

EMT MEDICAL ASSESSMENT SCENARIOS RESPIRATORY

UNDERSTANDING EMT MEDICAL ASSESSMENT SCENARIOS: RESPIRATORY EMERGENCIES

RESPIRATORY EMERGENCIES REPRESENT A SIGNIFICANT PORTION OF PREHOSPITAL MEDICAL CALLS, DEMANDING A SWIFT AND ACCURATE ASSESSMENT FROM EMERGENCY MEDICAL TECHNICIANS (EMTs). MASTERING EMT MEDICAL ASSESSMENT SCENARIOS INVOLVING THE RESPIRATORY SYSTEM IS PARAMOUNT FOR PROVIDING EFFECTIVE PATIENT CARE AND IMPROVING OUTCOMES. THIS ARTICLE DELVES DEEP INTO COMMON RESPIRATORY DISTRESS PRESENTATIONS, OUTLINING THE SYSTEMATIC APPROACH EMTs SHOULD TAKE, FROM INITIAL OBSERVATION TO DEFINITIVE TREATMENT. WE WILL EXPLORE KEY ASSESSMENT COMPONENTS, DIAGNOSTIC TOOLS, AND DIFFERENTIAL DIAGNOSES RELEVANT TO EMTs, FOCUSING ON VARIOUS EMT MEDICAL ASSESSMENT SCENARIOS INVOLVING BREATHING DIFFICULTIES. UNDERSTANDING THE NUANCES OF CONDITIONS LIKE ASTHMA, COPD, PNEUMONIA, AND ANAPHYLAXIS IS CRUCIAL FOR ANY EMT AIMING TO EXCEL IN THEIR ROLE. THIS COMPREHENSIVE GUIDE AIMS TO EQUIP EMTs WITH THE KNOWLEDGE AND CONFIDENCE TO NAVIGATE THESE CRITICAL SITUATIONS, ENSURING THEY CAN DELIVER THE BEST POSSIBLE CARE TO PATIENTS EXPERIENCING RESPIRATORY COMPROMISE.

TABLE OF CONTENTS

- INTRODUCTION TO EMT RESPIRATORY ASSESSMENT
- SYSTEMATIC APPROACH TO RESPIRATORY ASSESSMENT
- COMMON RESPIRATORY DISTRESS SCENARIOS FOR EMTs
- PATIENT HISTORY IN RESPIRATORY EMERGENCIES
- PHYSICAL EXAMINATION TECHNIQUES FOR RESPIRATORY PATIENTS
- VITAL SIGNS AND THEIR SIGNIFICANCE IN RESPIRATORY ASSESSMENT
- KEY DIAGNOSTIC TOOLS FOR EMTs IN RESPIRATORY CASES
- DIFFERENTIAL DIAGNOSES FOR RESPIRATORY COMPLAINTS
- SPECIFIC EMT MEDICAL ASSESSMENT SCENARIOS: RESPIRATORY
- PEDIATRIC RESPIRATORY EMERGENCIES: UNIQUE CONSIDERATIONS
- GERIATRIC RESPIRATORY EMERGENCIES: SPECIAL CIRCUMSTANCES
- ADVANCED AIRWAY MANAGEMENT AND EMT ROLE
- DOCUMENTATION AND REPORTING OF RESPIRATORY ASSESSMENTS
- CONCLUSION: MASTERING EMT RESPIRATORY ASSESSMENTS

INTRODUCTION TO EMT RESPIRATORY ASSESSMENT

THE ABILITY TO EFFECTIVELY ASSESS A PATIENT EXPERIENCING RESPIRATORY DISTRESS IS A CORNERSTONE OF EMT PRACTICE. RESPIRATORY COMPLAINTS CAN RANGE FROM MILD SHORTNESS OF BREATH TO LIFE-THREATENING AIRWAY OBSTRUCTION. A SYSTEMATIC APPROACH IS VITAL TO ENSURE NO CRITICAL SIGNS OR SYMPTOMS ARE MISSED. THIS INVOLVES A THOROUGH HISTORY, A FOCUSED PHYSICAL EXAMINATION, AND THE ACCURATE INTERPRETATION OF VITAL SIGNS. EMTs MUST BE ADEPT AT RECOGNIZING THE SUBTLE AND OVERT SIGNS OF RESPIRATORY COMPROMISE, UNDERSTANDING THAT PROMPT AND APPROPRIATE INTERVENTION CAN SIGNIFICANTLY IMPACT PATIENT PROGNOSIS. THIS SECTION SETS THE STAGE FOR UNDERSTANDING THE CRITICAL IMPORTANCE OF RESPIRATORY ASSESSMENT IN PREHOSPITAL EMERGENCY MEDICINE.

SYSTEMATIC APPROACH TO RESPIRATORY ASSESSMENT

A STRUCTURED APPROACH IS ESSENTIAL WHEN MANAGING PATIENTS WITH RESPIRATORY ISSUES. EMTs SHOULD FOLLOW A LOGICAL SEQUENCE TO GATHER INFORMATION AND FORM A WORKING DIAGNOSIS. THIS SYSTEMATIC APPROACH TYPICALLY INCLUDES SCENE SAFETY, PATIENT ASSESSMENT (PRIMARY AND SECONDARY SURVEYS), VITAL SIGNS, AND ONGOING REASSESSMENT. FOR RESPIRATORY PATIENTS, THE PRIMARY SURVEY IS PARTICULARLY CRUCIAL, FOCUSING ON AIRWAY, BREATHING, AND CIRCULATION (ABC). THE SECONDARY SURVEY ALLOWS FOR A MORE IN-DEPTH EVALUATION, INCLUDING A DETAILED HISTORY AND A HEAD-TO-TOE PHYSICAL EXAMINATION. REASSESSMENT IS A CONTINUOUS PROCESS THROUGHOUT THE PATIENT ENCOUNTER, ENSURING THAT ANY CHANGES IN THE PATIENT'S CONDITION ARE IDENTIFIED AND ADDRESSED PROMPTLY.

SCENE SAFETY AND GENERAL IMPRESSION

BEFORE APPROACHING ANY PATIENT, EMTs MUST ENSURE SCENE SAFETY. THIS INCLUDES IDENTIFYING ANY POTENTIAL HAZARDS THAT COULD ENDANGER THEMSELVES OR THE PATIENT. FOLLOWING SCENE SAFETY, A GENERAL IMPRESSION IS FORMED IMMEDIATELY UPON VISUAL CONTACT WITH THE PATIENT. THIS IMPRESSION PROVIDES INITIAL CLUES ABOUT THE SEVERITY OF THE PATIENT'S CONDITION, INCLUDING THEIR POSITION OF COMFORT, LEVEL OF DISTRESS, AND GENERAL APPEARANCE. FOR RESPIRATORY PATIENTS, OBSERVING THEIR BREATHING PATTERN, USE OF ACCESSORY MUSCLES, AND SKIN COLOR ARE KEY COMPONENTS OF THE GENERAL IMPRESSION.

AIRWAY ASSESSMENT

THE AIRWAY IS THE HIGHEST PRIORITY IN ANY MEDICAL EMERGENCY. EMTs MUST ENSURE THE PATIENT HAS A PATENT AIRWAY THAT IS CLEAR OF OBSTRUCTIONS. THIS INVOLVES CHECKING FOR FOREIGN BODIES, SECRETIONS, OR ANATOMICAL OBSTRUCTIONS. FOR UNCONSCIOUS OR SEMI-CONSCIOUS PATIENTS, AIRWAY POSITIONING MANEUVERS LIKE THE HEAD-TILT/CHIN-LIFT OR JAW-THRUST (IF SPINAL INJURY IS SUSPECTED) ARE CRITICAL. THE PRESENCE OF STRIDOR, GURGLING, OR SNORING SOUNDS CAN INDICATE AIRWAY COMPROMISE AND REQUIRES IMMEDIATE ATTENTION.

BREATHING ASSESSMENT

ONCE THE AIRWAY IS CONFIRMED TO BE PATENT, THE FOCUS SHIFTS TO BREATHING. EMTs SHOULD ASSESS THE RATE, RHYTHM, DEPTH, AND QUALITY OF THE PATIENT'S RESPIRATIONS. LOOKING FOR THE RISE AND FALL OF THE CHEST, LISTENING FOR BREATH SOUNDS, AND FEELING FOR AIR MOVEMENT ARE ESSENTIAL. THE USE OF ACCESSORY MUSCLES (E.G., STERNOCLEIDOMASTOID, SCALENES) AND RETRACTIONS (INTERCOSTAL, SUBSTERNAL) ARE INDICATORS OF INCREASED WORK OF BREATHING. AUSCULTATION OF BREATH SOUNDS WITH A STETHOSCOPE CAN REVEAL ABNORMAL SOUNDS SUCH AS WHEEZING, CRACKLES, OR RHONCHI, WHICH HELP NARROW DOWN THE POTENTIAL CAUSE OF RESPIRATORY DISTRESS.

