 (approximately \$134) for every opportunity, in asset-backed legal and debt financing asset classes.

The report notes that interim finance is a super short-term financing, which allows for an insolvent company to remain operational even while undergoing the Corporate Insolvency Resolution Process. LegalPay's work targets the mid-market companies that have been undergoing insolvencies, and it competes with restructuring firms. The New Delhi-based company has said the alternative investments in legal and debt asset classes doesn't go along with capital markets and

gives more than 20% to 30% pre-tax IRRs of monthly disbursements.

Kundan Shahi, founder and CEO of LegalPay, said the company "democratizes investments through extensive use of technology and data."

"We want to make the use of alternative investments mainstream for retail Indian investors like the ultra-rich does," Shahi continued. "We have a unique ability to engage in product innovation consistently and set benchmarks for wealth generation in India."

In other FinTech news, India-based firm Slice has plans to hire 800 new employees next year. That will include canvassing its operations, design, product and engineering departments.

Founder and CEO Rajan Bajaj said the idea was to "constantly" look for new talent, whether it's people just out of school or experienced professionals "who relate to our product and are equally enthusiastic about creating the future of payments."

PYMNTS reported that there will be a special focus on building and growing the product, operations, design and engineering teams. The new hires will be brought in to work with the flagship card product and new United Payments Interface (UPI) integration.

SOURCE: *Indian FinTech LegalPay Creates Healthcare Fund* | [PYMNTS.com](https://pymnts.com)

RETAILIO CONDUCTS SUCCESSFUL PILOT OF DRONE BASED MEDICINE DELIVERY

In this time of pandemic, where everyone is avoiding going out even if it means to get medicines from the medical store as they could be a high risk incidence zone, this pilot being rolled out by RetailIO can be a life saver. If this is successful, it can revolutionize the delivery of the medicines to the needy and that too in a safer and more real time manner.



RetailIO, connecting Pharmacies and Wholesalers, successfully conducted Drone deliveries in Karnataka's Gauribidanur in collaboration with healthcare autonomous drone logistics company Redwing Labs.

The pilot was focused on delivering critical lifesaving medicines to hospitals in under 10 mins maintaining the cold chain and all the norms, the team conducted 4 trips with different product mixes. The Pilot took place between Gauribidanur and Hossur Primary Healthcare center (PHC) in Chickaballapur district using a Hybrid VTOL drone with Payload capacity of upto 2 kgs. With an average speed of 90 kmph the drone covered an ariel distance of ~10km under 8 mins.

Harsh Parekh – Co founder, API holdings stated – “We believe autonomous drone systems are the future and will help the ecosystem get better. This is the future and we will continue to focus on such kind of innovations”

Additionally states” The VTOL drone was used in the demonstration and is 100% electric. Drone-based delivery networks could result in over 90% reduction in carbon emissions compared to using vans and cars”

Mithil Jain – CEO, RetailIO 1P said – “the vision to integrate Drones in the healthcare ecosystem is a critical step towards efficient medicine delivery. We feel Autonomous drones at scale would bring in a lot of disruption in healthcare delivery. With an exceptional response time, life-saving medicines can be delivered at lightning speeds. The success of the pilot opens up tremendous opportunities to provide exceptional service and healthcare supplies to the remotest part of the country.”

This trial opens up a plethora of opportunities in improving healthcare delivery for multiple stakeholders, this together with numerous such applications has tremendous potential to augment the entire ecosystem.

Limited access is one of the most serious concerns in Indian healthcare. For every 10,000 people, India has only ~9 doctors, compared to 26 and 20 doctors per 10,000 people in the US and China respectively. In rural areas, only 4 doctors are available for every 10,000 people. As a result, only 11 out of 29 states in India meet the WHO recommendation of 1:1000 doctor to population ratio and 10 Indian states face shortage of doctors at a primary care level.

