

# Case Notes

Royal Brompton & Harefield Hospitals Specialist Care

TENDYNE MITRAL  
VALVE REPLACEMENT

ENDOBONCHIAL CRYOTHERAPY  
FOR LUNG CANCER

OUR MERGER WITH GUY'S AND  
ST. THOMAS' NHS FOUNDATION TRUST

## SHOULD OLDER PATIENTS' HEARTS BE SCREENED BEFORE AN ENDURANCE EVENT?





## An update from David Shrimpton

Our hospitals faced a challenging start to the year with the UK's third lockdown. As a specialist heart and lung care centre, some of the country's sickest COVID-19 patients were referred to us for stabilisation and treatment in our ECMO and intensive care units – some of the most advanced in the world.

We had to rapidly expand our support for these patients, including redeploying our private care team to NHS roles, which we were proud to do. However, as we reflect on our success in saving lives, we also look onward to the challenge of serving the many patients whose treatments were postponed.

We are pleased to report that our capacity to see and treat private patients increases each day, while we continue to support our NHS services. Our work to push the fields of heart and lung care forward has also never stopped, as you will see from this issue of Case Notes.

Whether it is our specialists leading the development of a first-in-class mitral valve replacement technology (p14), or conducting the world's largest trial on a new COVID-related paediatric condition (p10), our multi-disciplinary teams work tirelessly to develop solutions to existing and emerging healthcare problems.

Finally, after years of careful planning, our hospitals merged with Guy's and St. Thomas' NHS Foundation Trust in February (p12). We believe the joining of our services will truly transform the care we are able to deliver as we have become part of the largest and strongest healthcare organisation in Europe.

### David Shrimpton

Managing director,  
RB&HH Specialist Care



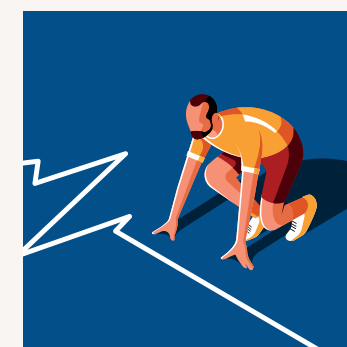
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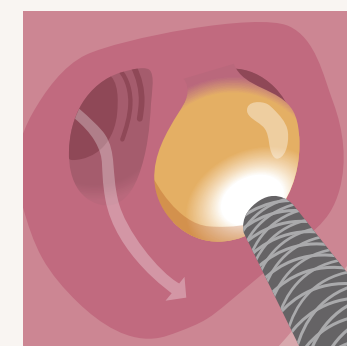
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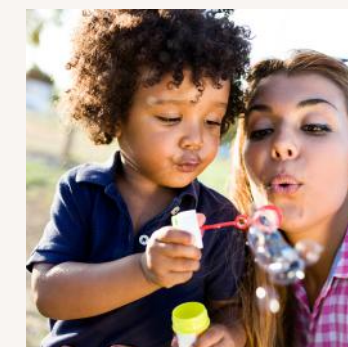
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Endobronchial cryotherapy  
for lung cancer



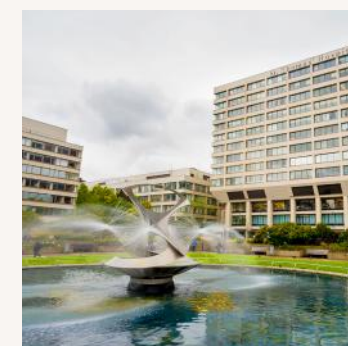
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# What's new?

## WELCOME TO OUR NEW PRIVATE CONSULTING ROOMS

We understand having access to the best heart and lung care is important for your patients. That's why we have opened our new outpatient centre located at the iconic Old Fire Station building on South Parade, Chelsea, while our old outpatients building is being renovated. At our new facility your patients will be able to see one of our world-leading experts in person.

To help prevent the spread of coronavirus (COVID-19), we have taken extra measures to reduce the risk for patients and staff through the use of social distancing in the waiting area, a symptom check station on arrival and thorough cleaning of all equipment and environs.

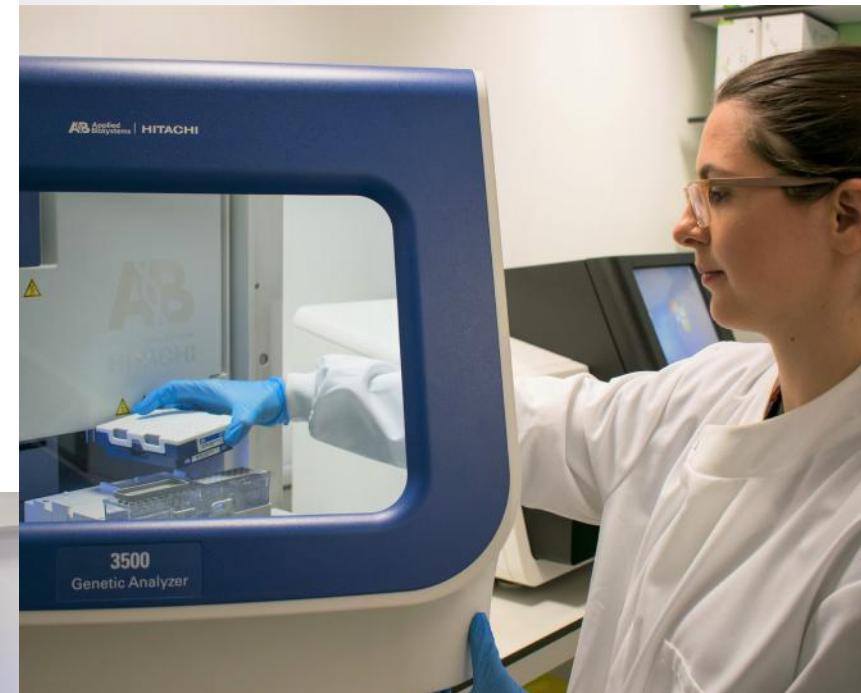


Inside our genetics and genomics laboratory

## NEW EDUCATION AND TRAINING WEBSITE

We have launched our new education and training website for healthcare professionals, with events, talks, courses, bespoke training opportunities and more.