CIRCULATION ASSESSMENT

ASSESSING CIRCULATION INVOLVES CHECKING THE PULSE RATE, RHYTHM, AND QUALITY, AS WELL AS OBSERVING SKIN COLOR,

TEMPERATURE, AND MOISTURE. CYANOSIS (BLUISH DISCOLORATION OF THE SKIN AND MUCOUS MEMBRANES), PARTICULARLY AROUND THE LIPS OR NAIL BEDS, IS A CRITICAL SIGN OF HYPOXIA. A RAPID, WEAK PULSE MAY INDICATE SHOCK, WHICH CAN OFTEN ACCOMPANY SEVERE RESPIRATORY DISTRESS DUE TO INADEQUATE OXYGENATION.

COMMON RESPIRATORY DISTRESS SCENARIOS FOR EMTs

EMTs FREQUENTLY ENCOUNTER A VARIETY OF RESPIRATORY EMERGENCIES IN THE FIELD. UNDERSTANDING THE COMMON PRESENTATIONS, UNDERLYING PATHOPHYSIOLOGY, AND TYPICAL FINDINGS FOR EACH IS CRUCIAL FOR EFFECTIVE PATIENT MANAGEMENT. THESE SCENARIOS TEST AN EMT'S ABILITY TO QUICKLY IDENTIFY THE PROBLEM AND INITIATE APPROPRIATE INTERVENTIONS. RECOGNIZING THE NUANCES OF DIFFERENT RESPIRATORY CONDITIONS ALLOWS FOR TARGETED TREATMENT AND IMPROVED PATIENT OUTCOMES.

ASTHMA EXACERBATIONS

ASTHMA IS A CHRONIC INFLAMMATORY DISEASE OF THE AIRWAYS CHARACTERIZED BY REVERSIBLE BRONCHOCONSTRICTION, INFLAMMATION, AND INCREASED MUCUS PRODUCTION. PATIENTS TYPICALLY PRESENT WITH WHEEZING, SHORTNESS OF BREATH, COUGH, AND CHEST TIGHTNESS. THE SEVERITY CAN RANGE FROM MILD TO LIFE-THREATENING RESPIRATORY FAILURE. EMTs SHOULD BE PREPARED TO ADMINISTER OXYGEN AND ASSIST WITH BRONCHODILATOR THERAPY VIA NEBULIZER OR METERED-DOSE INHALER.

CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD) EXACERBATIONS

COPD ENCOMPASSES CONDITIONS LIKE CHRONIC BRONCHITIS AND EMPHYSEMA, BOTH CHARACTERIZED BY AIRFLOW LIMITATION THAT IS NOT FULLY REVERSIBLE. PATIENTS WITH COPD OFTEN HAVE A HISTORY OF SMOKING AND PRESENT WITH INCREASED DYSPNEA, COUGH WITH SPUTUM PRODUCTION, AND WHEEZING. EXACERBATIONS ARE OFTEN TRIGGERED BY INFECTIONS. EMTs SHOULD ADMINISTER OXYGEN CAUTIOUSLY, AS SOME COPD PATIENTS MAY BE "HYPOXIC DRIVE" DEPENDENT, THOUGH CURRENT GUIDELINES EMPHASIZE MAINTAINING ADEQUATE OXYGENATION REGARDLESS.

PNEUMONIA

PNEUMONIA IS AN INFECTION THAT INFLAMES THE AIR SACS IN ONE OR BOTH LUNGS. THE AIR SACS MAY FILL WITH FLUID OR PUS, CAUSING COUGH, FEVER, CHILLS, AND DIFFICULTY BREATHING. EMTs MAY OBSERVE CRACKLES ON AUSCULTATION, INCREASED RESPIRATORY RATE, AND SOMETIMES CHEST PAIN. ANTIBIOTICS ARE THE PRIMARY TREATMENT FOR BACTERIAL PNEUMONIA, BUT EMTs FOCUS ON SUPPORTIVE CARE, OXYGEN ADMINISTRATION, AND TRANSPORT.

PULMONARY EMBOLISM (PE)

A PULMONARY EMBOLISM OCCURS WHEN A BLOOD CLOT TRAVELS TO THE LUNGS, BLOCKING BLOOD FLOW. SYMPTOMS CAN VARY WIDELY BUT OFTEN INCLUDE SUDDEN ONSET OF SHORTNESS OF BREATH, CHEST PAIN (OFTEN PLEURITIC), COUGH, AND SOMETIMES HEMOPTYSIS (COUGHING UP BLOOD). RISK FACTORS INCLUDE PROLONGED IMMOBILITY, SURGERY, AND CERTAIN MEDICAL CONDITIONS. EMTs SHOULD SUSPECT PE IN PATIENTS WITH THESE RISK FACTORS AND SUDDEN RESPIRATORY COMPROMISE.

ANAPHYLAXIS

ANAPHYLAXIS IS A SEVERE, LIFE-THREATENING ALLERGIC REACTION THAT CAN AFFECT MULTIPLE ORGAN SYSTEMS, INCLUDING THE RESPIRATORY SYSTEM. SYMPTOMS CAN INCLUDE DIFFICULTY BREATHING, WHEEZING, STRIDOR, HIVES, SWELLING OF THE FACE AND TONGUE, AND A DROP IN BLOOD PRESSURE. THE AIRWAY CAN BECOME OBSTRUCTED RAPIDLY. EMTs MUST BE PREPARED TO ADMINISTER EPINEPHRINE, OXYGEN, AND ANTIHISTAMINES.

UPPER AIRWAY OBSTRUCTION

OBSTRUCTION OF THE UPPER AIRWAY CAN BE CAUSED BY FOREIGN BODIES, SWELLING FROM TRAUMA OR INFECTION (E.G., CROUP, EPIGLOTTITIS), OR ANAPHYLAXIS. SIGNS INCLUDE STRIDOR, HOARSENESS, DIFFICULTY SWALLOWING, AND DROOLING. THE PATIENT MAY APPEAR ANXIOUS AND STRUGGLE TO SPEAK. RAPID INTERVENTION, SUCH AS THE HEIMLICH MANEUVER FOR FOREIGN BODY OBSTRUCTION OR AIRWAY POSITIONING, IS CRITICAL.

PATIENT HISTORY IN RESPIRATORY EMERGENCIES

GATHERING A COMPREHENSIVE PATIENT HISTORY IS A CRITICAL COMPONENT OF ASSESSING RESPIRATORY COMPLAINTS. THIS INFORMATION HELPS EMTs UNDERSTAND THE ONSET, DURATION, SEVERITY, AND POTENTIAL CAUSES OF THE PATIENT'S RESPIRATORY DISTRESS. A THOROUGH HISTORY CAN GUIDE PHYSICAL EXAMINATION FINDINGS AND INFORM TREATMENT DECISIONS.

CHIEF COMPLAINT AND HISTORY OF PRESENT ILLNESS (HPI)

THE CHIEF COMPLAINT IS THE PRIMARY REASON THE PATIENT IS SEEKING MEDICAL ATTENTION. FOR RESPIRATORY ISSUES, THIS IS TYPICALLY SHORTNESS OF BREATH, COUGH, OR DIFFICULTY BREATHING. THE HPI INVOLVES DELVING DEEPER INTO THE NATURE OF THE COMPLAINT USING THE OPQRST MNEMONIC: ONSET, PROVOCATION/PALLIATION, QUALITY, RADIATION, SEVERITY, AND TIMING. UNDERSTANDING WHEN THE SYMPTOMS BEGAN, WHAT MAKES THEM BETTER OR WORSE, HOW THEY FEEL, IF THEY SPREAD, THEIR INTENSITY, AND THEIR PROGRESSION OVER TIME IS VITAL.

PAST MEDICAL HISTORY (PMH)

INQUIRING ABOUT THE PATIENT'S PAST MEDICAL HISTORY IS ESSENTIAL, PARTICULARLY REGARDING PRE-EXISTING RESPIRATORY CONDITIONS SUCH AS ASTHMA, COPD, EMPHYSEMA, CHRONIC BRONCHITIS, OR HISTORY OF PNEUMONIA. KNOWING ABOUT CARDIAC HISTORY IS ALSO IMPORTANT, AS CARDIAC CONDITIONS CAN MIMIC OR CONTRIBUTE TO RESPIRATORY SYMPTOMS. OTHER RELEVANT PMH INCLUDES DIABETES, HYPERTENSION, AND A HISTORY OF PULMONARY EMBOLISMS OR DEEP VEIN THROMBOSIS.

