**ELIMINATION NEED**

**Learning Objectives:**

After studying this chapter, the students will be able to:

* Understand and describe about the basics of urinary elimination and the factors which affect it.
* Elaborate alterations in urinary elimination and bowel elimination.
* Understand the nursing care provided during various procedures.
* Understand how the urinary elimination and bowel elimination is facilitated.
* Understand and describe the process of bowel elimination and the factors affecting it.

**Abstract:**

Urination is the process by which the urinary bladder is emptied and it involves the kidneys, ureters and bladder for the elimination process. Urine is composed of majorly water, i.e. 96%. The rest 4% are organic and inorganic compounds. There are various factors that affect the process of urination and due to which there are evident of alterations in the urination process. These alterations are retention and incontinence. Nurses play a significant role in various procedures such as providing bedpan to a patient, inserting catheter or condom drainage.

Elimination of bowel contents take place through the digestive system, after the important electrolytes and water is reabsorbed in the large bowel. 3/4th of feces is composed of water and 1/4th of it consists solid waste. There are a number of factors, which affect the elimination process.

Constipation is a condition in which the frequency of defecation is reduced and the stool becomes hard and dry. This can be caused due to many reasons.

Diarrhea is a condition in which an individual passess watery stool. Also the frequency is increased. This condition is opposite to that of constipation.

Flatulence is the accumulation of gaseous contents in the GI tract.

Nurses take part in the procedures which facilitate bowel elimination. These procedures can be passing of flatus tube, enema, suppositories, bowel wash, diversion ostomies or the digital evacuation of the feces.

**Elimination:**

Elimination may be defined as the removal of waste material from the body like urine, faeces, sweat, discharge etc. through the intestine, kidneys, lung and skin.

**Urinary Elimination:**

Urinary elimination is defined as expulsion of waste products from the body through the urinary system.

**Physiology of Urine Elimination:**

Urinary elimination depends on the function of the kidneys, ureters, bladder and urethra. Kidneys remove waste from the blood to form urine. Ureters transport urine from the kidneys to the bladder. The bladder holds the urine until the urge. It influences urination.

All organs of the urinary system must be intact and functional for successful removal of urinary wastes. The process of emptying the bladder is known as **micturition** of **voiding** or **urination**. The bladder normally holds as much as **600 ml** of urine. However, the desire to urinate can be sensed when the bladder contains only a small amount of urine (**150 to 200 ml** in adults and **50 to 200 ml** in a child).

As the volume increases, the bladder walls stretch, sending sensory impulses to micturition centre in the **sacral spinal cord**. Parasympathetic impulses from the centre stimulate the detrusor muscle (a muscle which forms a layer of the wall of the bladder) to contract rhythmically. The internal sphincter also relaxes so that urine may enter the urethra, although voiding does not yet occur. As the bladder contracts, nerve impulses travel up the **spinal cord** to the **midbrain** and **cerebral cortex**. A person is thus conscious of the need to urinate. If the person chooses not to void, the external urinary sphincter remains contracted and the micturition reflex is inhibited. However, when a person is ready to void, the external sphincter relaxes, the micturition reflex stimulates the detrusor muscle to contract and urination occurs. The act of micturition is normally painless.

**Composition of urine:**

Human urine consists primarily of **water** (95%) with **organic solutes** including urea, creatinine, uric acid and trace amounts of enzymes, carbohydrates, hormones, fatty acids, pigments and mucins, and **inorganic ions** such as sodium (Na+), potassium (K+), chloride (Cl-), magnesium (Mg+2), calcium (Ca+2), ammonium (NH4+), sulphates (SO4-2) and phosphates (e.g. PO4-3).

