

# Particularitati ale sistemului respirator la copil

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Bucuresti

# Cuprins

- Particularitati fiziologice
- Particularitati anatomice
- Afectiuni respiratorii frecvente
- Echipament specific pentru copii

# Plamanul

- Dezvoltare din tubul endodermic
- Nastere 1 milion alveole
- 1 an 100 milioane
- 6 ani 300 milioane

# Particularitati fiziologice

- Complianța pulmonară = adult
- Complianța toracică >> adult
  - Mușchii intercostali se opun diafragmului
- Coaste orizontalizate
  - Respirație diafragmatică
- Rezistențe crescute în caile aeriene    Ø redus

# Particularitati fiziologice

	Nou Nascut	Adult	Unitati
FResp	$50 \pm 1$	$12 \pm 3$	Bpm
Vol curent	21	575	mL
	6–8	6–7	mL/kg
Minut volum	1050	6400	mL/min
	200–260	90	mL/kg/min
Ventilatie alveolara	665	3100	mL/min
	100–150	60	mL/kg/min
Vd/Vt	0.3	0.3	
Vo <sub>2</sub>	6–8	3–4	mL/kg/min
CapacVitala	120	4000	mL
CRF	80	3000	mL
	30	30	mL/kg
Capac Pulm	160	6000	mL
Total	63	82	mL/kg