MEDICATIONS

A THOROUGH MEDICATION HISTORY CAN REVEAL IMPORTANT INFORMATION. FOR RESPIRATORY PATIENTS, THIS INCLUDES BRONCHODILATORS (E.G., ALBUTEROL, IPRATROPIUM), INHALED CORTICOSTEROIDS, ORAL CORTICOSTEROIDS, AND ANY MEDICATIONS FOR CARDIAC CONDITIONS OR ALLERGIES. KNOWING IF THE PATIENT HAS THEIR PRESCRIBED MEDICATIONS WITH THEM AND IF THEY HAVE TAKEN THEM CAN BE CRUCIAL. UNDERSTANDING ANY RECENT CHANGES IN MEDICATION OR MISSED DOSES IS ALSO IMPORTANT.

ALLERGIES

IDENTIFYING ALLERGIES, ESPECIALLY TO MEDICATIONS OR ENVIRONMENTAL FACTORS, IS CRITICAL. ALLERGIC REACTIONS, PARTICULARLY ANAPHYLAXIS, CAN PRESENT WITH SEVERE RESPIRATORY DISTRESS. KNOWING IF THE PATIENT HAS ALLERGIES TO ASPIRIN, NSAIDs, OR OTHER MEDICATIONS THAT CAN TRIGGER BRONCHOSPASM IS ALSO IMPORTANT.

SOCIAL HISTORY

SOCIAL HISTORY CAN PROVIDE VALUABLE CONTEXT. THIS INCLUDES SMOKING HISTORY (NUMBER OF PACKS PER DAY AND YEARS SMOKED), OCCUPATIONAL EXPOSURES TO IRRITANTS OR TOXINS, AND ANY RECENT TRAVEL HISTORY. LIFESTYLE FACTORS LIKE DIET AND EXERCISE CAN ALSO PLAY A ROLE IN OVERALL HEALTH AND RESPIRATORY FUNCTION.

REVIEW OF SYSTEMS (ROS)

A TARGETED REVIEW OF SYSTEMS CAN UNCOVER ASSOCIATED SYMPTOMS THAT MIGHT NOT BE IMMEDIATELY APPARENT. FOR RESPIRATORY PATIENTS, THIS INCLUDES ASKING ABOUT FEVER, CHILLS, CHEST PAIN, PALPITATIONS, NAUSEA, VOMITING, EDEMA, AND ANY CHANGES IN MENTAL STATUS. A SYSTEMATIC REVIEW ENSURES THAT NO SIGNIFICANT SYMPTOMS ARE OVERLOOKED.

PHYSICAL EXAMINATION TECHNIQUES FOR RESPIRATORY PATIENTS

A HANDS-ON PHYSICAL EXAMINATION IS CRUCIAL FOR ASSESSING THE RESPIRATORY SYSTEM. EMTs USE A COMBINATION OF INSPECTION, PALPATION, PERCUSSION, AND AUSCULTATION TO GATHER OBJECTIVE DATA ABOUT THE PATIENT'S RESPIRATORY STATUS. THESE TECHNIQUES, WHEN PERFORMED SYSTEMATICALLY, PROVIDE A COMPREHENSIVE PICTURE OF LUNG FUNCTION AND POTENTIAL PATHOLOGIES.

INSPECTION

INSPECTION INVOLVES VISUALLY OBSERVING THE PATIENT FROM HEAD TO TOE. FOR RESPIRATORY ASSESSMENTS, KEY OBSERVATIONS INCLUDE:

- POSITION OF COMFORT: IS THE PATIENT SITTING UP, LEANING FORWARD, OR LYING DOWN?
- RATE AND PATTERN OF BREATHING: ARE RESPIRATIONS FAST, SLOW, SHALLOW, DEEP, OR LABORED?
- USE OF ACCESSORY MUSCLES: ARE MUSCLES IN THE NECK, SHOULDERS, OR ABDOMEN BEING USED TO AID BREATHING?
- CHEST WALL SYMMETRY AND EXPANSION: DOES THE CHEST RISE AND FALL EVENLY?
- SKIN COLOR: IS THERE CYANOSIS, PALLOR, OR FLUSHING?
- PRESENCE OF EDEMA: SWELLING IN THE EXTREMITIES CAN INDICATE CARDIAC ISSUES CONTRIBUTING TO RESPIRATORY DISTRESS.
- ANXIETY LEVEL: IS THE PATIENT CALM, AGITATED, OR RESTLESS?

PALPATION

PALPATION INVOLVES USING THE HANDS TO FEEL FOR ABNORMALITIES. THIS INCLUDES:

- TRACHEAL POSITION: IS THE TRACHEA MIDLINE OR DEVIATED?
- CHEST WALL TENDERNESS: PALPATE FOR PAIN OR CREPITUS.
- TACTILE FREMITUS: ASK THE PATIENT TO SAY "NINETY-NINE" WHILE PLACING YOUR HANDS ON DIFFERENT PARTS OF THEIR CHEST WALL. INCREASED FREMITUS CAN INDICATE CONSOLIDATION, WHILE DECREASED FREMITUS MAY SUGGEST FLUID OR AIR IN THE PLEURAL SPACE.

PERCUSSION

PERCUSSION INVOLVES TAPPING ON THE CHEST WALL TO ASSESS THE UNDERLYING LUNG TISSUE. DIFFERENT SOUNDS INDICATE

DIFFERENT CONDITIONS:

- **RESONANCE:** NORMAL LUNG TISSUE PRODUCES A HOLLOW SOUND.
- **DULLNESS:** A DULL SOUND MAY INDICATE FLUID ACCUMULATION (E.G., PNEUMONIA, PLEURAL EFFUSION).
- **HYPERRESONANCE:** AN OVERLY RESONANT SOUND CAN SUGGEST AIR TRAPPING (E.G., EMPHYSEMA, PNEUMOTHORAX).

AUSCULTATION

AUSCULTATION, USING A STETHOSCOPE, IS PERHAPS THE MOST CRITICAL PART OF THE RESPIRATORY PHYSICAL EXAM. EMTs LISTEN TO BREATH SOUNDS IN SPECIFIC AREAS OF THE CHEST.

- **NORMAL BREATH SOUNDS:** THESE ARE TYPICALLY VESICULAR, SOFT, AND HEARD OVER MOST LUNG FIELDS.
- **ADVENTITIOUS BREATH SOUNDS:**
 - **WHEEZING:** A HIGH-PITCHED, WHISTLING SOUND, USUALLY HEARD DURING EXHALATION, INDICATIVE OF NARROWED AIRWAYS (E.G., ASTHMA, COPD).
 - **CRACKLES (RALES):** FINE OR COARSE POPPING SOUNDS, OFTEN HEARD DURING INSPIRATION, SUGGESTING FLUID IN THE ALVEOLI (E.G., PNEUMONIA, PULMONARY EDEMA).
 - **RHONCHI:** COARSE, RATTLING SOUNDS, OFTEN HEARD DURING BOTH INSPIRATION AND EXHALATION, INDICATING SECRETIONS IN LARGER AIRWAYS.
 - **STRIDOR:** A HARSH, HIGH-PITCHED SOUND HEARD PRIMARILY DURING INSPIRATION, INDICATING UPPER AIRWAY OBSTRUCTION.
- **DECREASED OR ABSENT BREATH SOUNDS:** CAN INDICATE PNEUMOTHORAX, PLEURAL EFFUSION, OR ATELECTASIS.

VITAL SIGNS AND THEIR SIGNIFICANCE IN RESPIRATORY ASSESSMENT

VITAL SIGNS PROVIDE OBJECTIVE MEASUREMENTS OF A PATIENT'S PHYSIOLOGICAL STATE AND ARE INDISPENSABLE IN THE ASSESSMENT OF RESPIRATORY EMERGENCIES. MONITORING AND INTERPRETING THESE SIGNS ACCURATELY ALLOWS EMTs TO GAUGE THE SEVERITY OF RESPIRATORY COMPROMISE AND TRACK THE EFFECTIVENESS OF INTERVENTIONS.

RESPIRATORY RATE (RR)

THE NORMAL RESPIRATORY RATE FOR AN ADULT IS 12-20 BREATHS PER MINUTE.

- **TACHYPNEA (RR > 20):** CAN INDICATE HYPOXIA, FEVER, PAIN, ANXIETY, OR COMPENSATORY MECHANISMS FOR METABOLIC ACIDOSIS.
- **BRADYPNEA (RR < 12):** MAY SUGGEST RESPIRATORY DEPRESSION DUE TO DRUGS, HEAD INJURY, OR SEVERE ILLNESS.
- **APNEA:** ABSENCE OF BREATHING, A CRITICAL FINDING REQUIRING IMMEDIATE INTERVENTION.