**Organic compounds:**

Urea: 25-35 gm

Creatinine: 1.6 gm

Uric acid: 0.4-10 gm

Hippuric acid: 0.7 gm

Indican: 0.01 gm

Ketone bodies: 0.04 gm

Other substances (Carbohydrates, fatty acid, mucus, enzymes, hormones): 2.9 gm

**Inorganic compounds:**

Na+, Cl- : 15 gm

K+ : 3.3 gm

SO4-2 : 2.5 gm

H2PO-4, HPO4-2, PO4-3 : 2.5 gm

NH4+ : 0.7 gm

**Characteristics of Urine:**

1. **Volume:** 1000-2000ml/24hrs. but may vary according to season and water intake. E.g. in summer output is less and in winter output is more.
2. **Color:** A freshly voided specimen is pale yellow, straw-colored or amber, depending on its concentration.
3. **Turbidity and appearance:** Fresh urine should be clear or translucent. As urine stands and cools, it becomes cloudy. Normal urine is clear with no deposits. Cloudy appearance is due to ketone bodies (diabetes).
4. **Odor:** Normal urine smell is aromatic. As urine stands, it often develops an ammonia odor because of bacterial action.
5. **pH value:** The normal pH is about 6.0, with a range of 4.6 to 8.
6. **Specific gravity:** This is a measure of the concentration of dissolved solids in the urine. The normal range is 1.010 to 1.025.
7. **Constituents:** Organic constituents of urine include urea, uric acid, creatinine, urine pigments and undetermined nitrogen. Inorganic constituents are ammonia, sodium, chloride and traces of iron, phosphorus, sulphur, potassium and calcium.

**Factors influencing Urinary Elimination:**

1. **Developmental considerations:** Infants are born without voluntary control of urination and with little ability to concentrate urine. Most children develop urinary control between the ages of 2 and 5 years. In the elderly, diminished ability of the kidneys to concentrate urine may result in nocturia, while decreased bladder muscle tone results in frequency of urination.
2. **Lifestyle:** Many individual, family and socio-cultural variables influence a person’s normal voiding habits. For some individuals, voiding is a very personal and private act. The need to ask for assistance with a bedpan or urinal creates great embarrassment and anxiety in the patient, especially if it is offered by a nurse of the opposite sex.
3. **Fluid and food intake:** A healthy body maintains a sensitive balance between the amount of fluid ingested and the amount of fluid eliminated. When fluid intake increases, the output also increases. Certain fluids such as alcohol, coffee or tea increase urine production. Foods that are high in fluid content, e.g. cooked cereal also increase urine output. Food and fluids high in sodium can cause fluid retention e.g. snacks and pickles.
4. **Environment:** In summer due to excessive perspiration, urine output is less. During winter and the rainy season, due to lack of perspiration, urine output is more.
5. **Psychological factors:** Individuals experiencing stress often find themselves needing to void smaller amounts of urine at more frequent intervals. Stress can also interfere with the ability to relax the external urethral sphincter; as a result, emptying the bladder completely becomes difficult or impossible.
6. **Medications:** Many medications interfere with the normal urination process and may cause retention:

* Anticholinergic
* Antidepressants
* Antihistamine
* Antihypertensive

**Diuretics,** e.g. frusemide, increase urine formation.

1. **Muscle tone and activity:** Those who exercise regularly will have good muscle tone, increased body metabolism and good urine production. Poor muscle tone can lead to impaired bladder muscle contraction and poor control of the external urethral sphincter, and thus, poor urination control.

**Alterations in Urinary Elimination/Common Urinary problems:**

1. **Dysuria:** Difficulty in voiding, may or may not be associated with pain.
2. **Glycosuria:** Presence of sugar in the urine.
3. **Hematuria:** Presence of blood in the urine.
4. **Orthostatic albuminuria:** Presence of albumin in urine that is voided after periods of standing, walking or running.
5. **Pneumaturia:** Passage of urine containing gas.
6. **Polyuria:** Excessive output of urine (dyuresis).
7. **Proteinuria:** Presence of protein, usually albumin, in the urine.
8. **Pyuria:** Pus in the urine. Urine appears cloudy.
9. **Urgency:** A sudden strong desire to pass urine.
10. **Nocturia:** Excessive passing of urine in the night.
11. **Enuresis:** Involuntary voiding in bed (bedwetting).
12. **Urinary suppression:** The stopping or inhibition of urination.
13. **Oliguria:** A decrease in the expected amount of urine.
14. **Anuria:** Absence of or failure to produce urine.

