

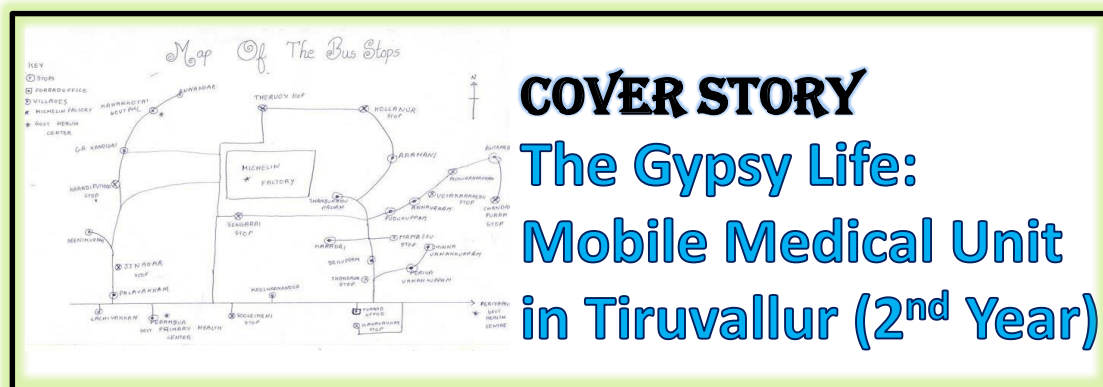
# What's Up? @St John's Hospital

Issue 20, March 15<sup>th</sup>, 2019



Its spring on its way to summer with all new green leaves in the campus..

PC: Dr. Rakesh



#### EDITORIAL TEAM:

Archana S, Avinash. H. U, Bhavyank Contractor, Blessy Susan Biji, Deepak Kamath, Manu. M. K. Varma, Merlin Varghese Susan, Nivedita Kamath, Rakesh Ramesh, Reena Menon, Ruchi Kanhere, Sanjiv Lewin, Sanjukta Rao, Santu Ghosh, Saudamini Nesargi, Sheela Immaculate, Rev. Fr. Vimal Francis, Winston Padua



St John's National Academy of Health Sciences  
St John's Medical College Hospital, Bengaluru





# CONTENTS

Message From The Editorial Team .....	02
Cover Story (Gypsy Life 2 <sup>nd</sup> Year) .....	03
Updates This Week (World Glaucoma Week 2019) .....	07
Updates This Week (Home Phlebotomy Services) .....	10
Updates This Week (Participation in Aero India Show 2019) .....	11
Updates This Week (Best Teachers of Year 2018-19) .....	12
Updates This Week (54 <sup>th</sup> Convocation day) .....	13
Updates This Week (Friday Clinical Meeting) .....	14
Team of the Month (Sewage Treatment Plant) .....	15
Ig Nobel.....	19
Know your Hospital (Occupational Health) .....	20
Laughter Is The Best Medicine .....	23
The Quotable Osler .....	24
Medicine Dis Week.....	24
Reference 1 of Medicine Dis Week.....	25
Reference 2 of Medicine Dis Week.....	28
The Story Of Medicine.....	29
Pearls Of Wisdom .....	29
L Johny .....	30
Did You Know? .....	30



## MESSAGE FROM THE EDITORIAL TEAM

***Vellarigu Namaskara!!!***

We are pleased to share the twentieth issue of “What’s Up? @ St John’s Hospital” magazine today. The magazine is recognisably growing. We welcome another member to our family, Mrs. Reena Menon (Vice-Principal, St. John’s College of Nursing).

We plan to start a new section to encourage research and publications for the staff of St. John’s. To begin with, we will choose published research from the year 2018 (January to December).

We present 2<sup>nd</sup> part of the story ‘Gypsy Life’ by Dr. Mihika Noronha (Johnite from 2011 batch) elaborating on her incredible journey of 2 years in rural service. A story which is a must read for all young doctors who are about to start their rural service.

The present issue is themed green to symbolize World Glaucoma week 2019 as well as the beautiful spring we are in. We thank Dr. Ankita Kothari (Assistant Professor, Department of Ophthalmology) for providing a brief write up on glaucoma.

This issue we highlight ‘Sewage treatment plant’ team of St. John’s in ‘Team of the Month’ and ‘Occupational Health Services’ in ‘Know your hospital’ section. Do not miss these sections.

We will soon send an online feedback survey, requesting all of your sincere opinion on your magazine. Please feel free to communicate with us to publish your achievements, events and any feedbacks are welcome. Happy Reading!!

**Editorial Team**



# COVER STORY

*Continued from the previous issue.....*

## 2<sup>nd</sup> Year of Gypsy Life!

**Dr Mihika Noronha,**

Johnite, Batch of 2011, Completing her 2yrs Rural Service soon...

Last year when I submitted my review, I had just begun to figure out bond and was thoroughly enjoying the novelty of it. The second year of bond differed from the first in both thrills and difficulties and the way I coped with them.

Having finally procured all the necessary permissions, I could now restrict my interactions with the government. I started looking for new ways to engage the community. I realised simply telling people that they needed to screen themselves for diabetes and hypertension was not sufficient. They did not particularly care to know if they had it because they did not have symptoms.



So, I taught the health workers to conduct village level meetings about diabetes and hypertension. They discussed the complications, proper diet and the importance of continuing to take medication. Similar discussions were held for mothers and grandmothers about home care for children with coughs and diarrhoea. Using the IMNCI guidelines we taught them about red flags. This brought me face to face with hand out politics. People demanded ₹100 for having attended the session. I wondered whether Johnites would have had a better first hour attendance record, if we were given a cash incentive.

I also realised that I needed to actively step out of my centre and visit other places to learn new things. I visited Swasthya Swaraj in Orissa and Sittilingi in Tamil Nadu. I was also lucky that Dr. Randall from the batch of 2005 visited my centre in December and provided suggestions for its improvement. I had come to realise a major expense of ours was in providing pain relief for the multiple aches and pains that plague rural India. Swasthya Swaraj uses a simple chilli ointment for the same.



# COVER STORY

## 2<sup>nd</sup> Year of Gypsy Life!

After, procuring the method of preparation, we have asked a couple of elderly women in the tribal areas to make the same for us. This also provides income to a vulnerable population. We also partnered with an NGO called Vidyasaar which works with people with disabilities. They make a mixture of ragi, green gram, peanuts and jaggery that we use to treat malnutrition.

The year continued to teach me. I learnt something new about contact tracing. I had a lady who had an STI and I had treated both her and her spouse. This happened 3 times. With both of them being adamant that they only sleep with spouses. In the midst of me demanding the truth for their own good, I was told that the rural population can be polyamorous and the spouses in total after contact tracing were 10.



We tend to give people their medicines in paper packets stamped morning, noon and night and whether it was to be taken before and after food. However, some of our elderly patients used to forget whether they had taken tablets at all. This resulted in wrong doses. We have now started making cardboard pill boxes from the cartons that we get our medicines in. I'm hoping this will help.

The most difficult part of this year was balancing my preparation for the NEET. I could not take prolonged leave because, when I am absent, the clinic does not run.