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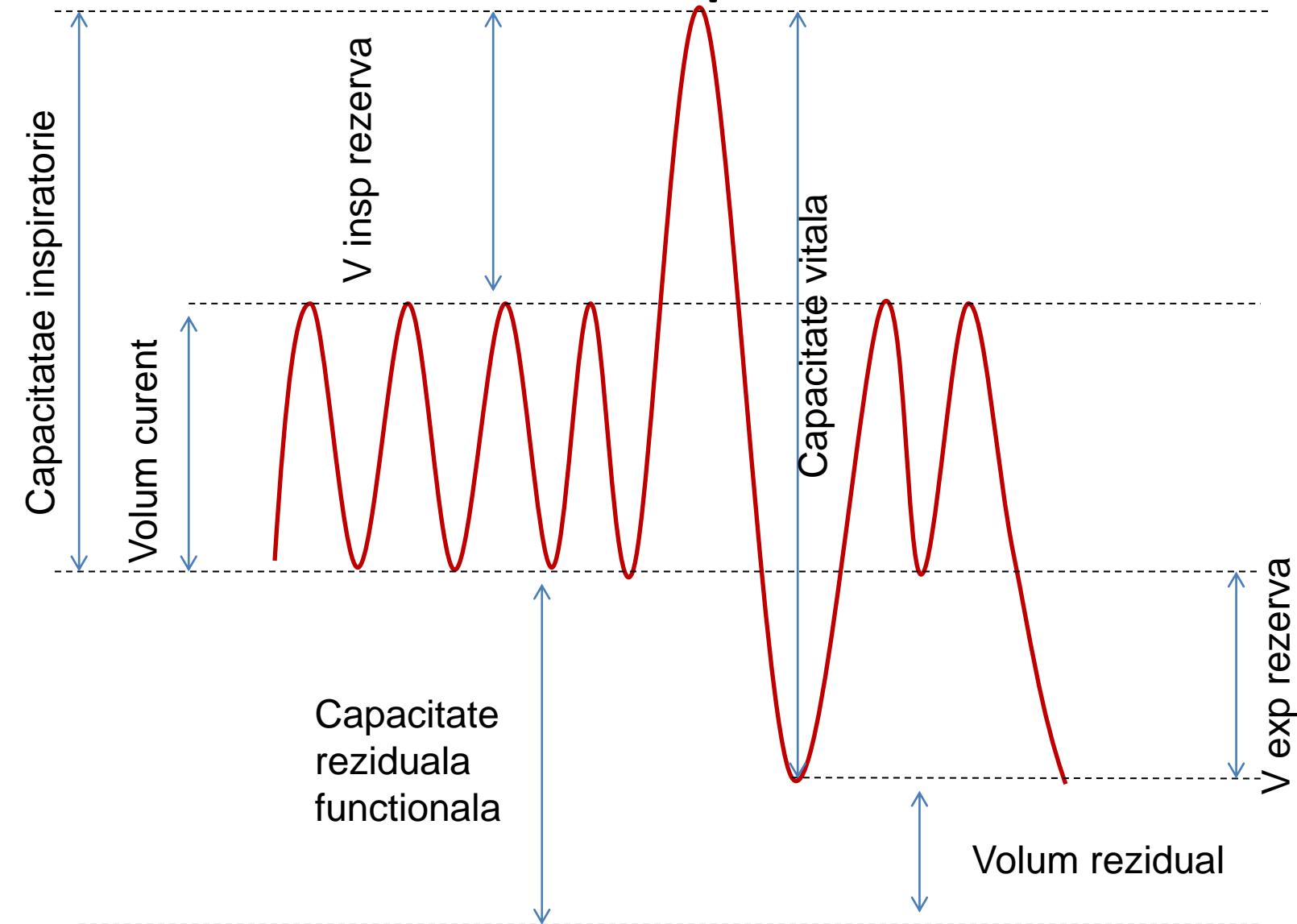
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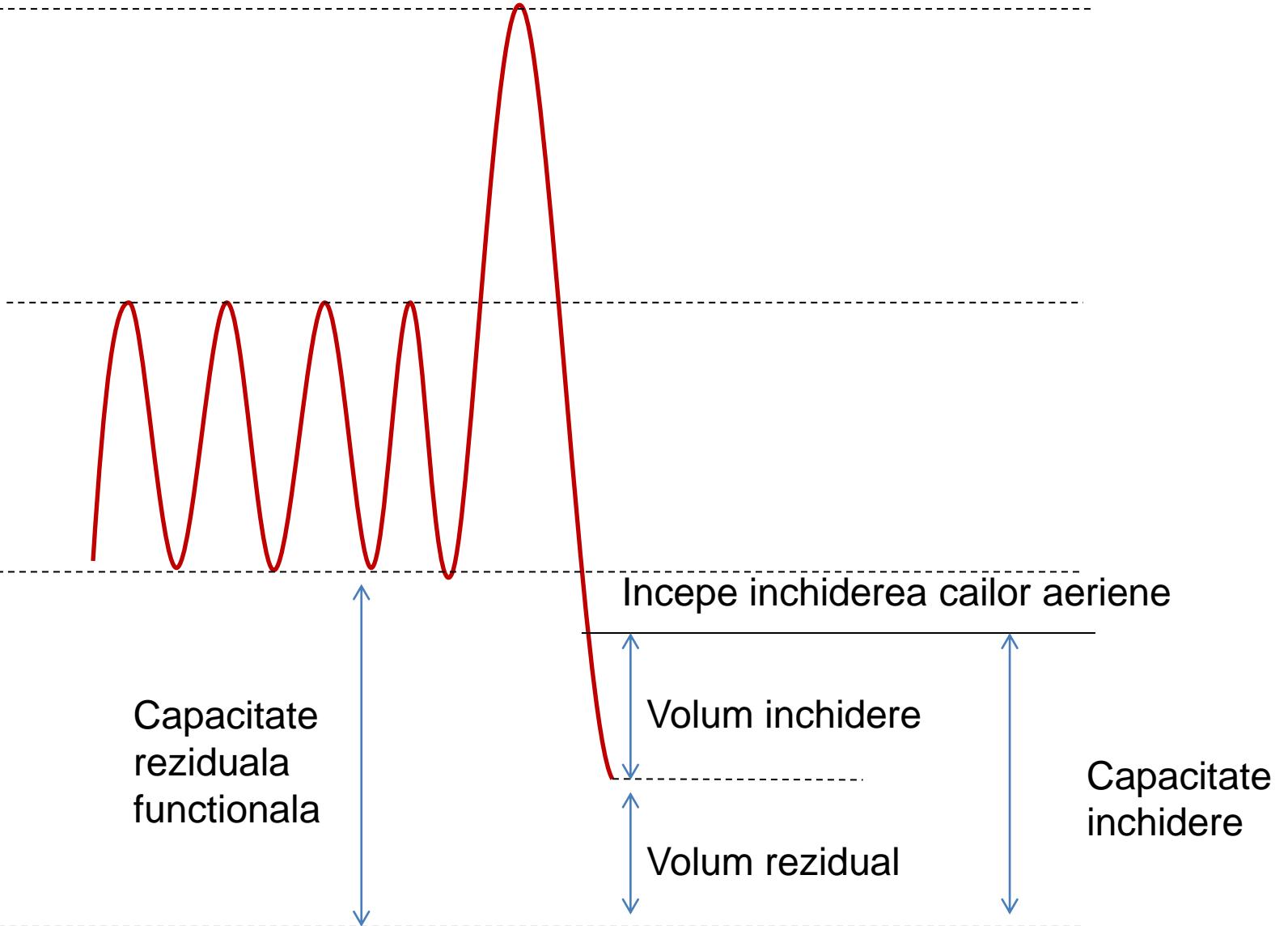
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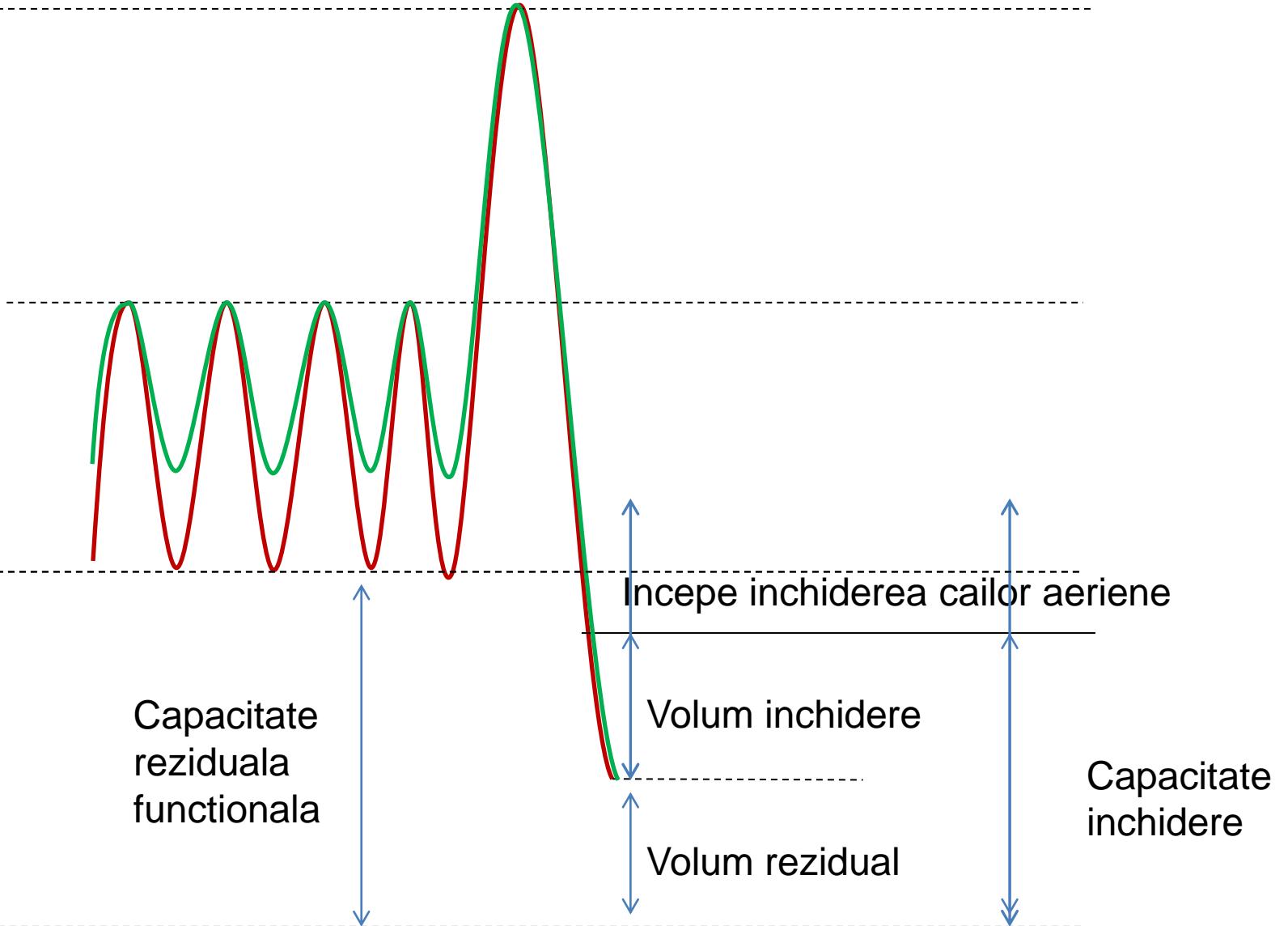
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# Volume pulmonare





