

Step by Step©

STEP 8

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Main Objectives

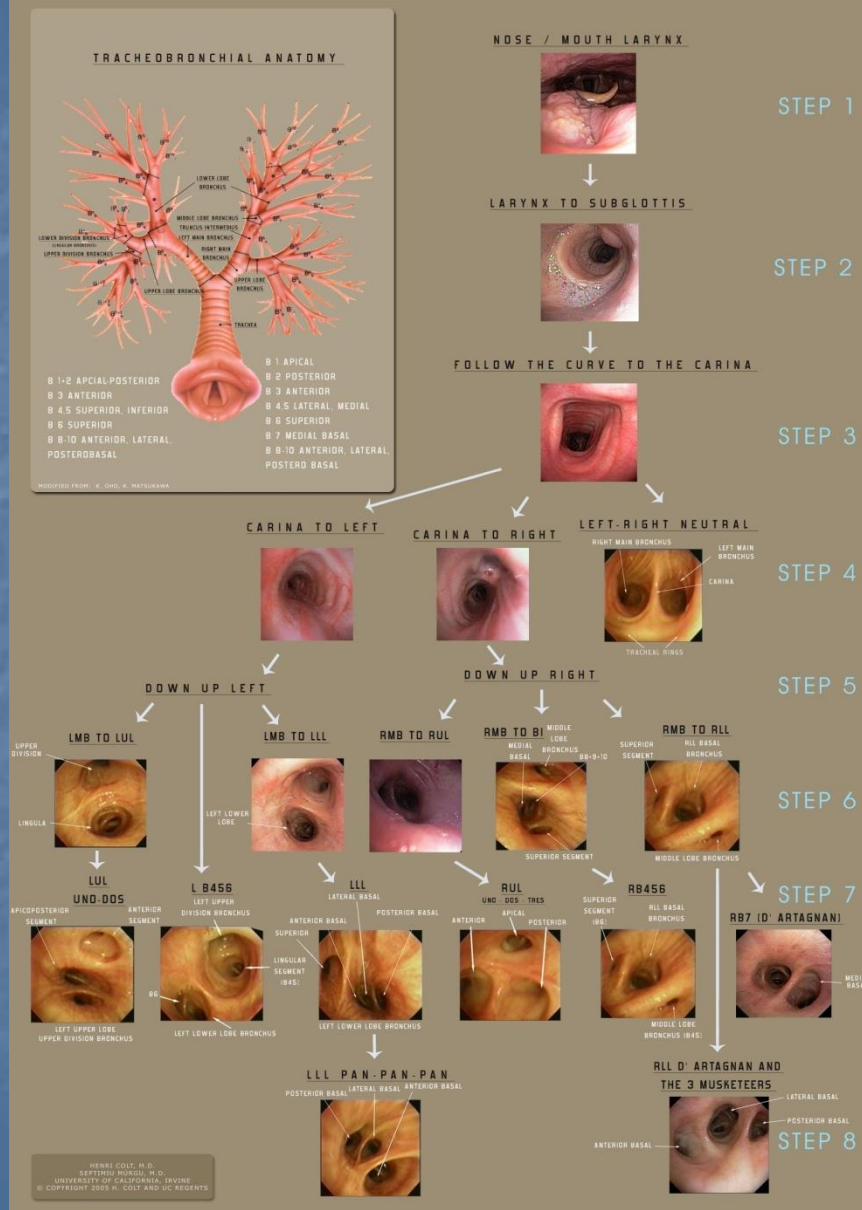
- To learn bronchoscopic techniques using an approach similar to learning to dance, play tennis or play a musical instrument.
 - To develop “muscle memory”
 - To develop a “systematic approach” to bronchoscopic inspection.
- To learn how to handle the flexible bronchoscope and to accurately identify and enter lobar and segmental bronchial segments with ease.