I think MARROW was really helpful in helping me study. The second problem was created by me. I have high expectations from human beings in general and expected my health workers and patients to be as diligent as me. Casual statements from diabetics that they had payasam for breakfast and biryani for dinner made me question what I had achieved and if I had totally failed in my health education objectives.

# COVER STORY

## 2<sup>nd</sup> Year of Gypsy Life!

. I also became exasperated with statements from my health workers like we didn't check sugars because we went shopping. Luckily, the guidance of plenty of seniors helped me realise that we can only do our best and let go of our need to make people follow our instructions perfectly.

I also learnt how access to health care is not merely the presence of big hospitals. PHCs in my area do not start insulin or do incisions and drainages. It is frightening for elderly patients to travel to Chennai to get basic treatment. As a result, I have seen some pretty strange cases. I have removed a 5mm bit of gravel from a foreign body granuloma in a patient who has been treated with antibiotics for year. I have had to contend with the fact that people would see a resident quack and not the PHC simply because there are no doctors at the PHC. I have also syringed out enough wax out of peoples' ears that I don't need to buy a candle this Easter

There are some things that I do feel are necessary for anyone going into bond. One is to have a strong support system or to know people nearby that you can meet up with on the weekends because the isolation can get to you. The second is that you should travel to other centres for exposure and to learn things that your centre may not offer. I think if your centre is not flexible with this, like mine was it would be important to maybe change your centre after a year. Lastly, learn to say no and to take breaks if you are feeling burnt out. It is daunting when you have multiple responsibilities and you should take care of yourself first.



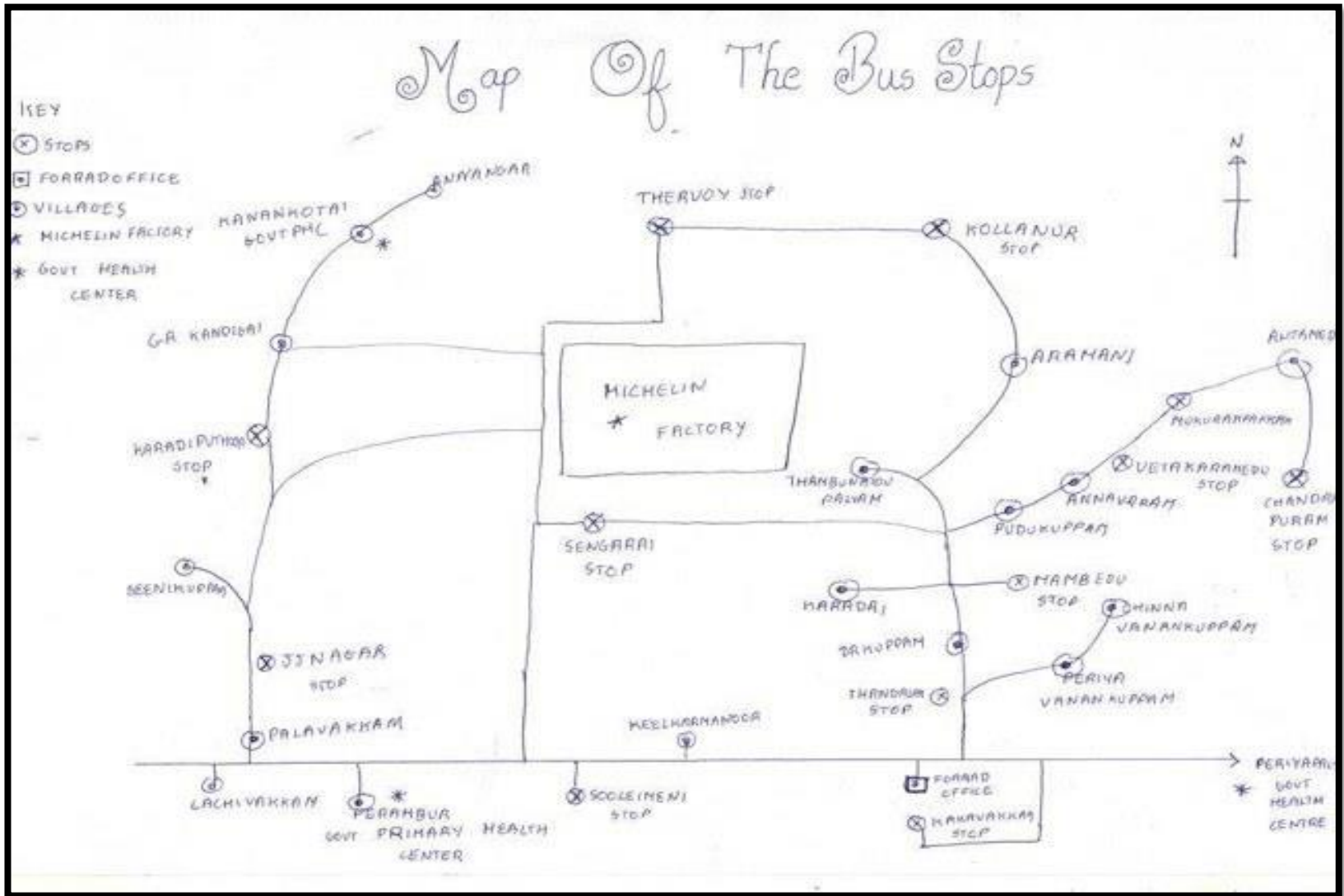
This weekend when Dr. Nikita Sunny from the batch of 2013 came to see the centre because she will be working here from May, I saw myself in her. I'm sure bond will help her grow in confidence, the way it helped me.

**In the Picture – Dr. Nikita Sunny seeing a case file.**



# COVER STORY

## 2<sup>nd</sup> Year of Gypsy Life!



Map of the project area



Inside the Mobile Medical Unit

# UPDATES THIS WEEK

## WORLD GLAUCOMA WEEK 2019

- *Dr. Ankita Kothari, Assistant Professor, Department of Ophthalmology*

World Glaucoma Week is observed from March 11-17, 2019. The main objective of this day is to eliminate glaucoma blindness by motivating people to have regular eye check up, including optic nerve examination.

Glaucoma is a term used to describe group of diseases of the eye, characterized by progressive and irreversible damage to the optic and which, if untreated, may lead to irreversible blindness. It usually happens when fluid builds up in the front part of your eye. That extra fluid increases the pressure in your eye, damaging the optic nerve.



Glaucoma is the second most common cause of blindness worldwide. WHO has estimated that 4.5 million people are blind due to glaucoma. In India, glaucoma is the leading cause of irreversible blindness with at least 12 million people affected and nearly 1.2 million people blind from the disease. More than 90 percent of cases of glaucoma remain undiagnosed in the community. Glaucoma prevalence increases with age.

It is reported that while anyone has about 2.3% lifetime risk of glaucoma, first degree relatives (FDRs) of glaucoma patient have a ten-fold increase in risk of glaucoma. So, making FDRs aware of the need for glaucoma by glaucoma investigations including examination of optic nerve may save blindness in large number of people.