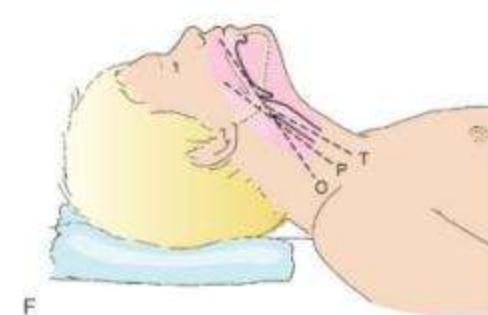
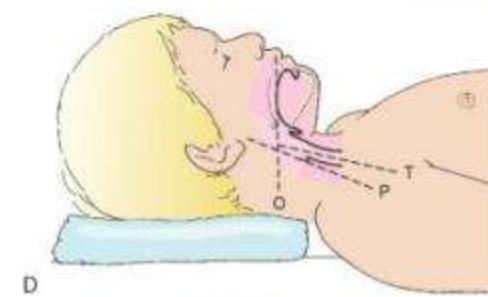
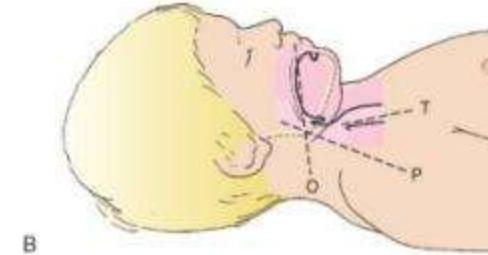
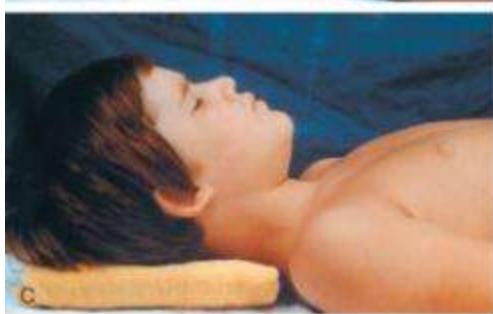