The Art of Bronchoscopy

8 Basic Principles

- 1. The bronchoscope wants to do the bronchoscopy*
- 2. Stay in the midline
(Get off the wall).*
- 3. Moderation in everything;
slow down, think, act.*
- 4. If you don't know where you are
you probably shouldn't be there*
- 5. Force is wrong. Return to what you
know; then move on and grow.*
- 6. Slow down to finish faster.*
- 7. Treasure basic values: peace,
harmony and kindness*
- 8. You and the bronchoscope are one*

BRONCHOSCOPY STEP BY STEP

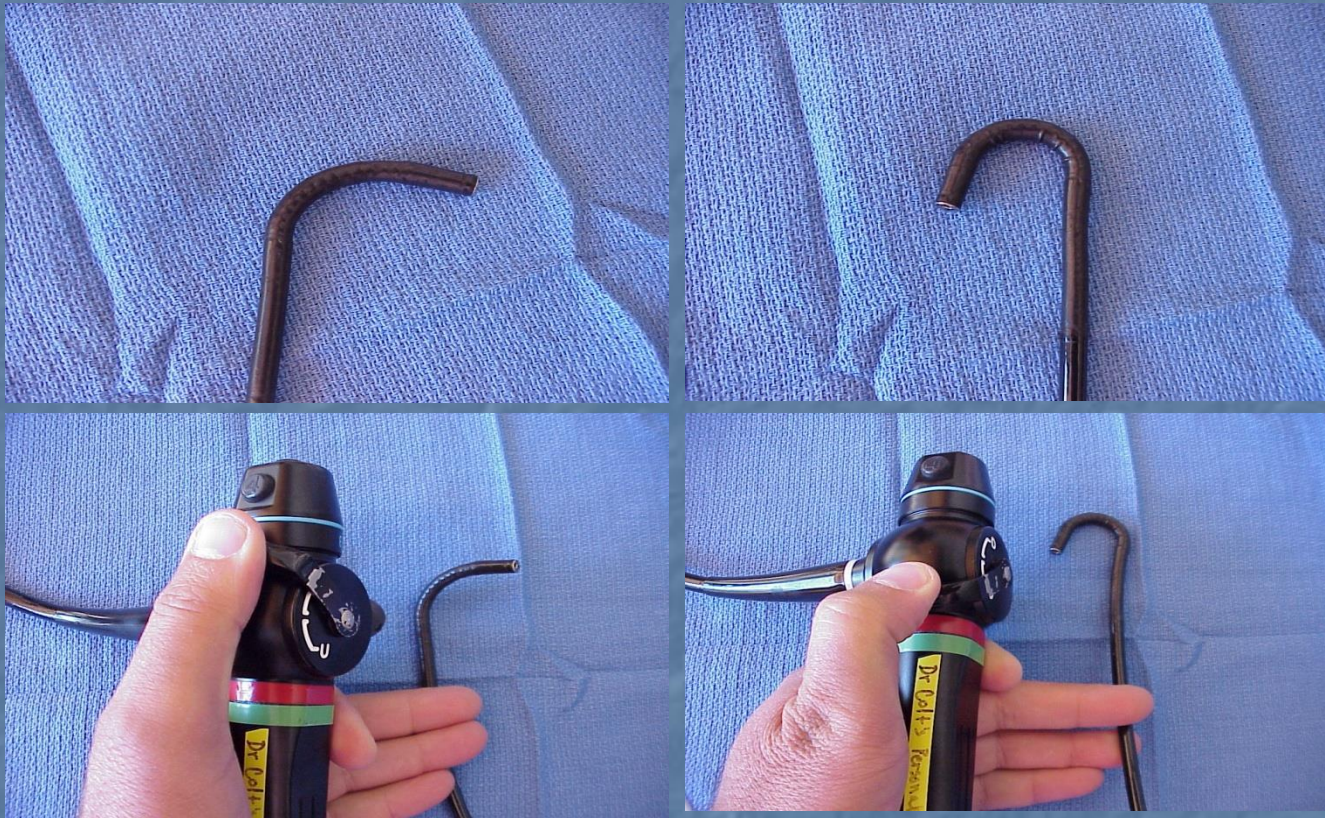


8 steps

Bronchoscopy exercises

Group 1	Nose/mouth to larynx Larynx to subglottis Follow the curve to the carina	Carina to left Carina to right Left right neutral	Down-up right Down-up left
Group 2	LMB to LLL LMB to LUL	RMB to RLL RMB to BI RMB to RUL	Larynx to RLL Larynx to LLL
Group 3	LLL pan pan pan LUL uno dos LLL B6-8910	LB456 RB456 RLL medio-basal (D'Artagnan)	RLL D'Artagnan and the three musketeers RUL uno dos tres