SOURCE: [expresscomputer.in](https://www.expresscomputer.in)

Compiled by:

Parthvee Jain, is an engineer with specialization and interests in fields of Biotechnology, Healthcare, Food Processing and Nutraceuticals. Currently working to build key partnerships to impact people's lives in emerging markets through technology and entrepreneurship. She has an expertise in the area of organising and handling virtual events and also in strengthening the collaboration across national and international organisations.

IC InnovatorCLUB

Eleventh meeting report

YOUNG INNOVATORS

■ Clarion Kodamanchli

Eleventh Virtual Club Meeting



Young Innovators

Young Innovators! How can one define young? Is it something related to age, or something related to field experience or just a combination of both. For now, let us fly ahead to cover the Eleventh IC InnovatorCLUB virtual meeting, which was conducted on February 12, 2022 under the theme “Young Innovators”. This meeting, unlike the usual panelists, saw a younger generation taking the lead in sharing their relatively extraordinary experiences, and declaring outright the strength, perseverance, commitment and most importantly freshness in their imagination and innovation.

The meeting commenced with Dr. V K Singh, Managing Director of InnovatioCuris and InnovatioCuris Foundation of Healthcare & Excellence, introducing the IC InnovatorCLUB and the motive behind having “Young Innovators” as the theme for the edition of

the meeting. He pronounced the pace of the waves at which the young generation is striding and their level of all round understanding of aspects which took years to research. He was particularly exuberant for this edition of the meeting which consisted of presentations and panel discussion charting guests from different generations with various facets of innovation.

Dr. Singh introduced the presenters and panelists of the meeting starting with Dr. Mohit Gambhir, Innovation Director @ Ministry of Education’s Innovation Cell, Govt. of India, Mr. Harmanjot Singh, who at a tender age of 14-year-old has created three award-winning Mobile Apps. One of his app for women’s safety called Raksha has won him Prime Minister Bal Puraskar for the year 2021, Mr. Abhik Saha another young innovator who at the age of 15 years was awarded the Gandhian Young Innovation Award

(GYTI) 2018 by President Ram Nath Kovind at the Festival of Innovation and Entrepreneurship (FINE) and, Dinesh C Sharma, is an award-winning journalist, author and media trainer with over 35 years’ experience of reporting on science and technology, health and environment for national and international media outlets and has recently composed a book on the top 100 innovations from India.

Dr. Singh further mentioned about the InnoHEALTH magazine which is circulated to a huge global healthcare community consisting of 95000 subscribers. The interview of Harmanjot Singh, who is a 14 year old Bal Puraskar awardee and a panelist in this edition of IC InnovatorCLUB meeting, will be published in the upcoming edition of the magazine scheduled to be released in March 2022. He also urged that more interviews, experiences and journeys of the younger generation be published to

promote visibility and garner the young minds of the nation. He highlighted the focus of the Prime Minister of India on innovations, unicorns and the supporting tools for these like conducting hackathons, eg; IDEathon, SAMADHAN, Smart India Hackathon with Dr. Mohit Gambhir through the Ministry of Education who was the organizer. He optimistically mentioned that, though India was at 46th and 40th position on the innovation index in 2000 and 2021, still India is a home for 81 unicorns with a total valuation of 279

billion USD. Out of these, 43 unicorns are valued at 89 billion happening only in the last year. USA stood at the top in the number of unicorns whereas India stood in the 4th place, behind China and UK. He stated that the pandemic has forced the country into frugal and real innovation. Taking the COVID-19 vaccine as an example, he applauded the way the vaccine shots were exported contrary to our importing of the same previously.

With further elucidation he mentioned about the challenges faced by the young innovators that leads to 90% of the start-ups to fail within five years of inception and face the consequence of closure. It is not just about getting a billion unique data, but thoughts have to be on the challenges that arise by this.



