SELF ASSESSMENT RSPT 1200 – MODULE C:
ADMINISTRATION AND MONITORING OF AEROSOL DELIVERY DEVICES

1. List five examples of dry powder inhalers:
   A. **ROTOHALER**
   B. **SPINHALER**
   C. **DISKUS**
   D. **TURBUHALER**
   E. **ROTADISK**
   F. **AEROLIZER**
   G. **HANDIHALER**

2. What % of medication deposits in the lung following aerosol delivery? **10 TO 20%**

3. What happens to the remaining % of drug during aerosol delivery?

   A. **IMPACTED IN THE ORAL AIRWAY**
   B. **DEPOSITED IN THE STOMACH**
   C. **IS LOST IN THE APPARATUS**
   D. **IS EXHALED & LOST TO ENVIRONMENT**

4. How does a holding chamber differ from a spacer? **SPACER: NO ONE WAY VALVES; HOLDING CHAMBER: ONE WAY VALVE**

5. What are two reasons for using a reservoir device?
   INCREASE DEPOSITION IN THE LUNGS
   REDUCE THE TASTE OF MEDICATIONS
   REDUCE COLD FREON EFFECT THAT CAUSES MANY CHILDREN TO STOP INHALATION

6. A SVN can be used to deliver medication during mechanical ventilation

   A. True
   B. False

7. Which four DPI require you to insert capsules?
   A. **ROTOHALER (albuterol)**
   B. **SPINHALER (cromolyn sodium)**
   C. **AEROLIZER (formoterol)**
   D. **HANDIHALER (tiotropium bromide)**

8. What is the dosage of each capsule?

   DON'T WORRY ABOUT MEMORIZING DOSAGES AT THIS TIME.

9. If the doctor ordered an MDI for your patient and prescribed 3 inhalations/QID and the canister holds 400 actuations, how many days would the inhaler last?

$$\textbf{DURATION} = \frac{\#\ \textbf{ACTUATIONS IN CANISTER}}{\#\ \textbf{ACTUATIONS PER DAY}} = \frac{\textbf{400 ACTUATIONS}}{\textbf{3 ACTUATIONS} \times \textbf{4 TIMES/DAY}} = \textbf{33.33 DAYS}$$

10. Name three differences between an MDI and a BAI (pirbuterol) in regards to patient teaching.

    A. **THE NEED TO ACTIVATE THE INHALER BY LIFTING THE LEVER ON THE TOP.**
    B. **PLACEMENT OF THE BAI UNIT INSIDE THE MOUTH WITH THE LIPS TIGHT AROUND IT.**
    C. **THE FLOW OF GAS WITH A BAI MUST BE FAST ENOUGH TO TRIGGER THE UNIT ON. THE INSPIRATORY FLOW RATE WITH A TYPICAL MDI SHOULD BE SLOW.**

11. During a MDI (with spacer) administration, the device "whistles". You would instruct your patient to **REDUCE THEIR INSPIRATORY FLOW RATE**.

12. What part of the Aerochamber should be disassembled for cleaning? **I'M DELETING THIS QUESTION (AND THE NEXT). TECHNICALLY, THE AEROCHAMBER SHOULD ONLY HAVE THE MDI ADAPTER REMOVED AND CLEANED. THE VALVES AND OTHER PORTIONS OF THE MDI SHOULD NOT BE CLEANED.**

13. How often is it recommended that the Aerochamber be replaced? **DELETE. 6 TO 12 MONTHS. THE IMPORTANT POINT IS THAT THEY ARE NOT GOOD FOREVER (SAME WITH PEAK FLOW METERS)**

14. How long should you wait to deliver a second inhalation from a MDI? **THIRTY SECONDS TO ONE MINUTE**

15. Running water through a holding chamber can damage the chamber.

    A. True
    B. False

16. List two ways to prevent fungal infections after steroid administration

    A. **USE A HOLDING CHAMBER**
    B. **RINSE MOUTH AFTER USE**

17. What needs to be done prior to administering a B2 agonist with an MDI if the MDI has not been used in 24 hours? **DISCHARGE A PRIMING DOSE**

18. If you are administering a B2 agonist and a steroid via MDI, which should be given first? **BRONCHODILATOR FIRST AND WAIT 5 MINUTES**

19. How long should a breath hold be during an MDI inhalation? **TEN SECONDS**

20. The deadspace volume of the nebulizer is the amount of drug solution remaining in the reservoir when the device begins to "sputter" and aerosolization ceases. This volume is generally **0.5 TO 1.0** cc.

21. What % change in the FEV_1 would be considered a significant improvement following bronchodilator administration? **12% AND 200 mL**

22. What particle size is necessary for aerosol deposition to the alveoli? **LESS THAN 2 μ**

23. Given a pre FEV_1 of 1.67 L and a post FEV_1 of 1.92 L, calculate the % change in post bronchodilator flowrates.

$$\textbf{\% change} = \frac{\textbf{Post test } FEV_1 \textbf{ - Pretest } FEV_1}{\textbf{Pretest } FEV_1} \times 100$$

$$\textbf{\% change} = \frac{1.92 - 1.67}{1.67} \times 100 = \frac{0.25}{1.67} \times 100 = .15 \times 100 = 15\%$$

24. What is the recommended filling volume of a SVN? **MINIMUM OF 3 cc**

25. What is the recommended liter flow to run a SVN? **8 LITERS/MINUTE**

26. Why do you never exhale into a DPI? **UNUSED MEDICATION CAN BE DISPERSED.**

27. What is the ideal pattern for DPI administration?

A. Fast and deep
B. Slow and deep
C. Fast and shallow
D. Slow and shallow

28. The spacer device used with a MDI will:

A. Improve aerosol lung deposition
B. Reduce oropharyngeal deposition
C. Make it easier for the patient
D. All the above

29. If a MDI hasn't been used for 24 hours, you should:

A. Not shake the MDI
B. Take an extra dose
C. Discharge a waste dose
D. Use another MDI