OXYGEN SATURATION (SpO2)

SpO2 MEASURES THE PERCENTAGE OF HEMOGLOBIN SATURATED WITH OXYGEN. NORMAL SpO2 IS TYPICALLY 94-99%.

- **HYPOXIA (SpO2 < 94%):** INDICATES INADEQUATE OXYGENATION OF THE BLOOD. FOR SOME CHRONIC RESPIRATORY PATIENTS, A LOWER BASELINE SpO2 MAY BE ACCEPTABLE, BUT A SIGNIFICANT DROP FROM THEIR BASELINE IS STILL CONCERNING.
- **HYPEROXIA (SpO2 > 99%):** WHILE LESS COMMON IN PREHOSPITAL SETTINGS, IT CAN OCCUR WITH EXCESSIVE OXYGEN ADMINISTRATION AND HAS POTENTIAL LONG-TERM RISKS.

PULSE RATE (HEART RATE)

THE NORMAL RESTING HEART RATE FOR AN ADULT IS 60-100 BEATS PER MINUTE.

- **TACHYCARDIA (HR > 100):** CAN BE A COMPENSATORY MECHANISM FOR HYPOXIA OR HYPOVOLEMIA, OR DUE TO FEVER, PAIN, OR ANXIETY.
- **BRADYCARDIA (HR < 60):** CAN BE A SIGN OF SEVERE HYPOXIA, HEAD INJURY, OR CERTAIN MEDICATIONS.

BLOOD PRESSURE

BLOOD PRESSURE IS CRUCIAL, ESPECIALLY TO MONITOR FOR SIGNS OF SHOCK. RESPIRATORY DISTRESS CAN LEAD TO HYPOTENSION DUE TO REDUCED CARDIAC OUTPUT FROM IMPAIRED OXYGENATION OR EXCESSIVE WORK OF BREATHING. A FALLING BLOOD PRESSURE IN A PATIENT WITH RESPIRATORY DISTRESS IS A CRITICAL SIGN.

SKIN COLOR AND TEMPERATURE

OBSERVING THE SKIN PROVIDES CLUES ABOUT PERFUSION AND OXYGENATION.

- **CYANOSIS:** BLUISH DISCOLORATION, ESPECIALLY OF THE LIPS AND NAIL BEDS, INDICATES POOR OXYGENATION.
- **PALLOR:** PALE SKIN CAN INDICATE POOR PERFUSION OR ANEMIA.
- **DIAPHORESIS:** PROFUSE SWEATING CAN BE A SIGN OF SIGNIFICANT PHYSIOLOGICAL STRESS.

KEY DIAGNOSTIC TOOLS FOR EMTs IN RESPIRATORY CASES

WHILE EMTs DO NOT PERFORM INVASIVE DIAGNOSTICS, THEY UTILIZE SPECIFIC TOOLS TO GATHER INFORMATION THAT AIDS IN THEIR ASSESSMENT AND TREATMENT DECISIONS. THESE TOOLS ARE ESSENTIAL FOR UNDERSTANDING THE PATIENT'S CONDITION AND COMMUNICATING EFFECTIVELY WITH RECEIVING FACILITIES.

STETHOSCOPE

AS PREVIOUSLY DISCUSSED, THE STETHOSCOPE IS VITAL FOR AUSCULTATING BREATH SOUNDS. ITS ABILITY TO DETECT ABNORMAL LUNG SOUNDS LIKE WHEEZING, CRACKLES, AND RHONCHI IS INDISPENSABLE FOR DIFFERENTIATING BETWEEN VARIOUS RESPIRATORY ETIOLOGIES.

PULSE OXIMETER

THE PULSE OXIMETER IS A NON-INVASIVE DEVICE THAT MEASURES OXYGEN SATURATION (SpO_2) AND PULSE RATE. IT PROVIDES A QUANTITATIVE MEASURE OF OXYGENATION, ALLOWING EMTs TO ASSESS THE SEVERITY OF HYPOXIA AND MONITOR THE EFFECTIVENESS OF OXYGEN THERAPY. IT'S IMPORTANT TO REMEMBER THAT SpO_2 CAN BE AFFECTED BY FACTORS LIKE POOR PERIPHERAL PERFUSION, DARK NAIL POLISH, OR CARBON MONOXIDE POISONING.

BVM (BAG-VALVE-MASK)

WHILE PRIMARILY A TREATMENT DEVICE, THE BVM'S ABILITY TO DELIVER POSITIVE PRESSURE VENTILATION CAN ALSO PROVIDE DIAGNOSTIC CLUES. THE EASE OR DIFFICULTY IN VENTILATING THE PATIENT, THE PRESENCE OF CHEST RISE, AND ANY AIR LEAKS CAN OFFER INFORMATION ABOUT AIRWAY PATENCY AND LUNG COMPLIANCE. INADEQUATE CHEST RISE DESPITE PROPER TECHNIQUE MAY INDICATE BRONCHOSPASM, AIRWAY OBSTRUCTION, OR PNEUMOTHORAX.

CAPNOGRAPHY (END-TIDAL CO_2 MONITORING)

CAPNOGRAPHY MEASURES THE CONCENTRATION OF CARBON DIOXIDE AT THE END OF EXHALATION ($ETCO_2$). THIS PROVIDES A REAL-TIME, CONTINUOUS ASSESSMENT OF VENTILATION AND CAN BE A SENSITIVE INDICATOR OF PHYSIOLOGICAL CHANGES.

- NORMAL $ETCO_2$ FOR ADULTS IS TYPICALLY 35-45 MMHG.
- ELEVATED $ETCO_2$: CAN INDICATE HYPOVENTILATION OR IMPAIRED CO_2 ELIMINATION.
- DECREASED $ETCO_2$: CAN INDICATE HYPERVENTILATION, REDUCED PULMONARY PERFUSION (E.G., CARDIAC ARREST, PULMONARY EMBOLISM), OR AIRWAY OBSTRUCTION.
- SUDDEN LOSS OF $ETCO_2$ WAVEFORM: OFTEN INDICATES CARDIAC ARREST OR COMPLETE AIRWAY OBSTRUCTION.

WHILE NOT ALL EMTs ARE EQUIPPED WITH CAPNOGRAPHY, ITS AVAILABILITY SIGNIFICANTLY ENHANCES THE ABILITY TO ASSESS VENTILATION AND CARDIAC OUTPUT.

DIFFERENTIAL DIAGNOSES FOR RESPIRATORY COMPLAINTS

WHEN FACED WITH A PATIENT EXHIBITING RESPIRATORY DISTRESS, EMTs MUST CONSIDER A RANGE OF POTENTIAL DIAGNOSES. THIS DIFFERENTIAL DIAGNOSIS PROCESS HELPS ENSURE THAT THE MOST CRITICAL CONDITIONS ARE IDENTIFIED AND MANAGED PROMPTLY. EMTs SHOULD THINK BROADLY ABOUT CONDITIONS AFFECTING THE LUNGS, AIRWAYS, CARDIOVASCULAR SYSTEM, AND EVEN NEUROLOGICAL OR METABOLIC CAUSES.

PULMONARY CAUSES

- ASTHMA: WHEEZING, DYSPNEA, COUGH, CHEST TIGHTNESS.
- COPD EXACERBATION: INCREASED DYSPNEA, CHRONIC COUGH, SPUTUM PRODUCTION, WHEEZING.

- **PNEUMONIA:** FEVER, COUGH WITH SPUTUM, CRACKLES, DYSPNEA, PLEURITIC CHEST PAIN.
- **PULMONARY EDEMA (CARDIOGENIC OR NON-CARDIOGENIC):** PINK, FROTHY SPUTUM, CRACKLES, DYSPNEA, OFTEN ASSOCIATED WITH HEART FAILURE.
- **PNEUMOTHORAX:** SUDDEN ONSET DYSPNEA, PLEURITIC CHEST PAIN, DECREASED BREATH SOUNDS ON ONE SIDE.
- **PLEURAL EFFUSION:** DYSPNEA, DECREASED BREATH SOUNDS OVER AFFECTED AREA, POTENTIAL CHEST PAIN.
- **ASPIRATION:** HISTORY OF ALTERED MENTAL STATUS OR VOMITING, SUDDEN ONSET COUGH, DYSPNEA, POTENTIAL LUNG SOUNDS CHANGES.