Dr. Mohit Gambhir spoke ardently about the importance and the need for innovating. He emphasized that the innovation coming from the younger generation these days has upscaled it to the next level for the future. He also spoke about incubators supporting the younger generation, alongwith the hackathons to ignite the flame of innovations. He shared some numbers and thoughts on the initiatives of the Ministry of Education in conducting smart India hackathons, and also the evolution of the competition from 40,000 participants in the first year to 3.5 lakh participants in the fourth year, and expecting a million participants for the upcoming hackathons. He mentioned that the fifth edition is introducing a junior student track starting for grades 6-12, who would be part of the Open Innovation Model.

Dr. Gambhir also talked about the tough, however fruitful journey of the first Indian pandemic lockdown time, where he, the Ministry of Education and InnovatioCuris, under the guidance of Dr. V K Singh moved pole to pillar to transpire the IDEathon (a COVID-19 themed hackathon). It was an initiative where 10000 participants came together with innovative ideas to confront and

cessation of the virus. The ideas were bestowed with accolades and many teams which impressed the jury were incubated by the Ministry of Education post the hackathon.



Dr. Gambhir then spoke about the TOYCATHON (an innovative toy making themed hackathon) and explained the procedure for its participation. The number of school student participants involved, greatly indicating the younger generation's strength in the innovation space. He mentioned about the licensing and hand-holding that is still culminating between the participant school students and the toy making companies. These initiatives will have a higher impact in broadening the horizon of the school students as such actions would help the students during the time school students

and when they have reached the college their ideas which are already funded thereby will strengthen the innovation ecosystem right from school.

Dr. Gambhir then spoke about the administrative work being done in the past 2-3 years, setting up innovation councils in higher education institutions across the country to bridge the gap in the design thinking, critical thinking and cognitive skills. He stated that this model would be used to launch school innovation councils and the ministry is ready to announce 10000 school innovation councils. He spoke about the teacher training in more than 25000 schools in India on design thinking, innovation, idea, the partnerships, technology, commerce, HR, sales, financing, boot camps, arranging business plan, like kind of people and activity. These teachers, if not completely trained, are at least aware of the basic concepts so that the student may not be discouraged in posing queries in the same. Dr. Gambhir spoke about mapping innovation and its role in the flourishing of enterprise ownership which brings to the way of channelising the brain tuning and resources to bring in more indigenous products made in the country.

Dr. Gambhir concluded his talk by speaking about the current actions, numbers in the IP space compared with the super powers like India and China. He mentioned about the challenges faced in IP due to poor documentation and the actions being taken from the rudimentary level to over turn these challenges.

The club meeting progressed with a panel discussion moderated by Sachin Gaur. The panel participants were Harmanjot Singh, Abhik Saha and Dinesh C Sharma.



Harmanjot Singh started his presentation where he introduced his accolades and work he is pursuing in his apps in healthcare and cyber bullying and women's safety app and its success, shining his work before the Government of India. He mentioned that his work consists of three main ingredients: creativity, knowledge, and perseverance, quoting Thomas Edison's 1% inspiration and 99% perseverance. When asked about his change in life after developing these apps, he elucidated about his work life balance and its importance to motivate both segments.



After this, Abhik Saha, the second panelist started with his introduction and the way he progressed with his dream through the monotony of childhood and how he broke his shackles in setting up his own company, Origgon, a search engine. He shared his pull back from the investors terming it as a crazy idea going against a search engine giant. He then shared his long story short about his development of his idea from challenging times to his

company closure due to unavailability of investors and funds. He still called it development due to the experience and excitement he received recharging him to scale to better opportunities. He mentioned that he is currently working with telecom companies, startups, etc; where they power search engine recommendations and other AI related technology backend, understanding big data. Abhik concludes that he would have ideally started his company at 15 contrary to 27 and expressed that he knew more about the jargon of the business world. When asked about the future of online gaming in India, Abhik responded that it's not just about gaming it's about a completely different world that you can opt into, from your daily busy life, or whatever it does not matter in the game you can choose what character they want to be as well as the role they want to play. Also meet other people and do something together making that part of gaming so interesting, or makes the full potential of the internet in a completely different environment or scenario, also bringing those angles from the gaming to other environments like education and technology and learning.