One of the important factors is increase in pressure of the eye, but people with normal eye pressure can also develop glaucoma. According to WHO, there are several types of glaucoma, however, the two most common are, primary open angle glaucoma (POAG), having a slow and insidious onset and symptomless, and angle closure glaucoma (ACG), which is less common and tends to be more acute hence may present as a medical emergency.





# UPDATES THIS WEEK

## WORLD GLAUCOMA WEEK 2019



### **Risk Factors:**

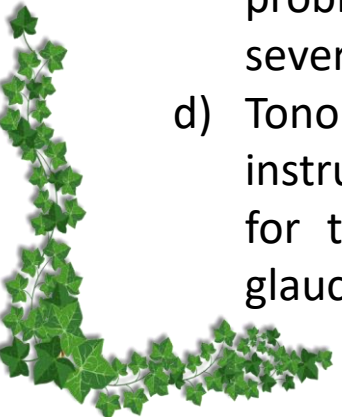
- 1) Having high internal eye pressure (intraocular pressure)
- 2) Age above 60
- 3) Family History
- 4) Having certain medical conditions, such as diabetes, heart disease, high blood pressure and sickle cell anaemia
- 5) Having certain eye conditions, such as myopia
- 6) Had certain types of eye surgery
- 7) Taking corticosteroid medications, especially eye drops, for a long time.

### **The symptoms of an acute angle-closure glaucoma attack:**

- 1) Vision is suddenly blurry
- 2) Severe eye pain
- 3) Sudden severe headache
- 4) Nausea
- 5) Vomiting
- 6) Seeing rainbow-colored rings or halos around lights

### **How is glaucoma detected?**

Glaucoma is detected through a comprehensive dilated eye exam that includes the following:

- a) Visual acuity test :This eye chart test measures how well you see at various distances.
  - b) Visual field test: This test measures your peripheral (side vision). It helps your eye care professional tell if you have lost peripheral vision, a sign of glaucoma.
  - c) Dilated eye exam: In this exam, drops are placed in your eyes to widen, or dilate, the pupils. Your eye care professional uses a special magnifying lens to examine your retina and optic nerve for signs of damage and other eye problems. After the exam, your close-up vision may remain blurred for several hours.
  - d) Tonometry: is the measurement of pressure inside the eye by using an instrument called a tonometer. Numbing drops may be applied to your eye for this test. A tonometer measures pressure inside the eye to detect glaucoma.
- 

# UPDATES THIS WEEK

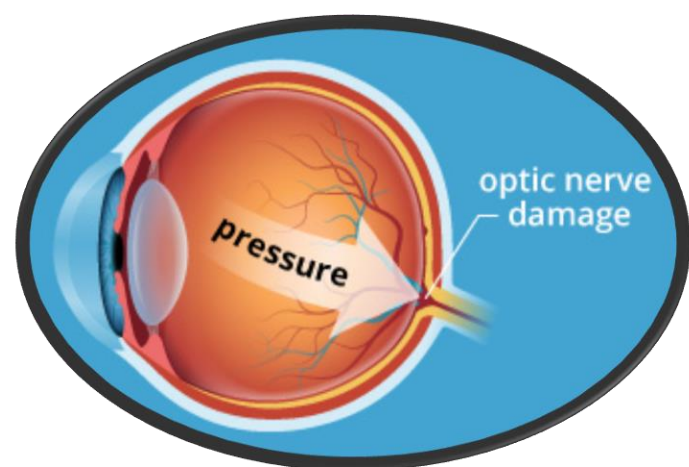
## WORLD GLAUCOMA WEEK 2019

e) Pachymetry : is the measurement of the thickness of your cornea. Your eye care professional applies a numbing drop to your eye and uses an ultrasonic wave instrument to measure the thickness of your cornea.

Without treatment, people with glaucoma will slowly lose their peripheral (side) vision. As glaucoma remains untreated, people may miss objects to the side and out of the corner of their eye. They seem to be looking through a tunnel. Over time, straight-ahead (central) vision may decrease until no vision remains.

Glaucoma treatments include medicines, laser trabeculoplasty, conventional surgery, or a combination of any of these. While these treatments may save remaining vision, they do not improve sight already lost from glaucoma.

Little is known about the prevention of glaucoma, however, early diagnosis and treatment is the best way to prevent vision loss from glaucoma.





# UPDATES THIS WEEK

## 23<sup>rd</sup> February 2019

### St. John's Medical College Hospital Inaugurated Home Collection Phlebotomy Services

**ST. JOHN'S**  
NATIONAL ACADEMY of HEALTH SCIENCES

**HOME**  
SAMPLE COLLECTION\*

**8880 638 638**

Save Time. Get your samples collected at your doorstep.

\*Collection Charges Applicable

powered by **DIAKART**<sup>®</sup>

Sarjapur Main Road, Bengaluru, Karnataka - 560034

St. John's Laboratory Services, St. John's Medical College Hospital, has initiated home collection service for laboratory samples in partnership with Diakart Healthcare Technologies Pvt. Ltd.

#### PROCESS OF HOME COLLECTION SERVICES:

- 1) Call Diakart<sup>®</sup> on 8880638638 (exclusive for St. John's) to book for a home collection.
- 2) Share your OPD hospital number if available, the list of tests ordered by your doctor in the lab request form with the Diakart<sup>®</sup> person.
  - Tests are limited to most Blood and Urine tests
  - Your mobile number and email identity registered, becomes the contact for all the further communications

# UPDATES THIS WEEK

## 23<sup>rd</sup> February 2019

### St. John's Medical College Hospital Inaugurated Home Collection Phlebotomy Services

- 3) Diakart® will assist with a convenient time and date for collection at home and will also be sharing costs for tests.
  - Lab costs are the same as hospital charges for the OPD patients.
  - An additional charge per visit (irrespective of number of patients at home) by Diakart® are applicable.
- 4) Reports will be made available by email after authorisation.
- 5) Credit or staff patients can avail this facility by making an advance billing for the tests (before the day of sample collection to avail the concession/credit and provide the same to the phlebotomist.

### St. John's Medical College Hospital Team at Aero India Show 2019



St. John's Medical College Hospital provided Ambulance and Emergency services for the Aero India Show 2019.



# UPDATES THIS WEEK

## CONGRATULATIONS!

2018 - 2019

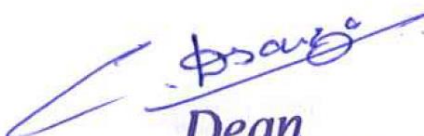
### THE BEST TEACHERS OF THE YEAR

#### The Pioneer's Award for Excellence in Teaching for the year 2018-19

Towards the end of their Internship, the outgoing Interns batch (Batch of 2013 this time) nominate using a scoring system their top five teachers from among all teachers in pre, para and clinical departments. The best is awarded 'The Pioneer's Award for Excellence in Teaching', instituted by Dr George Varghese - the batch of 1963, on Graduation Day.

