



**NORTHWEST
COMMUNITY
EMERGENCY
MEDICAL
SERVICES
SYSTEM**

NWC EMS System Continuing Education August 2020

UNKEYED CECQ PACKET



EXTREMELY OBESE PATIENTS

Excess weight becomes a health hazard at $\geq 20\%$ above desirable weight. Obesity is defined as a body mass index (BMI) of at least 30 kg/m². It increases the risk for type 2 DM, cancer, heart disease, HTN, high cholesterol, gallstones, sleep apnea, venous thrombosis, atrial fib, reflux and renal disease, disability, and death. Eating disorders and psychological stigma are also linked to obesity. The leading causes of death among adults with obesity include ischemic heart disease, type 2 DM, respiratory diseases, and cancer (e.g., liver, kidney, breast, endometrial, prostate, and colon).

1. IMC/ITC special considerations:

Positioning: Consider risk for apnea, airway obstruction, ventilatory distress, and desaturation when flat. Elevate upper torso to optimally open airway or sit patient up as tolerated.

Secure airway - Advanced airway considerations: Higher incidence of tube dislodgement; ETCO₂ required

- Attempt intubation X 1 per procedure, airway size does not change due to obesity
- If difficult to intubate: Consider nasotracheal approach unless contraindicated
 - Insert alternate airway rather than attempting a difficult intubation
 - Anticipate difficult access for cricothyrotomy

Breathing: Assessment of lung sounds may be difficult; listen over back first

- **SpO₂ monitoring:** Can desaturate quickly when flat and be more difficult to monitor. Consider use of central sensor to better detect oxygenation
- O₂ by NRM or CPAP (PEEP 5 – 10 cm H₂O); assist w/ BVM (2 person technique) if severe hypoxia or hypercarbia
- CO₂ retention probable (46-52 mEq/L); monitor ETCO₂ if available

Circulation:

- Fluid loading is poorly tolerated
- Standard peripheral IV approaches may be difficult d/t thickness of sub-q fat
- **IO:** 45 mm 15 g needle; sites per System procedure
- **ECG:** Changes due to obesity; decreased amplitude (leads farther from heart); flattening of T waves in leads II, III, AVF, V5, V6, & T wave flattening or inversion in I and AVL

Disability:

- Supine patients will have decreased range of motion
- Motor strength may be diminished & difficult to assess due to weight of extremities; look for symmetry
- May have deceptive pain perception

Exposure:

- **Painus** (abd skin), back, buttocks, and perineum may be difficult to examine; addl. personnel may be needed
- View as much skin as possible; lift and retract painus to inspect for wounds, skin ulcers, infections

2. **Secondary assessment:** Use right size BP cuff / consider forearm location, abdominal exam $\leq 25\%$ accurate, high index of suspicion. Ask about recent surgery for weight reduction, type/nature (restrictive, malabsorptive or combination, open or laparoscopic), compliance with follow up instructions. High suspicion for dumping syndrome & hypoglycemia.

3. **Medications:** Consider using weight-adjusted dose to avoid sub-therapeutic levels. Contact OLMC for orders.

4. **Transport considerations:** Consider stretcher/spine board w/ limits. Request bariatric-equipped vehicle if available.

Diabetes~Obesity~Elderly

Questions/Comments
regarding this CE are welcome,
and should be directed to:

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NWC EMSS In-Field Coordinator
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Knowledge Objectives:

After completing the class & reading the referenced documents, each participant will do the following with a degree of accuracy that meets or exceeds standards established for their scope of practice without critical error:

Cognitive:

1. Distinguish how the body normally metabolizes and controls blood glucose from that of a diabetic.
2. Compare and contrast the classifications of diabetes including the pathophysiology, onset, clinical presentation and potential complications of type 1, type 2, and gestational diabetes.
3. Sequence the development of dehydration and acidosis in DKA.
4. Differentiate DKA and hyperglycemic, hyperosmolar, non-ketotic syndrome (HHNS).
5. Distinguish sources of infection unique to the obese patient population.
6. Investigate alternative methods for airway management with the obese patient population.
7. Examine the physiologic changes that occur as a result of aging.
8. Sequence the initial evaluation and treatment of an elderly patient including airway management, ventilatory assessment and support; optimizing oxygenation; cardiovascular (CV) support with IV fluids and potentially vasopressors, neurologic assessment and management; pain assessment and management; safe packaging (if transported), and appropriate patient dispensation.
9. Compare ways to prevent or reduce the risk of complications seen in elderly patients.