**Retention of Urine:**

Retention of urine means that the urine is retained in the bladder.

**Causes of Retention of Urine:**

1. **Urethral obstruction:** Obstruction of the urethra from within or from outside can lead to retention of urine e.g. enlarged prostate gland, stricture of the urethra etc.
2. **Decreased stimulation of the muscle of bladder:** A lack of muscle tone and muscle spasm can lead to retention of urine as seen in injury or paralysis of the spinal nerves, dullness following shock, anaesthesia or alcoholism.
3. Pressure on the bladder by faecal impaction, fetus in utero pelvic tumors etc. can lead to retention of urine.
4. Poor fluid intake.
5. Surgery and trauma on the urinary structures may interfere with micturition.
6. Change in the living patterns can lead to retention of urine. Change in the daily routines, strange environment, lack of privacy etc. experienced by the clients during illness and hospitalization can lead to retention of urine.
7. Some medications such as analgesics and tranquillizers which suppress the central nervous system will also interfere with micturition by diminishing the effectiveness of the neural reflex.

**Prevention and Treatment of Retention of Urine:**

Before resorting to catheterization or even reporting that a client cannot pass urine, an intelligent nurse will use her knowledge and skill to aid the client to empty the bladder by natural means. Methods used in including natural urination are:

1. Assist the client to his or her normal position for voiding.
2. Provide privacy.
3. Offer a bedpan or urinal that is warm. A bedpan that is cold to touch may cause contraction of the perineal muscles.
4. Foster the muscles relaxation by providing necessary physical support to the client and by relieving pain.
5. Local application of heat to the perineum and lower abdomen by pouring warm ater or by the application of hot water bottles or by a sitz bath can foster muscle relaxation and thereby the act of micturition.
6. Provide any assistance when the client feels the need to void. By waiting for bedpan, the desire to void may pass off. Offer bedpan or urinal at regular intervals.
7. Provide enough time for micturition.
8. Reassurance and emotional support are helpful to relax the client.
9. A hot enema, **if permitted,** may relieve the retention of the urine.
10. Give fluids freely unless contraindicated.

**Incontinence of Urine:**

Urinary incontinence is the inability of the urinary sphincters to control the passage of the urine from the bladder.

**Causes of Incontinence of Urine:**

1. Sphincter damage
2. Weak perineal muscles
3. Tumors e.g. enlarged prostate
4. Urinary tract infection
5. Strictures
6. Faecal impaction
7. Neurological conditions
8. Effects of narcotics, sedatives and alcoholism
9. Paralysis of the body
10. Old age
11. Unconsciousness

**Prevention and Treatment of Incontinence of Urine:**

1. Establish a regular voiding schedule for the client e.g. every 2 hours whether he or she feels the urge or not.
2. Increase the physical activity.
3. Perineal exercises.
4. Arrange for toilet or bedpan within the easy reach of the client.
5. Medical and surgical correction of the causative factors e.g. treatment of the urinary tract infections, correction of the anatomic problem.
6. **Bladder training program:** The fluid intake is to be maintained between 2000 to 3000ml per day. Fluids are carefully spaced through the day and are limited before bedtime, so that urine production is reduced during the night.
7. **Condom drainage:** A male client with incontinence of urine can be safely managed with condom drainage.

**Specimen:**

A specimen is a small sample or part taken to show the nature of the whole, as a small quantity of urine for urinalysis or a small fragment of tissue for a microscopic study.