#### Overall Rankings

I	Dr G Sridhar	Professor, General Surgery
II	Dr K S Chandramouli	Professor, General Medicine
III	Dr Prakash Rosario	Professor, General Surgery
IV	Dr P S Varghese	Professor, Forensic Medicine
V	Dr Nachiket Shankar	Associate Professor, Anatomy
VI	Dr G D Ravindran	Professor, General Medicine
VII	Dr Mario Vaz	Professor, Physiology
VIII	Dr Arvind Kasthuri	Professor, Community Medicine
IX	Dr Sanjiv Lewin	Professor, Paediatrics
X	Dr Chaitanya H B	Senior Resident, General Medicine

  
Dean  
St. John's Medical College  
Bangalore - 34



# UPDATES THIS WEEK

**40 MBBS Graduates from St. John's Medical College choose to Serve Underdeveloped Areas**

**54<sup>th</sup> CONVOCATION – 7<sup>th</sup> March 2019**



54h Convocation Ceremony of St. John's Medical College was held on 7<sup>th</sup> March 2019. The Convocation was presided over by Most. Rev. Peter Machado (Archbishop of Bengaluru). Dr. K. R. Anthony (Alumnus from Batch 1973, Former Director Chhattisgarh State Health Resource Centre, Health & Nutrition Specialist to UNICEF) was the Chief guest.

A total of 269 medical professionals were given certificates. Forty of the 58 outgoing MBBS students opted for serving in underserved and underdeveloped areas of the country. Kudos to these new doctors and best wishes. This was duly appreciated in one of the leading Newspapers of the country – [Times of India](#).





# UPDATES THIS WEEK

## FRIDAY CLINICAL MEETING

22<sup>nd</sup> February 2019

### Should genetically edited babies be an available option for parents?

- *Intern's Debate*

Dr. Kevin George spoke for the topic and Dr. Hemanth Gowda spoke against the topic. The session was moderated by Dr. Anil Vasudevan (Professor and Head, department of Pediatric Nephrology) and Rev. Fr. Christopher Vimalraj (Member, Institutional Ethics Committee).

Dr. Kevin explained that genetic editing means replacing an undesirable trait or adding a desirable trait by modifying the genome. The two main benefits of gene therapy are treatment and enhancement.

He discussed about the burden of genetic disorders in India and that most disorders have no treatment. Therefore, gene editing can be a boon for families where one child may be affected. Dr. Kevin urged the audience to open their mind to productive changes and ask "why not?". The argument for genetic editing was concluded stating that "Gene editing is a boon!"

Dr Hemath spoke against the topic. He discussed various issues in gene editing - scientific, ethical, religious, economical and social issues. The scientific issues are there can be off target mutations which may result in a higher risk of cancers in these engineered babies.

Cardinal William J Leveda spoke about the dignity of a person and how life starts with the embryo. In gene editing, 90% of the embryos are either discarded or die. This is taking of a life which is against Christianity.

Dr. Hemanth also raised concerns about the introduction of new diseases or mutations.

Dr Anil Vasudevan concluded the session stating that we should be progressing towards improvement and have laws to prevent misuse of technology.



# Team of The Month

## **SEWAGE TREATMENT PLANT TEAM**

St. John's Medical College and Hospital has set up a waste water treatment plant for treating and recycling of waste water generated out of hospital, college and food counters in its premises and reuses the tertiary treated waste water for gardening and flushing of toilet in its premises. There are two waste water treatment and recycle plant of each 500 KLD/day, designed on the basis of extended aeration activated process and are in use since 2006, by way of which we are saving considerable amount of ground water consumption.

The first plant was initially designed and executed during 2006. Later the second plant was added on modular plant to meet there waste water treatment requirement with growth of the organization.

The department is headed by Mr. Stephen JL [General Manager], Mr. Irudayanadan [Civil Junior Engineer] and Mr. Luies J [Manifold room supervisor], who are ably assisted by four staffs.

In order to meet the demands of our hospital, these four staffs work in three shifts:

- Morning duty: Reports for work at 6am and leaves by 2pm
- Evening duty: Reports for work at 2pm and leaves by 10pm
- Night duty: Reports for work at 10pm and leaves by 6am

### **DESIGN-PROCESS OVERVIEW**

1. Domestic sewage is typically pure water that is laden with a small amount of biodegradable pollutants. The STP uses bacteria in the aeration tank to digest this biodegradable material. Therefore the incoming sewage must remain in the aeration tank long enough to let the bacteria complete the digestion process. So the first task is to retain the sewage long enough in the aeration tank.
2. The bacterial population needs Oxygen to survive. So the second task is to provide adequate Oxygen.





# Team of The Month

## SEWAGE TREATMENT PLANT TEAM

3. The bacterial mass (called “activated sludge”) is recycled and retained in the aeration tank, while the treated water overflows from the clarifier tank. This clarified water is further filtered, disinfected and reused for non-potable purposes (toilet-flushing & gardening). A sizable fraction of treated water remains unused, which is released in nature.
4. The bacteria breed in the aeration tank, which increases the sludge volume constantly. Secondly, the bacterial population is the most vigorous, when average age of the bacteria in the tank is maintained at 25 days. Both these purposes are achieved by bleeding off the excess sludge periodically. (The discarded sludge is used as organic manure).
5. The next step is to find the amount of bacteria needed to digest this amount of food. The subsystems needed to handle the bacteria are designed (amount of oxygen needed, amount of excess sludge to be handled, etc.).



The sewage treatment involves three stages, called primary, secondary and tertiary treatment. First, the solids are separated from the waste water stream [Equalization tank]. Then, dissolved biological matter is progressively converted into a solid mass by using indigenous, water-borne micro-organisms in the Anoxic tank, after which the water is pumped into the aeration tank.





# Team of The Month

## SEWAGE TREATMENT PLANT TEAM



The aerated water is then pumped to the secondary clarifier where the workers manually remove the sludge using necessary protective equipments.



The water is send to the plant room where it undergoes filtration process [activated carbon filter and pressure sand filter] and the treated water is send to the final tank in which fish farming is done. The final treated water is sent out for gardening and toilet flush purpose within the campus.





# Team of The Month

## SEWAGE TREATMENT PLANT TEAM



A by- product of sewage treatment [sewage sludge] is disposed of in a safe and effective manner like landfill or used as an agricultural soil amendment.

Monthly the treated water is checked by the chemist and the water sample is send to NABL accredited lab for quality check. The reports are submitted to the pollution control board.