Affective:

1. Appreciate the long-term effects of hyperglycemia on the body systems, including the kidneys, heart and blood vessels, eyes, and nervous system.
2. Appreciate the need to perform a thorough physical assessment for obese patient populations to determine sources of infection.
3. Value the need to provide compassionate and competent patient-centered care to aging adults tailored to their unique circumstances.

**Northwest Community EMS System
August 2020 CE**

Name:	Date submitted:
EMS Agency/hospital:	Credit awarded (date):
	Returned for revisions:
	Revisions received:

1. After reviewing the video from Dr. Jordan this month regarding CA, what is the take home message mentioned to update notification to the field? <https://youtu.be/6Vdp4bNBeQI>

After reviewing the video from Dr. Jordan regarding the C-6 policy, please answer the following questions. <https://youtu.be/JLTSe0WyDkU>

2. What federal governing body of authority was primarily cited when writing the policy regarding controlled substances?
3. What was the reason for this policy being updated, changes made, and review of policy revisions re-educated on during January's CE?

4. What were the 3 issues found during a random (agency specific) audit within the last few months that brings us to this repeated discussion in the video?

- a. _____
- b. _____
- c. _____

5. What was the concern Dr. J mentioned in regards to the 2nd issue above?

6. Whose license does the C-6 policy fall under and what is the concern if censure were to occur?

7. What is your agencies process for signing off on controlled substances after each shift?

Diabetes

8. Define metabolism.

9. Define diabetes.

10. How many types of diabetes are there and explain the causation of each.

11. Statistically speaking, if a person is by definition obese, what is the increased likelihood that they will develop DT2?

12. What is insulin's role in glucose use for energy in the body?

13. What does it mean to be a pre-diabetic and what education can patients be given if this is suspected?

14. Identify risk factors for diabetes that are:

Modifiable

Non-Modifiable

Modifiable	Non-Modifiable

15. What two prevention programs did the ADA Standards of Medical Care in Diabetes put forth in 2020?

16. What five clinical presentations could a patient complain of if noted to have DKA / HHNS?

17. Identify five areas that increase risk of gestational diabetes.

18. Gestational diabetes can result in delivery of a large baby. What maneuver could be done to assist in delivery of the fetus to minimize risk of complications?

19. When treating a patient with diabetes, standard of care suggests to place the patient on a cardiac monitor. Why should the patient's cardiac condition be monitored?

20. What two frequent cardiac conditions are seen in persons with diabetes?

21. How does SOP treatment differ for a patient presenting with a blood glucose level of:

45	vs.	63
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Obesity

22. What specialized equipment is now available for EMS to use when caring for an obese patient?

23. What "back to basic" positioning of an obese pt should be considered when transporting to the hospital?

24. What is the highest priority for these obese patients during transport?

25. To avoid possibility of needing to intubate an obese patient, what airway device could be used to assist in work of breathing?

26. Identify two basic needs for positioning of an obese patient being ventilated with a BVM prior to requiring intubation?

27. Because standard peripheral IV approaches may be difficult to obtain, what alternative does EMS have in a conscious adult in extremis? What equipment is needed to perform?

28. What three disabilities may be noted for a person who is morbidly obese interfering with normal daily routine?

29. What two symptoms may be caused from a person after recent weight reduction surgery?

30. Identify one anatomic or physiologic change that occurs in a morbidly obese patient for each body system.

Pulmonary: _____
Cardiovascular: _____
Musculoskeletal: _____
GI: _____

Elderly

31. Explain the 1% Rule as understood for an aging population.

32. Upon assessment of the cardiovascular system for the aging population, what is understood about the pacing myocytes found in the elderly? Which conduction defect is often found as a person ages?

33. What two portions of the cardiac circulation is affected causing myocardial “stiffening” as a person ages?

34. Hemodynamically speaking, what could be masked in the absence of an elderly person who does not elicit a tachycardic response?

35. What seven changes can occur within the respiratory system in the elderly population?

36. Elderly patients who have sustained blunt thoracic trauma are at increased risk for rib fractures 2^o to decreased bone density.

TRUE

FALSE

37. As a person ages, renal dysfunction can often cause _____ of metabolism and _____ of medications. As a result, the NWCEMSS _____ the initial dose of pain medications given to a patient.

38. Sometimes confusion is just a normal process found in aging.

TRUE

FALSE

39. As a person ages, what skin changes occur and what considerations must be taken to avoid injury?

40. For those patients ≥ 65 years of age, what is the intention of the NWCEMSS to do if they should fall?

Upon completion, please submit to your hospital EMSC for grading. Upon successful completion, you will be awarded 2 hours of CE.