Dr Richard Grocott-Mason, managing director of Royal Brompton and Harefield Clinical Group, said: *"Our specialists are renowned for their expertise in heart and lung care, with healthcare professionals across the world turning to us for training and guidance. This new platform offers us the opportunity to share our knowledge internationally, to help advance healthcare services and enable many more patients to access the same standard of care as ours."*



Inside our genetics and genomics laboratory

## OUR GENETICS TEAM CELEBRATES MILESTONE ACHIEVEMENT

Royal Brompton and Harefield hospitals' Clinical Genetics and Genomics Laboratory team is celebrating the milestone of analysing 10,000 samples of DNA.

Genetic testing is carried out to confirm a diagnosis of a suspected inherited cardiac or respiratory condition in patients who have symptoms. Discovering if patients have an inherited disease can help doctors to decide on the right medical treatment. It also means that relatives of patients can be invited for genetic testing to find out whether they are at an increased risk of developing the same disease before symptoms even start.

The laboratory team was established in 2015 to provide genetic testing for inherited cardiac conditions, and two years later introduced genetic testing for inherited respiratory conditions. Starting as only four people just six years ago, the team has gone from strength to strength, and is now a team of 16; four clinical scientists, three bioinformaticians, seven technical and two administrative staff.

Dr Deborah Morris-Rosendahl, consultant clinical scientist and head of the Clinical Genetics and Genomics Laboratory, said: *"We started off receiving just 200 samples a year to analyse, so it is a real achievement for the team to receive the 10,000th sample."*

## AWARD FOR SURGERY

Professor Eric Lim, consultant thoracic surgeon, was awarded the Robert J Ginsberg Lectureship Award for Surgery at the recent International Association for the Study of Lung Cancer (IASLC) conference.

Commenting on his award, Prof Lim said: *"I am honoured and humbled that the work I'm doing with the UK thoracic research community, through two National Institute for Health Research grants – as the chief investigator leading UK-wide multicentre trials of surgery for mesothelioma and VATS lobectomy – is getting global recognition."*



Professor Eric Lim

  
Royal Brompton &  
Harefield Hospitals  
**EDUCATION**





# SHOULD OLDER PATIENTS' HEARTS

be screened before an endurance event?

With lockdowns easing, many of our patients will be looking to get back into shape by running an endurance event, such as a 5K-run. However, with participation increasing in older age groups, we may need to consider how we can best assess and advise our patients to protect their heart health.

## ENDURANCE RUNNING DEMOGRAPHICS ARE CHANGING

Despite a recent decline in running event participation, they were popular pre-pandemic with 7.9 million people taking part globally in 2018, as reported in 'The State of Running 2019' report.

With lockdowns easing, many of our patients may wish to get back into running and take on the challenge of an endurance event, such as the popular 5K runs or half-marathons which are being planned for the year ahead.

However, with data indicating that runners are now much older with an average age of 39 and potentially less experienced at running, we may need to re-consider what the normal 'athlete' looks like in our clinics and what advice we can give them to ensure optimal heart health and safe participation.

## THE BENEFITS AND RISKS OF ENDURANCE RUNNING

There are many health benefits to regular physical activity and running a marathon is very safe, with a recent literature review estimating the risk of death to be just 0.67 per 100,000 participants. However, there have also been an increasing number of studies showing an association with pre- and post-race-related cardiac dysfunction which means that training around the event may put a strain on the heart.

Sudden cardiac arrest in young competitive athletes is well characterised and is most often associated with the inherited cardiac disorder, hypertrophic cardiomyopathy. In Italy, there has been mandatory pre-participation cardiovascular evaluation for all young athletes aged 12-35 since 1982 and mortality data over a 26-year period has shown sudden cardiac arrest to have reduced by 89% in this population. This suggests that systematic pre-participation evaluation can significantly decrease mortality in young athletes.

However, this data may not extend to participants that are older, with different cardiovascular risk factors and underlying medical conditions, and a recent literature review found that the most common cause of death during marathons was ischaemic heart disease, which predominantly affected men over 40. It was also found that most deaths occurred in the last quarter of a marathon race.

This data would suggest that training programmes for a marathon do not put runners under the same sort of stress as they would experience in the race itself, where they would typically run for longer. The stress of running a marathon is also known to release a number of inflammatory biomarkers, creating a situation where plaque rupture and coronary thrombosis is more likely.

Further, studies have shown that race length is associated with an increased risk of cardiac arrest and death, with rates for marathons 3 to 5 times higher than for half marathons. This could be due to longer races placing greater physiological stress on participants. Men have also consistently been shown to be at greater risk than women. However, deaths from sudden cardiac arrest still do occur during half marathons and in women, so their risks should still be considered.

“

*For anyone over 35, a clinical history, physical examination and an ECG would be appropriate.”*

## SHOULD WE SCREEN OUR PATIENTS BEFORE AN ENDURANCE EVENT?

“The answer depends on the age and level of activity of the person.” explains Professor Mark Mason, consultant cardiologist at Royal Brompton & Harefield Hospitals Specialist Care.