The Team : Mr. Manju Karthik, Mr. Sri Hari, Mr. Harisha H P , Mr. Prashant, Ms. Sindhuja K [chemist] and Mr. Luies J [Mechanical and Manifold room supervisor]

Not for General Public



# IG NOBEL

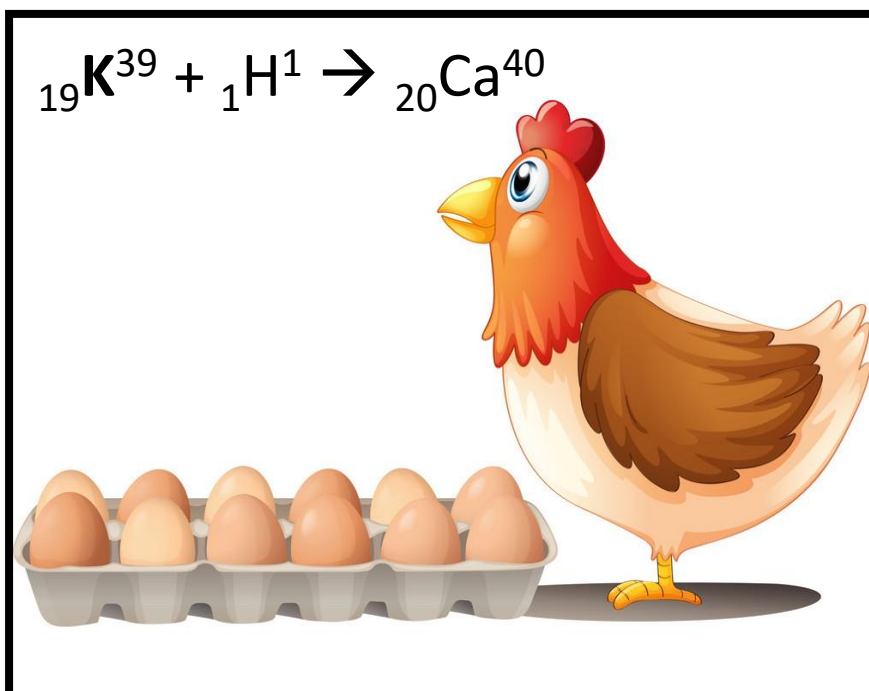


## 1993 - PHYSICS

### Louis Kervran

#### Biological Transmutations

Louis Kervran of France, ardent admirer of alchemy, for his conclusion that the calcium in chickens' eggshells is created by a process of cold fusion.



Kervran is certainly the most well-known scientist having worked in the field of biological transmutations. He had a broad knowledge of plants, geology and also of nuclear science. His findings have been published in French in ten books, some of which have been translated in English. Kervran collected facts and performed experiments which showed that transmutations of chemical elements do indeed occur in living organisms. He pointed out that the ground in Brittany contained no calcium; however, every day a hen would lay a perfectly normal egg, with a perfectly normal shell containing calcium. The hens eagerly pecked mica from the soil, and mica contains potassium. It appears that the hens may transmute some of the potassium to calcium.



## OCCUPATIONAL HEALTH SERVICES IN SJNAHS

Occupational Health Services seek to address the potential risk to health and safety of the workers in their work setting. The hospital is a place where healthcare professionals spend long working hours in providing care to patients. Healthcare providers may overlook their own health issues. Caregivers need care too.

Guidelines by the WHO for occupational health and safety in hospitals, came into existence around 2010. Before this, in 2006-2007 a needs assessment study was conducted in St John's Medical College Hospital by the Department of Community Health to understand the healthcare requirements of our employees. Based on this needs assessment report, on 21st January 2011 the Occupational Health Services and Staff Clinic was inaugurated and placed under the leadership of Dr Bobby Joseph (Professor of Community Health at our Medical College).

### THE OCCUPATIONAL HEALTH SERVICE PROVIDES THE FOLLOWING SERVICES:

**OPD consultation to employees in staff clinic:** It works as a primary care service dedicated only for employees and students working/studying in the SJNAHS campus. Doctors from the Community Health Department provide consultations on rotation basis. Dr Archana S has been appointed as Medical Officer by the SJMCH in year 2016 and since then she is providing her services exclusively for the Staff Clinic. Staff can also avail of a system of procuring medicines by proxy for their dependents, instead of having to bring them to the hospital on a monthly basis. The dependent may be asked to visit the hospital at a frequency determined by the consultants. The Staff Clinic also serves to endorse and grant sick leave that is availed of by our employees.

**Pre-employment health checkup:** All new employees joining the institute undergo a pre-placement checkup, to assess their basic health and fitness levels at the time of joining.

**Vaccination for employees:** All employees are required to take the Hepatitis B vaccines – protocols regarding this and other optional vaccines are recommended and followed up by the Staff Clinic.

## OCCUPATIONAL HEALTH SERVICES IN SJNAHS

**Annual health checkup for all hospital employees:** Setting standards for the NABH accreditation, all employees undergo an annual medical examination with follow-up investigations (if required).

**Hazard Inspections in SJMCH:** The Occupational Health team conducts regular inspections in different areas of the hospitals and suggest guidelines to the Facilities Management Department to improve work conditions. Employees can also approach occupational health team if they have any concerns regarding work conditions.

**Health Education for employees:** In addition to the monthly presentation on the roles of the Occupational Health Service for all new inductees, on request, the team conducts educational lectures and demonstrations for specific departments. These hour-long lectures are aimed at creating awareness among staff members about occupational hazards and promoting a culture of safety.

### LOCATION

Room No. 21 of the OPD (near Ophthalmology)

Timing: 09.00hrs to 13.00hrs for OPD consultations

### STATISTICS FOR 2017-18:

OPD Consultations: 4478

Pre-Placement Medical Examinations: 970

Annual Medical Examinations: 846

Vaccinations: 1409

### RECENT EDUCATIONAL PROGRAMMES:

Monthly Induction Training for all new employees

Introduction to Occupational Health and Safety for Heads of Hospital Departments

Occupational Health and Safety for Laboratory Staff



## OCCUPATIONAL HEALTH SERVICES IN SINAHS



**THE TEAM:**

Front Row (L-R: our Nursing Aides): Ms. Stella, Ms. Kavitha, Ms. Helen

Back Row (L-R: our Doctors): Dr. Archana, Dr. Nancy, Dr. Naveen, Dr. Bobby,  
Dr. Merlyn





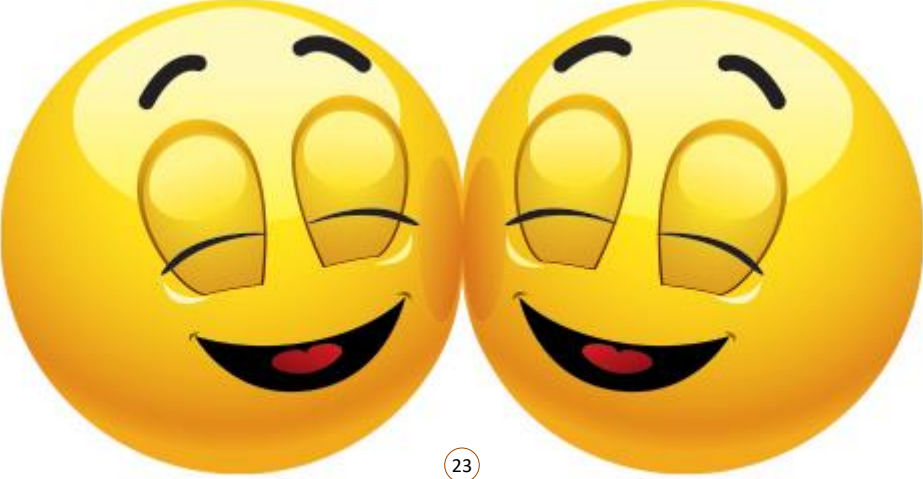
**LAUGHTER IS THE BEST MEDICINE...**



Each time there's a petrol price hike, I remove one body part... It reduces my burden!

