London Health Sciences Centre

Southwest Ontario Regional Base Hospital Program

Respiratory Assessment Differentiation and Treatment

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Objectives

- Discuss the assessment of the patient in respiratory distress including history, physical examination and auscultation.
- Review and describe the accompanying signs and symptoms and history related to the pathophysiology of Asthma, COPD, Anaphylaxis and Acute Pulmonary Edema.
- State the treatment options available to the Paramedic and their effects on the patient.

History

- Get to know your patient and what lead up to the distress. Follow the pattern of your ACR for direction. The **chief complaint** will usually lead you in the direction of investigation.

OPQRST

- Onset: Is this gradual or a sudden event
- Previous Events: Has this ever happened before? What makes it better or worse?
- Quality: How is your breathing difficult? Can you describe what it is like, trying to breathe?
- Radiation: Is there pain/discomfort associated with your breathing. Where is it and does it radiate?
- Severity: Is this 2 word dsypnea? Is distress evident.
- Time: When did this start?

SAMPLE

- Signs and Symptoms:
- Allergies
- Medications
- Palliation / Provocation
- Last Oral Intake
- Events Leading Up to Episode

Physical Examination

- General Impression / Appearance
- Head / Neck
- Chest
- Abdomen
- Back/Pelvis
- Extremities

COPD

- Risk Factors
- Chronic Bronchitis
- Emphysema
- Signs and Symptoms
- Medications

COPD Medications:

- Beta agonists (broncho-dilators)
- Ventolin
- (salbutamol)

www.healthcentral.com

COPD Medications:

- Beta agonists (broncho-dilators)
- Bricanyl
- (terbutaline)

COPD Medications:

- Beta agonists (broncho-dilators)
- Oxeze
- (formoterol)

www.medicalook.com

COPD Medications:

- Beta agonists (broncho-dilators)
- Serevent
- (salmeterol)

COPD Medications:

- Anticholinergics:
- Atrovent
- (ipratropium bromide)

COPD Medications:

- Anticholinergics:
- Spiriva tiotropium bromide

www.healthcentral.com

COPD Medications:

- Combination medications
- Advair
  fluticasone &
  salmeterol

www.everydrugs.com

COPD Medications:

- Combination medications
- Symbicort
  formoterol & budesonide

www.asthmameds.ca

COPD

- Treatment

Asthma

- Risk Factors
- Pathophysiology
- Signs and Symptoms
- Treatment

Pneumonia

- Risk Factors
- Causative Agents
- Mechanism of Infection
- Signs and Symptoms
- Treatment

Acute Pulmonary Edema

- Risk Factors
- Pathophysiology
- Signs and Symptoms
- Treatment

Treatment & Tools

- SpO2 Monitor
- Patient Positioning
- Oxygen
- Capnography

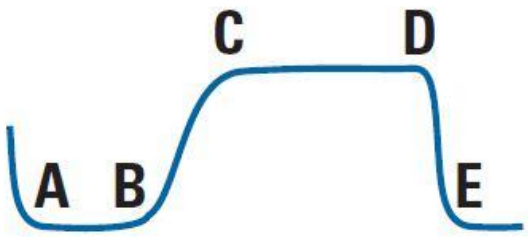
EtCO2

- Capnography is the measurement of CO2 in the airway at the end of each breath.
- Used with endotracheal tubes or with special nasal canulae
- Normal Values are between 35 and 45 mm Hg
- Normal wave shapes are as follows.

EtCO2

Normal Ranges:

Arterial $PaCO_2$	38–45mmHg
Capnography $EtCO_2$	35–45mmHg (4–6 Vol. %)

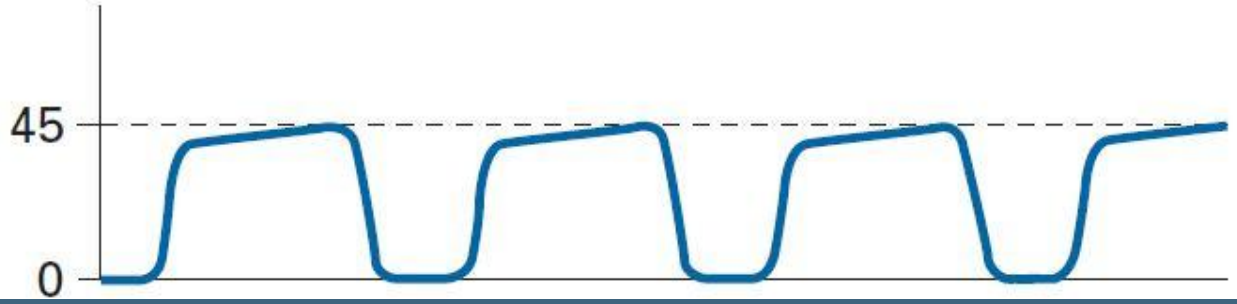


http://www.physio-control.com

A–B	Respiratory baseline
B–C	Expiratory upslope
C–D	Expiratory plateau
D	End-tidal value—peak CO_2 concentration—normally at the end of exhalation
D–E	Inspiratory downstroke

EtCO2

Normal Waveform:



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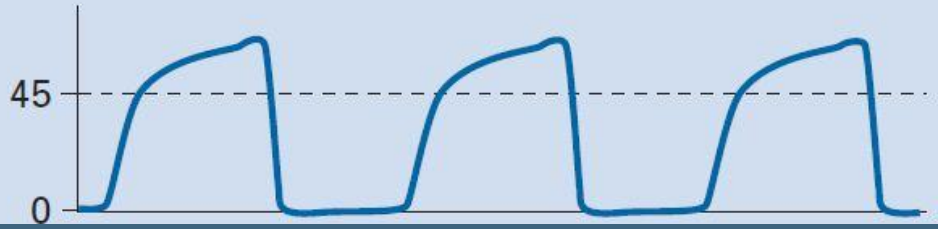
Examples:

Plateau has curved, "shark-fin" appearance

- Asthma
- COPD



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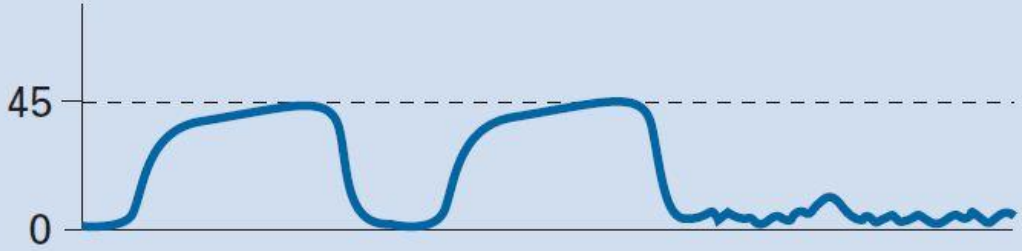
EtCO2

Examples:

Sudden loss of waveform, $EtCO_2$ near zero

- ET tube disconnected, dislodged, kinked or obstructed
- Loss of circulatory function



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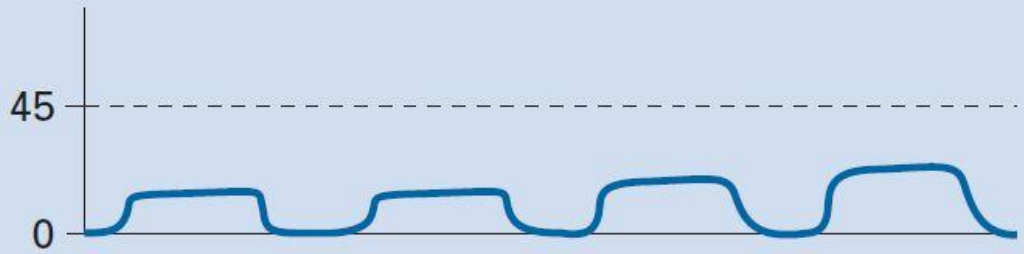
EtCO2

CPR Assessment

- Attempt to maintain minimum of 10mmHg



Sudden increase in $EtCO_2$

- Return of spontaneous circulation

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Treatment & Tools Cont.

- Cardiac Monitor
- Vital Signs
- Symptom Relief Medication
- CPAP for those patients with COPD or APE

SOB/Respiratory Distress

- Indications:
- Conditions:
- Contra-indications:
- Procedures:

Moderate to Severe Asthma Exacerbation

- Indications:
- Conditions:
- Contra-indications
- Procedures

Anaphylaxis/Allergic Reaction Protocol

- Indications:
- Conditions:
- Contra-indications
- Procedures

CPAP

- Indications:
- Conditions:
- Contra-indications
- Procedures

Acute Cardiogenic Pulmonary Edema

- Indications:
- Conditions:
- Contra-indications
- Procedures

Case Study

- It is a cool spring night and you are dispatched code 4 to a patient's home for a 77 year old male whose wife states is confused and not answering questions appropriately. The patient wearing a dirty muscle shirt and beige Fruit of the Loom briefs is sitting in his recliner chair and appears agitated and has knocked his TV tray over in front of himself. Hercules' wife has indicated that he has been coughing for two weeks, he refuses to see a doctor and just this afternoon he developed a fever. His wife indicates his only medical history is that of mild dementia.

Case Study

- Your calm demeanour allows you get some vital signs and they are as follows;
- Pulse 136 Strong and regular
- Respirations 22 regular and full
- SBP 90 mmHg by palpation
- O2 sats. Are 89% on room air.
- His skin in normal colour and temperature feels warm, mucous membranes are dry, he has no tracheal deviation or JVD. When auscultating you hear focal crackles on his right lung, lower lobe.

Case Study

- You are dispatched code 4 for a 89 year old female patient who family states has been lethargic today at her daughter's (where she lives) birthday party. On arrival you find a thin 89 year old patient sitting upright on the stairs. She had to sit down due to lightheadedness shortness of breath when she got up from the kitchen table 4 feet away. At that point her family called 911. Her family states she has COPD, CHF, CAD, HTN, and valvular heart disease and minor heart attacks in the past.

Case Study

- On examination, you find your patient looks pale and feels cold, her skin is dry. She is confused as to what season it is and doesn't know her daughters name (abnormal per daughter). She has swelling to her feet (which is normal for her) and can't lie back on the stairs due to uncomfortable breathing. You notice no JVD or tracheal deviation.

Case Study

- Vital Signs
- Pulse 110 Regular and Full
- Respirations 24 shallow and Regular
- Blood Pressure 188 / 110.
- Oxygen Saturation 86% on room air
- Mental Status (confused but reponsive)
- Blood Sugar 7.8 mmol/L
- Lung Sounds rales in the lower lobes, wheezes in the upper lobes.

Conclusion

- Chief complaint, History (including OPQRST & SAMPLE) and your physical assessment are key in determining your symptom relief treatment.
- Make your decision based on thorough assessment and treat your patient with your appropriate directive.
- If in doubt, consult your BHP for advise and direction.

References

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