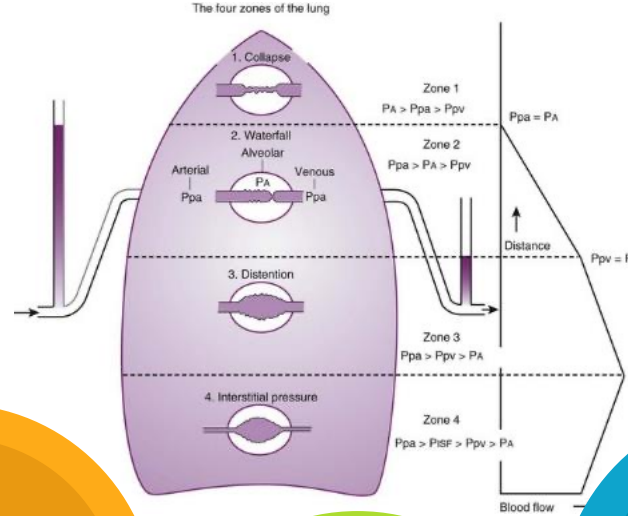
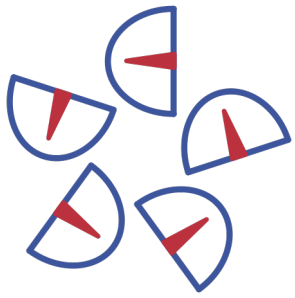


# CLAP Snaps

5 Key Messages  
Thoracic Update Presentations  
Thursday 29<sup>th</sup> May 2021

# Consequences of OLV - Dr Michiel Du Toit



## Hypoxic Pulmonary Vasoconstriction

HPV is maximum when 30% - 70% of the lung is hypoxic and most effective in low-resistance pulmonary arteries.



## Cardiac Output

Direct correlation between increasing CO and improving oxygenation during OLV



## West Zones

Perfusion is not uniform across the lungs



## v/Q Mismatch

GA drops the FRC of both lungs by 15-20%



## Pendelluft

"Air pendulum"  
Gas moves back and forth between more- and less-recruited lung units

# Thoracic Pre-Assessment – Dr Dirk Vrancken



1

## 3 Key Elements

1. Respiratory Mechanics  
(FVC >40% pred)
2. Cardiopulmonary Reserve  
(VO<sub>2</sub> Max >15ml/kg/min)
3. Lung Parenchymal Function  
(DLCO >40% pred)

2

## DLCO

- (Diffusion capacity for carbón monoxide)
- Most important predictor of mortality and postoperative complications in patients undergoing resection

3

## Predicted Postoperative (PPO) Lung Function

- o PPO FEV<sub>1</sub> and PPO DLCO
- Preoperative values
- The amount of lung tissue to be resected
- Contribution to overall lung function

4

## Risk

- Low Risk – 1% Mortality
- Medium Risk – 2-9% Mortality
- High Risk >10% Mortality

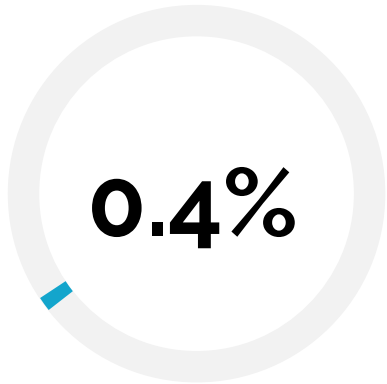


5

## To Operate or Not?

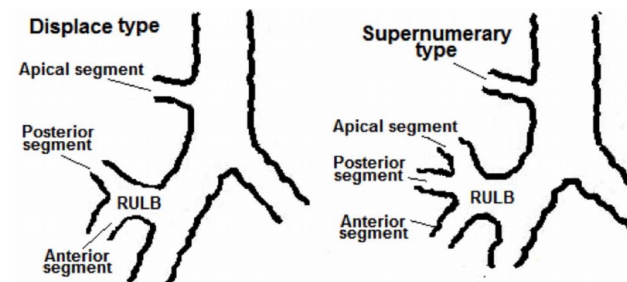
Given the poor prognosis of cancer without surgery and patients' willingness to accept higher levels of risk, every effort should be made to optimize the medical condition of a patient so that surgery can be considered