CARDIAC CAUSES

- **MYOCARDIAL INFARCTION (MI):** CHEST PAIN RADIATING TO ARM OR JAW, SHORTNESS OF BREATH, DIAPHORESIS. CAN PRESENT WITH DYSPNEA AS THE PRIMARY SYMPTOM.
- **CONGESTIVE HEART FAILURE (CHF):** EDEMA, ORTHOPNEA, PAROXYSMAL NOCTURNAL DYSPNEA (PND), CRACKLES, AND SOMETIMES WHEEZING (CARDIAC ASTHMA).
- **ARRHYTHMIAS:** CAN LEAD TO REDUCED CARDIAC OUTPUT AND SECONDARY RESPIRATORY DISTRESS.

OTHER CAUSES

- **ANAPHYLAXIS:** RAPID ONSET OF RESPIRATORY DISTRESS, HIVES, ANGIOEDEMA, HYPOTENSION.
- **PULMONARY EMBOLISM (PE):** SUDDEN ONSET DYSPNEA, PLEURITIC CHEST PAIN, COUGH, SOMETIMES HEMOPTYSIS, RISK FACTORS PRESENT.
- **METABOLIC ACIDOSIS:** KUSSMAUL RESPIRATIONS (DEEP, RAPID BREATHING) TO COMPENSATE FOR ACID BUILDUP.
- **ANXIETY/PANIC ATTACK:** HYPERVENTILATION, DYSPNEA, CHEST TIGHTNESS, BUT OFTEN WITH NORMAL OXYGEN SATURATION AND PHYSICAL FINDINGS.
- **TRAUMA:** CHEST TRAUMA CAN LEAD TO PNEUMOTHORAX, HEMOTHORAX, PULMONARY CONTUSIONS, AND FRACTURED RIBS AFFECTING BREATHING MECHANICS.

SPECIFIC EMT MEDICAL ASSESSMENT SCENARIOS: RESPIRATORY

LET'S EXPLORE SOME COMMON EMT MEDICAL ASSESSMENT SCENARIOS INVOLVING RESPIRATORY COMPLAINTS, HIGHLIGHTING THE STEP-BY-STEP APPROACH EMTs SHOULD EMPLOY.

SCENARIO 1: ELDERLY PATIENT WITH SUDDEN ONSET SHORTNESS OF BREATH

AN 80-YEAR-OLD MALE CALLED EMS COMPLAINING OF SUDDEN ONSET SHORTNESS OF BREATH THAT BEGAN APPROXIMATELY 30 MINUTES AGO. HE IS SITTING UPRIGHT IN A RECLINER, APPEARING DISTRESSED.

- **GENERAL IMPRESSION:** PATIENT APPEARS ELDERLY, IN MODERATE RESPIRATORY DISTRESS, USING ACCESSORY MUSCLES, SPEAKING IN SHORT SENTENCES. SKIN IS PALE AND CLAMMY.
- **AIRWAY:** PATENT, NO OBVIOUS OBSTRUCTION.
- **BREATHING:** RAPID AND SHALLOW, RR 28. CHEST RISE IS SYMMETRICAL BUT REDUCED. AUSCULTATION REVEALS DIFFUSE CRACKLES IN BOTH LUNG BASES.
- **CIRCULATION:** PULSE IS RAPID AND WEAK, HR 110. BLOOD PRESSURE 130/80. SpO2 88% ON ROOM AIR.
- **HISTORY:** PATIENT HAS A HISTORY OF CHF AND HYPERTENSION. HE DENIES FEVER OR COUGH. HE STATES HE HAS NOT BEEN COMPLIANT WITH HIS DIURETIC MEDICATION.
- **DIFFERENTIAL:** CHF EXACERBATION, PULMONARY EDEMA, PNEUMONIA, PE.
- **INTERVENTIONS:** ADMINISTER HIGH-FLOW OXYGEN VIA NON-REBREATHING MASK, POSITION PATIENT COMFORTABLY, PREPARE FOR TRANSPORT. CONTINUOUS REASSESSMENT OF VITAL SIGNS AND BREATHING EFFORT.

SCENARIO 2: MIDDLE-AGED MALE WITH WHEEZING AND COUGH

A 55-YEAR-OLD MALE WITH A KNOWN HISTORY OF COPD IS EXPERIENCING INCREASED SHORTNESS OF BREATH, A PRODUCTIVE COUGH WITH YELLOW SPUTUM, AND AUDIBLE WHEEZING FOR THE PAST TWO DAYS.

- **GENERAL IMPRESSION:** PATIENT IS LEANING FORWARD, USING ACCESSORY MUSCLES, SPEAKING IN 3-4 WORD SENTENCES. SKIN IS SLIGHTLY CYANOTIC AROUND THE LIPS.
- **AIRWAY:** PATENT.
- **BREATHING:** INCREASED WORK OF BREATHING, RR 24, DEEPER THAN USUAL. DIFFUSE BILATERAL WHEEZING HEARD ON AUSCULTATION. CHEST EXPANSION IS ADEQUATE.
- **CIRCULATION:** PULSE IS RAPID AND REGULAR, HR 95. BLOOD PRESSURE 140/85. SpO2 90% ON ROOM AIR.
- **HISTORY:** PATIENT REPORTS INCREASED SPUTUM PRODUCTION AND CHANGE IN COLOR, ATTRIBUTING IT TO A "CHEST COLD." HE HAS HIS ALBUTEROL INHALER BUT STATES IT IS NOT PROVIDING MUCH RELIEF.
- **DIFFERENTIAL:** COPD EXACERBATION, PNEUMONIA.
- **INTERVENTIONS:** ADMINISTER OXYGEN TO MAINTAIN SpO2 BETWEEN 88-92%, ASSIST WITH NEBULIZED BRONCHODILATOR THERAPY (E.G., ALBUTEROL AND IPRATROPIUM), ASSIST WITH HIS OWN INHALER IF AVAILABLE AND APPROPRIATE.

SCENARIO 3: CHILD WITH STRIDOR AND DROOLING

A 3-YEAR-OLD CHILD IS BROUGHT IN BY PARENTS DUE TO DIFFICULTY BREATHING AND A BARKING COUGH.

- **GENERAL IMPRESSION:** CHILD APPEARS ANXIOUS, SITTING UPRIGHT, DROOLING, AND MAKING A HIGH-PITCHED INSPIRATORY SOUND (STRIDOR).
- **AIRWAY:** STRIDOR IS EVIDENT, INDICATING UPPER AIRWAY NARROWING. PARENTS REPORT NO KNOWN FOREIGN BODY INGESTION.

- **BREATHING:** RAPID, RR 35. RETRACTIONS NOTED IN THE SUPRASTERNAL NOTCH AND INTERCOSTAL SPACES.
- **CIRCULATION:** PULSE IS RAPID, HR 130. SKIN IS WARM AND DRY. SpO2 94% ON ROOM AIR.
- **HISTORY:** PARENTS REPORT THE SYMPTOMS BEGAN SUDDENLY THIS MORNING. THEY ARE CONCERNED ABOUT POSSIBLE CROUP OR EPIGLOTTITIS.
- **DIFFERENTIAL:** CROUP, EPIGLOTTITIS, FOREIGN BODY ASPIRATION.
- **INTERVENTIONS:** HUMIDIFIED OXYGEN IF AVAILABLE, POSITION OF COMFORT, AVOID AGITATING THE CHILD. PREPARE FOR RAPID TRANSPORT. IF AIRWAY COMPROMISE IS SEVERE, CONSIDER AIRWAY ADJUNCTS IF TRAINED AND PROTOCOL ALLOWS.

PEDIATRIC RESPIRATORY EMERGENCIES: UNIQUE CONSIDERATIONS

PEDIATRIC PATIENTS PRESENT UNIQUE CHALLENGES IN RESPIRATORY ASSESSMENT DUE TO ANATOMICAL AND PHYSIOLOGICAL DIFFERENCES. EMTs MUST BE AWARE OF THESE DISTINCTIONS TO PROVIDE EFFECTIVE CARE.

ANATOMY AND PHYSIOLOGY

- **SMALLER AIRWAYS:** MAKE CHILDREN MORE SUSCEPTIBLE TO OBSTRUCTION FROM SWELLING, SECRETIONS, OR FOREIGN BODIES.
- **HIGHER METABOLIC RATE:** CHILDREN REQUIRE MORE OXYGEN THAN ADULTS AND CAN DECOMPENSATE MORE RAPIDLY.
- **DIAPHRAGMATIC BREATHERS:** INFANTS AND YOUNG CHILDREN PRIMARILY USE THEIR DIAPHRAGM FOR BREATHING; ACCESSORY MUSCLE USE IS A LATE SIGN OF DISTRESS.
- **IMMATURE IMMUNE SYSTEMS:** INCREASE SUSCEPTIBILITY TO RESPIRATORY INFECTIONS LIKE BRONCHIOLITIS AND PNEUMONIA.