“For anyone over 35, a clinical history, physical examination and an ECG would be appropriate.

“Although an ECG has its limitations, it may help capture some silent heart conditions. It also provides an opportunity for a doctor to assess their physical condition and give advice on training before embarking on an endurance challenge.

“For anyone under 35, screening would not be appropriate unless they are at risk of a heart condition, such as if they have a family history, or are experiencing signs and symptoms of one. However, if they are under 35 and an athlete regularly taking part in vigorous sporting activities, they may benefit from an intensive heart screening to rule out a silent heart condition.

“Overall, regular exercise is beneficial and should be encouraged. As doctors, we can help advise our patients on the most appropriate level of exercise that is safe for them and participation in any endurance event, whatever its distance, should be considered with care.”



**Professor Mark Mason**  
Consultant cardiologist, Medical director for Royal Brompton & Harefield hospitals

Professor Mason specialises in coronary intervention, cardiac resynchronisation therapy and implanting pacemakers and defibrillators.

To find out more about our heart screening services, or to refer a patient, please contact the customer services team on **+44 (0)20 3131 0535** or email [privatepatients@rbht.nhs.uk](mailto:privatepatients@rbht.nhs.uk)

# OUR NEW CONSULTANTS

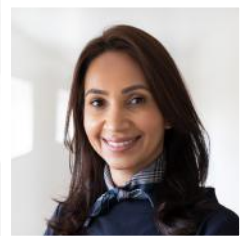
As one of Europe's largest heart and lung centres, we attract some of the most talented consultants from all over the world. Below are some of the newest members of our team.



**Dr Ricardo José**  
Consultant in respiratory medicine  
*Royal Brompton Hospital*

Dr José is a respiratory specialist with expertise in acute and chronic respiratory infections and respiratory disease associated with cancer. He has a special interest in respiratory disease in immunocompromised individuals and has a clinic dedicated to the management of respiratory infection and respiratory disease in patients with primary and secondary immunodeficiency.

He particularly sees patients with immunodeficiency secondary to cancer (e.g. leukaemia and lymphoma), therapies for cancer (e.g. systemic and targeted chemotherapy, immunotherapy, radiotherapy, haematopoietic stem cell transplantation), and therapies for inflammatory disease (e.g. biological therapies and other immunosuppressant drugs).



**Dr Wala Mattar**  
Consultant general and interventional cardiologist  
*Harefield Hospital*

Dr Wala Mattar has expertise in general cardiology such as angina, valvular heart disease, heart failure, syncope and hypertension.

She also has specialist expertise in the diagnosis and treatment of coronary artery disease, coronary artery intervention, the use of fractional flow reserve, intravascular ultrasound and optical coherence tomography, permanent pacemaker insertion, percutaneous patent foramen ovale closure and balloon aortic valvuloplasty.



**Dr Resham Baruah**  
Consultant Cardiologist  
*Royal Brompton Hospital, Harefield Hospital*

Dr Resham Baruah specialises in all aspects of general adult cardiology and treats a range of conditions, including heart murmurs, cardiomyopathies, valve disease and sleep disordered breathing.

She also has expertise in cardiac diagnostic modalities including transthoracic echocardiography, transoesophageal echocardiography, exercise stress echocardiography, pharmacological stress echocardiography and cardiac MRI.



**Dr Aleksander Kempny**  
Consultant Cardiologist  
*Royal Brompton Hospital*

Dr Kempny is a cardiologist with many years of experience in adult congenital heart disease and

pulmonary hypertension, valvular heart disease, coronary artery disease, echocardiography, including transthoracic echocardiogram, transoesophageal echocardiogram and stress echocardiography, heart failure and intensive care management of ACHD and PH patients and exercise physiology.

Dr Kempny leads the adult congenital heart disease and pulmonary hypertension intervention programme at Royal Brompton Hospital and performs the a wide range of procedures in adults and children ranging from percutaneous pulmonary valve implantation (both Melody and Edwards-Sapien valves) and balloon valvuloplasty to coronary angiography and cardiac catheterisation and 3D reconstructions and 3D printing for advanced planning of percutaneous procedures.

# Research update

## NEW CHARITY-BACKED VENTURE FUNDS FIRST CROP OF RESEARCH PROJECTS

Myocardial disease, bronchiectasis and improving catheter ablations are just some of the themes that have successfully secured funding from a new scheme supported by the Royal Brompton & Harefield Hospitals Charity.

The Research Management Fund, administered by the Research Management Committee (RMC), has been established to help allocate funds to prime Royal Brompton and Harefield hospitals-based research infrastructure and project grants that strive to tackle heart and lung disease.

The response from our teams to the launch of this scheme was extremely positive and both RMC and the independent panel of expert and lay reviewers were pleased to see this in the breadth and quality of proposals received. 23 applications were submitted for consideration, of which 5 were awarded.

Gill Raikes, who was CEO of the Charity when the scheme was created and has recently retired, said:

*"Funding these vital and ground-breaking research programmes is a very exciting project for the Charity, and the Trustees and the team are honoured to be supporting such innovative work."*

*"Royal Brompton and Harefield hospitals is a centre of excellence for research and knowing that the Charity – our donors and other supporters – can play a part in helping to find treatments and cures for some of these diseases and conditions is inspiring."*

The successful applications include funding for projects run by Dr Joyce Wong, consultant cardiologist, Dr Anand Shah, respiratory consultant, Professor Sabine Ernst, consultant cardiologist, Dr Clare Nolan, specialist pulmonary rehabilitation physiotherapist and Dr Shouvik Halder, consultant cardiologist.