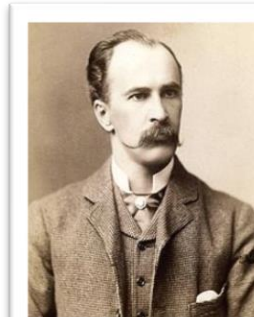


Daily that old empty petrol can helps him get free lifts to office and home.





# THE QUOTABLE OSLER



SIR WILLIAM OSLER

## Cultivate a cheerful heart:

The greatest gift that nature or grace can bestow on a man is the aequus animus, the even - balanced soul; but unfortunately nature rather than grace, disposition rather than education, determines its existence. I cannot agree.. That it is not to be acquired. On the contrary, I maintain that much may be done to cultivate a cheerful heart.



REF: The Quotable OSLER: Edited by Mark E Silverman, T. Jock Murray, Charles. S Bryan



## MEDICINE DIS WEEK

*A Bird's Eye View.....*

### Prophylactic Antibiotic therapy to prevent exacerbations in COPD.

Prophylactic antibiotics are a proposed strategy to improve outcomes in patients with chronic obstructive pulmonary disease (COPD), although the risk-benefit trade-off is unclear. In a systematic review of 14 randomized trials evaluating almost 4000 patients, prophylactic antibiotic use of any kind reduced the proportion of patients with acute exacerbations (47 versus 61 percent with placebo). Prophylaxis also resulted in small trends toward improvement in the number of hospital admissions, serious adverse events, and all-cause mortality, but none were statistically significant.

- Herath SC et al., Cochrane Database Syst Rev. 2018 Oct 30;10:CD009764.

### Abdominal closure with intraperitoneal mesh to prevent incisional hernia:

Incisional hernia occurs in approximately 10 to 15 percent of patients after an abdominal incision; mesh placed at the time of abdominal closure may reduce this rate. In a randomized trial, 150 patients at high risk for developing incisional hernias underwent abdominal closure with or without intraperitoneal mesh implantation. Although mesh reduced the incidence of hernia at three years, it contributed to increased abdominal pain in the early postoperative period and delayed healing after a surgical site infection. Given the potential deleterious effects, routine use of mesh at abdominal closure is not recommended.

-Kohler A et al., JAMA Surg. 2018 Nov 21.

[Intervention Review]

# Prophylactic antibiotic therapy for chronic obstructive pulmonary disease (COPD)

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**Editorial group:** Cochrane Airways Group.

**Publication status and date:** New search for studies and content updated (conclusions changed), published in Issue 10, 2018.

**Citation:** Herath SC, Normansell R, Maisey S, Poole P. Prophylactic antibiotic therapy for chronic obstructive pulmonary disease (COPD). *Cochrane Database of Systematic Reviews* 2018, Issue 10. Art. No.: CD009764. DOI: 10.1002/14651858.CD009764.pub3.

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## ABSTRACT

### Background

There has been renewal of interest in the use of prophylactic antibiotics to reduce the frequency of exacerbations and improve quality of life in chronic obstructive pulmonary disease (COPD).

### Objectives

To determine whether or not regular (continuous, intermittent or pulsed) treatment of COPD patients with prophylactic antibiotics reduces exacerbations or affects quality of life.

### Search methods

We searched the Cochrane Airways Group Trials Register and bibliographies of relevant studies. The latest literature search was performed on 27 July 2018.

### Selection criteria

Randomised controlled trials (RCTs) that compared prophylactic antibiotics with placebo in patients with COPD.

### Data collection and analysis

We used the standard Cochrane methods. Two independent review authors selected studies for inclusion, extracted data, and assessed risk of bias. We resolved discrepancies by involving a third review author.

### Main results

We included 14 studies involving 3932 participants in this review. We identified two further studies meeting inclusion criteria but both were terminated early without providing results. All studies were published between 2001 and 2015. Nine studies were of continuous macrolide antibiotics, two studies were of intermittent antibiotic prophylaxis (three times per week) and two were of pulsed antibiotic regimens (e.g. five days every eight weeks). The final study included one continuous, one intermittent and one pulsed arm. The antibiotics investigated were azithromycin, erythromycin, clarithromycin, doxycycline, roxithromycin and moxifloxacin. The study duration varied from three months to 36 months and all used intention-to-treat analysis. Most of the pooled results were of moderate quality. The risk of bias of the included studies was generally low.



## REFERENCE 1: MEDICINE DIS WEEK

The studies recruited participants with a mean age between 65 and 72 years and mostly at least moderate-severity COPD. Five studies only included participants with frequent exacerbations and two studies recruited participants requiring systemic steroids or antibiotics or both, or who were at the end stage of their disease and required oxygen. One study recruited participants with pulmonary hypertension secondary to COPD and a further study was specifically designed to assess whether eradication of *Chlamydia pneumoniae* reduced exacerbation rates.

The co-primary outcomes for this review were the number of exacerbations and quality of life.

With use of prophylactic antibiotics, the number of participants experiencing one or more exacerbations was reduced (odds ratio (OR) 0.57, 95% CI 0.42 to 0.78; participants = 2716; studies = 8; moderate-quality evidence). This represented a reduction from 61% of participants in the control group compared to 47% in the treatment group (95% CI 39% to 55%). The number needed to treat for an additional beneficial outcome with prophylactic antibiotics given for three to 12 months to prevent one person from experiencing an exacerbation (NNTB) was 8 (95% CI 5 to 17). The test for subgroup difference suggested that continuous and intermittent antibiotics may be more effective than pulsed antibiotics ( $P = 0.02$ ,  $I^2 = 73.3\%$ ).

The frequency of exacerbations per patient per year was also reduced with prophylactic antibiotic treatment (rate ratio 0.67; 95% CI 0.54 to 0.83; participants = 1384; studies = 5; moderate-quality evidence). Although we were unable to pool the result, six of the seven studies reporting time to first exacerbation identified an increase (i.e. benefit) with antibiotics, which was reported as statistically significant in four studies.

There was a statistically significant improvement in quality of life as measured by the St George's Respiratory Questionnaire (SGRQ) with prophylactic antibiotic treatment, but this was smaller than the four unit improvement that is regarded as being clinically significant (mean difference (MD) -1.94, 95% CI -3.13 to -0.75; participants = 2237; studies = 7, high-quality evidence).

Prophylactic antibiotics showed no significant effect on the secondary outcomes of frequency of hospital admissions, change in forced expiratory volume in one second (FEV1), serious adverse events or all-cause mortality (moderate-quality evidence). There was some evidence of benefit in exercise tolerance, but this was driven by a single study of lower methodological quality.

The adverse events that were recorded varied among the studies depending on the antibiotics used. Azithromycin was associated with significant hearing loss in the treatment group, which was in many cases reversible or partially reversible. The moxifloxacin pulsed study reported a significantly higher number of adverse events in the treatment arm due to the marked increase in gastrointestinal adverse events ( $P < 0.001$ ). Some adverse events that led to drug discontinuation, such as development of long QTc or tinnitus, were not significantly more frequent in the treatment group than the placebo group but pose important considerations in clinical practice.