# Thoracic Anatomy – Dr Siew-Ling Harrison



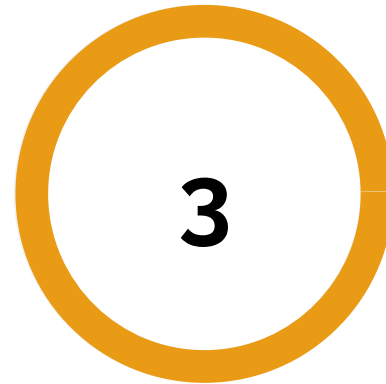
1 in 250 people have abnormal bronchial takeoff above the carina

## Bronchi



The mediastinum has 4 compartments: superior, anterior, middle and posterior. Consider the effects a mass in a section could have

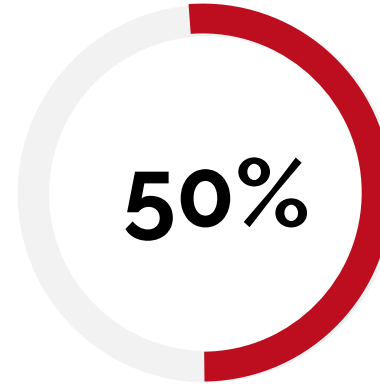
## Mediastinum



VATS typically involves 3 ports:

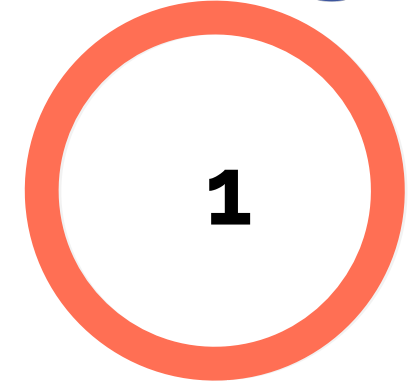
- Ant. camera port (7/8th ICS)
- Post. Port for retraction & stapling (8th ICS)
- Utility port (4th ICS)

## Surgical Access



Pneumonectomy removes half of the pulmonary vascular bed, increasing PVR and RV afterload – risks pushing pt into RV failure. Stretching of pulmonary veins *may* precipitate AF!

## Vasculature



Thoracic Inlet tumours affect structures around the 1st rib and T1 vertebra. Initial symptoms arise from compression of the lower portions of the brachial plexus as tumour grows from below

## Thoracic Inlet

# Troubleshooting in Thoracics – Dr Simon Stacey

01

## DIFFICULT AIRWAY

Don't get fixated on lung isolation – secure the airway with a single lumen tube and go from there

02

## DIFFICULT AIRWAY

Airway exchange to a DLT can be challenging – and TRAUMATIC – try the Cook soft-tipped extra-firm Exchange catheter for DLTs

03

## Laryngectomy

Consider a DLT through the laryngectomy!

04

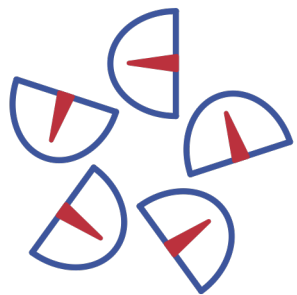
## Low SaO<sub>2</sub> on OLV

Isolate straight after GA – if patient desaturates early, discuss with surgeons - case is likely to be challenging (realign expectations!)

05

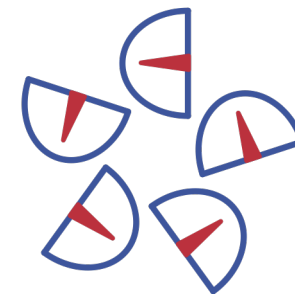
## Which DLT?