## WHAM STUDY GETS THE GO-GO FROM NIHR

A research study has been awarded funding to determine whether singing classes can help people maintain the health benefits seen after undertaking pulmonary rehabilitation. Pulmonary rehabilitation is an education and exercise programme recommended for people with lung conditions to help improve the management of symptoms, such as breathlessness, the ability to exercise and improve quality of life. Royal Brompton & Harefield NHS Foundation Trust has its own pulmonary rehabilitation service which is run by physiotherapists at both hospital sites.

The aim of this research project will be to encourage people who complete the pulmonary rehabilitation programme, to participate in Singing for Lung Health (SLH) classes led by a specially trained singing teacher. The SLH classes will help participants learn techniques to help control their breathing, using singing exercises and tools to improve breathing control and in the process, gain the skills to help them to cope with their lung condition.

Dr Adam Lewis, physiotherapy lecturer at Brunel University London and an honorary researcher at the Trust, is leading the project and hopes to prove that the project is feasible – paving the way for a clinical trial in the future to demonstrate any clinical benefits.

Dr Lewis said: *"It's fantastic to win this award which has been fully developed and endorsed by patients within the hospital. This award will enable patients with different respiratory condition across London to access a potentially valuable therapy when current choices are limited."*



# Freezing therapy offers LUNG CANCER CURE

Lung cancer cryotherapy can offer a chance of a cure for early stage lung cancer and help alleviate symptoms for those with advanced lung cancer.

## THE GLOBAL BURDEN OF LUNG CANCER

Lung cancer is the leading cause of cancer-related deaths worldwide, responsible for approximately 1 in every 4 (1.6 million) cancer-related deaths annually.

Most cases can be attributed to smoking and it mainly occurs in older people, with the average age of diagnosis around 70 and is rarely diagnosed in those younger than 45.

Unfortunately, due to the late onset of symptoms, lung cancer is often only diagnosed at an advanced stage. For this reason, the chance of surviving the condition remains low despite great advancements in treatment options available.

For patients with advanced lung cancer that is inoperable, treatment is often confined to alleviating symptoms to improve the quality of life of patients. One such treatment is called endobronchial cryotherapy.

## WHAT IS ENDOBRONCHIAL CRYOTHERAPY?

Endobronchial cryotherapy is a treatment that uses a bronchoscope to reach the part of the airways affected by the cancer and apply a cryogen from its tip directly to the cancer.

The cryogen can achieve temperatures of between  $-78^{\circ}\text{C}$  and  $-187^{\circ}\text{C}$ . This works to kill the cancer cells, as well as cutting off the blood supply to it. The dead cells are then naturally removed by the body.

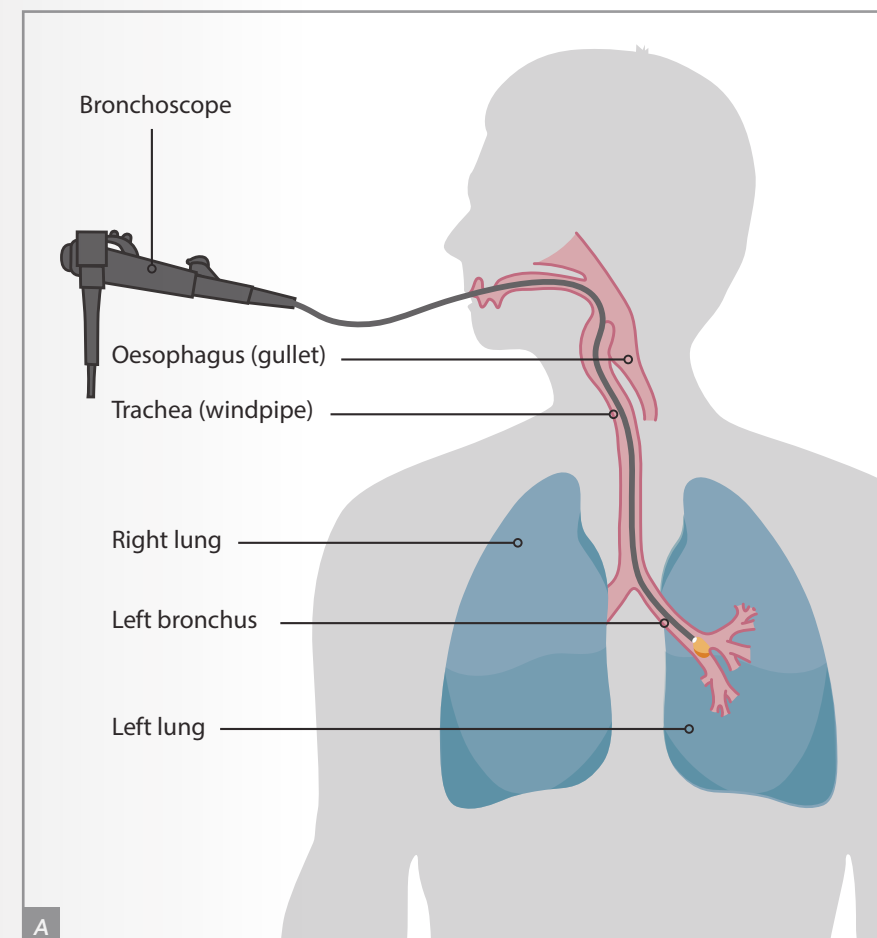
The procedure is short, lasting around 20 minutes, and is performed under general anaesthesia. The cryogen is applied for 3-5 minutes at a time and over several areas if the cancer growth is large, to aim to freeze it completely.

