



HEALTH IS BEYOND WEALTH

BREATHE MORE MRACH 2024 - Volume 07 - Billroth Hospitals







"It has been said that a gentle word, a warm hand, a willing ear and small acts of kindness, often taken for granted, can change a life. We believe that to be true. Because we have seen first-hand the power of caring with compassion."

~ Dr. V. Jeganathan - Founder

MAN WITH VISION...

The Seed Was Sown

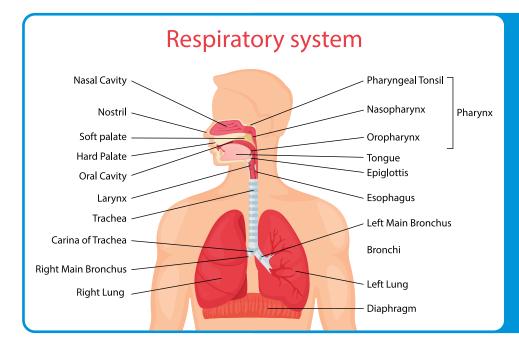
An extraordinary physician of our times, Dr. V. Jeganathan watched thoughtfully as the first bricks for his dream hospital were laid. His vision for creating a world-class healing environment which would attract the best medical minds was taking shape. He dreamt of creating an institution which would serve as a beacon of hope to patients from across the world, offering them the highest standards of excellence in medical care, delivered with compassion. And so began a journey that started with a 70-bed hospital for Gastroenterology. Now Billroth Hospitals, offers entire spectrum of Cancer Care and elevates cancer treatments through Medical, Surgical and Radiation Oncology.

SINCE 1990,
THERE WERE NO
COMPROMISES
AND NO
LOOKING BACK
AT BILLROTH
HOSPITALS.





KNOW YOUR RESPIRATORY SYSTEM



YOUR
RESPIRATORY
SYSTEM IS A
COMPLEX WEB OF
BODY PARTS THAT
DELIVERS OXYGEN
TO YOUR CELLS.
IT ALSO ALLOWS
YOU TO TALK AND
SMELL.

WHAT ARE THE PARTS OF THE RESPIRATORY SYSTEM?

The airways

When you breathe in air through your nose or mouth, it passes through your windpipe. The windpipe is also called the trachea. The windpipe divides into two airways called bronchial tubes or bronchi. There is one bronchial tube for each lung. The bronchial tubes branch off into smaller tubes called bronchioles. At the end of the bronchioles, there are tiny air sacs called alveoli. These are where gas exchange happens. You have hundreds of millions of alveoli in each of your lungs.

The lungs

Your lungs are soft and look like two spongy balloons. They sit in your chest, on either side of your heart. Your lungs are made up of areas called lobes. Your left lung is smaller than your right because it shares the left side of the chest with your heart. Your right lung has three lobes and your left lung has two.



The pleura

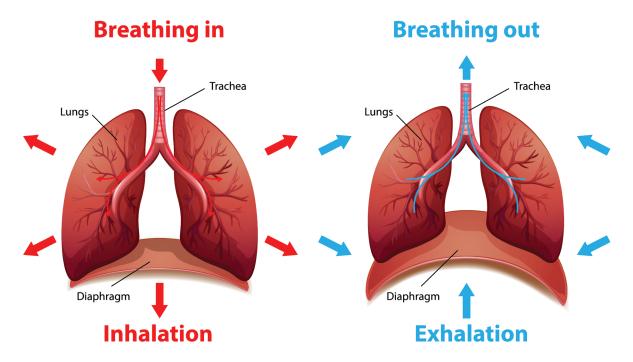
The pleura is a thin covering (membrane) that surrounds your lungs. It is in two layers, with a liquid called pleural fluid in between. Pleural fluid helps your lungs move freely when you breathe in and out.

Bones and muscles

Your lungs and heart are protected by your ribs, which are bones that form a cage in your chest. In between your ribs, there are muscles called intercostal muscles. Below your ribs, there is a muscle called the diaphragm. These muscles help breathing.

INHALATION AND EXHALATION

BREATHING



Inhalation and exhalation are how your body brings in oxygen and gets rid of carbon dioxide. The process gets help from a large dome-shaped muscle under your lungs called the diaphragm. When you breathe in, your diaphragm pulls downward, creating a vacuum that causes a rush of air into your lungs. The opposite happens with exhalation: Your diaphragm relaxes upward, pushing on your lungs, and allowing them to deflate.

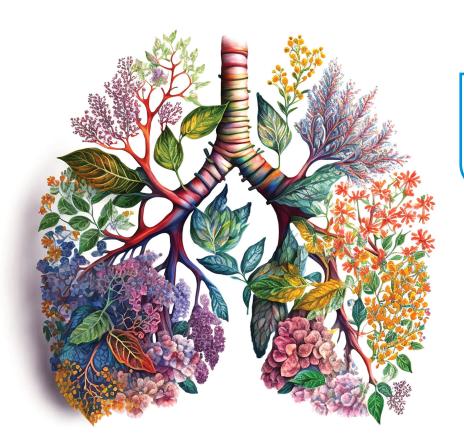


HOW IS BREATHING CONTROLLED?

Usually, you don't have to think to breathe. It happens automatically. There are sensors in different parts of your body that send signals to your brain to control your breathing. For example, sensors in your arms and legs send signals to increase how much you breathe when you're exercising. Feeling short of breath from time to time is normal, but sometimes it can be a sign of something more serious, like a lung condition.

Breathing is not the only job done by your respiratory system. Other tasks include:

- Warming up air so that it matches your body temperature
- Moisturizing air to the humidity level your body needs
- Letting you smell and talk
- Protecting your airways from things that might irritate or harm them



INTERESTING FUN FACTS ABOUT LUNGS

Breathing is the most important thing our body does. Without lungs to breathe, we can't live. It sounds simple, but how lungs work — our entire respiratory system — is very complex. Here are some very interesting facts that are worth knowing.



The lungs are the major organ of the respiratory system. An average human breathes about 13 pints of air every minute.

Fact-No-1

The right lung is bigger than the left lung and the total surface area of both the lungs is 80 sq. m which is roughly equal to the size of a tennis court.

Fact-No-2

Lungs are the only organs in the human body *that can float on water.*

Fact-No-3

Humans have two lungs

which are situated within the thoracic cavity of the chest. The trachea is divided into a smaller structure called bronchi, which are divided into bronchioles.