Background A: Flexion-Extension



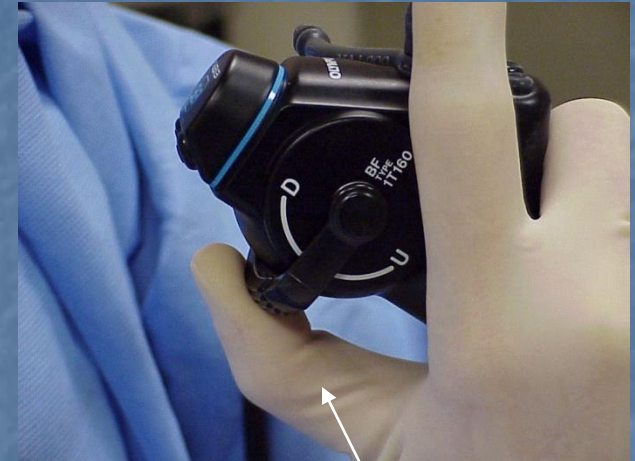
Extension

Flexion

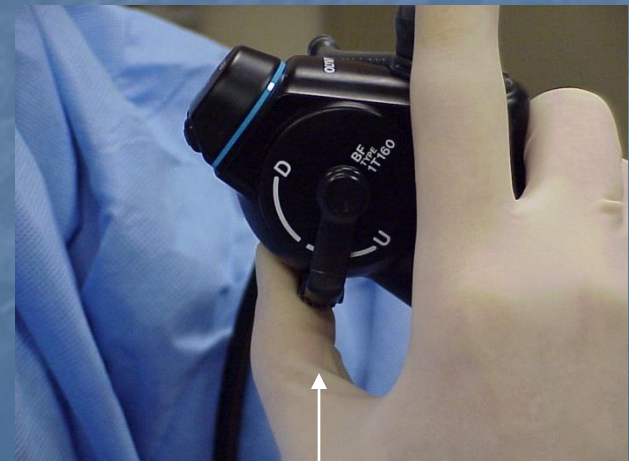
Background B: Down-Neutral-Up positions



Lever down



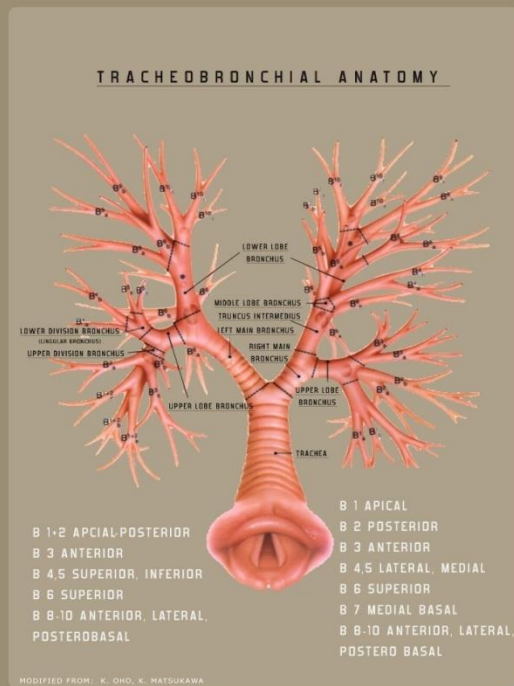
Lever straight (Neutral)



Lever up

Group 1 Exercises

● BRONCHOSCOPY STEP BY STEP ●



NOSE / MOUTH LARYNX



STEP 1

LARYNX TO SUBGLOTTIS



STEP 2

FOLLOW THE CURVE TO THE CARINA



STEP 3

CARINA TO LEFT



CARINA TO RIGHT



LEFT-RIGHT NEUTRAL



STEP 4

DOWN UP LEFT

DOWN UP RIGHT

STEP 5

Step 1: nose to larynx

- The scope is advanced from the nose to the larynx .
- This step includes local anesthesia.