# Particularitati anatomicice

- Capul voluminos (occiput)
- Gat scurt



# Particularitati anatomicice



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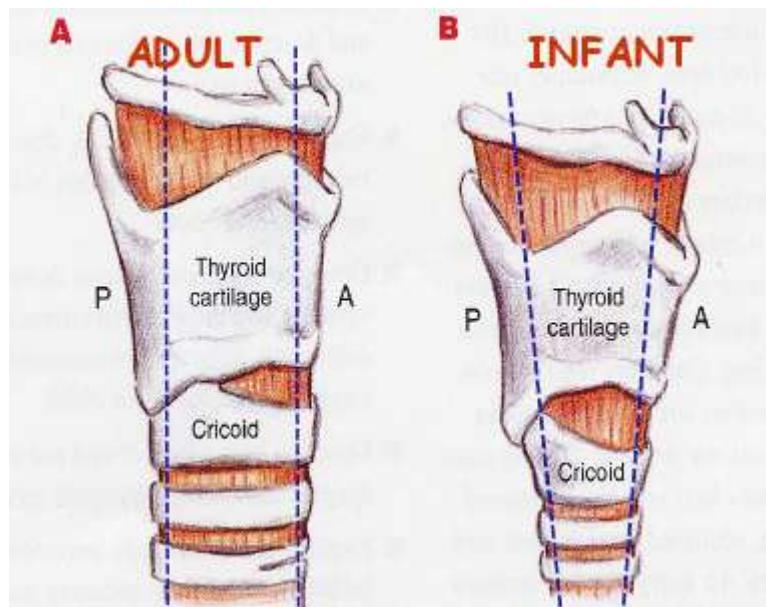
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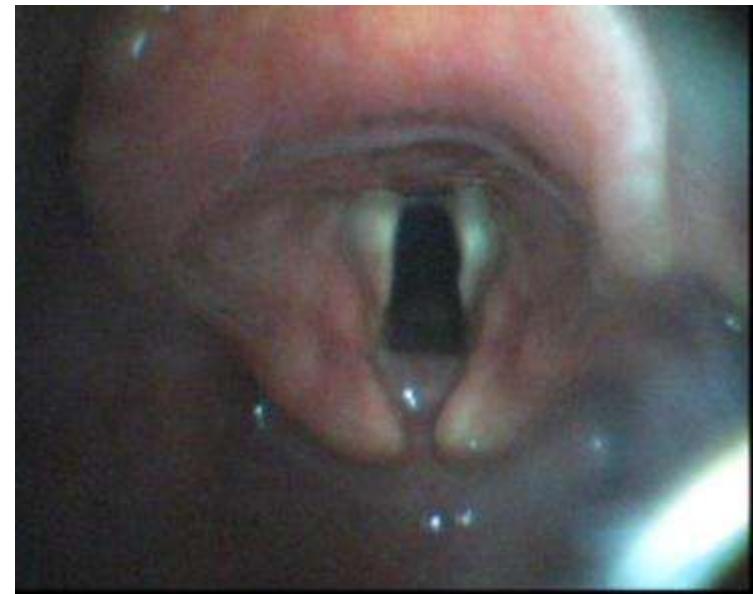
# Particularitati anatomicice

- Glota sub forma de palnie (cartilajul cricoid mai ingust)



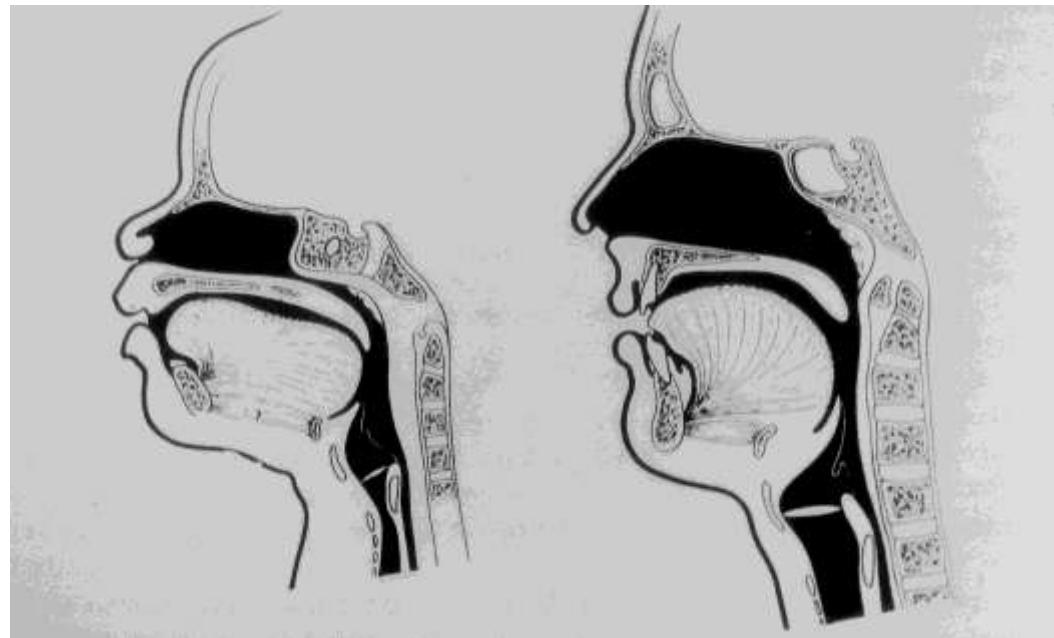
# Particularitati anatomicice

Epiglota lunga si sub forma de V



# Particularitati anatomicice

- Macroglosie
- Laringe inalt (C4)