**Purposes of Collection of Specimen:**

1. To understand the importance of specimen collection
2. To develop skill in collection of different specimens
3. To differentiate the variation from normal to abnormal in sickness

**Types of Urine Specimen:**

The urine specimens collected for various examinations are given below:

1. Collection of mid-stream urine
2. Routine microscopic culture
3. 24 hours urine
4. Pregnancy test
5. Double voided specimen

**Observation of Urine Specimens:**

Each time the client’s urine is handled it should be observed for its normal characteristics as it helps the nurse to detect any variations in its normal characteristics. The normal and abnormal characteristics of urine are given below:

|  |  |  |
| --- | --- | --- |
| **Characteristics of Urine** | **Normal** | **Abnormal** |
| Volume | 1000-2000ml/24hrs. but may vary according to season and water intake. E.g. in summer output is less and in winter output is more | Abnormal increase in volume is called polyuria which is found in Diabetes Mellitus patients. Oliguria is less than 500ml/24hrs. which is found in heart and kidney diseases and shock conditions. Anuria is absent or scanty urine found in renal failure |
| Color | A freshly voided specimen is pale yellow, straw-colored or amber, depending on its concentration | Urine is darker than normal when it is scanty and concentrated. Urine is lighter than normal when it is excessive and diluted. Certain drugs, such as B-complex, L-dopa etc. alter the color of urine |
| Turbidity and appearance | Fresh urine should be clear or translucent. As urine stands and cools, it becomes cloudy. Normal urine is clear with no deposits. Cloudy appearance is due to ketone bodies (diabetes) | Cloudiness observed in freshly voided urine is abnormal and may be due to the presence of red blood cells, white blood cells, bacteria, vaginal discharge, sperm or prostatic fluid |
| Odor | Normal urine smell is aromatic. As urine stands, it often develops an ammonia odor because of bacterial action | Some foods cause urine to have a characteristic odor. E.g. asparagus causes urine to have a strong, musty odor.  Urine high in glucose content has a sweet odor.  Urine that is heavily infected has a fetid odor |
| pH value | The normal pH is about 6.0, with a range of 4.6 to 8 | Certain foods tend to produce acidic urine, for e.g. meat and canberry juice.  A high protein diet causes urine to become excessively acidic.  Certain foods tend to produce alkaline urine, such as citrus fruits, dairy products and vegetables, especially legumes. |
| Specific gravity | This is a measure of the concentration of dissolved solids in the urine. The normal range is 1.010 to 1.025 | Concentrated urine will have higher than normal specific gravity and diluted urine will have lower than normal specific gravity.  In the absence of a kidney disease, a high specific gravity usually indicates dehydration and a low specific gravity indicates over hydration |
| Constituents | Organic constituents of urine include urea, uric acid, creatinine, urine pigments and undetermined nitrogen.  Inorganic constituents are ammonia, sodium, chloride and traces of iron, phosphorus, sulphur, potassium and calcium | Abnormal constituents of urine include blood, pus, albumin, glucose, ketone bodies, casts, gross bacteria and bile |

**Providing Bedpan/Urinal**

**Definition:**

Offering a bedpan to meet the bowel elimination need of a bedridden patient.

**Types:**

1. Regular bedpan
2. Fracture bedpan

**Purposes:**

1. To facilitate bowel elimination in a bedridden patient
2. To collect specimen

**Principle:**

Buttocks should be firmly attached against the bedpan

**Articles:**

|  |  |
| --- | --- |
| **Articles** | **Rationale** |
| 1. Bedpan with lid | To receive faecal material |
| 1. Disposable gloves | To prevent cross infection |
| 1. Toilet tissues/wipes | To clean the anal region |
| 1. Mackintosh with towel | To protect the bed linen |
| 1. Specimen container (if needed) | To send the faecal material for laboratory test |
| 1. Kidney tray | To receive the wastes |
| 1. Screen | To provide privacy |