COMMON PEDIATRIC RESPIRATORY CONDITIONS

- **CROUP:** VIRAL INFECTION CAUSING INFLAMMATION OF THE LARYNX AND TRACHEA, PRESENTING WITH A BARKING COUGH AND STRIDOR.
- **BRONCHIOLITIS:** VIRAL INFECTION OF THE SMALL AIRWAYS, COMMON IN INFANTS, CAUSING WHEEZING AND INCREASED WORK OF BREATHING.
- **PNEUMONIA:** BACTERIAL OR VIRAL INFECTION OF THE LUNGS, SIMILAR PRESENTATION TO ADULTS BUT CAN BE MORE SEVERE.
- **ASTHMA:** INCREASINGLY COMMON IN CHILDREN, PRESENTING WITH SIMILAR SYMPTOMS TO ADULTS.
- **FOREIGN BODY ASPIRATION:** CAN CAUSE SUDDEN ONSET OF CHOKING, COUGHING, AND RESPIRATORY DISTRESS.

ASSESSMENT TIPS

- OBSERVE FROM A DISTANCE: ALLOW THE CHILD TO REMAIN WITH PARENTS IF POSSIBLE.
- USE AGE-APPROPRIATE LANGUAGE.
- LOOK FOR SUBTLE SIGNS: NASAL FLARING, GRUNTING, RETRACTIONS, AND CHANGES IN ACTIVITY LEVEL ARE IMPORTANT INDICATORS.
- LISTEN TO BREATH SOUNDS CAREFULLY: SMALLER LUNG FIELDS REQUIRE PRECISE AUSCULTATION.
- FEVER IS COMMON: DIFFERENTIATE BETWEEN INFECTIOUS AND NON-INFECTIOUS CAUSES.

GERIATRIC RESPIRATORY EMERGENCIES: SPECIAL CIRCUMSTANCES

ELDERLY PATIENTS OFTEN HAVE COMORBIDITIES AND AGE-RELATED PHYSIOLOGICAL CHANGES THAT COMPLICATE RESPIRATORY ASSESSMENTS AND INCREASE THEIR VULNERABILITY.

AGE-RELATED CHANGES

- DECREASED LUNG ELASTICITY: LEADS TO REDUCED LUNG CAPACITY AND EXPIRATORY FLOW.
- WEAKENED RESPIRATORY MUSCLES: CAN IMPAIR THE ABILITY TO GENERATE ADEQUATE TIDAL VOLUME AND COUGH EFFECTIVELY.
- REDUCED IMMUNE FUNCTION: INCREASES SUSCEPTIBILITY TO INFECTIONS LIKE PNEUMONIA.
- INCREASED PREVALENCE OF CHRONIC DISEASES: SUCH AS COPD, CHF, AND CARDIOVASCULAR DISEASE, WHICH CAN MIMIC OR EXACERBATE RESPIRATORY SYMPTOMS.

COMMON GERIATRIC RESPIRATORY ISSUES

- PNEUMONIA: A COMMON AND SERIOUS INFECTION IN THE ELDERLY, OFTEN PRESENTING WITH ATYPICAL SYMPTOMS LIKE CONFUSION OR WEAKNESS RATHER THAN FEVER AND COUGH.
- COPD EXACERBATIONS: OLDER ADULTS WITH COPD ARE PRONE TO FREQUENT EXACERBATIONS.
- HEART FAILURE: CAN PRESENT WITH PULMONARY EDEMA AND DYSPNEA, OFTEN INDISTINGUISHABLE FROM PRIMARY LUNG DISEASE WITHOUT A THOROUGH CARDIAC ASSESSMENT.
- ASPIRATION: DUE TO REDUCED GAG REFLEX OR DYSPHAGIA, ASPIRATION IS MORE COMMON, LEADING TO ASPIRATION PNEUMONIA.

ASSESSMENT CONSIDERATIONS

- **ATYPICAL PRESENTATIONS:** RECOGNIZE THAT ELDERLY PATIENTS MAY NOT EXHIBIT CLASSIC SYMPTOMS.
- **POLYPHARMACY:** BE AWARE OF THE POTENTIAL FOR DRUG INTERACTIONS OR SIDE EFFECTS THAT COULD AFFECT BREATHING.
- **COGNITIVE IMPAIRMENT:** MAY AFFECT THE PATIENT'S ABILITY TO REPORT SYMPTOMS ACCURATELY.
- **FOCUS ON FUNCTIONAL STATUS:** HOW THE RESPIRATORY ISSUE AFFECTS THEIR DAILY ACTIVITIES.

ADVANCED AIRWAY MANAGEMENT AND EMT ROLE

WHILE EMTs PRIMARILY FOCUS ON BASIC AIRWAY MANAGEMENT, UNDERSTANDING ADVANCED AIRWAY TECHNIQUES AND THEIR INDICATIONS IS CRUCIAL FOR A COMPREHENSIVE UNDERSTANDING OF RESPIRATORY EMERGENCIES. DEPENDING ON THEIR LEVEL OF CERTIFICATION AND LOCAL PROTOCOLS, EMTs MAY HAVE SPECIFIC ROLES OR BE TRAINED IN ADVANCED AIRWAY PROCEDURES.

BASIC AIRWAY ADJUNCTS

EMTs ARE TRAINED IN THE USE OF BASIC AIRWAY ADJUNCTS:

- **OROPHARYNGEAL AIRWAY (OPA):** USED IN UNCONSCIOUS PATIENTS WITHOUT A GAG REFLEX TO PREVENT TONGUE FROM OBSTRUCTING THE PHARYNX.
- **NASOPHARYNGEAL AIRWAY (NPA):** USED IN CONSCIOUS OR SEMI-CONSCIOUS PATIENTS WITH A GAG REFLEX OR WHEN THE MOUTH IS UNABLE TO BE OPENED.

VENTILATION DEVICES

THE BAG-VALVE-MASK (BVM) IS THE PRIMARY VENTILATION DEVICE USED BY EMTs, EITHER WITH A NON-REBREATHER MASK FOR OXYGEN DELIVERY OR FOR POSITIVE PRESSURE VENTILATION. POCKET MASKS ARE ALSO USED FOR RESCUE BREATHING.

WHEN ADVANCED AIRWAY IS INDICATED

ADVANCED AIRWAY INTERVENTIONS ARE TYPICALLY PERFORMED BY PARAMEDICS OR HIGHER-LEVEL CARE PROVIDERS. HOWEVER, EMTs ARE OFTEN THE FIRST ON SCENE AND MAY ENCOUNTER SITUATIONS WHERE THESE INTERVENTIONS ARE NECESSARY. INDICATIONS FOR ADVANCED AIRWAY MANAGEMENT INCLUDE:

- INABILITY TO MAINTAIN A PATENT AIRWAY WITH BASIC ADJUNCTS.
- FAILURE TO ADEQUATELY VENTILATE A PATIENT WITH A BVM.
- NEED FOR PROLONGED VENTILATORY SUPPORT.
- PROTECTION AGAINST ASPIRATION IN PATIENTS WITH ALTERED MENTAL STATUS OR RISK OF VOMITING.

ADVANCED AIRWAY DEVICES (PARAMEDIC LEVEL)

COMMON ADVANCED AIRWAY DEVICES INCLUDE:

- ENDOTRACHEAL TUBE (ETT): INSERTED DIRECTLY INTO THE TRACHEA.
- SUPRAGLOTTIC AIRWAY DEVICES (E.G., KING LT, I-GEL): PLACED ABOVE THE GLOTTIS.
- NEEDLE CRICOTHYROTOMY: A SURGICAL AIRWAY PERFORMED IN EMERGENT SITUATIONS.

EMTS PLAY A VITAL ROLE IN SUPPORTING THESE PROCEDURES BY ENSURING PATIENT POSITIONING, ADMINISTERING PRE-OXYGENATION, AND MONITORING THE PATIENT DURING AND AFTER PLACEMENT.

DOCUMENTATION AND REPORTING OF RESPIRATORY ASSESSMENTS

ACCURATE AND THOROUGH DOCUMENTATION IS A CRITICAL COMPONENT OF PATIENT CARE. IT ENSURES CONTINUITY OF CARE, PROVIDES A LEGAL RECORD, AND AIDS IN QUALITY IMPROVEMENT. FOR RESPIRATORY ASSESSMENTS, SPECIFIC DETAILS MUST BE RECORDED.