# Particularitati anatomicice

- Trahee scurta (4-5 cm la nou nascut)
- Narine inguste

# Afectiuni frecvente

- Medicale

# Raceala comuna

- Tuse, rinoree, fara febra (redusa), conjunctivita
- 90% virusi din care 40% rinoavirusuri
- Autolimitat dar:
  - 4-6 sapt hiperreactivitate cai aeriene !!!
- Alte afectiuni: rinita vasomotorie, rinita alergica, laringita, traheobronsita, pneumonia
- Progreseaza: otita, sinuzita, pneumonie

# Aspiratie de meconiu

- Frecv la postmaturi
- Meconiu in cailea aeriene
  - Obstructie + inflamatie
  - Pneumotorax (20%)
  - Hipertensiune pulmonara
- Suport ventilator -frecvent
  - HFOV
  - Oxid nitric

# Tahipnee tranzitorie a nou nascutului

- Rezorbtie lenta a lichidului pulmonar
- 24-48 ore tahipnee, cianoza
- Rx hiluri accentuate, scizuri vizibile
- Supliment O<sub>2</sub>, CPAP nasal, IOT – VM
- DG ≠ pneumonie

# Displazia bronhopulmonara

- Tahipnee, tiraj, supliment O<sub>2</sub> > 28 zile
- Pacienti care au necesitat suport ventilator
- Prematuri >> NN la termen
- Risc ↑ infectii
- Evolutie f. dificila a suprainfectiilor
- Risc ↑ deces





# Mucoviscidoza

- Boala genetica
- Mucus vascos
  - Plaman, pancreas, ficat, gl digestive,
  - Manifestari pulmonare, digestive, hepatice
- Dg = boala pulmonara cronica, deficit pancreas exocrin, Na↑ in transpiratie

# Mucoviscidoza

- Tuse cronica, infectii pulmonare frecvente/cronice (stafilococ, pseudomonas)
- Evolutie → supuratie pulmonara cronica
- Complicatii: pneumotorax, hemoptizie, cord pulmon
- Denutritie severa
- Protezare respiratorie
  - Pentru afect. potential reversibile: pneumotorax, hemoptizie, transplant pulmonar



03/03/2006

# Astmul bronsic

- Afectiune cronica
  - Inflamatie
  - Bronhospasm
  - Edem
  - Hipersecretie mucus
- Varsta de debut = 4 ani
  - 60% remisiune in adolescenta

- Tratament
  - O<sub>2</sub>
  - Bronhodilatatoare  $\beta_2$  agonisti
  - Anticolinergice (ipratropium)
  - Cromolin
  - Teofilina
  - Inhibitori leucotriene (montelukast)
  - Corticoizi







# Bronsiolita

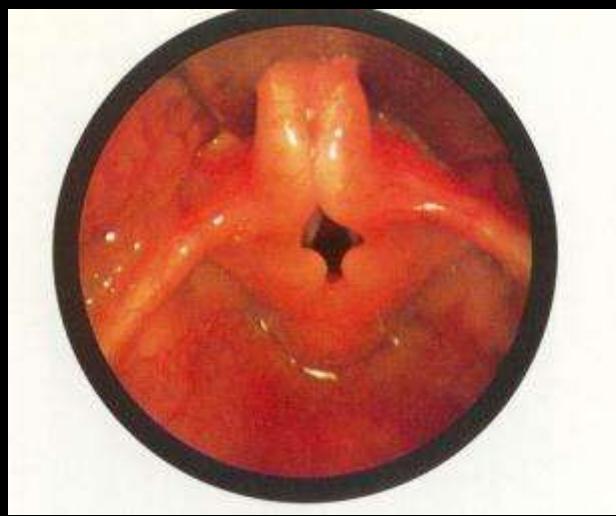
- debut 2-8 luni (max 2 ani)
- Infectie virală VSR
  - Mucoasa bronsiilelor =Edem hipersecretie
- Polipnee, tuse, wheezing, batai aripi nazale, tiraj
- Trat
  - β adrenergice(adrenalina)
  - corticoizi