Fact-No-4



Yawning helps us to breathe more oxygen into our lungs. It is an involuntary process accompanied by a long inspiration (or) inhalation. This process occurs when the brain sends a message about the shortage of oxygen and this message tricks our sensory system into taking a long deep breath or a yawn.

Fact-No-5

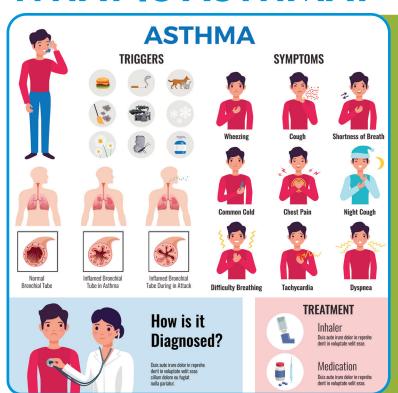




GETTING THROUGH THE SUMMERTIME ASTHMA BLUES

Summertime gives us the chance to get outdoors and participate in our favorite activities. But if you have asthma, you might be reluctant to participate. Know these tips to help asthma sufferers live boldly throughout the year.

WHAT IS ASTHMA?



Summer conditions can trigger asthma. People are outside more. There is more air pollution, humidity and pollen all of which can trigger asthma. They can also worsen allergies, such as

Asthma is a chronic lung disease, marked by reversibility of airflow that causes bronchospasm, making it difficult to breathe. Irritants cause inflammation of the airways, and the body's immune system produces an inflammatory reaction in response to what it considers a threat. The lining of the airways becomes inflamed and swollen, leaving less room for air to move through. Asthma can result from environmental and genetic factors. While we can't control the genetic factors, there are ways to reduce your exposure to irritants and mitigate attacks.

An asthma attack can be scary and include:

- Coughing
- Chest tightness
- Shortness of breath
- Trouble breathing
- Wheezing

grass allergies. Other things that can also set off asthma include campfires, cigarette smoke and fireworks. The increase in temperatures and outdoor activities can induce bronchoconstriction or the narrowing of the airways.



If you are going to be outdoors, we recommend you:

- Be prepared and take your inhalers.
- Drink plenty of water.
- If you are swimming and the chlorine in the pool water is causing flare-ups, consider swimming outside or in a properly ventilated indoor pool.
- Know before you go check pollen and humidity levels.
- Use short-acting inhalers before playing or exercising.
- Use the buddy system someone you trust to help monitor your condition.
- Warm up before strenuous activity.
- Wear a mask.

Controlling triggers

Staying away from allergens and triggers are key to managing asthma.





- CONSIDER USING AN AIR FILTRATION SYSTEM IN YOUR HOME.
- MAINTAINING A GOOD HUMIDITY LEVEL IN YOUR HOME.
- MINIMIZING CLEANING SPRAYS IN YOUR HOME. IF THEY'RE NECESSARY, MAKE SURE YOUR HOME IS WELL VENTILATED.
- KEEPING MOLD AND DANDER DOWN TO A MINIMUM.
- USING AN AIR CONDITIONER AND AVOID OPENING WINDOWS.
- STAYING INSIDE WHEN THE POLLEN COUNT IS HIGH.
- WEARING A MASK IF YOU DO YARD WORK.



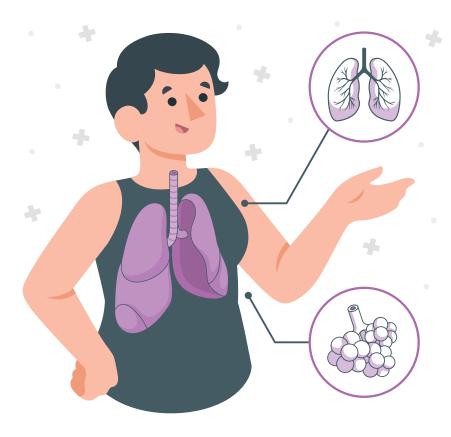
Wearing a HEPA filter mask may also mitigate some of the pollen and allergens.
Consider showering and doing nasal saline rinse after you return from the outdoors.





DETOX YOUR LUNGS:SIMPLE STEPS FOR REFRESHING RESPIRATORY SYSTEM

Lung cleansing techniques may help people with chronic respiratory conditions or who are regularly exposed to tobacco smoke or air pollution.



Breathing in air pollution, cigarette smoke, and other irritants can damage the lungs and even cause health conditions. Maintaining the health of the lungs is essential for keeping the rest of the body healthy.

Is it possible to cleanse your lungs?

Yes, it is possible for a person to "cleanse" their lungs and improve lung health.

Safeguarding Your Lungs:

Protection is the first step towards effective lung detoxification. The best way for a person to ensure their lungs are healthy is to:

- Avoid harmful toxins, such as cigarette smoke and air pollution
- Incorporate certain lifestyle behaviors, such as regular exercise.





Steam Therapy:

Steam therapy, or steam inhalation, involves inhaling water vapor to open the airways and help loosen mucus.

Enhancing Indoor Air Quality:

Indoor air pollution can harm lung health. To counter this, prioritize a clean indoor environment.

Fueling Lung Health Through Exercise:

Regular exercise strengthens muscles and enhances lung capacity and efficiency. Cardiovascular exercises like jogging, cycling, or swimming bolster blood flow in pulmonary vessels, contributing to lung tissue repair.

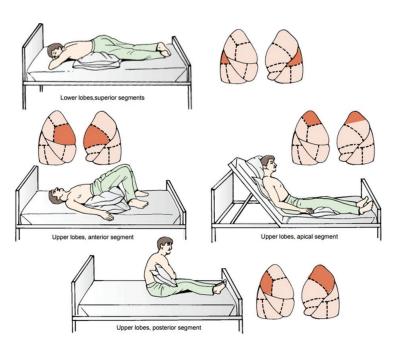
The Lung-Boosting Diet:

Your dietary choices are pivotal in lung detoxification. Foods that help fight inflammation include:

- Turmeric
- · Leafy greens
- Cherries
- Blueberries
- Olives
- Walnuts
- Beans
- Lentils

Harnessing the Power of Postural Drainage:

Postural drainage is an effective technique that employs gravity to drain lung secretions.







CAN YOU SLEEP YOUR WAY TO A HEALTHIER HEART?