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Click to continue



From the head

Step 2: larynx to subglottis

- From the larynx the trachea is entered to the subglottic area.
- **If from the head:**
once the vocal cords are passed the scope is slightly flexed downwards.
- **If from the front:**
once the vocal cords are passed the scope is slightly flexed upwards.

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From the front

Click to continue



Step 3: Follow the curve to the carina

- The Trachea is not a “straight pipe”;
- It deviates posteriorly and slightly to the right when approaching the main carina.

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From the head

Step 4a: Carina to left main bronchus

- From the neutral position the LMB is entered just by twisting the wrist to the left and advancing for 1 -2 cm.



From head

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Click to continue



Step 4b: Carina to right main bronchus

- From the neutral position the RMB is entered just by twisting the wrist to the right and advancing the scope for 1 -2 cm.



From head

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Click to continue



Step 4c: Left-right-neutral



Click to
continue

- From the neutral position the left and right main bronchi are entered alternatively just by twisting the wrist and advancing the scope for few cm.

From head

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Step 5a: Down-up-left main bronchus

- The scope is slowly advanced the pulled back up the LMB while always keeping it in the middle of the airway lumen.

From the front

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Step 5b: Down-up right main bronchus

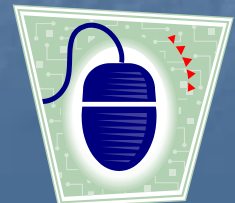
- The scope is slowly advanced down the RMB to RLL and pulled back upwards while always keeping it in the middle of the airway lumen.

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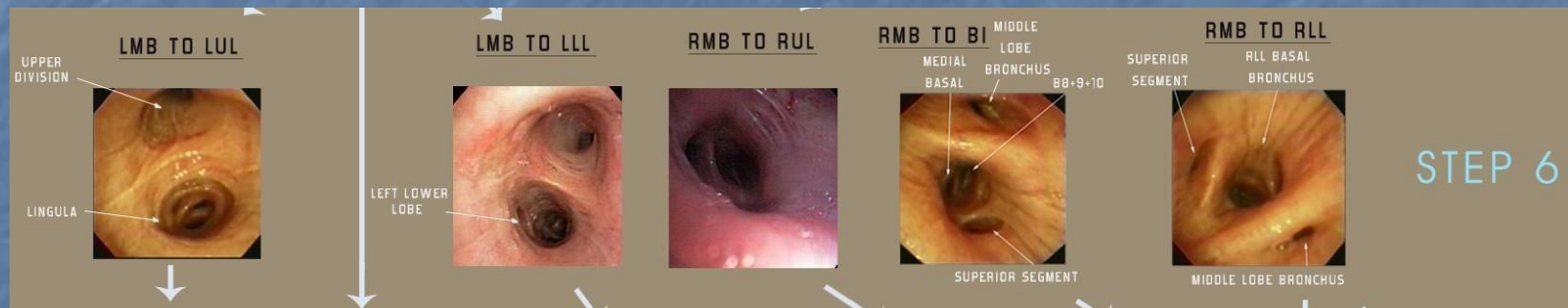


From the front

Click to continue



Group 2 Exercises



Step 6a: Left main to left upper lobe bronchus

- From the LMB the scope is advanced to the entrance of the LUL bronchus.

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From the front

Click to continue



Step 6b: Left main to left lower lobe bronchus

- The scope is advanced down the LMB to the entrance of the LLL bronchus.

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From the front

Click to continue



Step 6c: Right main to right upper lobe bronchus

- The scope is advanced down the RMB then with the wrist twisted 60 degrees from midline the scope is flexed up to the entrance of RUL.

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From the front

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Step 6d: Right main to bronchus intermedius

- From the carina advance the scope down the RMB to the distal bronchus intermedius and visualize the entrance to RB456 and the basal pyramid.