Vivasight – great for intra-op checks, large bronchial cuff (permits downsizing) Red Robertshaw – largest eye for RUL teeth-resistant cuff



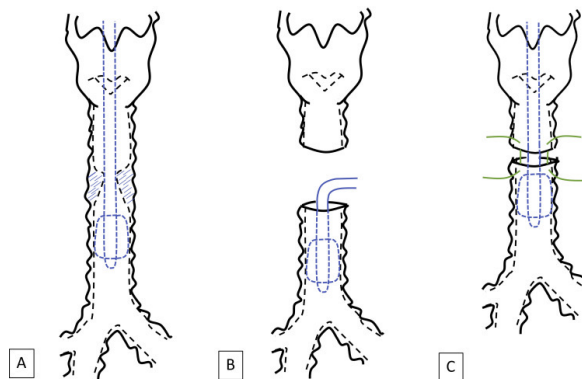


# Tracheal Reconstruction Surgery



## Keep your Chin Down!

A temporary chin stay suture helps to reduce stretching of the tracheal anastomosis post-op

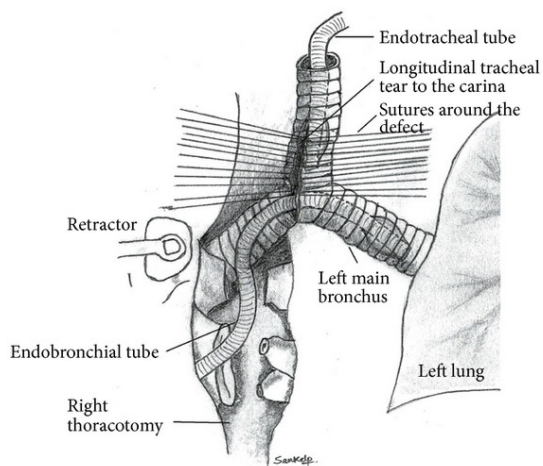


## Cross-Table Ventilation

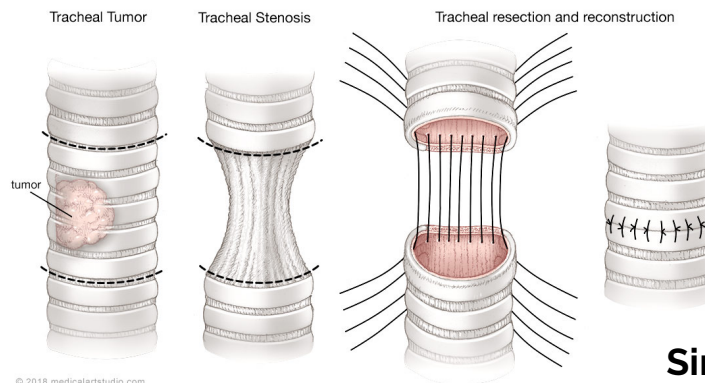
Direct intubation of trachea/bronchus with long flexometallic ETT by surgeons

## Cross table ventilation 2

(A daunting but uncommon procedure!)



"The celebrity [*tracheal reconstruction*] surgeon who used love, money, and the Pope to scam an NBC news producer!"





# Anaesthesia for Tracheal Pathology & Surgery

## Dr Stephen Shepherd



### Where is the Lesion?

Extrinsic or Intrinsic?

Lymphoma  
Thymoma  
Germ cell tumour  
Bronchogenic CA  
Thyroid Mass



### Assessment

Airway exam  
+/- FNE if safe  
Systemic features  
(SVCO?)

Imaging (CXR, CT  
H&N, Flexi Bronch)



### Airway Mgmt

Temporising  
measures:  
Adrenaline nebs,  
heliox, steroids

IV or gas induction?



### Stent Insertion

LMA or ETT

Simultaneous  
scope & vent  
Intermittent apnoea  
Ventilating scope  
Jet vent



### Tracheal Resection

Not an  
emergency!

Functionally good  
status

Competent glottis

Have to be  
extubatable!