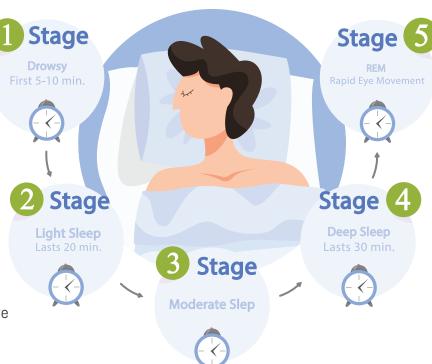
Sleep is an important factor in our lives, but with the fast and often stressful pace of our lives, it can seem like less of a priority. We often sleep late or fewer hours because we think it doesn't affect our daily activities, but that is far from true. The use of mobile phones is so rampant that screen time is not only causing a burden to the eyes but also changing our sleep patterns. Sleeping less can increase stress, which can cause a rise in binge eating and can affect our alertness. Know how we can have better sleep habits.



THE NEWEST KEY TO SUCCESS

For more than a decade, the AHA has emphasized seven important strategies to improve heart health. They are:

- Getting enough physical activity
- Eating a nutritious diet
- Not smoking
- Maintaining a healthy weight
- Controlling cholesterol
- Stabilizing blood sugar
- Keeping a handle on blood pressure



SLEEP CYCLE



WHY SLEEP MATTERS?

Slacking on sleep—or overdoing it—can cause a wide range of negative health effects, from depression to cognitive decline to heart disease.

Getting just the right amount, meanwhile, leads to:

- A stronger immune system A brighter mood More resilient cells, tissues, and blood vessels
- · A sharper brain, with enhanced focus, memory, and problem-solving
- · Lower risk for chronic diseases



Poor sleep harms your heart specifically by affecting risk factors for cardiovascular disease. For instance, your blood pressure, blood sugar, and cholesterol all rise with poor rest.

Sometimes, we need a little help knowing some good ways to fall asleep. Some beneficial sleep habits include:



Stick to a sleep schedule: Treat sleep like the priority it is. Plan when to go to bed and wake up at the same time every day, even on weekends. Sticking to a certain time to go to sleep can help maintain your sleep schedule.



Create a bedtime routine: A warm bath or shower, listening to calming music before or reading a book can be helpful. A relaxing routine can prepare your body for sleep and aid with the process.



Making your bedroom comfortable: Ensure that your bedroom is quiet, cool, and dark. Invest in comfortable bedding and pillows. Ensure you use your bed and bedroom to sleep rather than watch TV and finish off pending work or study.



Limit screen time before bed: Avoid using electronic devices an hour before bed since blue light emitted by screens can disrupt your sleep.



I HEART COFFEE: COFFEE'S HEALTH EFFECTS ON THE HEART



You wake up tired, but you know that you've got something to look forward to. It's not your morning commute, your day at work or getting the kids to

school on time. It's your morning cup of coffee. And you're not alone. About 62% of population drinks coffee every day. But is drinking coffee bad for you?

Some people say their heart feels weird after drinking coffee. They may experience a racing heart, heart palpitations, or an increased heart rate. So, does that mean coffee is bad for the heart?

Science has the answer to these questions, and for coffee drinkers, there's some good news and some bad news.



HEART HEALTH BENEFITS

Coffee is full of health benefits. According to the American College of Cardiology, drinking two to three cups of coffee per day is associated with maintaining a healthy heart. What they found was that two to three cups of coffee a day either had a neutral effect – meaning it did not cause harm – or those people experienced a 10 to 20% improvement in cardiovascular health. These cardiovascular improvements were associated with a lower risk for:

- Developing coronary heart disease
- Heart failure
- Heart rhythm problems
- Dying for any reason
- If you're a one-cup-a-day coffee drinker, there's good news for you, too. The risk of dying of heart-related reasons and stroke is also lower in those who drink a cup a day.
- Plus, coffee beans themselves have nutritious qualities.
- Coffee beans actually have over 100 biologically active compounds. These substances can help reduce oxidative stress and inflammation, improve insulin sensitivity, boost metabolism, inhibit the gut's absorption of fat and block receptors known to be involved with abnormal heart rhythms.

NEGATIVE EFFECTS ON THE HEART

- Caffeine's effect on overall health is one of the biggest concerns when it comes to coffee. Coffee's caffeine content is high about 100 mg per 8-ounce cup.
- Caffeine increases heart rate and blood pressure, and too much of it can cause anxiety, insomnia, headaches, stomach irritation and an irregular heartbeat. It's also addictive.
- About 400 mg is the maximum amount of caffeine you should consume in one day, which equals about four cups of coffee.
- Besides the caffeine content, many people don't consume their coffee black, and it's here where
 coffee can go from good for you to bad. Adding creamer and sugar can significantly increase the
 calorie, sugar and fat content. This can cause weight gain, diabetes and increased blood sugar
 levels, which can lead to heart disease and other health problems.





WHEN A COUGH MAY BE MORE THAN JUST A COUGH

As a person with any amount of life experience under your belt, you likely don't need the term "cough" defined for you. You've probably experienced a recurring cough at least once in your life if not countless times. Sometimes the cough goes away after a short time all by itself. Sometimes the cough is a symptom of an illness.

So, when should you worry about your child's cough? What's the difference between a "wet cough" and a "dry cough?"

Identify the type of cough your child is experiencing, and what other symptoms to look for. A cough by itself is not very worrisome. But if it is accompanied by other symptoms of illness, it can help you identify when it's time to consult your doctor.

WET VS. DRY?

You've likely seen or heard the terms "wet cough" and "dry cough" used to help diagnose an illness. These terms describe two types of coughs with different causes.

- Wet cough: Coughing up mucus from the airway makes the cough sound "wet," as mucus shifts in the airway.
- Dry cough: Also known as a hacking cough, this cough has a consistent tone because it is free from the sound of mucus. It is caused by irritation and inflammation of the airway.

your child's cough?

A cough by itself is rarely worrisome, but when combined with other symptoms, it can help you know if your child needs to see a doctor.

Description



Wet cough

Coughing up mucus makes the cough sound "wet," as mucus shifts in the airways and lungs.

Dry cough

Also known as a hacking cough, this cough has a consistent tone because it is free from the sound of mucus. It is caused by irritation and inflammation of the airway.

Call your child's doctor if you answer YES

to any of these questions

- Any other COVID-19 symptoms?
- Does the cough stay bad or get worse after a week?
- Has a fever of higher than 101 degrees Fahrenheit lingered more than three or four days?
- Is it a deep cough from the chest, bringing up thicker yellow or green mucus?
- Is it a loud cough that sounds like a seal bark and accompanied by high-pitched breathing?



Assessing the situation

If your child has a cough but is running around the room, they're probably fine. But if they're coughing and feeling miserable, that is concerning.

Any other COVID-19 symptoms?