It is a safe minimally invasive procedure that has been used for over 25 years for the effective treatment of lung cancers that obstruct the airways and there are minimal side effects, with a sore throat being most common after the procedure.

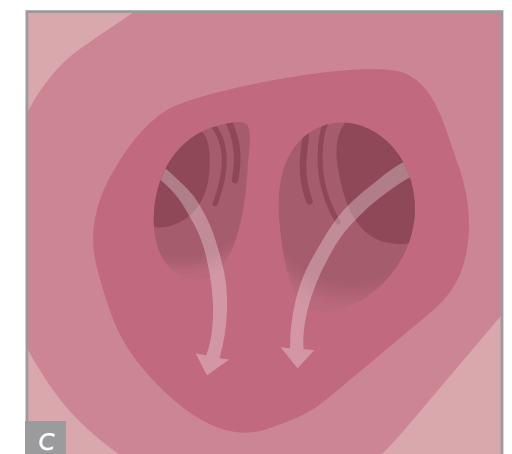
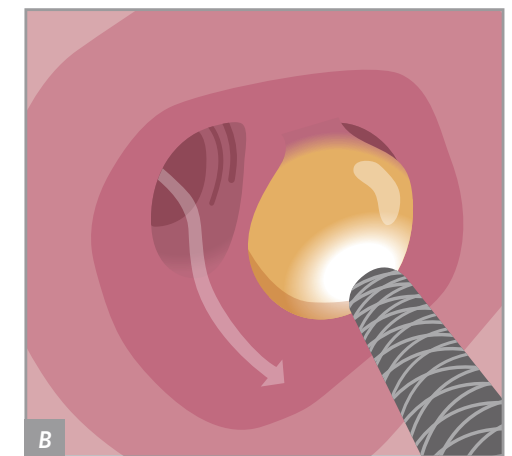
"Endobronchial cryotherapy is a suitable option for patients with advanced lung cancer that cannot be operated on and have few other treatment options available to them. Many of our patients have reported improvements in symptoms such as being able to breathe much better after the procedure," explains our consultant thoracic surgeon, Mr Nizar Asadi.

"In addition, if we manage to catch lung cancers early enough when they are small and localised to the airways, cryotherapy can be curative in some patients. Otherwise, it can work to reduce the size of the cancer growth in these patients so that less of the lung tissue needs to be removed during a lung resection procedure and so ensuring lung function is preserved as much as possible."

Endobronchial cryotherapy may be repeated on multiple occasions – approximately every 4-6 weeks – to remove or reduce the size of the cancer over time.



A bronchoscope (A) is used to apply the cryogen directly on the cancer growth (B) to freeze and kill the cancer cells. After one or more cryotherapy treatments, the growth is completely cleared or reduced in size (C).



## A SPECIALIST TEAM BEHIND EVERY PATIENT

As a specialist heart and lung care centre, we perform many endobronchial cryotherapy procedures each year, with patients coming from far and wide for lung cancer treatment.

Our world-leading multi-disciplinary team reviews each patient in turn, to offer opinions from multiple perspectives and develop the best treatment strategy for them. From our histopathologists that can accurately diagnose the type of cancer from lung biopsies to our thoracic surgeons that can remove it, each patient receives the best care available.



**Mr Nizar Asadi**  
Consultant thoracic surgeon

Mr Asadi specialises in adult and paediatric thoracic surgery. He is also the London Thoracic Lead for Getting IT Right First Time, a national programme of the NHS to improve the quality of patient care.

## A YOUNG MUM CAN BREATHE AGAIN

"After the first cryotherapy session, I felt so much better. They managed to remove about 80% of the tumour in the first session," explains one of our UK-based patients.

The 40-year-old teaching assistant and mum of two developed a rare type of lung cancer called a pulmonary carcinoid tumour. She first noticed that she might have a problem with her lungs when she started to wheeze without exerting herself too much.

Her doctors initially felt this might be due to asthma, but after inhalers had no impact on her condition, she was referred to Mr Asadi's care for further investigation.

After a routine bronchoscopy, her cancer was spotted, and Mr Asadi started her treatment with cryotherapy to shrink the tumour. Once it was reduced in size, a lung resection surgery was performed to remove the cancer remaining.

"The service and treatment that I received was excellent. There wasn't any delay, and everything was done fairly quickly – even during the COVID-19 pandemic," she shares of her experience receiving treatment with us.

To find out more about our endobronchial cryotherapy procedure for lung cancer, please contact the customer services team on **+44 (0)20 3131 0535** or email [privatepatients@rbht.nhs.uk](mailto:privatepatients@rbht.nhs.uk)



# PIMS-TS

## An update on the COVID-related paediatric condition

COVID-19 infection in children and adolescents is often mild or asymptomatic, but rarely can trigger a multi-system inflammatory disorder that requires urgent care. We provide the latest findings on the aetiology of PIMS-TS from the world's largest study on the condition led by our consultants.

### A RARE SYNDROME REQUIRING URGENT CARE

In the middle of the UK's first lockdown in 2020, a number of teenagers were admitted to the paediatric intensive care unit at Evelina London Children's Hospital requiring inotropic support in the absence of infection.

It would later emerge that these teenagers, like others across the world, were affected by a complication of COVID-19 resulting in multi-system inflammatory disease, often leading to multiorgan failure and shock that required urgent intensive care.

This condition was defined and named 'paediatric inflammatory multi-system syndrome temporally associated with SARS-CoV-2' (PIMS-TS) by the Royal College of Paediatrics and Child Health in the UK, and MIS-C (multisystem inflammatory syndrome in children) by the WHO and CDC in the US.