The development of antibiotic resistance in the community is of major concern. Six studies reported on this, but we were unable to combine results. One study found newly colonised participants to have higher rates of antibiotic resistance. Participants colonised with moxifloxacin-sensitive pseudomonas at initiation of therapy rapidly became resistant with the quinolone treatment. A further study with three active treatment arms found an increase in the degree of antibiotic resistance of isolates in all three arms after 13 weeks treatment.

### Authors' conclusions

Use of continuous and intermittent prophylactic antibiotics results in a clinically significant benefit in reducing exacerbations in COPD patients. All studies of continuous and intermittent antibiotics used macrolides, hence the noted benefit applies only to the use of macrolide antibiotics prescribed at least three times per week. The impact of pulsed antibiotics remains uncertain and requires further research.

The studies in this review included mostly participants who were frequent exacerbators with at least moderate-severity COPD. There were also older individuals with a mean age over 65 years. The results of these studies apply only to the group of participants who were studied in these studies and may not be generalisable to other groups.

Because of concerns about antibiotic resistance and specific adverse effects, consideration of prophylactic antibiotic use should be mindful of the balance between benefits to individual patients and the potential harms to society created by antibiotic overuse. Monitoring of significant side effects including hearing loss, tinnitus, and long QTc in the community in this elderly patient group may require extra health resources.

## PLAIN LANGUAGE SUMMARY

## Preventative antibiotic therapy for people with COPD

### What is COPD?

COPD is a common chronic respiratory disease mainly affecting people who smoke now or have done so previously. It could become the third leading cause of death worldwide by 2020. People with COPD experience gradually worsening shortness of breath and cough with sputum (phlegm) because of permanent damage to their airways and lungs. Those with COPD may have flare-ups (or exacerbations) most commonly with respiratory infections. Exacerbations may lead to further irreversible loss of lung function, as well as days off work, hospital admission, reduction in quality of life, or even death.

### Why did we do this review?

We wanted to find out if giving antibiotics to prevent a flare-up ('prophylactic' antibiotics) would reduce the frequency of flare-ups and improve quality of life. Studies that were taken into consideration used either continuous prophylactic antibiotics (every day), or antibiotics that were used intermittently (three times per week) or pulsed (e.g. for five days every eight weeks)

### What evidence did we find?

We carried out the latest search for studies in July 2018. We found 14 randomised controlled trials (RCTs) involving 3932 participants. All studies were published between 2001 and 2015. Nine studies were of continuous antibiotics, two studies were of intermittent antibiotic prophylaxis and two were of pulsed antibiotics. The final study included one continuous, one intermittent, one pulsed and one placebo arm. The antibiotics investigated were azithromycin, erythromycin, clarithromycin, roxithromycin, doxycycline and moxifloxacin. On average, the people involved in the studies were 65 to 72 years old and had moderate or severe COPD. Three studies included participants with frequent exacerbations and two of the studies recruited participants requiring steroid tablets or antibiotics or both, or who were at the end stage of their disease and required oxygen. One study only included people with a particular complication of COPD, involving the heart and blood vessels in the lungs (known as pulmonary hypertension).

### Results and conclusions

We found that, with the use of antibiotics, the number of participants who developed an exacerbation reduced markedly. For every eight participants treated, one person would be prevented from suffering an exacerbation. However, not all the antibiotic regimens had the same impact on exacerbations. The results suggested that antibiotics given at least three times per week may be more effective than antibiotics given daily for a few days followed by a break of several weeks. We also found there may have been a benefit on patient-reported quality of life with the antibiotics. On the other hand, use of antibiotics did not significantly affect the number of deaths due to any cause, the frequency of hospitalisation, or the loss of lung function during the study period.

Even though there may be fewer exacerbations with antibiotics, there are considerable drawbacks of taking antibiotics. First, there were specific adverse events associated with the antibiotics, which differed according to the antibiotic used; second, patients have to take antibiotics regularly for months or years; finally, the resulting increase in antibiotic resistance will have implications for both individual patients and the wider community through reducing the effectiveness of currently available antibiotics.

Because of concerns about antibiotic resistance and specific adverse effects, consideration of prophylactic antibiotic use should be mindful of the balance between benefits to individual patients and the potential harms to society created by antibiotic overuse.



JAMA Surgery | **Original Investigation**

# Effectiveness of Prophylactic Intraperitoneal Mesh Implantation for Prevention of Incisional Hernia in Patients Undergoing Open Abdominal Surgery

## A Randomized Clinical Trial

Andreas Kohler, MD; Joel L. Lavanchy, MD; Ursina Lenoir, MD; Anita Kurmann, MD; Daniel Candinas, MD; Guido Beldi, MD

**IMPORTANCE** Incisional hernia is a frequent complication after open abdominal surgery. Prophylactic mesh implantation in the onlay or sublay position requires dissection of the abdominal wall, potentially leading to wound-associated complications.

**OBJECTIVE** To compare the incidence of incisional hernia among patients after prophylactic intraperitoneal mesh implantation with that among patients after standard abdominal closure.

**DESIGN, SETTING, AND PARTICIPANTS** An open-label randomized clinical trial was performed in 169 patients undergoing elective open abdominal surgery from January 1, 2011, to February 29, 2014. Follow-up examinations were performed 1 year and 3 years after surgery. The study was conducted at Bern University Hospital, Bern, Switzerland, a referral center that offers the whole spectrum of abdominal surgical interventions. Patients with 2 or more of the following risk factors were included: overweight or obesity, diagnosis of neoplastic disease, male sex, or history of previous laparotomy. Patients were randomly assigned to prophylactic intraperitoneal mesh implantation or standard abdominal closure. Data were analyzed in August 2017.

**INTERVENTIONS** Intraperitoneal implantation of a polypropylene-polyvinylidene fluoride mesh with circumferential fixation.

**MAIN OUTCOMES AND MEASURES** The primary end point was the incidence of incisional hernia 3 years after surgery. Secondary end points included mesh-related complications.

**RESULTS** After the exclusion of 19 patients, 150 patients (81 in the control group and 69 in the mesh group; mean [SD] age, 64.2 [11.1] years; 102 [68.0%] male) were studied. The cumulative incidence of incisional hernia was significantly lower in the mesh group compared with the control group (5 of 69 [7.2%] vs 15 of 81 [18.5%], log-rank test  $P = .03$ ). Abdominal pain was observed in significantly more patients in the mesh group compared with the control group at 6 weeks (34 of 52 [65%] vs 26 of 59 [44%],  $P = .04$ ) but not at 12 and 36 months postoperatively. No difference in surgical site infections was observed, but time to complete wound healing of surgical site infection was significantly longer in patients with mesh implantation (median [interquartile range], 8 [6-24] weeks compared with 5 [1-9] weeks;  $P = .03$ ). Trunk extension was significantly decreased after mesh implantation compared with the control group (mean [SD], 1.73 [0.97] cm vs 2.40 [1.23] cm,  $P = .009$ ).

**CONCLUSIONS AND RELEVANCE** In patients at elevated risk for incisional hernia, prophylactic intraperitoneal mesh implantation reduces the incidence of hernia formation but with increased early postoperative pain and prolonged wound healing of surgical site infection.

**TRIAL REGISTRATION** ClinicalTrials.gov Identifier: [NCT01203553](https://clinicaltrials.gov/ct2/show/study/NCT01203553).