COVID-19 symptoms can be very similar to those of a common cold, including a cough. Know the symptoms of COVID-19, and if your child exhibits any of them.

Does the cough stay bad or get worse after a week?

Even a cough by itself with no other symptoms should be checked out by a physician if it lasts longer than a week. It could still be nothing serious, but this is a good point at which it makes sense to see a physician for peace of mind.

Is it a deep cough from the chest, bringing up thicker yellow or green mucus?

This is a sign of a possible bacterial infection like pneumonia. Contact a physician for an appointment to get it checked out promptly.

Is it a loud cough that sounds like a seal bark and accompanied by high-pitched breathing?

This could be croup, and the cough can often be accompanied by stridor, a high-pitched breathing sound from the upper airway. Croup is a viral infection that causes some narrowing of the airway at the level of the vocal cords. This usually clears up, but severe cases can require hospitalization, so contact your child's pediatrician immediately.

It's important to have a physician for yourself and your children, so you have someone you trust with any health concerns. If you don't already have a primary care provider, you can find one that fits the needs of you and your family with Billroth Hospitals.



WHAT TO KNOW ABOUT STREP THROAT ???



Strep throat, a bacterial infection in the throat and tonsils, causes a sore or scratchy throat, as well as white patches on your tonsils.

It is highly contagious during the incubation period — the two to five days after you're infected and before symptoms appear – and stays contagious until your symptoms resolve.

Hand hygiene and disinfecting commonly used surfaces frequently can decrease the risk of transmission of strep.

Our doctors took time to answer more questions about strep:

Q. What is strep throat?

Strep throat refers to the inflammation of the pharynx (pharyngitis), and/or tonsils (tonsillitis) caused by a group A streptococcus infection. This is just one of the many types of streptococcus bacteria.

Q. What does strep look like?

Common findings of the throat include redness, swelling and exudates (white patches).

Q. What are symptoms of strep?

In addition to a sore throat, someone with strep may experience a fever, headache, abdominal pain, nausea, vomiting, enlarged lymph nodes and rash.





Q. How is strep diagnosed?

The tonsils are examined and a sample of fluid may be taken from the back of the throat using a soft swab. The sample can be checked right away for the bacteria that cause strep throat. If the initial test is negative, the sample may be sent to a lab for further testing with a culture.

Q. How is strep spread

Strep throat is transmitted via droplets. These can be tiny airborne droplets after a cough or sneeze or from surfaces that are contaminated with droplets.

Q. How is it different than a regular sore throat?

Many different types of bacteria and viruses can cause a sore throat. Many of the symptoms overlap between the causative agents and therefore it is very difficult to differentiate between strep pharyngitis and other causes of pharyngitis without testing. A cough is not a common symptom with strep throat and may indicate a different cause of sore throat.

Q. How should strep be treated?

Ibuprofen and acetaminophen can be used for discomfort and fever. Stay hydrated, rest and maintain a soft diet for comfort.

Q. Are antibiotics used to treat strep?

Antibiotics are used with the following goals in mind: reduce the severity and duration of symptoms, prevent acute and delayed complications and prevent the spread to others.

Q. What are complications related to strep?

Most cases of strep throat resolve without complications. However, complications can include blood stream bacterial infections, abscesses in the tissue surrounding the throat, ear infections and sinus infections. Other complications following the initial strep throat infection include acute rheumatic fever, kidney issues and psychiatric disorders.





Q. Is medical attention always needed for strep?

If strep pharyngitis is suspected, a strep test is recommended.

Q. Are there home remedies that can be used to treat strep?

In addition to a soft diet to avoid irritating the throat, individuals with strep may find the following soothing:

Cold or warm beverages (honey should not be given to children less than 1 year old)

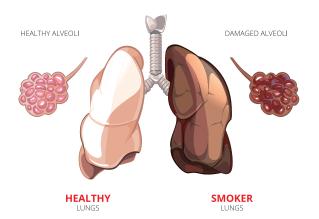
- Cold or frozen desserts such as popsicles, sucking on ice, sucking on hard candy (not recommended for children under 5 years old)
- Gargling warm salt water (1/2 teaspoon per 8 ounces of water)

HEALTHY LUNGS VS. SMOKERS' LUNGS WHAT YOU NEED TO KNOW

When Lungs Are Healthy

Healthy lungs look and feel like sponges. They're pink, squishy, and flexible enough to squeeze and expand with each breath. Their main job is to take oxygen out of the air you breathe and pass it into your blood.

HEALTHY PERSON AND SMOKER



If strep pharyngitis is suspected, a strep test is recommended.

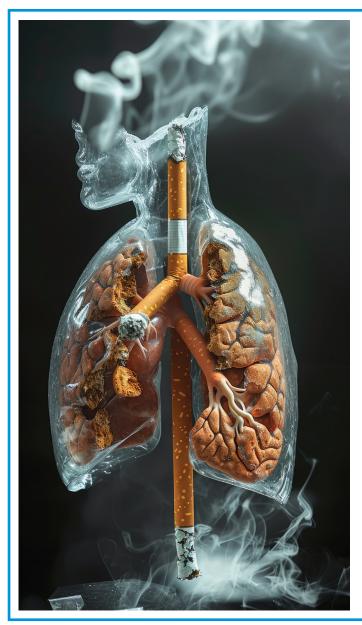
When you inhale, air enters your body through your windpipe, or trachea, the tube that connects your mouth and nose with your lungs. The air then travels through bronchial tubes, which move air in and out of your lungs. All along your airways, mucus and hair-like structures called cilia get rid of dust and dirt that come in with the air. Air keeps moving through your airways until it reaches tiny balloon-like air sacs in your lungs, called alveoli. From there, the oxygen moves into your blood.

When you exhale, your lungs remove carbon dioxide from your blood in a process called gas exchange. Smoking throws this entire process out of balance.





HOW SMOKING CHANGES YOUR LUNGS



A single puff of cigarette smoke has more than 7,000 chemicals, and almost 70 of them are known to cause cancer. When you breathe it in, these toxins go deep into your lungs and inflame them. Your airways start to make too much mucus. That leads to problems like coughing, bronchitis, and pneumonia.

Toxins make the tiny airways in your lungs swell. This can make your chest feel tight and can cause wheezing and shortness of breath. If you continue smoking, the inflammation can build into scar tissue, which makes it harder to breathe. Sticky tar from tobacco builds up inside your lungs too. After years of smoking, it can give them a black color.