KEY ELEMENTS TO DOCUMENT

- SCENE SAFETY AND GENERAL IMPRESSION.
- PATIENT'S CHIEF COMPLAINT AND ONSET.
- HISTORY OF PRESENT ILLNESS (OPQRST).
- PAST MEDICAL HISTORY, MEDICATIONS, AND ALLERGIES RELEVANT TO RESPIRATORY FUNCTION.
- VITAL SIGNS, INCLUDING RESPIRATORY RATE, SpO_2 , PULSE RATE, AND BLOOD PRESSURE, AT MULTIPLE POINTS IN TIME.
- PHYSICAL EXAM FINDINGS: BREATH SOUNDS (TYPE AND LOCATION), PRESENCE OF RETRACTIONS, USE OF ACCESSORY MUSCLES, SKIN COLOR AND TEMPERATURE.
- PATIENT'S POSITION OF COMFORT AND ABILITY TO SPEAK.
- INTERVENTIONS PERFORMED: OXYGEN DELIVERY METHOD AND FLOW RATE, BRONCHODILATOR ADMINISTRATION, POSITIONING, ETC.
- PATIENT'S RESPONSE TO INTERVENTIONS.
- ANY PERTINENT NEGATIVES (E.G., NO FEVER, NO CHEST PAIN).
- DETAILS OF COMMUNICATION WITH MEDICAL CONTROL OR RECEIVING FACILITY.
- PATIENT DISPOSITION AND CONDITION UPON ARRIVAL AT THE HOSPITAL.

USING CLEAR AND CONCISE LANGUAGE

EMTS SHOULD USE STANDARD MEDICAL TERMINOLOGY AND AVOID JARGON OR AMBIGUOUS DESCRIPTIONS. FOR EXAMPLE,

INSTEAD OF "BREATHING HARD," USE "INCREASED WORK OF BREATHING WITH ACCESSORY MUSCLE USE." SPECIFIC FINDINGS LIKE "DIFFUSE BILATERAL WHEEZING" ARE MORE INFORMATIVE THAN "NOISY BREATHING."

CONCLUSION: MASTERING EMT RESPIRATORY ASSESSMENTS

EFFECTIVELY MANAGING RESPIRATORY EMERGENCIES IS A CRITICAL SKILL FOR ANY EMT. BY EMPLOYING A SYSTEMATIC APPROACH, GATHERING A THOROUGH PATIENT HISTORY, PERFORMING A DETAILED PHYSICAL EXAMINATION, AND ACCURATELY INTERPRETING VITAL SIGNS, EMTs CAN PROFICIENTLY ASSESS PATIENTS EXPERIENCING BREATHING DIFFICULTIES. UNDERSTANDING THE COMMON EMT MEDICAL ASSESSMENT SCENARIOS INVOLVING THE RESPIRATORY SYSTEM, FROM ASTHMA TO ANAPHYLAXIS, ALLOWS FOR TIMELY AND APPROPRIATE INTERVENTIONS. RECOGNIZING THE UNIQUE CONSIDERATIONS FOR PEDIATRIC AND GERIATRIC POPULATIONS FURTHER ENHANCES THE QUALITY OF CARE. CONTINUOUS LEARNING AND PRACTICE ARE ESSENTIAL TO REFINE THESE SKILLS, ENSURING EMTs ARE WELL-PREPARED TO PROVIDE LIFE-SAVING ASSISTANCE TO THOSE IN RESPIRATORY DISTRESS.

FREQUENTLY ASKED QUESTIONS

WHAT ARE THE INITIAL STEPS IN ASSESSING A PATIENT PRESENTING WITH SHORTNESS OF BREATH (SOB) IN A PREHOSPITAL SETTING?

THE INITIAL STEPS INVOLVE ENSURING SCENE SAFETY, PERFORMING A RAPID PRIMARY SURVEY (AIRWAY, BREATHING, CIRCULATION, DISABILITY, EXPOSURE - ABCDE), OBTAINING VITAL SIGNS (INCLUDING SPO₂), AND PERFORMING A FOCUSED HISTORY USING OPQRST OR A SIMILAR MNEMONIC FOR THE RESPIRATORY COMPLAINT.

WHAT ARE COMMON ADVENTITIOUS BREATH SOUNDS AND WHAT DO THEY TYPICALLY INDICATE?

COMMON ADVENTITIOUS SOUNDS INCLUDE CRACKLES (RALES), WHICH OFTEN INDICATE FLUID IN THE ALVEOLI (E.G., PULMONARY EDEMA, PNEUMONIA); WHEEZES, WHICH SUGGEST NARROWED AIRWAYS (E.G., ASTHMA, COPD); RHONCHI, WHICH INDICATE MUCUS IN LARGER AIRWAYS (E.G., BRONCHITIS); AND STRIDOR, WHICH IS A HIGH-PITCHED INSPIRATORY SOUND INDICATING UPPER AIRWAY OBSTRUCTION.

HOW WOULD YOU DIFFERENTIATE BETWEEN AN ASTHMA EXACERBATION AND A COPD EXACERBATION IN A PREHOSPITAL PATIENT?

WHILE BOTH PRESENT WITH SOB AND WHEEZING, ASTHMA OFTEN HAS A MORE SUDDEN ONSET, A HISTORY OF ALLERGIES OR ATOPY, AND MAY HAVE A CLEAR TRIGGER. COPD EXACERBATIONS ARE MORE COMMON IN SMOKERS OR THOSE WITH CHRONIC LUNG DISEASE, OFTEN PRESENT WITH INCREASED SPUTUM PRODUCTION AND PURULENT SPUTUM, AND MAY HAVE A SLOWER ONSET OR BE PRECIPITATED BY INFECTION.

WHAT IS THE SIGNIFICANCE OF ACCESSORY MUSCLE USE AND PURSED-LIP BREATHING IN A RESPIRATORY ASSESSMENT?

ACCESSORY MUSCLE USE (E.G., STERNOCLEIDOMASTOID, SCALENES) INDICATES SIGNIFICANT RESPIRATORY DISTRESS AND THE BODY'S ATTEMPT TO RECRUIT ADDITIONAL MUSCLES TO AID IN BREATHING. PURSED-LIP BREATHING IS A COMPENSATORY MECHANISM, PARTICULARLY IN COPD, WHERE IT HELPS MAINTAIN AIRWAY PATENCY AND REDUCES AIR TRAPPING BY INCREASING INTRATHORACIC PRESSURE DURING EXHALATION.

WHAT ARE THE KEY COMPONENTS OF A FOCUSED RESPIRATORY HISTORY?

KEY COMPONENTS INCLUDE THE ONSET, DURATION, AND PROGRESSION OF SYMPTOMS; PRESENCE OF CHEST PAIN; COUGH (PRODUCTIVE OR NON-PRODUCTIVE, COLOR OF SPUTUM); ANY HISTORY OF RESPIRATORY CONDITIONS (ASTHMA, COPD, PNEUMONIA, PE); RELEVANT PAST MEDICAL HISTORY (CARDIAC, DIABETES); MEDICATIONS; ALLERGIES; AND ANY RECENT TRAVEL OR EXPOSURES.

HOW WOULD YOU ASSESS FOR PARADOXICAL CHEST WALL MOVEMENT?

PARADOXICAL CHEST WALL MOVEMENT, ALSO KNOWN AS A FLAIL CHEST, IS ASSESSED BY OBSERVING THE CHEST DURING RESPIRATION. THE AFFECTED SEGMENT OF THE CHEST WALL WILL MOVE INWARD DURING INSPIRATION AND OUTWARD DURING EXPIRATION, AS OPPOSED TO THE NORMAL COORDINATED MOVEMENT OF THE ENTIRE CHEST.

WHAT ARE THE IMMEDIATE INTERVENTIONS FOR A PATIENT EXPERIENCING SEVERE RESPIRATORY DISTRESS WITH SUSPECTED BRONCHOSPASM?

IMMEDIATE INTERVENTIONS OFTEN INCLUDE ADMINISTERING HIGH-FLOW OXYGEN, ASSISTING WITH PATIENT POSITIONING (E.G., SITTING UP), AND ADMINISTERING A SHORT-ACTING BETA-AGONIST (SABA) LIKE ALBUTEROL VIA NEBULIZER OR METERED-DOSE INHALER (MDI) WITH A SPACER, IF AVAILABLE AND INDICATED BY PROTOCOL.

WHAT ARE THE SIGNS AND SYMPTOMS OF A PULMONARY EMBOLISM (PE) THAT MIGHT BE ENCOUNTERED IN A RESPIRATORY ASSESSMENT?

SIGNS AND SYMPTOMS OF PE CAN INCLUDE SUDDEN ONSET OF DYSPNEA, PLEURITIC CHEST PAIN, TACHYPNEA, TACHYCARDIA, HYPOXIA, AND SOMETIMES A COUGH WITH HEMOPTYSIS. PATIENTS MAY ALSO HAVE RISK FACTORS SUCH AS IMMOBILITY, RECENT SURGERY, OR A HISTORY OF DVT.