### WHAT INCREASES THE RISK OF DEVELOPING PIMS-TS?

Although it was originally described as a Kawasaki-like syndrome, the age of presentation for PIMS-TS is generally older. Where Kawasaki syndrome mostly affects children under 5, PIMS-TS presents with greater frequency in those aged 8-15. However, exactly how the infection can trigger this syndrome is still unknown and it remains a rare outcome of COVID-19 infection in children and adolescents.

What is known is that the syndrome tends to appear 4-6 weeks after COVID-19 infection. Also, the COVID-19 infection is usually mild or asymptomatic, in-line with what is normally expected for these age groups (patients do not experience a more severe form of the infection before presenting with PIMS-TS).

In terms of a mechanism of disease, it is thought that the viral spike protein may resemble a superantigen that can drive the development of a cytokine storm, triggering the multi-system inflammation observed with PIMS-TS. Viral sequencing studies have also revealed that different strains of the virus do not influence the likelihood of the syndrome developing. It is therefore more likely that factors such as host genetics that trigger it.

To further understand the syndrome and its aetiology, our consultant paediatric cardiologists, Professor Alain Fraissé and

Dr Carles Bautista, recently led the world's largest study cohort on PIMS-TS across 13 countries. Among other findings, it demonstrated that patients from a BAME background were most susceptible, with almost a third of patients with PIMS-TS in the study being black (30.6%).

In addition, obesity was a common comorbidity associated with the development of the syndrome, with 26.2% of patients meeting this criterion. However, no other potential risk factors (including diabetes) were found to be associated. Interestingly, the study also revealed that a shorter period of symptoms before admission to hospital significantly increased the likelihood of a worse outcome and the requirement for extracorporeal membrane oxygen and/or death.

### WHAT SHOULD DOCTORS LOOK OUT FOR?

"What our study demonstrated is that it is essential to admit patients to an acute care centre as soon as possible with this condition, to ensure the best outcomes. It is hard to predict which patients will deteriorate most rapidly, but in the right setting they may be stabilised promptly to enable their recovery. Rapid accurate diagnosis is therefore key," explains Dr Bautista.

### Clinical features of PIMS-TS:

- Aged 18 or under.
- Recent history (previous 4 to 6 weeks) of COVID-19 infection or contact with infected individual.
- Abdominal symptoms: diarrhoea, pain and vomiting.
- Conjunctivitis and/or widespread rash.
- Cracked lips and/or strawberry red tongue.
- Headache.
- Hypotension and/or dizziness.
- Lethargy and myalgia.
- Peeling on hands and feet.
- Prolonged high fever.
- Tachycardia +/- shock.

### MULTI-DISCIPLINARY CARE IS NEEDED

"As PIMS-TS can be a multi-system condition, a multi-disciplinary approach is needed for its successful treatment. At Royal Brompton Hospital, we work in partnership with St Mary's Hospital to provide the best care," explains Dr Bautista.

"With our expertise in heart and lung care, we can work quickly to diagnose the condition and stabilise the acute cardiac and respiratory problems associated with it. As the gastrointestinal system is also often involved as well as other systems, we tap into the expertise of our partner hospitals for a total body approach to care."



**Professor Alain Fraissé**  
Consultant paediatric cardiologist

Specialises in interventional catheterisation and echocardiography in children and adults with congenital heart disease.



**Dr Carles Bautista**  
Consultant paediatric and interventional cardiologist

Specialises in minimally invasive interventional procedures for paediatrics and neonatal cardiology.



# Transforming our healthcare services

Royal Brompton and Harefield hospitals have merged with Guy's and St Thomas' NHS Foundation Trust to become one of the largest and strongest healthcare organisations in Europe.

## COMBINING OUR EXPERTISE

Since 2017, our hospitals have been working with colleagues at Guy's and St Thomas' NHS Foundation Trust (GSTT) and Kings Health Partners on plans to transform care for adults and children with heart and lung diseases.

Early last year, it was jointly decided that the full integration of services provided across all our hospitals – a merger – was the best way of achieving this and as of Monday 1<sup>st</sup> February 2021, Royal Brompton and Harefield hospitals are proud to be part of GSTT as one of its new Clinical Groups.

## TRANSFORMING OUR HEALTHCARE SERVICES

With our combined expertise, our clinical and academic teams are now unparalleled and will continue to deliver exceptional care to patients, as well as drive research forwards into new and better treatments.

Subject to public consultation, children's services will move from the Royal Brompton Hospital site to an expanded Evelina London Children's

Hospital at St Thomas' in approximately five to six years' time. Following this, and again subject to consultation, we hope to also build a new centre for heart and lung services at the St Thomas' site, which will be the home of adult heart and lung services from across the new Trust and potentially other partners as well. There are no plans to move services from Harefield Hospital, but these services will be an integral part of the integration across the new Trust.

Our hospitals will continue to have strong links with the NHS in north west London and other partners – including local government, as a significant provider of NHS services in the area for a long time to come. In addition, as part of the merged Trust, we have academic partnerships with both Imperial College London and King's College London.

Professor Ian Abbs, chief executive at Guy's and St Thomas' NHS Foundation Trust, said: "I am proud to welcome colleagues from Royal Brompton and Harefield to the Guy's and St Thomas' family. Together, and with our partners, we have a once in a generation opportunity to build a

lasting, world-renowned heart and lung centre, providing the highest quality care for patients from before birth to old age, and conducting world-leading research.

"We have already demonstrated that by working together we can achieve more for our patients, not least during our current pandemic response, where partnership working has helped us care for many patients requiring the most specialist treatment."