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From the front

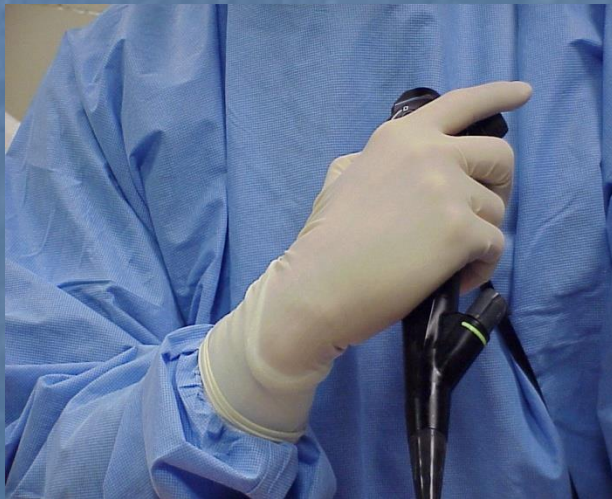
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Step 6e: Right main to right lower lobe bronchus

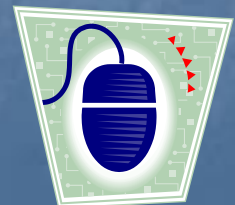
- Advance the scope from the carina to the entrance of the RLL while always keeping it in the midline.

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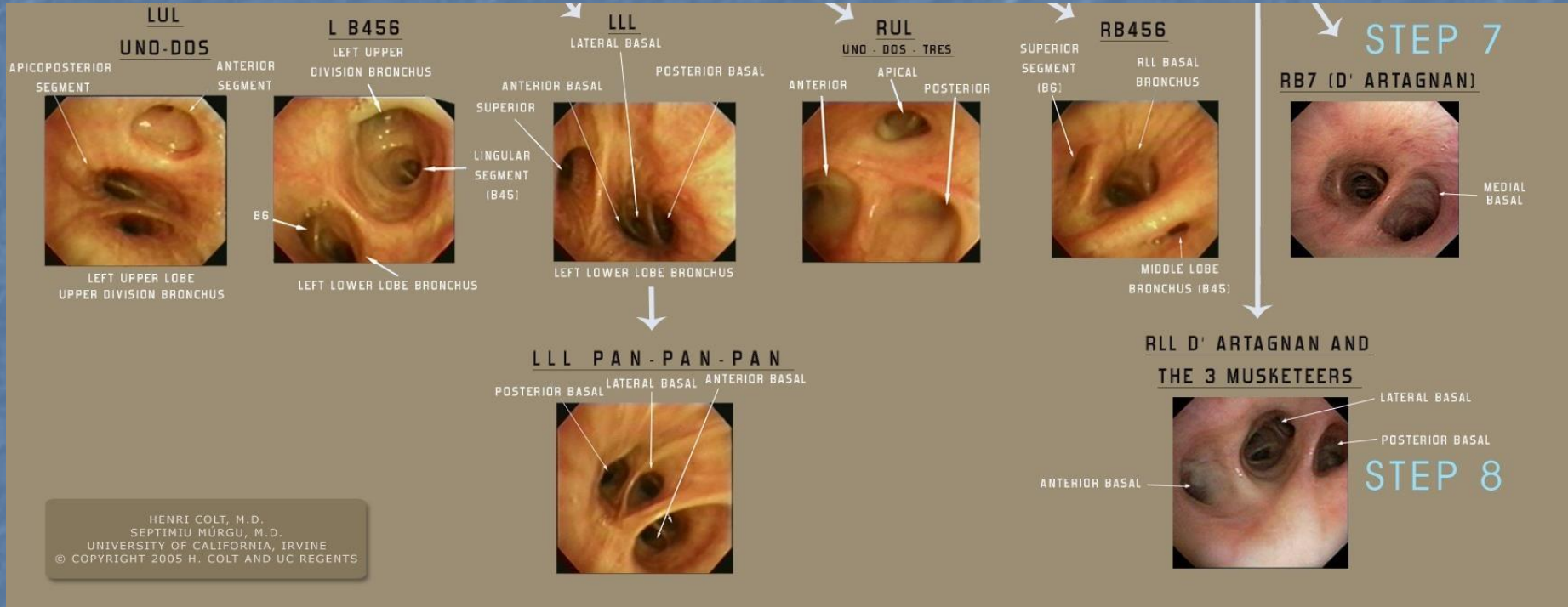