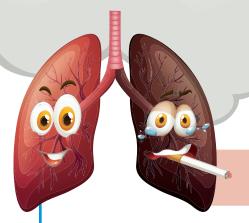
The nicotine in cigarette smoke temporarily paralyzes and kills cilia. That means your airways can't filter the dust and dirt in the air you breathe. It also makes you more likely to get colds and other respiratory infections.

Smoking also damages the alveoli, the tiny air sacs that bring oxygen into your body. Once they're destroyed, they don't grow back. When you lose too many of them you'll have emphysema, a lung condition that causes severe shortness of breath.

With less oxygen coming into your body, and cigarette smoke bringing more carbon monoxide in, smoking puts all your vital organs at risk.



WILL QUITTING SMOKING HELP YOUR LUNGS?



The moment you stop smoking, your lungs begin to repair themselves. In fact, just 12 hours after you quit, the amount of carbon monoxide in your blood drops to a healthy level. More oxygen flows to your organs, and you're able to breathe better. The cilia in your lungs become active again too. As they recover, you might cough more at first. But that's a sign that the cilia are helping to clear extra mucus out of your lungs.

Smoking isn't an easy habit to break, but you'll improve the way your lungs work if you quit.

LAUGHTER IS THE BEST MEDICINE



"For exercise, I do resistance training: I resist exercising"



"You need strong medicine to relieve your stress. I'm prescribing a puppy."





SLEEP-RELATED BREATHING DISORDER (SRBD) OR SLEEP DISORDERED BREATHING (SDB)



Sleep-disordered breathing is a spectrum of sleep disorders characterized by snoring, upper airway resistance syndrome and obstructive sleep apnea hypopnea syndrome and obesity hypoventilation syndrome.

Snoring is an abnormal respiratory sound during sleep because turbulence of airflow in a narrowed airway causes vibrations in the upper airway wall. Simple snoring may be due to colds, allergies and infections. In sleep apnea snoring breathing passage narrows while sleeping and produces complete blockage of the upper airway.

Upper airway resistance syndrome (UARS) is characterized by excessive daytime sleepiness, fragmented sleep with or without snoring and without oxygen desaturation with normal apnea and hypopnea index in sleep study with elevated Respiratory event-related arousal (RERA) in level 1 or 2 sleep study.





Obesity hypoventilation syndrome/Pickwickian syndrome is characterized by morbid obesity with chronic hypoventilation with hypercapnia during wakefulness and frequently coexists with obstructive sleep apnea.

Obstructive sleep apnea (OSA) by definition recurrent episodes of partial or complete airway obstruction during sleep due to repetitive collapse of the pharynx, necessitating recurrent awakening reestablish airway patency. Hypopnea means more than 50% reduction of airflow for more than 10 seconds or less than 50% reduction in airflow plus 3% oxygen desaturation plus or minus arousal. Apnea means total cessation of airflow for at least 10 seconds.

Clinical phenotypes of OSA are REM-related apnea, obesity-related apnea, position-dependent apnea, apnea with hypersomnolence, complex apnea and asymptomatic apnea.

Clusters of OSA are:

- 1. Disturbed sleep group.
- 2. Minimally symptomatic group and
- 3. Excessive day time sleepiness group.

Following are the common clinical conditions to keep in mind in which sleep apnea should be suspected. Systemic HT, obesity, myocardial infarction, cerebrovascular accident, pulmonary HT, type 2 DM, nocturnal cardiac arrhythmias, driver involved in a sleep-related automobile crash, preoperative anesthesia evaluation, uncontrolled asthma and cancer. Diagnosis based on clinical questionnaires like STOP BANG and Epworth sleepiness scale.

Directions Property of the State Sta	each c	ne.
	Yes	No
Snoring (Do you snore loudly?)		
Tiredness (Do you often feel tired, fatigued, or sleepy during the daytime?)		
O bserved Apnea (Has anyone observed that you stop breathing, or choke or gasp during your sleep?)		
High Blood P ressure (Do you have or are you being treated for high blood pressure?)		
BMI (Is your body mass index more than 35 kg per m ² ?)		
A ge (Are you older than 50 years?)		
Neck Circumference (Is your neck circumference greater than 40 cm [15.75 inches]?)		
Gender (Are you male?)		

preoperative anesthesia evaluation, Source: University Health Network, Toronto, Ontario, Canada (www.stopbang.ca/uncontrolled asthma and cancer. osa/screening/php). Used with permission from Sauk Prairie Healthcare.





What is you	r total score from the Ep				
Chicoso	2 if score is 7-10				
Situation			7/59/	of dozing (0-3)	
Sitting and reading		0	1	2	3
Watching television		0	1	2	3
Sitting inactive in a p forexample, a theate		0	1	2	3
As a passenger in a	car for an hour without a break	0	1	2	3
ying down to rest in	the afternoon	0	1	2	(3
Sitting and talking to	someone	0) 1	2	3
Sitting quietly after lu	unch (when you've had no alcohol)	0	1_	2	3
n a car, while stopp	ed in traffic	0	1	2	3
		August Warren		Total Score	13

Sleep study (Polysomnography) is the confirmatory test for the diagnosis of sleep-related breathing disorder. Sleep endoscopy, dynamic MRI scan, and facial cephalometry are useful tests for those patients requiring curative surgical treatment. There are 4 levels of sleep study – level 1 sleep study is the gold standard test and this is fully attended in lab polysomnography. Level 2 sleep study can be done at home or in the hospital but not in the sleep lab and this is an unattended sleep study. Level 3 sleep study is polygraphy or home. Sleep test which measures cardiorespiratory parameters. Level 4 is a screening test to measure heart rate and oxygen saturation.

Treatment of sleep-related breathing disorder is multidisciplinary and consist of Continuous positive airway pressure (CPAP) therapy considered as first-line treatment. Non-PAP therapy consists of oral appliances, maxillo mandibular advancement, upper airway surgery, and bariatric surgery. Treatment is tailor-made to individual characteristics and disease nature mainly based on endo and phenotypes.

DR. S. JAYARAMAN,SENIOR CONSULTANT PULMONOLOGIST





PULMONARY REHABILITATION:

A BOON FOR RESPIRATORY ISSUES



Pulmonary rehabilitation is a multi-component healthcare intervention that improves symptoms, exercises tolerance and quality of life in people with chronic lung diseases.

Who can benefit from pulmonary rehabilitation?

- Dyspnea in patients of Chronic obstructive pulmonary diseases.
- ICD/Restrictive lung disease along with medical management.