Dr Richard Grocott-Mason, managing director of the new Royal Brompton and Harefield Clinical Group at Guy's and St Thomas' said: "This is a hugely significant moment in the history of Royal Brompton and Harefield hospitals. From our earliest discussions with Guy's and St Thomas' we realised we had the chance to create something new and dynamic with colleagues who shared our values and appetite for innovation and transformation – vital for a specialist Trust with a strong reputation for breaking new ground in heart and lung disease treatment and research."

## OUR PRIVATE CARE SERVICES

Royal Brompton and Harefield hospital will continue to deliver world-class heart and lung care from our current sites for many years to come and patients will continue to see the clinical teams that they do now. Our private care services will also remain unchanged and continue to be delivered under the 'Royal Brompton & Harefield Hospitals Specialist Care' brand.

David Shrimpton, managing director of RB&HH Specialist Care, said: "We are all very excited to be part of Guy's and St Thomas' NHS Foundation Trust and have no doubt it will bring many opportunities to deliver even better heart and lung care to our private patients by accessing our new integrated healthcare services."



**Professor Ian Abbs**  
Chief executive and  
chief medical officer,  
Guy's and St Thomas'  
NHS Foundation Trust



**Dr Richard Grocott-Mason**  
Managing director,  
Royal Brompton and  
Harefield Clinical Group



**David Shrimpton**  
Managing director,  
RB&HH Specialist Care



St Thomas' Hospital



# TENDYNE

## A REVOLUTIONARY TECHNOLOGY FOR MITRAL VALVE REPLACEMENT



Patients with severe mitral regurgitation (MR) have limited treatment options and are often refused surgery due to the condition of their health or advanced age. Tendyne is a revolutionary mitral valve replacement technology that offers a safe and effective treatment option when others are not available.

### ALTERNATIVE TREATMENT OPTIONS ARE NEEDED

MR is the most common heart valve disease in developed countries. The condition can be debilitating, greatly reducing a patient's ability to take part in activities they enjoy and may result in progression to heart failure.

Mitral valve surgery for symptomatic patients is strongly recommended in current guidelines, yet data suggests that only 50% of patients with severe MR undergo conventional surgery due to prohibitively high risk.

Reasons why patients are denied surgery include factors such as advancing age, multiple co-morbidities, hostile chest, and high-risk surgical technique. Medical therapies can be used in patients who are deemed unsuitable for conventional mitral valve surgery, and these can help to relieve symptoms, but they do not rectify the underlying structural problem of a leaky mitral valve in the way surgery can.

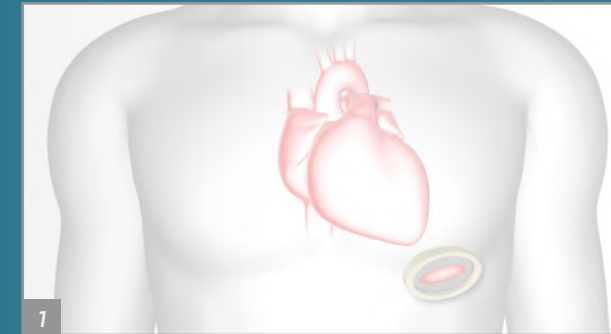
An alternative to conventional mitral valve surgery is therefore needed to provide a much-needed invasive treatment option in patients with severe MR.

### TENDYNE: A FIRST-IN-CLASS TECHNOLOGY

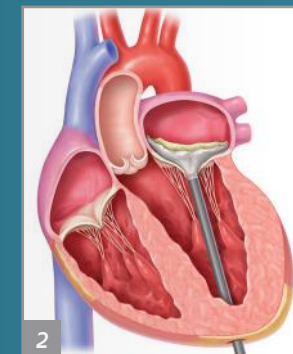
The Tendyne™ Transcatheter Mitral Valve Replacement (TMVR) is a ground-breaking technology that offers select patients with severe MR (≥ grade 3) the opportunity for a safe and effective replacement of their mitral valves.

The procedure is less invasive than conventional mitral valve surgery, requiring only a small 5cm incision between the ribs. Moreover, unlike conventional mitral valve surgery (which requires a patient's heart to be stopped and the circulation supported on cardiopulmonary bypass), the Tendyne TMVR procedure facilitates insertion of the valve directly via a catheter into a patient's beating heart with no requirement for cardiopulmonary bypass or sternotomy.

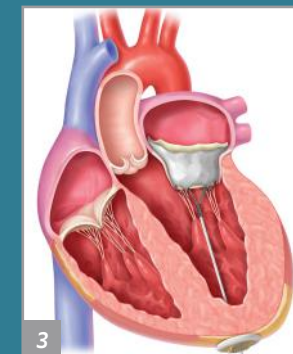
### TENDYNE TMVR PROCEDURE



A delivery system positions the Tendyne valve in the heart via an incision in the left side of the chest.



The valve is secured by applying tension to the tether, which is attached to an apical pad placed over the access site.