# Afectiuni frecvente

- Chirurgicale

# Stenoza traheala

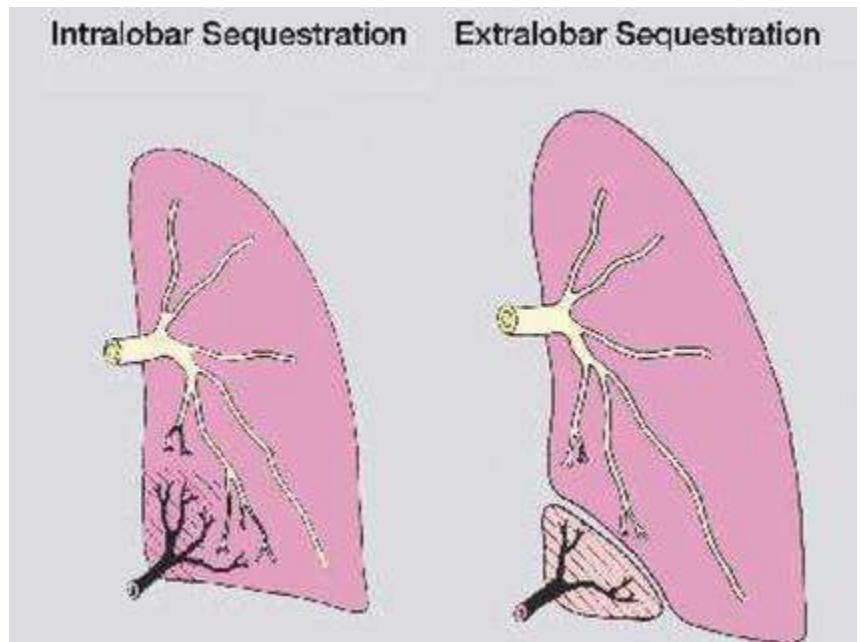
- Intubatie prelungita sau congenital
- Dg ≠
  - laringomalacie,
  - paralizia corzi vocale
  - Membrana laringiana





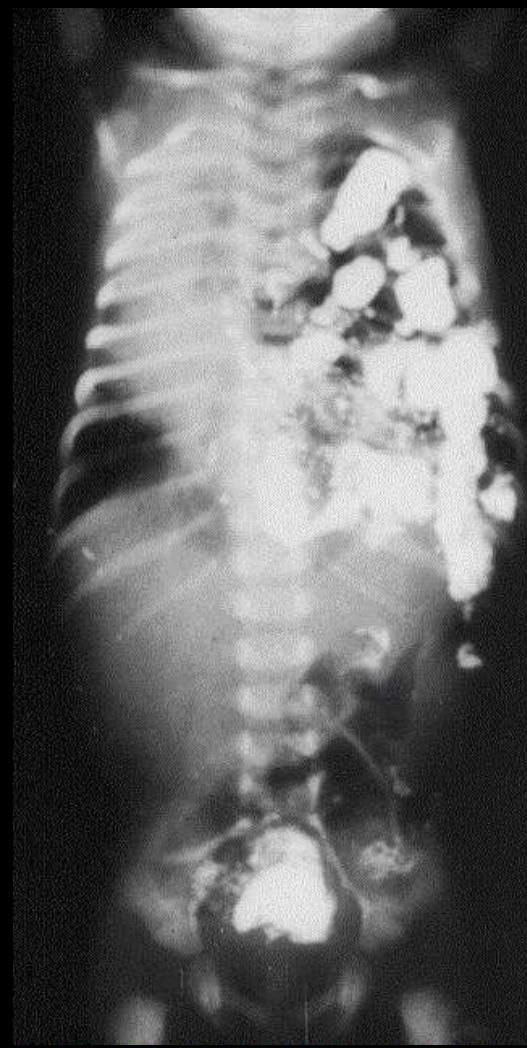
# Sechestratia pulmonara

- Defect embriogenetic
- Masa tesut nefunctional
- Tuse, pneumonie, insuficienta cresterii



# Hernia diafragmatica

- Defect de inchidere a diafragm (stg)
- Hernierea continut abdominal in torace



# Hernia diafragmatica

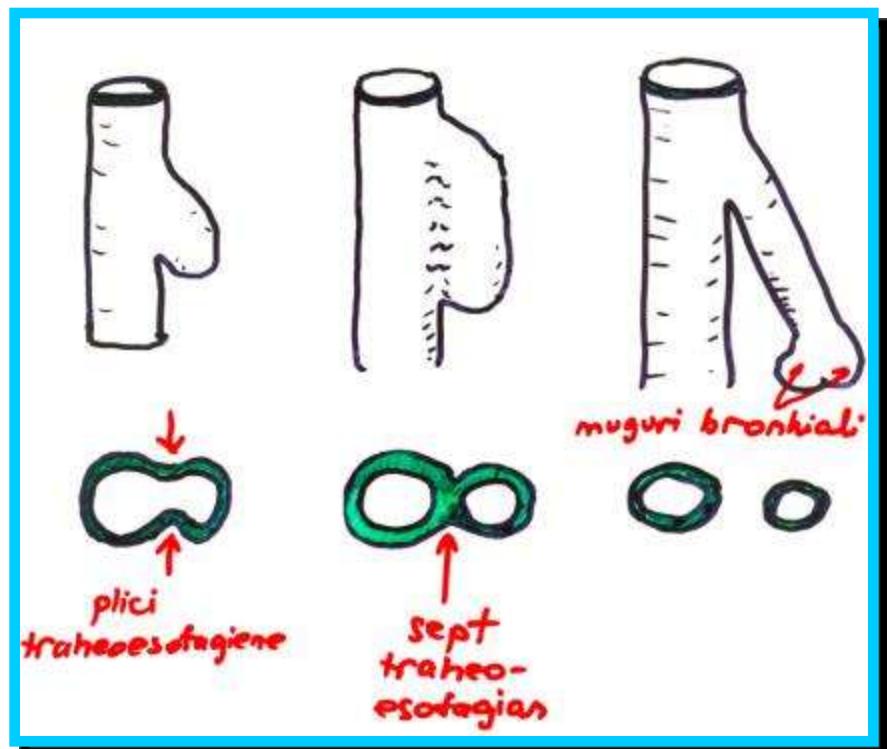
- Insuf respiratorie:
  - Hipolazia pulmonara
  - Distensia anselor/stomac in torace
- Urgenta medicala
  - Ventilatie mecanica   ↓ hipertensiunii pulmonare