Contraindications for pulmonary rehabilitation

- · Recent myocardial infarction.
- · Unstable angina.
- Uncontrolled cardiac arrhythmias.
- Acute embolus or pulmonary infarction.
- Acute myocarditis or pericarditis.
- Dissection aneurysm.
- Acute infection.
- Severe arterial hypertension.
- Hypertrophic cardiomyopathy.
- Uncontrolled metabolic disease.







Treatment components of pulmonary rehabilitation:

- Chest physiotherapy
- Breathing exercise
- Muscles and joint strengthening exercise
- 6-minute walk test

DR. P. AMAL JOHNSON,
CONSULTANT INTERVENTIONAL PULMONOLOGIST
CHITRA. T [PHYSIOTHERAPIST]





SUCCESSFUL MANAGEMENT OF FULMINANT TB IN A YOUNG LADY

A 20-year-old woman arrived at Billroth's emergency room, experiencing sudden breathing difficulty. She reported intermittent fever and cough over recent months, alongside a history of low food intake. Upon examination, she displayed signs of distress but remained conscious. Her breathing was shallow, and oxygen saturation levels were low at 85%. Arterial blood gas analysis confirmed type 1 respiratory failure, and her lactate levels were elevated. Additionally, she exhibited signs of severe malnutrition, including pallor, low blood pressure (90/60 mmHg), and a rapid heart rate (130 bpm).

A chest X-ray revealed bilateral cavities and a large pneumothorax in the left lung. An intercostal drain (ICD) was promptly inserted, and she was transferred to the Critical Care Unit (CCU). There, she received treatment for sepsis with broad-spectrum antibiotics, oxygen therapy, and supportive care. Initial tests, including ECG and ECHO, returned normal results, providing some relief amidst the uncertainty.





Further investigations through a CT scan revealed bilateral lung abscesses, with the left lung showing a pyopneumothorax, which was managed with the ICD. Bronchoscopy uncovered extensive necrosis of the endobronchial mucosa bilaterally, with purulent secretions noted in the right lower lobe bronchus leading into the abscess. Additionally, a bronchopleural fistula (BPF) was identified in the left lower lobe bronchus. Therapeutic lavage removed approximately 200ml of pus, indicating progress in her treatment.

BAL Analysis

Following the diagnostic journey, a bronchoalveolar lavage (BAL) analysis unveiled a complex picture. The smear was positive for acid-fast bacilli (AFB), and the GenexpertMTB test confirmed rifampicin sensitivity. Culture/sensitivity revealed pseudomonas infection, susceptible to fluoroquinolones (FLQ), alongside a positive result for aspergillus. Cytology indicated an inflammatory response, prompting further investigation into immunosuppression.

Despite being a college student and day scholar with no history of steroid use or drug abuse, peripheral smear analysis revealed severe anemia with leukocytosis. However, screenings for HIV, HBsAg, and anti-HCV returned negative results. Further tests, including HbA1c, immunoglobulin panel, ANA, RA factor, and serum cortisol levels, yielded normal findings, raising questions about potential immunosuppression.

Need to evaluate for dissemination

To assess dissemination, CT abdomen and MRI brain scans were conducted, revealing no evidence of tuberculosis (TB). However, pleural fluid analysis returned positive for GenexpertMTB, indicating rifampicin sensitivity.

Management

The final diagnosis crystallized as fulminant cavitatory pleuropulmonary TB with a superadded infection/TB cachexia. Management commenced with HRZE plus streptomycin and levofloxacin, alongside voriconazole for fungal infection. With multidisciplinary care and robust nutritional support, her general condition gradually improved, despite a persistent air leak and drain in the ICD.

Consultation with Cardiothoracic and Vascular Surgery (CTVS) specialists led to the decision to maintain the ICD. After two weeks of intensive treatment, she was discharged with anti-tubercular therapy (ATT), oxygen support, chest physiotherapy, and continued ICD management. Additionally, her entire family underwent TB screening, all returning negative results. Close follow-up appointments were scheduled weekly, with strict instructions for home respiratory isolation.



Following her initial treatment, the young woman faced further challenges on her medical journey. After two weeks of anti-tubercular therapy (ATT), she experienced intolerance leading to vomiting, prompting her to be hospitalised for the 2nd time. Despite normal renal function, liver function, and serum electrolytes, therapeutic drug monitoring revealed normal serum levels. With reassurance and antiemetics, she resumed ATT at incremental doses and was discharged.

Continuing her treatment regimen, a month of voriconazole and two months of streptomycin and levofloxacin ensued. A subsequent bronchoscopy revealed decreasing purulence, with negative bacterial cultures and smear-negative but GeneXpertMTB-positive results, prompting removal from respiratory isolation. Her weight increased from 19 kg to 23 kg, and her fever subsided. After two months, the air leak and drain were resolved, leading to the removal of the intercostal drain (ICD). ATT continued with HRE, planned for a year's duration.



After three months of ICD care, the air leak was resolved, and the ICD was removed. She continued ATT with a high-protein diet supplemented with optimum fats, carbohydrates, and multivitamins

while receiving constant reassurance for good compliance. A year later, a follow-up CT chest revealed the resolution of the disease with minimal sequelae. Off medications, her current weight was 37 kg, she resumed college, and with vaccinations and nutritional support, she would be in follow-up once every three months for the next three years.

During her third admission, close monitoring was paramount. Oxygen support was discontinued after two months, and her anemia improved with hematologic support. However, on the fifth month, she presented with shortness of breath and developed contralateral massive pneumothorax the right side. necessitating ICD insertion. Bronchoscopy revealed a bronchopleural fistula (BPF) in the right lower lobe, alongside favorable healing of the disease. Persistent air leak led to the insertion of a Heimlich valve for ambulant care, and she was discharged after a few days.

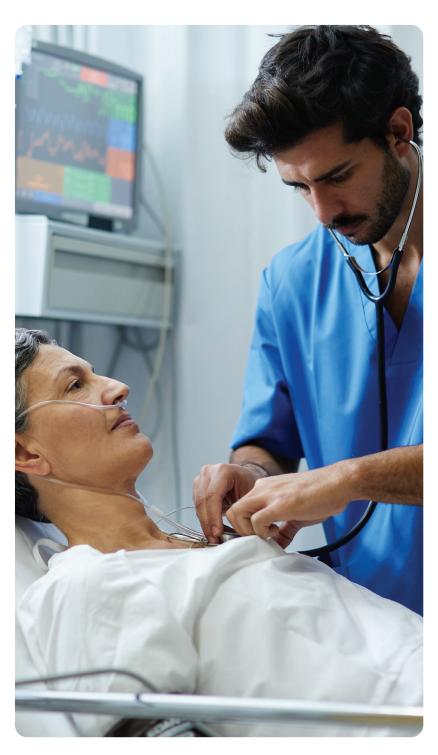




Managing fulminant TB presents mvriad challenges, including heightened infection burden leading to ATT failure and primary MDR-TB risk. Extensive luna damage increases structural complications during and after treatment. TB sepsis, with over 75% mortality, threatens multiorgan failure and bone marrow suppression. Severe malnutrition accelerates disease progression and treatment intolerance. often leading mortality.