WHEN SHOULD POSITIVE PRESSURE VENTILATION (E.G., CPAP OR BiPAP) BE CONSIDERED FOR A PATIENT WITH RESPIRATORY DISTRESS?

POSITIVE PRESSURE VENTILATION IS CONSIDERED FOR PATIENTS WITH SIGNIFICANT RESPIRATORY DISTRESS, HYPOXIA DESPITE OXYGEN THERAPY, INCREASED WORK OF BREATHING, AND SIGNS OF IMPENDING RESPIRATORY FAILURE, PARTICULARLY IN CASES OF PULMONARY EDEMA OR SEVERE COPD EXACERBATIONS, WHEN AVAILABLE AND INDICATED BY PROTOCOL.

ADDITIONAL RESOURCES

HERE ARE 9 BOOK TITLES RELATED TO EMT MEDICAL ASSESSMENT SCENARIOS FOCUSING ON RESPIRATORY ISSUES:

1. RESPIRATORY EMERGENCIES: A PRACTICAL GUIDE FOR EMTs

THIS COMPREHENSIVE GUIDE DELVES INTO THE ASSESSMENT AND MANAGEMENT OF COMMON AND CRITICAL RESPIRATORY EMERGENCIES ENCOUNTERED BY EMERGENCY MEDICAL TECHNICIANS. IT PROVIDES DETAILED INFORMATION ON IDENTIFYING SIGNS AND SYMPTOMS, PERFORMING FOCUSED PHYSICAL ASSESSMENTS, AND IMPLEMENTING APPROPRIATE INTERVENTIONS FOR CONDITIONS LIKE ASTHMA, COPD EXACERBATIONS, AND PULMONARY EDEMA. THE BOOK EMPHASIZES CRITICAL THINKING SKILLS AND PRACTICAL APPLICATION OF KNOWLEDGE IN REAL-WORLD SCENARIOS, MAKING IT AN INVALUABLE RESOURCE FOR EMT STUDENTS AND PRACTICING PROFESSIONALS.

2. AIRWAY MANAGEMENT FOR THE PREHOSPITAL PROVIDER

THIS ESSENTIAL TEXT FOCUSES ON THE CRUCIAL SKILL OF AIRWAY MANAGEMENT FOR EMTs, A FUNDAMENTAL COMPONENT OF RESPIRATORY ASSESSMENT. IT COVERS A WIDE RANGE OF TECHNIQUES FROM BASIC AIRWAY MANEUVERS TO ADVANCED INTERVENTIONS LIKE SUCTIONING AND OXYGEN DELIVERY. THE BOOK INCLUDES DETAILED ANATOMICAL OVERVIEWS, STEP-BY-STEP PROCEDURES, AND CASE STUDIES TO HELP EMTs CONFIDENTLY ASSESS AND SECURE AIRWAYS IN VARIOUS PATIENT PRESENTATIONS.

3. PATIENT ASSESSMENT: THE EMT'S CLINICAL TOOLKIT

WHILE COVERING A BROAD SPECTRUM OF PATIENT ASSESSMENT, THIS BOOK DEDICATES SIGNIFICANT SECTIONS TO RESPIRATORY SYSTEM EVALUATION. IT GUIDES READERS THROUGH THE SYSTEMATIC PROCESS OF GATHERING SUBJECTIVE AND OBJECTIVE DATA, INCLUDING VITAL SIGNS, LUNG SOUNDS, AND PATIENT HISTORY, SPECIFICALLY RELATED TO BREATHING DIFFICULTIES. THE TEXT EQUIPS EMTs WITH THE TOOLS AND KNOWLEDGE TO ACCURATELY ASSESS THE SEVERITY OF RESPIRATORY DISTRESS AND FORMULATE EFFECTIVE TREATMENT PLANS.

4. PULMONARY DISORDERS IN EMERGENCY MEDICINE

THIS ADVANCED TEXT EXPLORES A VARIETY OF PULMONARY DISORDERS FROM AN EMERGENCY MEDICINE PERSPECTIVE, OFFERING INSIGHTS RELEVANT TO EMTs DEALING WITH THESE CONDITIONS. IT COVERS THE PATHOPHYSIOLOGY, CLINICAL MANIFESTATIONS, AND IMMEDIATE MANAGEMENT OF CONDITIONS LIKE PNEUMONIA, PNEUMOTHORAX, AND ANAPHYLAXIS. THE BOOK HIGHLIGHTS THE CRITICAL ROLE OF EMTs IN INITIAL ASSESSMENT AND STABILIZATION BEFORE PATIENT ARRIVAL AT A HOSPITAL.

5. THE EMT'S GUIDE TO CARDIOLOGY AND RESPIRATORY EMERGENCIES

THIS BOOK INTEGRATES THE ASSESSMENT OF RESPIRATORY AND CARDIAC SYSTEMS, RECOGNIZING THEIR FREQUENT INTERPLAY IN EMERGENCY SITUATIONS. IT PROVIDES A STRUCTURED APPROACH TO ASSESSING PATIENTS PRESENTING WITH SYMPTOMS THAT COULD STEM FROM EITHER SYSTEM, SUCH AS SHORTNESS OF BREATH WITH CHEST PAIN. THE TEXT INCLUDES ALGORITHMS AND DECISION-MAKING TOOLS TO HELP EMTs DIFFERENTIATE BETWEEN CARDIAC AND RESPIRATORY CAUSES AND PRIORITIZE INTERVENTIONS.

6. PEDIATRIC RESPIRATORY EMERGENCIES: AN EMT'S APPROACH

FOCUSING SPECIFICALLY ON THE UNIQUE CHALLENGES OF PEDIATRIC RESPIRATORY EMERGENCIES, THIS BOOK OFFERS TAILORED GUIDANCE FOR EMTs. IT ADDRESSES COMMON PEDIATRIC RESPIRATORY ILLNESSES, SUCH AS CROUP, BRONCHIOLITIS, AND PEDIATRIC ASTHMA, DETAILING THEIR SPECIFIC ASSESSMENT FINDINGS AND MANAGEMENT STRATEGIES. THE BOOK EMPHASIZES AGE-APPROPRIATE TECHNIQUES AND COMMUNICATION SKILLS VITAL FOR ASSESSING AND TREATING YOUNG PATIENTS.

7. MEDICAL SCENARIOS FOR EMTs: RESPIRATORY FOCUS

THIS BOOK IS DESIGNED TO ENHANCE PRACTICAL SKILLS THROUGH REALISTIC CASE STUDIES CENTERED ON RESPIRATORY EMERGENCIES. EACH SCENARIO PRESENTS A TYPICAL PATIENT PRESENTATION, PROMPTING THE READER TO PERFORM A SYSTEMATIC ASSESSMENT, IDENTIFY KEY FINDINGS, AND DETERMINE APPROPRIATE INTERVENTIONS. THE BOOK SERVES AS AN EXCELLENT TOOL FOR REINFORCING KNOWLEDGE AND DEVELOPING CRITICAL THINKING IN A SIMULATED ENVIRONMENT.

8. OXYGENATION AND VENTILATION: EMT ESSENTIALS

THIS FOCUSED TEXT ZEROES IN ON THE CRITICAL ASPECTS OF OXYGENATION AND VENTILATION ASSESSMENT AND MANAGEMENT FOR EMTs. IT COVERS THE PRINCIPLES OF GAS EXCHANGE, VARIOUS OXYGEN DELIVERY DEVICES, AND THE ASSESSMENT OF VENTILATION ADEQUACY. THE BOOK PROVIDES PRACTICAL INSTRUCTION ON HOW TO EVALUATE A PATIENT'S OXYGENATION STATUS AND IMPLEMENT EFFECTIVE VENTILATORY SUPPORT.

9. GERIATRIC RESPIRATORY ASSESSMENT: A PRACTICAL GUIDE

THIS SPECIALIZED GUIDE ADDRESSES THE NUANCES OF ASSESSING AND MANAGING RESPIRATORY EMERGENCIES IN THE ELDERLY POPULATION. IT HIGHLIGHTS HOW AGE-RELATED CHANGES CAN ALTER THE PRESENTATION OF RESPIRATORY CONDITIONS, REQUIRING SPECIFIC CONSIDERATIONS DURING ASSESSMENT. THE BOOK PROVIDES PRACTICAL TIPS FOR IDENTIFYING AND TREATING RESPIRATORY DISTRESS IN OLDER ADULTS, A SIGNIFICANT DEMOGRAPHIC ENCOUNTERED BY EMTs.

Emt Medical Assessment Scenarios Respiratory

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