**Procedure:**

|  |  |
| --- | --- |
| **Steps of procedure** | **Rationale** |
| **Before procedure:**   1. Assess patient’s normal bowel elimination habits, routine pattern | To receive the faecal material |
| 1. Assess patient’s level of mobility, amount of assistance required and positions that the patient can assume | Determines the type of bedpan to be used and helps in identifying the level of assistance required from the nurse |
| 1. Assess for abdominal pain, haemorrhoids or irritation of skin surrounding anus | Pain can reduce ability of the patient to bear down during defecation |
| **During procedure:**   1. Wash hands and don gloves | Reduces transmission of microorganisms |
| 1. Provide mackintosh with towel under the buttocks | Prevents spillage |
| 1. Remove top sheet just enough, so they are out of the way but do not unduly expose patient | Reduces embarrassment and promotes normal bowel movement |
| 1. Warm bedpan under warm running water for few seconds and dry and keep it within reach | Warm bedpan helps to relax anal sphincter |
| 1. Pour just enough water to cover the bottom of bedpan | Helps in easy cleaning of the bedpan after use |
| 1. In patients who can move lower limbs, ask patient to flex knees resting the weight on back and legs, and then raise the buttocks at a count of 3 (with the help of a trapeze if available) | These movements will allow patient to support some of his/her weight himself/herself and avoid inconvenience |
| 1. Place a regular bedpan under patient with the smooth rounded rim under the patient’s buttocks. If a fracture bedpan is used, place it with flat low end under the patient’s buttocks. If patient is not able to move, obtain assistance from another nurse to lift the patient onto the bedpan   **OR**  Position the patient to sidelying position, place bedpan against buttocks and roll patient onto the bedpan, back to supine position |  |
| 1. Elevate patient’s bed to semifowler’s position or support patient’s back with pillows | Elevating head end allows for a more normal position. Placing pillows at lumber curvature prevents hyperextension of the back |
| 1. Cover patient with bed linen and permit patient to be alone with call bell within reach. Elevate side rails | Promotes the dignity of the patient |
| 1. When removing bedpan return bed to the position used when giving bedpan. Hold bedpan steady, remove it, cover it and place it away |  |
| 1. If patient can help by himself, provide toilet paper/wipes so that patient can clean himself |  |
| 1. If patient is totally helpless clean the anal region with wipes |  |
| 1. Collect faecal material in specimen container if required and empty the bedpan into toilet and flush it down |  |
| 1. Cleanse bedpan and return it to sluice room |  |
| **After procedure:**   1. Remove gloves and wash hands | Prevents spread of microorganism |
| 1. Position the patient comfortably, change linen if wet |  |
| 1. Record the procedure |  |

**Nursing Care of Client with Condom Drainage**

Condom drainage is a method of managing the continence in male patients in which a condom is used to attach to a plastic drainage tube and is rolled over the penis. The tube, from the other end is connected to a drainage bag.

The condom drainage can be applied overnight only or it can be a continuous process. It generally varies according to the patient's needs.

**Purposes of Condom Drainage:**

* Urine collection and controlling incontinence.
* Allow the client to perform physical activity while the client still has urinary incontinence.
* Prevent the skin from moisture due to leaking urine, thus preventing bedsores.
* To prevent UTIs resulting due to invasive procedures such as indwelling catheter.

**Procedure:**

|  |  |
| --- | --- |
| **Steps of procedure** | **Rationale** |
| 1. Before beginning the procedure the nurse must introduce herself and explain the procedure to the patient. | To gain cooperation and consent |
| 1. Perform the hand washing procedure. | Prevent cross contamination |
| 1. The client must be given either supine or sitting position to perform the procedure. | Provide privacy and maintain working areas ergonomically suitable. |
| 1. Privacy must be provided using the curtains or screens, and only the penis should be exposed and the client must be covered using the drape or top sheet. |  |
| 1. Wear gloves. | Prevent cross contamination |
| 1. Clean the penis and inspect for any other deformities or injuries. | Use circular motion to clean the prepuce |
| 1. Apply the condom by rolling it over the penis and secure it to the penis. The condom shouldn't be too tight or too loose. | Securing will prevent leakage |
| 1. After securing the condom with a strip of elastic tape, the drainage system is attached to it. | Drainage system will collect the urine output |
| 1. The client is then taught about the mechanism of the procedure. | For proper functioning of the system |
| 1. The nurse then observes for outflow of urine for the next 30 minutes and then at a regular interval of 4 hours. | To assess the working condition of the drainage system |
| 1. Document the procedure and any other findings. |  |