Respiratory failure, compounded by immunosuppression, invites superadded bacterial and fungal infections. HIV coinfection adds complexity to management. Identifying treating and comorbidities like DM. CKD. and cancer is intricate. Fulminant TB typically affects extremes of age and overcrowded populations. psychological distress and high-risk behaviors hinder cooperation.

There is no clear guidelines for the approach to this kind of extensive disease, but a multidisciplinary approach, swift intervention, and patience are crucial for the cure. Despite its challenges, collaboration among our healthcare professionals helped us navigate this intricate terrain toward recovery.



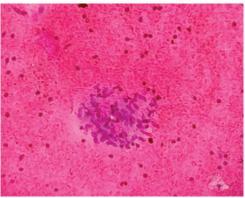
DR. P. AMAL JOHNSON,CONSULTANT INTERVENTIONAL PULMONOLOGIST





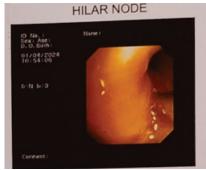
USE OF C TBNA IN SAFE AND PROMPT DIAGNOSIS OF MEDIASTINAL LYMPHADENOPATHY.

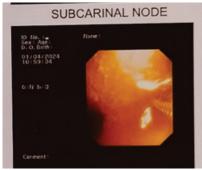
22-year-old young man came in with complaints of chest discomfort and occasional breathing difficulty. CT chest showing mediastinal lymphoma.











Discussed with the patient regarding diagnostic options. There are four modalities of sampling a mediastinal lymph node:

- 1) Bronchoscopic TBNA transbronchial needle aspiration (conventional or EBUS-guided for very small nodes)
- 2) UGI endoscopic-guided FNAC for select nodes
- 3) CT-guided biopsy: more risk for bleeding and pneumothorax
- 4) Surgical lymph node biopsy, VATS, or mediastinoscopy (last resort as it is a surgery)



decided to perform bronchoscopic CTBNA (conventional TBNA) as the node size is feasible, and cost-effective, and it can be done under local anaesthesia with less recovery time.

The diagnostic yield is close to 80 percent with a skilled bronchoscopist, and as it is not image-guided, it will be difficult for small nodes less than 1 cm. Keeping this in mind, radiologist Dr.Malathi's input was obtained for assessing the size, axis, and anatomical landmark of the nodes via CT scan.

Bronchoscopy showed normal endobronchial mucosa with splaying of the carina. Using the latest Excelon probe by Boston Scientific-19 Guage, conventional transbronchial needle aspiration (TBNA) was done from the hilar, subcarinal, and right paratracheal nodes.

The post-procedure was uneventful. and the patient was discharged after an hour of observation. ROSE, done (a consultant bv Dr. Pooia pathologist), confirmed the adequacy of the specimen and was reported within hours as necrotizing granuloma suggestive of TB. The patient is being started on anti-TB treatment and is currently in follow-up.



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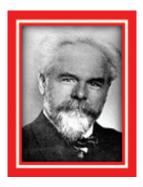


BASICS OF BRONCHOSCOPY

Introduction

- The most important procedure for a pulmonologist
- Endoscopy of the lungs from the nose/ mouth until segmental bronchi
- Both diagnostic and therapeutic
- Earlier rigid bronchoscope was conventionally used, but now flexible bronchoscope has been widely used for most indications

History



 Father of Bronchoscopy
 Gustav Killian in 1897
 performed the first bronchoscopy.

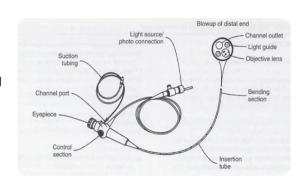


- Dr. Shigeto Ikeda is the father of flexible bronchoscopy.
- He is left-handed hence the culture of holding the scope to the left is a tribute to him

PARTS OF A BRONCHOSCOPE

Indications of bronchoscopy - Diagnostic

- 1. Evaluation of non-resolving pneumonia, pneumonia in immunosuppressed BAL analysis
- 2. Persistent atelectasis? Mucus plug? Foreign body? Tumour
- 3. Endobronchial tumour biopsy/brush
- 4. Mediastinal lymphadenopathy TBNA +/- convex EBUS
- 5. Peripheral parenchymal lung nodule Radial EBUS biopsy
- 6. Hemoptysis identify the source of bleeding and sampling
- 7. Tracheobronchomalacia
- 8. Toxic inhalation
- 9. Evaluation of chronic cough
- 10. TEF and BPF evaluation





INDICATIONS OF BRONCHOSCOPY - THERAPEUTIC

- ET placement in difficult situations
- Hemoptysis local control with Argon plasma coagulation, balloon tamponade or occlusion of affected bronchus with blocker
- Foreign body removal
- BPF management with synthetic glue
- Cryotherapy to remove endobronchial tumours
- Balloon dilatation to treat airway stenosis
- Tracheobronchial stenting
- Treatment of asthma Bronchial thermoplasty
- Treatment of emphysema with endobronchial coils /valves, thermal vapor ablation

CONTRAINDICATIONS TO BRONCHOSCOPY - ABSOLUTE

- Absence of informed consent
- Refractory hypoxemia
- Severe bleeding diathesis
- Malignant cardiac arrhythmia

CONTRAINDICATIONS TO BRONCHOSCOPY - RELATIVE

- · Lack of patient cooperation
- Recent myocardial infarction or unstable angina
- Severe respiratory failure
- Uncontrolled hypertension
- Unstable cardiac arrhythmia
- Uremia for bronchoscopic biopsy