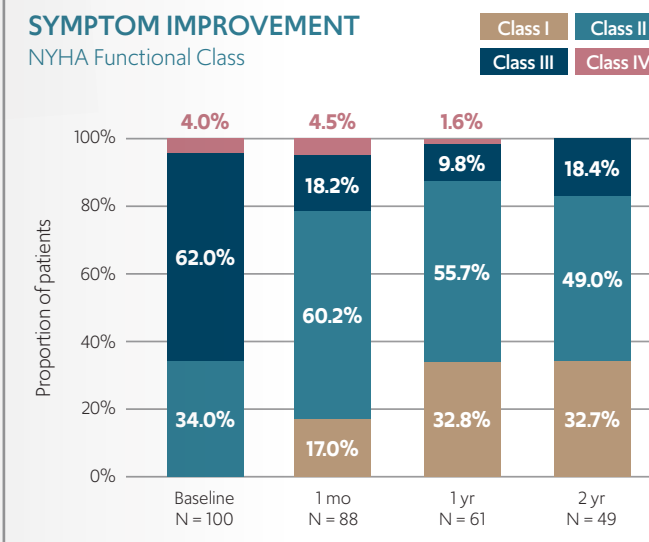


Once the Tendyne valve is optimally positioned within the mitral annulus, the delivery system is removed.

An analysis of two-year outcomes data on the first 100 patients treated with the technology for severe symptomatic MR has demonstrated complete elimination of MR in 99% of patients at 30 days and sustained MR elimination in 93% of patients at two years.

In addition, the procedure had a high 96% technical success rate reported and a significant improvement in symptom and quality of life measures. 82% of patients were in NYHA Class I/II at two years compared with 34% at baseline and there was an average 19-point increase in quality of life (KCCQ) scores over the same period.

### SYMPTOM IMPROVEMENT NYHA Functional Class



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### THE FUTURE OF MITRAL VALVE SURGERY

"This is a game-changer in mitral valve surgery. Patients who previously had limited treatment options now have one that is very safe and effective in eliminating their mitral valve regurgitation," explains Dr Alison Duncan, associate specialist in cardiology and transcatheter valve therapies.

Dr Duncan is the UK Chief Investigator of the Tendyne Global Early Feasibility Study and performed the first procedure in the world with her surgical colleagues at Royal Brompton Hospital in 2014. "I have patients who were previously suffering from heart failure due to mitral regurgitation who are now able to go the gym three times a week and are very active and full of life," she says of her experiences.

Mr Cesare Quarto, consultant cardiac surgeon at Royal Brompton & Harefield Hospitals Specialist Care, was instrumental in pioneering the first Tendyne TMVR procedures and continues to do so. He says: "We have the longest follow-up of patients of any centre in the world and we continue to see great safety and effectiveness. We are hopeful that its availability will be expanded so that it may benefit many more patients."

As Royal Brompton Hospital is the only centre in the UK that offers the procedure, both Dr Duncan and Mr Quarto offer training for other clinicians and healthcare teams around the world in its use.

The technology gained its CE Mark in January 2020 and is the first of its kind available for wider use outside of clinical trials. It is awaiting NICE approval but is available privately at RB&HH Specialist Care.



#### Dr Alison Duncan

Associate specialist in cardiology and transcatheter valve therapies

Specialises in transthoracic and transoesophageal cardiac imaging, cardiac physiology, peri-procedural (intra-operative and transcatheter valve intervention) image guidance.



#### Mr Cesare Quarto

Consultant cardiac surgeon

Specialises in cardiac surgery including complex aortic surgery, coronary artery bypass grafting, valve surgery, minimally invasive surgery and transcatheter procedures.

To find out more about Tendyne TMVR, or to refer a patient, please contact the customer services team on **+44 (0)20 3131 0535** or email **privatepatients@rbht.nhs.uk**



# Social news feed

You can keep up to date with all our latest news by following our social media pages on Facebook, Twitter and LinkedIn.

Royal Brompton and Harefield hospitals



## Leading the first UK Sarcoidosis patient event

We were proud to have hosted the first UK sarcoidosis patient event on the 1st April 2021, in collaboration with Sarcoidosis UK.

During the one-day virtual event, patients had the opportunity to hear from our specialists and specialists from across the UK, who will cover a range of topics.

Read more on

## Pacemakers and Implantable Devices

Dr Rebecca Lane, consultant interventional cardiologist, discusses pacemakers, different types of defibrillators, resynchronisation therapies, loop recorders and new technologies in her webinar.

Read more on



Recognising and treating sleep problems can help individuals cope better with the anxiety and stress brought about by lockdowns and may also have important impacts on physical health and immune function.

Dr Alanna Hare  
Consultant physician in respiratory and sleep medicine



## World Sleep day

For World Sleep day, Dr Alanna Hare, consultant physician in respiratory and sleep medicine, shares why people might not be sleeping as well during the COVID-19 pandemic and what can be done about it.

Read more on



## Effectively treating angina

One of our cardiology experts discusses how we can help treat angina even when other treatment options haven't worked.

Read more on

Ms Rashmi Yadav  
Consultant cardiac surgeon

Ms Yadav is an international expert in minimally invasive transcatheter beating-heart mitral valve repair (NeoChord) and replacements, and is part of the ground-breaking transcatheter mitral heart team.



## Celebrating International Womens Day

Ms Rashmi Yadav, consultant cardiac surgeon based at Royal Brompton Hospital, talks about her route into cardiac surgery, the experiences that shaped her as a woman in this field of work, and her thoughts on how important it is to encourage more women to follow their dreams to become a surgeon.

Read more on



## PICS post COVID & management of long term COVID symptoms

In his webinar, Dr Sunny Kaul discusses the latest insights on post-intensive care syndrome (PICS) and the management of patients with long term COVID-19 symptoms within primary care.

Read more on

Royal Brompton & Harefield Hospitals  
**EDUCATION**

## Introducing our new education and training website: **RB&HH Education**

We want every patient to access the best heart and lung care available, wherever they are in the world – and we believe the key to achieving this is your professional development.

Whether it's to stay up to date with the latest treatment guidelines or learn about new procedures available to your patients, we can support you with expert training and guidance.

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