**Special consideration:**

* While securing the condom, it should be taken care that it is firm but not tight because that may stop the blood flow to the penis.
* The condom should not be twisted as it can obstruct the urinary flow.
* Assessment of penis for any swelling or discoloration should be done.
* Check for the urine output and flow in the bag.
* The condom must be replaced as prescribed by the physician. In certain settings, the condom is changed as regularly as daily.
* Provide skin care, to avoid irritation to the client and any infection.
* Documentation is must.
* Perform an evaluation to assess for any deviations from the normal.
* Report the deviations to the physician, if any.

**Urinary Catheterization:**

Urinary catheterization is a procedure where a catheter (hollow tube) is inserted into the bladder to drain or to collect urine. There are 3 main types of urinary catheterization that is:

* Intermittent
* Retention/Indwelling catheterization
* Suprapubic catheterization

**Intermittent catheterization:**

It is defined as a procedure performed medically in a situation when a patient is in need of catheterization, but for a shorter period of time.

It can be done easily by patient at home or by a nurse in a hospital setting. The major indication for intermittent catheterization is neurogenic bladder. The time duration can range from 2-3 hours to 4-6 hours.

**Benefits:**

1. To help regain control of bladder
2. Prevents reflux of urine
3. Prevention of dribbling of urine

**Procedure:**

|  |  |
| --- | --- |
| **Steps of procedure** | **Rationale** |
| 1. The perineal area is then cleaned and rinsed. It is worth considering that women have to clean the perineum from front to back | To prevent contamination from rectal area to perineum, this is why front to back cleaning is done |
| 1. Then a comfortable position is provided to the patient, in a way that it facilitates flow of urine. |  |
| 1. On the tip of catheter, a lubricant gel is applied, mostly lignocaine is used. | For easy insertion and lubrication |
| 1. In males pull back the prepuce and insert the catheter. |  |
| 1. In females separate the labia majora and minora and visualize the urethra for Insertion, vaginal opening may be plugged in case of confusion. |  |
| 1. The catheter is then inserted inside the urinary meatus until the outflow of urine is seen. | Urine flow indicates the entry to bladder |
| 1. Then, firmly hold the catheter until the client is done urinating and the bladder is drained completely. | To prevent progression or misplacement. |
| 1. Gently remove the catheter, and clean it thoroughly using soap and water. The catheter is stored in a dry place. | Disposable one |

**Special consideration:**

1. Check for any signs of infection. The signs can include burning sensation while urinating, pain or physical changes in the urine.
2. Make sure that the client is taking adequate fluids orally.

As the catheterization is done, the urine is collected and assessed if there is presence of any blood in urine. The urine is assessed for any other physical changes.

1. The client can be suggested to consume acidic juices such as cranberry or prunes.

**Indwelling Catheterization:**

Indwelling catheter, also called Folley’s catheter is defined as a device, which helps in the drainage of urinary bladder.

**Procedure:**

|  |  |
| --- | --- |
| **Steps of Procedure** | **Rationale** |
| In males-hold the penis and retract the prepuce if patient is not circumcised, clean the tip of the penis using the centre to periphery stroke in a circular motion |  |
| After cleaning lubricate the catheter and hold the penis upright with non-dominant hand | To straighten the urethral duct. |
| Insert the lubricated catheter |  |
| Distal end is kept in the kidney tray | It confirms the position of catheter in bladder. |
| Watch for the urine output After the catheter is inserted, urine will flow in the drainage bag. The retention balloon has to be inflated without releasing the catheter | As the urine flow comes, still insert the catheter almost half length so that while balloon inflation inflate, urethral injury doesn’t occur. |
| Hold catheter in non-dominant hand, the balloon has to be inflated using dominant hand. |  |
| If urine sample is needed, collect it. It can be collected through the drainage bag as well. Note that the urine sample can be collected from the drainage bag only for the initial time. |  |
| Secure the catheter using tape. | To prevent the misplacement. |
| Remove the gloves and discard them. | To prevent the cross contamination. |
| Wash hands and perform hand hygiene. |  |
| Observe the urine and note down the output, by taking the measurements from the collecting bag. |  |
| Document the procedure in the record book. |  |
| Report to the physician if any changes in the urine are seen. |  |

**Suprapubic Catheterization:**

It is the placement of a drainage tube into the urinary bladder just above the pubic symphysis.