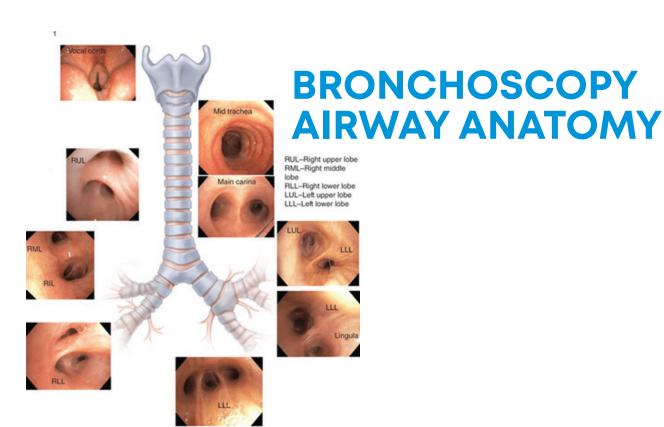


PRE PROCEDURAL PREPARATION

- Consent
- Nil per oral for liquids (2 hrs) and solids (4 hrs)
- Known allergies, comorbidities and drug history noted
- Nasal and oral examination must be done dentures removed
- Vitals must be recorded BP, HR, Spo2, and blood sugar levels
- Important to check platelet count, PT/APTT/INR in patients planned for biopsy

PRE PROCEDURAL ANESTHESIA

- Midazolam can be used to improve patient tolerance (2ml of 1mg/ml)
- Propofol must be used by an anesthetist
- Local anesthesia of upper airway 2 percent LOX jelly for nose, 10 percent LOX oral spray
- Tracheobronchial anesthesia Cricothyroid injection with 2 ml of 2 percent LOX and "spray as you go" 2 percent LOX 2 ml
- Strive to use the lowest dose of lignocaine as possible





COMPLICATIONS DURING BRONCHOSCOPY

- Usually well-tolerated procedure
- Most common are mild fever, transient hypoxemia, bronchospasm and minimal bleeding
- Very rarely, adverse events like severe bleeding or pneumothorax occur following TBLB
- Cardiac events like arrhythmia/pulmonary edema are also very rare.

TESTS IN BRONCHOSCOPY

- ⇒ BAL (Bronchoalveolar lavage)
- Gram stain, Bacterial culture and sensitivity
- ⇒ Viral PCR
- AFB smear, Genexpert MTB, LPA, AFB culture and sensitivity, WGS
- Fungal stain, Fungal PCR, Aspergillus galactomannan, Fungal culture
- Nocardia stain
- PCJ stain
- Cell count
- Cytology
- Endobronchial brush
- Endobronchial biopsy
- **⇒** TBNA
- **⇒** TBLB
- ⇒ When sending a sample to a pathologist for HPE/cytology please make a clear mention of the case history, differentials, findings and the sample in the request and if possible, talk to the pathologist.

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UNVEILING CARDIAC INSIGHTS: BILLROTH HOSPITAL'S CARDIAC CME MEETING

On February 17, Billroth Hospital hosted a prestigious Cardiac CME (Continuing Medical Education) meeting that brought together esteemed doctors and specialists in the field of cardiology. The event was a gala of cardiac insights, featuring enlightening presentations on key topics that are shaping the future of cardiovascular care the highlights of the CME meeting were the session on "Complete or Culprit Only PCI in ACS," by Dr. Ilayaraja, a renowned Interventional Cardiologist. Our experts delved into the intricacies of percutaneous coronary intervention (PCI) in acute coronary syndromes (ACS). The discussion revolved around the optimal approach to revascularization in ACS patients, weighing the benefits and risks of complete revascularization versus culprit-only intervention.







Another captivating presentation was the "Update on Dyslipidemia Management," by Dr. D Prabhakar, a cardiologist who shed light on the latest advancements and guidelines in managing lipid disorders. With cardiovascular health being closely linked to lipid levels, this session provided valuable insights into personalized treatment strategies for patients with dyslipidemia.

The CME meeting also featured a thought-provoking session titled "Food for Thought - An Introspection of CT Department 2023 Case Records" by Dr. Arunkumar K. This session offered a retrospective analysis of case records from the hospital's CT department, highlighting trends, challenges, and opportunities for improvement in cardiac imaging and diagnosis.

"It was an honor to witness such a gathering of brilliant minds and passionate discussions. The insights shared during the presentations will undoubtedly influence our approach to cardiac care, leading to better outcomes for our patients."





BILLROTH HOSPITAL'S GASTROENTEROLOGY CAMP: PROMOTING DIGESTIVE HEALTH IN THE CORPORATE WORLD

In a proactive initiative to promote digestive health and well-being, Billroth Hospital organized a Gastroenterology Camp at the Cholamandalam MS corporate office in Nugambakkam. The camp, held on February 24, 2024, witnessed the participation of 52 employees who benefitted immensely from the expert guidance and medical insights provided by Dr. Mercelin and Dr. Karthick, renowned gastroenterologists from Billroth Hospital.

The camp aimed to raise awareness about gastrointestinal disorders, preventive measures, and the importance of regular screenings for early detection. With modern lifestyles often leading to digestive issues, the camp focused on empowering employees with knowledge and tools to maintain optimal digestive health.

Digestive health is crucial for overall well-being, especially in today's fast-paced world. Our goal with this camp was to educate and empower individuals to take charge of their digestive

health proactively. Many digestive disorders can be effectively managed or even prevented through early detection and lifestyle modifications. Regular check-ups and screenings play a crucial role in maintaining digestive health.









BILLROTH HOSPITAL'S COMPASSIONATE OUTREACH: MEDICAL CAMPS THAT MAKE A DIFFERENCE

In February, Billroth Hospital embarked on a mission of compassion and care through two impactful medical camps, in collaboration with Nanbarkag Trust and Rediyar Patti Nadar Sangam. These camps served as a beacon of hope for underserved communities, providing much-needed medical attention and support.

The first camp - the Rediyar Patti Nadar Sangam camp held on February 11th, 2024, was organised in Kelambakkam. This camp, spearheaded by Dr. Shyamala and Dr. Hassan, aimed to address healthcare needs within the local community.

Following the success of this camp, Billroth Hospital partnered up with the Nanbarkag Trust on February 25th, 2024, in Vellore. This was a testament to Billroth Hospital's commitment to reaching out to those in need. Led by a dedicated team of doctors including Dr. Shankar Narayanan, Dr. Shyamala, Dr. Waseem, and Dr. Malavika, the camp offered a range of medical services, from general health check-ups to specialized consultations. Patients were able to receive expert medical advice and care, enhancing their overall well-being.







Both medical camps exemplified Billroth Hospital's ethos of compassionate healthcare delivery and community engagement. Through these initiatives, the hospital not only provided essential medical services but also fostered a sense of trust and goodwill within the communities served.















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Dr. Rajesh Kumar, the Medical Director of Billroth Hospital, remarked, "Our commitment to making a positive impact extends beyond our hospital walls. These medical camps reflect our dedication to serving society and making healthcare accessible to all."



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