From the front

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Group 3 Exercises



Step 7a: Left upper lobe uno dos

- From the carina, the scope is advanced to LUL entrance; there, just by thumb movement, the lingula and upper division bronchus are visualized.

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From the head

Click to continue



Step 7b: Left before five six (LB 456)

- From the LMB, the lingula is entered, then the scope is pulled back into the distal LMB and the scope is advanced into the superior segment of the LLL.
- ! Wrist movements are “in the mirror”

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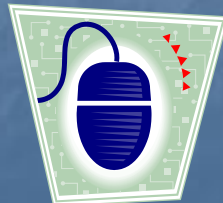
From the head

Step 7c: Left B6-8,9,10

- With the scope at the LLL bronchus entrance, the superior segment is entered, then alternately, the antero, lateral and postero-basal segments of the LLL are entered.

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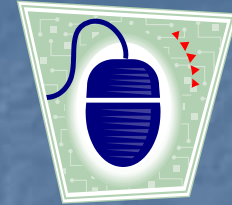


From the head

Step 7d: Right upper lobe uno-dos-tres

- From the RMB the scope is advanced and flexed up into the RUL bronchus where just by wrist and thumb movements the three segments are visualized; then the scope is withdrawn to the main carina.

Click to continue



From the head

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Step 7e: Right before five six (RB 4,5,6)

- From the distal bronchus intermedius, the RML and superior segment are entered alternatively;
- ! Wrist movements are “in the mirror”.

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Click to continue



From the head

Step 7f: Right medial basal (RB7) (d''Artagnan)

- From the distal bronchus intermedius the scope is advanced and the medio-basal segment is entered.

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Click to continue



From the front

Step 8a: Left lower lobe basal pyramid

- From the entrance of the LLL bronchus go in and out of the 3 basal segments, then withdraw the scope to the carina.

Pan - Pan - Pan

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Click to continue



From the head

Step 8b: Right lower lobe basal pyramid (D'Artagnan and the three musketeers)

- From the carina advance the scope to the RLL bronchus entrance and then enter the medial-basal segment, pull back and then examine the other three segments of the basal pyramid.

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From the front



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11/1/2014

STAY OFF THE WALL

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This presentation is part of a comprehensive curriculum for Flexible Bronchoscopy. Our goals are to help health care workers become better at what they do, and to decrease the burden of procedure-related training on patients.

The Essential Bronchoscopist



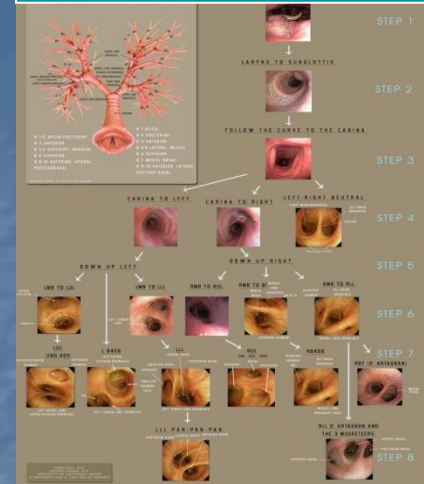
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2. Computer-based simulations, didactic lectures, and image encyclopedia.
3. Bronchoscopy step-by-step©: Practical exercises, skills and tasks, competency testing.
4. Guided apprenticeship.
5. Learning the art of Bronchoscopy.

Step by Step©



The Art of Bronchoscopy



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8. You and the bronchoscope are one

DEMOCRATIZATION AND
GLOBALIZATION OF KNOWLEDGE

BRONCHATLAS©



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