# Hernia diafragmatica

- Risc pneumotorax
  - volume ↓ ,HFOV, NO
  - Drenaj pleural imediat disponibil
- Interventie chirurgicala
  - Integrarea viscerelor in abdomen
  - Inchiderea defectului cu plasa
  - Sindrom compartiment abdominal

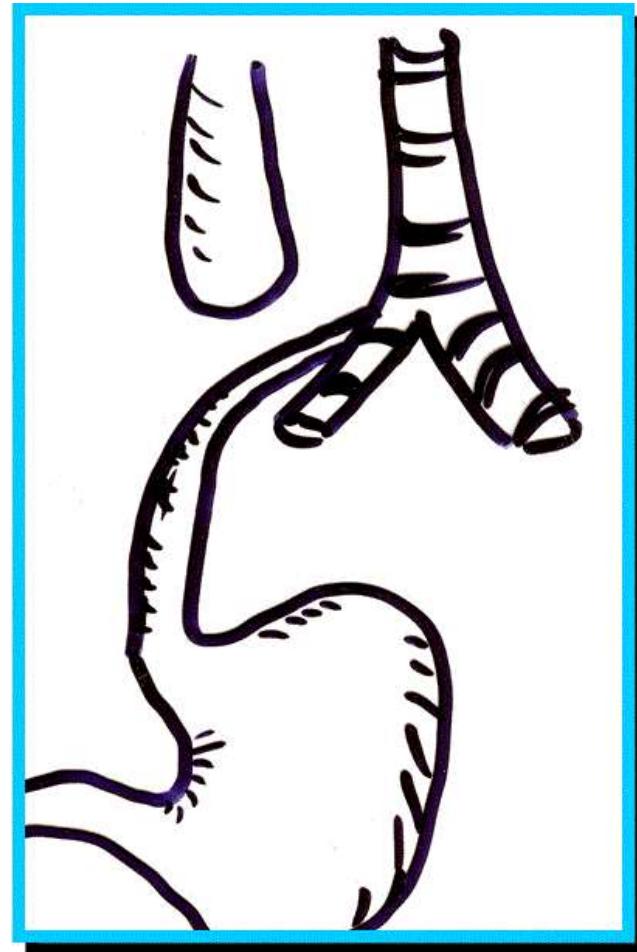
# Atrezi de esofag

- Saptamana 4
- Diverticul laringotraheal
- Septul traheoesofagian
- Separarea diverticulului de intestinul cefalic, in sens caudo-cranial