Next, the award winning journalist, Dinesh C Sharma took over and talked about his journey of journalism in 1984 about scientific institutions paving the way for science journalism. He mentioned his book on the Arctic where he was at the ground zero of climate change, spending time as an icebreaker. He mentioned that he broadly wrote on environment and medicine. When asked about his opinion on communication, he talked about the way communication has evolved and the change in the internet speed, the evolution of the technology infrastructure. He states that his reason to write the book

"Indian innovation: not jugaad" is first, many innovations have touched the lives of people and needed documentation, and secondly whenever there's a discussion about Indian innovation, the word

"Jugaad" comes into picture most of the time creating a wrong impression and hence wanted to shrug off the thoughts on Indian innovation. He states that frugal innovation is not jugaad, but a quick transient act for correction and he wanted that impression to change through this book. He gives an example of the egg market in India and how uniform pricing helped egg availability all over India. He spoke about the future trends in India stating that when innovated, it finds use cases all along and not just for the length of the time it was made. He mentioned that his favorite innovation from his book is the ticketing system and the very thought of computerizing and making it, accessible to people you could book any ticket anywhere, anytime and those are that kind of revolutionary then that changed the number of people who travel by Indian railways in a year is humongous and the other innovation being the digitisation of land records. His healthcare specific favorite innovation was the set of ideas which led to making medicines and vaccines affordable to India.

Dinesh mentioned that the younger generation needs mentoring from the experienced lot and that every innovation is based on a context and processed may be cultural specific, technology can only be a support and the problem solving needs innovations.

Dr. Gambhir concurred with Dinesh about the problem solving innovations and also carefully highlights the peer pressure scenarios that may arise due to this.

Dr. V K Singh concluded the meeting by sharing his experience on generational awareness and the perspective of life changing drastically as time passes and technology strides over power the way of living. His advice to the younger generation is to analyze failure rather than success.

Clarion Kodamanchli works extensively on custom software development, learning management system design and development, digital event management, communication engagement and digital marketing campaign strategies and technologies. He has successfully handled global projects in healthcare, ICT, education and commerce. He loves to play fortnite and inquisitive about learning new languages.