This is typically performed for individuals who are unable to drain their bladder via the urethra.

**Indications:**

1. Urinary retention when urethral catheterization is not feasible.
2. When the urethra is damaged or injured.
3. If the pelvic floor muscles are weakened, causing a urethral catheter to fall out.
4. After surgeries that involve the bladder, uterus, prostate or nearby organs.

**Contraindications:**

1. Non-distended bladder and bladder malignancy.
2. Active skin infection, coagulopathy, osteomyelitis of the pubis.

**Complications:**

1. Bowel injury
2. Bleeding and vascular injury
3. Obstruction of the tube and failure to enter the bladder during the initial procedure

**Role of nurse in Urinary catheterization:**

As far as the role of nurse is concerned, the nurse has to take measures to avoid infection of the urinary tract. The nurse also takes care that the urine outflow is adequate. For that, the client must maintain a good fluid intake.

**Fluid:** The nurse has to encourage the patient for the intake of a good amount of fluid orally. It is advisable to drink up to 3 L of fluids every day for a patient with indwelling catheter, unless contradicted due to any disease condition. As the patient's intake is high, accordingly the output will also be high. The urine thus helps to flush the bladder and urethra and prevents infection due to urinary stasis. The flushing of bladder and urethra helps to remove any obstruction, if present.

**Diet:** To reduce the risk of urinary tract infection, the urine must be acidic in nature. Also, acidic urine prevents the formation of calculi. Food products which promote the urine to turn acidic must be promoted by the nurse. These items are eggs, meat, cranberry, plums, and prunes. On the other hand milk and milk products turn the urine alkaline.

**Hygiene:** Perineal care is advised. However, no specific cleaning is required. Routine hygiene practices have to be followed by the patients. The nurse can guide the family or the patient on how to perform perineal and catheter care and if necessary, the nurse can even assist them with the procedure.

**Catheter changing:** The catheter or tubing is not changed on a regular basis. If the catheter and drainage system is impaired, or there is some evidence of collection of certain salts in the form of sediments in the tube, the catheter can be changed. Regular insertion of new catheter can injure the perineum and promote the chances of infections.

**Input-output:** The nurse has to maintain the documentation where the accurate input and output is mentioned to assess the hydration status of patient and the urinary functions.

**Removal of the Urinary Catheter:**

|  |  |
| --- | --- |
| **Types** | **Removal** |
| Foley’s | * Wear clean gloves * Empty the uro bag and then with the help of syringe and needle deflate the balloon by withdrawing the fluid from it and hold the two gauze piece in non-dominant near to the perineum, in such a way that catheter is in the centre. * Now withdraw the catheter with dominant hand. * Throw the catheter and uro bag as per BMW policy of the hospital. |
| Condom drainage | * Wear gloves, empty the uro bag and note down the output. * Roll down the condom drainage and dispose of the condom drainage apparatus. |
| Suprapubic catheter | * Wear clean gloves * Remove the dressing and discard * Wash hands and wear sterile gloves clean the site of insertion of suprapubic catheter and deflate the balloon near the tip of the catheter and remove the catheter while patient is exhaling * Pull the purse string at the incision site and close the opening * Apply paraffin gauze and sterile dressing on it to seal the air entry * Discard the apparatus as per BMW policy. |

**Bladder Irrigation:**

Bladder irrigation is a procedure used to flush sterile fluid through a catheter into the bladder. Bladder irrigation helps remove and prevent blood clots in bladder.