# Atrezie de esofag

- 85%
- Atrezie esofag
- Fistula traheo-esofagiana distala

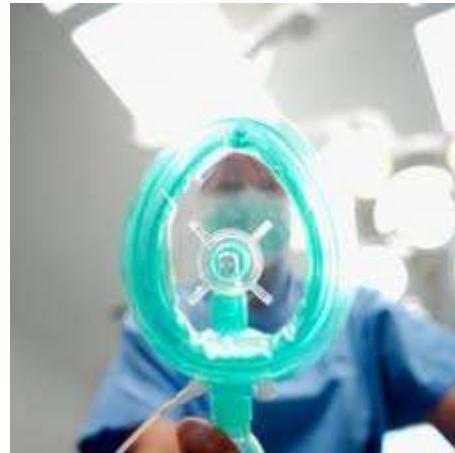






PETRU 7.2

# Echipament specific pentru anestezie

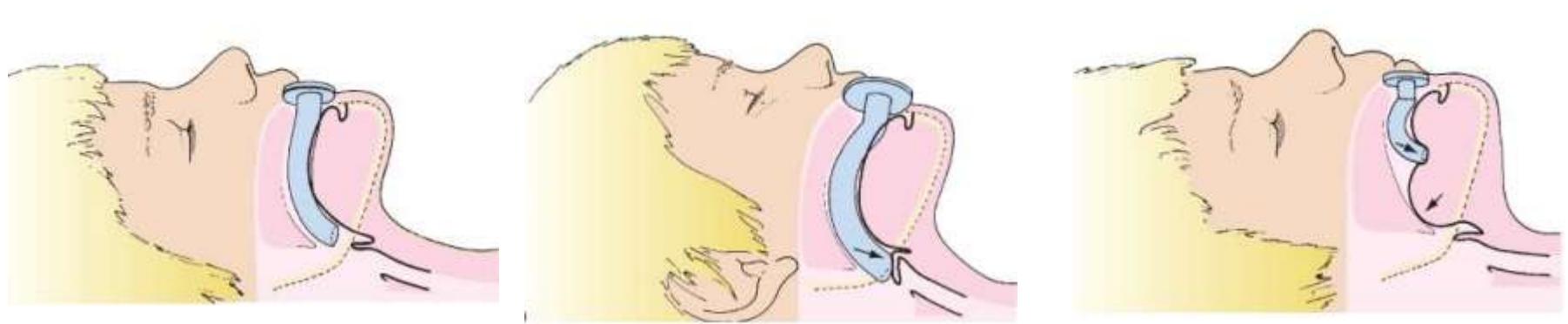


# Masti faciale



# Pipa Guedel





# Masca laringiana



# I-gel



# Sonda intubatie





Mallinckrodt® I.D. 4.5 6.2 O.D. 121

Reus

I.D. 4.5 111 SINGLE USE

CHARITY® ID. 4.0 ORAL/NASAL 5.500

ID. 4.5

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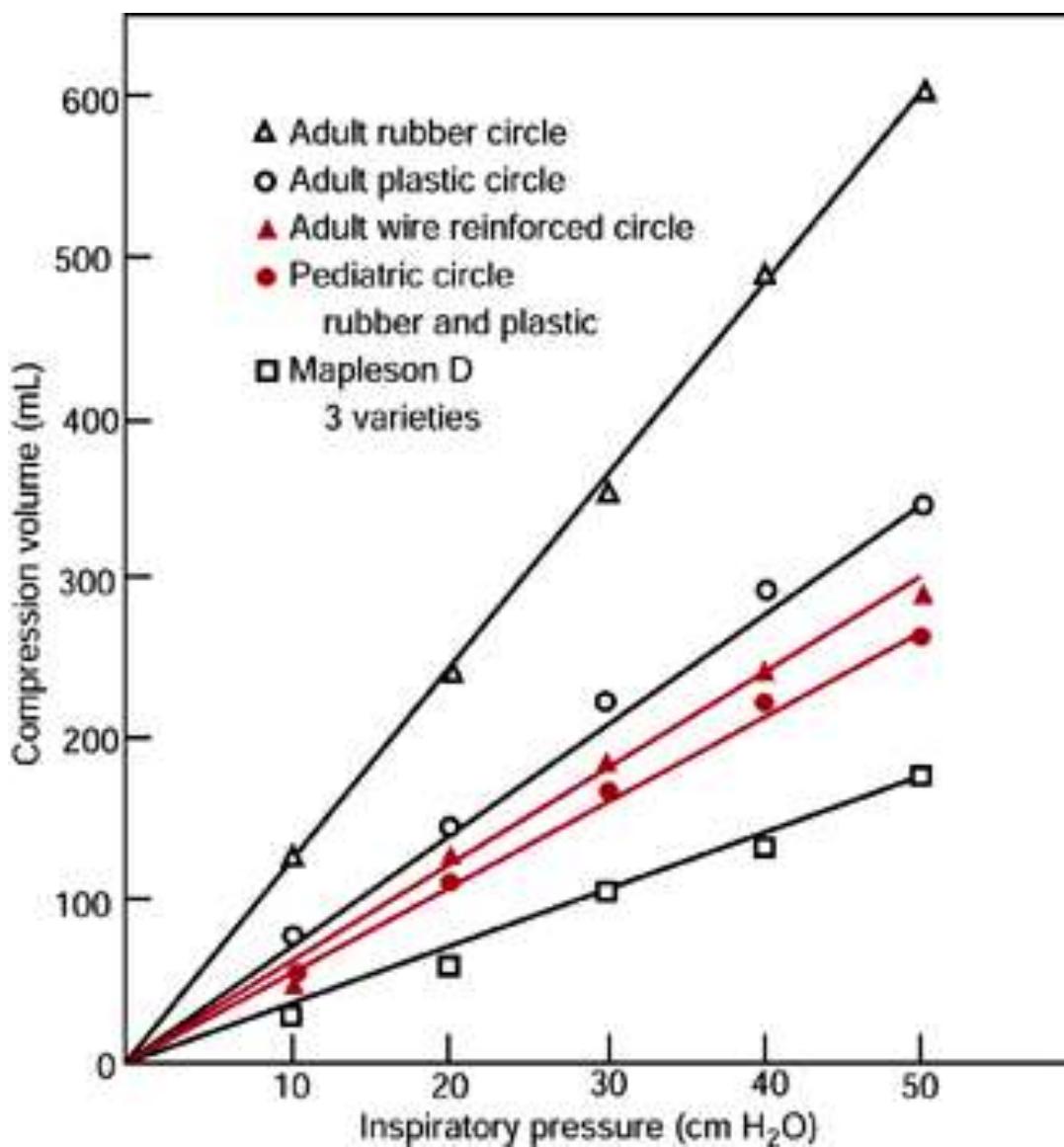
1 2 3

1 2 3

# Dimensiunea sondelor de intubatie

- <1500g = 2,5
- NN termen= 3- 3,5
- 1 an = 4
- 2 ani= 4,5-5

# Complianta tuburi circuite





Va multumesc