



STEAM INHALATION

Key Terms

Steam inhalation

Nelson's inhaler

Steam tent method

Chest physiotherapy

Jug method

Electrical steam inhaler

STEAM INHALATION

INTRODUCTION:

Topical medications are administered directly to the skin and mucus membranes by painting or spreading it over an area, applying moist dressings, soaking body parts in a solution, or giving medicated baths. They are applied mostly to produce local effects, but certain topical preparations have systemic effects, since they are absorbed through the skin and mucous membrane. Mucous membrane used as a route of administration of drugs, where it is quickly absorbed. Mucous membrane at different regions differs in their sensitivity to drugs. The nasal mucous membranes are very sensitive and because of this the client may complaint of burning sensation, on administration steam inhalation, the value of steam inhalation lies chiefly in the moisture and heat, although the medicines used are also helpful as they are acting as respiratory antiseptics.

DEFINITION:

Breathing warm and moist air produced by a vaporizer is called steam/moist inhalation.

PURPOSE:

- To relieve the inflammation and congestion of the mucous membranes of the respiratory tract and Para nasal sinuses thus to produce symptomatic relief in acute and chronic sinusitis.
- To soften thick tenacious mucus this helps in its expulsion from the respiratory tract.
- To provide moisture and heat and to prevent dryness of the mucus membranes of the lungs and upper respiratory passages following operation such as tracheostomy.
- To aid in absorption of oxygen.
- To relieve spastic conditions of the larynx and bronchi.
- To provide antiseptic action on the respiratory tract (e.g.) by using menthol, eucalyptus and tincture benzoin.

EQUIPMENTS REQUIRED:

1. A clean tray containing,
 1. Towel
 2. Nelson's inhaler in a bowl
 3. Sputum cup with antiseptic solution
 4. Inhaler mouthpiece
 5. Gauze piece
 6. Cotton ball
 7. Ounce glass
 8. Face towel
 9. Kidney tray
2. Cardiac table
3. Pillows
4. Medication like tincture benzoin if ordered
5. Boiling water (160 F)



Picture 1: Articles Required for Steam Inhalation

DRUGS USED:

- Tr. benzoin 5 ml per 500 ml of boiling water
- Eucalyptus 2 ml per 500 ml of boiling water
- Methyl salicylate few drops per 500 ml of boiling water.

- Menthol few crystals per 500 ml of boiling water.
- Camphor few crystals per 500 ml of boiling water.

METHODS OF GIVING STEAM INHALATION:

S.NO	METHODS	DESCRIPTION
1.	Jug method	In this method, a Nelson's inhaler is used. The type of the inhalant required and the boiling water is filled in the jug and the patient breathes the vapour.
2	Steam tent method	When a high concentration of steam is required, a steam tent may be used. There are different ways of making a tent. A quick and easy method is to place a screen on either sides on the patient's bed and stretch blankets or sheets across them, fixing them with safety pins, and forming a canopy. Woolen blankets are preferred to sheet because they absorb moisture and will not drip over the patient.
3.	Electrical steam inhaler method	Small electric vaporizers can be used to give steam inhalation. It consists of a small jar with a heating element extending into the jar. The jar is filled with water. On the top of the jar is a removable perforated cup to which is attached a small metal spout. Cotton saturated with medication is placed inside the cup and the metal spout is fitted over the cup. As the water boils, the medicated steam is directed through the spout which is inhaled by the patient.

Watch out

In steam tent method Care must be taken that the stove and the kettle are placed far away from the screen and the bed clothes to prevent the danger of catching fire.

PROCEDURE:

S.NO	NURSING ACTION	RATIONALE
1.	Check the physician's order and nursing care plan.	
2.	Explain the procedure to patient and ensure that patient has emptied his bowel and bladder.	Helps in promoting relaxation. Patient will have to remain in bed for 1 hour.
3.	Warm the inhaler by pouring a little hot water into the inhaler and emptying it after one minute.	Reduces loss of heat from inhaler during procedure.
4.	Pour the required amount of inhalant into the inhaler and fill to a level below the spout with boiling water. The water should remain just below the spout	If the inhaler is filled up to the level of spout there is possibility of drawing water into the mouth when inhaling and cause scalds. If the spouts is filled with water into the mouth when inhaling and cause scalds. If the spout is filled with water it will not act as an air inlet.
5.	Place sterile mouthpiece and close the inhaler tightly. See that the mouthpiece is in the opposite direction to the spout.	This arrangement keeps the spout away from the patient when inhalations are taken in.
6.	Cover the mouth piece with a gauze piece and plug the spout with a cotton ball.	Covering the mouthpiece with a gauze piece will prevent burns of the lips. Cotton ball in the spout will prevent escape of steam.
7.	Place a towel around the inhaler and position it in the bowl.	Insulates the inhaler and prevents heat loss.
8.	Take it to the patient without losing time.	
9.	Switch off fan/AC or close windows and doors.	
10.	Position the patient in high fowlers or sitting	

position.

11. Place the apparatus conveniently in front of the patient on cardiac table with spout opposite to the patient. Remove the cotton plug and discard it into the paper bag



Picture 2: Removing Cotton Plug from the spout

12. Instruct the patient to place lips on the mouthpiece and take deep breath. After removing the lips from the mouthpiece, breathe out air through nose.



Picture 3: Inhaling using a Nelson's inhaler

13. Continue the treatment for 15 to 20 minutes

Keeping the spout opposite to the patient reduces the chances of burns. Removing the cotton plug helps to open spout, so that it can act as an inlet for air.

Directing the steam out through the nostril relieves the congestion of the mucous membranes of the nostril.

Helps in effectiveness of the procedure.

- as long as patient gets the vapours. Observe the patient during procedure.
14. Remove inhaler from the patient after the stated time, wipe off perspiration from the patient's face. Enhances comfort of patient.
 15. Give chest physiotherapy and encourage patient to bring out sputum by coughing.
 16. Instruct the patient to remain in the bed for 1 to 2 hours Reduces chances of dizziness and effects of sudden temperature variation.
 17. Take articles to the utility room, empty the inhaler, and clean the inside with alcohol to remove Tr.benzoin. Wash it with warm soapy water and then rinse with clean water. Clean the ounce glass with alcohol swab followed by soapy water. Remove the gauze covering the mouthpiece and wash the mouthpiece with soap and water and send for autoclaving. Dry the articles and replace them. Wash hands. Cleaning of articles avoids contamination and cross infection.
 18. Record the procedure in nurse's record with date, time, purpose and patient's response to the procedure. Communicates to staff about effectiveness and reinforcement of the procedure.

 **Watch out**

During inhalation if patient stops for a while for coughing or expectorating sputum, the spout may be closed with cotton ball to prevent escape of steam.

DOCUMENTATION:

- Document doctor's order for administration of steam inhalation.

- Document the type of drugs used (Tr.benzoin, Eucalyptus, Methyl salicylate) or warm water for steam inhalation.
- Document assessment of respiratory status, characteristics of sputum after administration of steam inhalation and record it in the nurse's notes in detail.
- Report if any abnormal findings to the physician.

**PATIENT FAMILY EDUCATION:**

Educate the patient and family regarding,

- the significance of steam inhalation in pre and post-operative care.
- the use of nelson's inhaler in home care set up, proper cleaning of nelson's inhaler after each use.
- the importance of chest physio after the administration of steam inhalation.
- the importance of deep breathing and coughing exercises.