JAMA Surg. doi:10.1001/jamasurg.2018.4221  
Published online November 21, 2018.

**+** Invited Commentary

**+** Author Audio Interview

**+** Supplemental content

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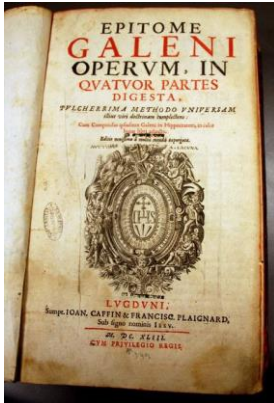
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# THE STORY OF MEDICINE

## GALEN



Galen was born in the once-Greek city of Pergamum (now Bergama, Turkey) around AD129. After becoming accomplished in mathematics, architecture, astronomy, agriculture and philosophy, he turned to medicine. Back in Pergamum, he spent three years as ‘physician to the gladiators’, using wounds as ‘windows’ into the body, to learn anatomy.



In AD 162, the 33-year-old Galen arrived in Rome. One of his specialities was to dissect the nerves in the neck of a live pig. As these were severed, one by one, the pig continued to squeal; however, when Galen cut one of the laryngeal nerves (now also called ‘Galen’s nerves’), the squealing stopped, to the awe of the crowd. Many other animals came under Galen’s knife — even two elephants — but only two known human corpses.



Through his anatomical studies, Galen added immeasurably to medical knowledge, even though his concentration on animals meant that some detail was incorrect when applied to human beings.

## PEARLS OF WISDOM

Its not what happens to you, but how you react that matters.

- Epictetus



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For kindness begets kindness evermore.

- Sophocles

Kind words do not cost much. Yet they accomplish much.

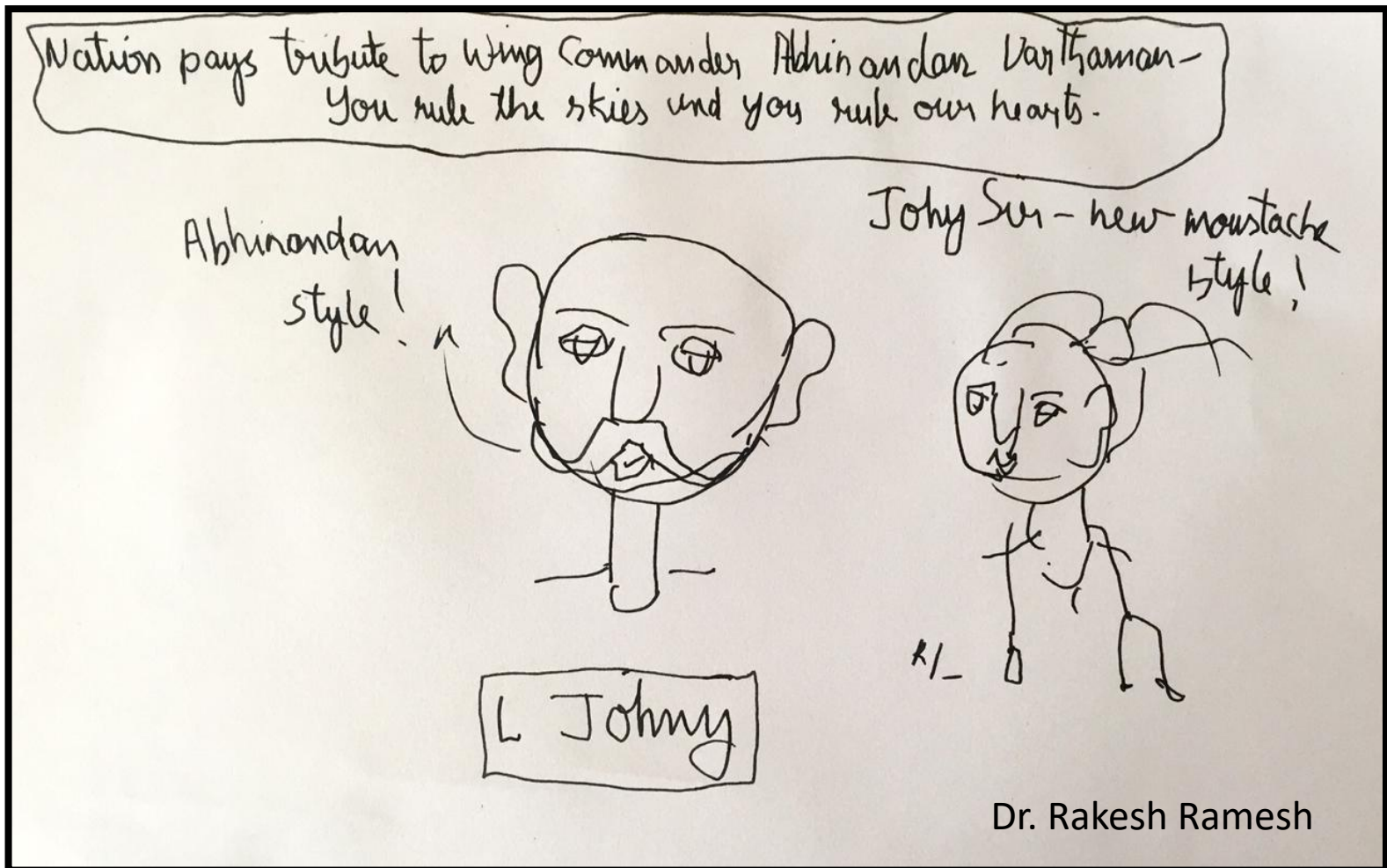
- Blaise Pascal



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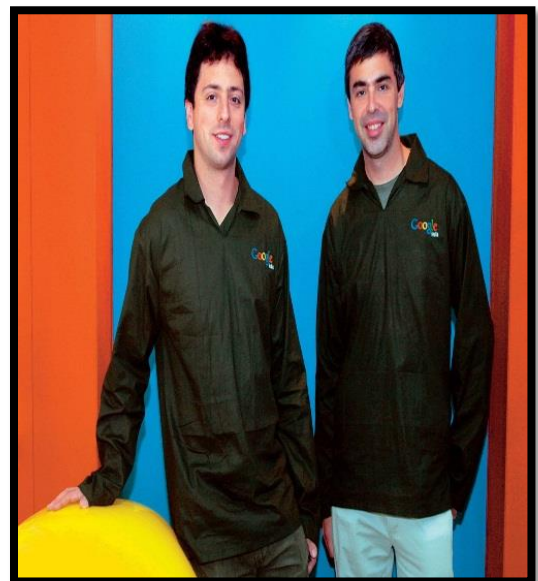
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## Did You Know?

In 1999, co-founders Larry page and Sergey Brin, were willing to sell Google to Excite, one of the original internet portals, for under a million dollars and were turned down. Now Google is the most powerful search engine worth over \$ 547 billion!! The two Stanford Graduates had started the idea as part of a PhD program, originally named "backrub" and later renamed GOOGLE -intended to be 1 followed by 100 zeros connoting the large volume of information it was to allow access to.

Source- Forbes



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