▶ BOOK REVIEW

Reviewed by Sachin Gaur, Executive editor for InnoHEALTH Magazine

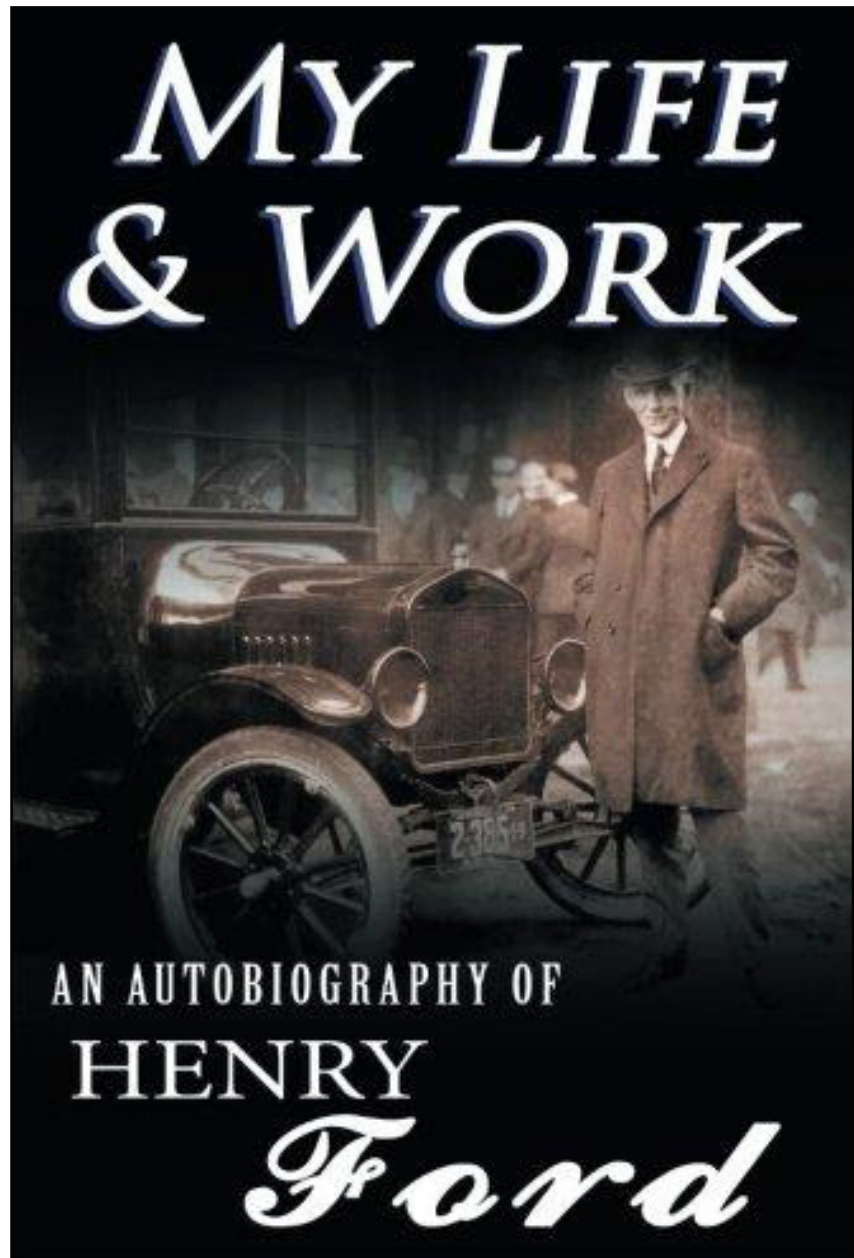
The autobiography of Henry Ford is the first book that I finished reading in 2022. I don't know why I picked it up but I was happy with my decision. I have always learnt about the work of Henry Ford in the form of assembly line by industry experts who are optimisation enthusiasts. I was very impressed by the depth of analysis that Mr Ford has presented on how he built his business. The book may be 100 years old now but it seems very pertinent for people who look to start businesses today. As many pursue the valuations of their start-ups in current times, Mr Ford defines the objective of the business as a service to the society with a strong pursuit of bringing down the cost and continuously improving the quality of product. This sounds so intuitive and the right thing to do however contrary to current business ethos where companies want to make a fat profit margin and want the product to be old and obsolete in 2-3 years so that they can sell more. I wonder if big companies like Apple can afford to do what Mr Ford did.

He mentions curtailing the waste during the manufacturing processes on multiple occasions in this book. It also reminds me of an expert who once told me that, 'Nature is very frugal. It does not waste anything.' I wonder why nobody called Mr Henry Ford, the father of Lean!

Towards the end of the book he writes about applying his life lessons in other domains from the rail road to building

a hospital. I have always heard about such lean management concepts from my pert colleagues and advisers in the healthcare setting. And now I am happy to point them to a reference

which is hundred years old. If you are a person looking to optimise processes in your work (manufacturing setup or healthcare), this book is for you!



As many pursue the valuations of their start-ups in current times, Mr Ford defines the objective of the business as a service to the society with a strong pursuit of bringing down the cost and continuously improving the quality of product.

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Higher Return on
Investments



Modular and
Repeatable



Interactive and
participative



Great value for
participants



Greater
Outreach



Scalable and
Measurable



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27

European Higher Education Virtual Fair 2016

16000+

87

European Higher Education Virtual Fair 2015

13000+

73

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SAMADHAN

9000+

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10000+

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