**Purpose:**

1. To flush clots and debris out of the catheter and bladder
2. To instil medication to bladder lining.
3. To restore patency of the catheter.
4. To prepare the bladder surgery as a preoperative measure.
5. To promote healing
6. To relieve congestion and pain in case of inflammatory condition of cystitis.
7. To cleanse the bladder from decomposed urine bacteria, excess mucus and pus.

**Indications:**

1. Acute urinary retention (e.g. blood clots )
2. Chronic obstruction that causes hydronephrosis
3. Hygienic care of bedridden patients

**Contraindications:**

1. Blood at the meatus. Insertion of the catheter can worsen an underlying injury.
2. Gross hematuria
3. Urethral pain or discomfort
4. Low bladder volume

**Preparation of the articles:**

|  |  |
| --- | --- |
| **Articles** | **Rationale** |
| 1. Disposable gloves | To prevent cross infection |
| 1. Disposable, water resistant, sterile towel/mackintosh. | To prevent soil |
| 1. Three-way retention catheter in situ. | To continuous bladder irrigation |
| 1. Sterile drainage tubing and bag in place. | To collect the waste |
| 1. Sterile antiseptic swab. | To clean the site |
| 1. Sterile irrigating solution warmed or at room temperature. | To irrigate the bladder |
| 1. Normal saline |
| 1. Distilled water |
| 1. Solution as prescribed by the physician. |
| 1. Infusion tubing | To infuse the irrigating solution |
| 1. IV pole | To keep the irrigating solution |
| 1. Kidney basin | To discard the waste |

**Steps of procedure:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Steps of procedure** | | **Rationale** | |
| **Before procedure:** | |  | |
| Provide Privacy | | To promote comfort | |
| Wash hands | | To prevent transmission of microorganisms | |
| Get informed consent | | To avoid ethical and legal issues | |
| Check the physician’s order and nursing care plan for type, amount, and strength of irrigating fluid, and reason for irrigation | |  | |
| Prepare the patient | |  | |
| 1. Explain the procedure and its purpose to the patient. 2. Provide for privacy | | Clear explanation reduces anxiety. | |
| 1. Empty, measure, and record the amount and appearance of urine present in the urine bag. | | Empty the bag allows for more accurate measurement of urinary output after irrigation.  Assessment of character of urine helps in obtaining a baseline assessment data for later comparison | |
|  | **During Procedure** | | | |
| Prepare the equipment | | Reduce transmission of microorganisms. | |
| 1. Wash hands | |  | |
| 1. Connect the irrigation infusion tubing to the irrigation solution and flush the tubing with solution | | Flushing the tubing removes air and prevents it from being instilled into the bladder | |
| 1. Connect the irrigation tubing to input port of the 3-way catheter. Connect the drainage bag and tubing to the urinary drainage port if not already in place | |  | |
| Irrigate bladder:   1. Intermittent irrigation:   Instill the prescribed amount of irrigant. If specific is not ordered , fill up to 150 ml of irrigant    Clamp the irrigant tubing.  If the physician has order the irrigant to remain in the bladder, for a measured length of time, clamp the drainage tube and wait for the prescribed length of time  Open the drainage tube and monitor the drainage as it flows into the drainage bag | | The bladder normally feels full when it contains 300 ml of urine  Prevents further instillation of irrigant  Some irrigation solutions contain medication and are meant to remain in contact with the bladder wall for a prescribed length of time  Assesses the drainage for volume, color, clarity, and the presence of any clots of debris. | |
| 1. Continuous bladder irrigation:   Adjust the clamp on the irrigation tubing to allow the prescribed rate of irrigant to flow into the catheter and bladder.  Monitor color, clarity, debris and volume as it flows back into the drainage bag. | | Regulates the amount of irrigant flowing in and out of the bladder to prevent distention or damage to any surgical site.  Assesses for bleeding, clotting, and blockage of urine drainage or other complications. | |
| Tape the catheter securely to the thigh. | | Prevents the catheter from dislodging | |
| **After procedure** | | | |
| Assess the patient’s condition and tolerance of procedure | |  | |
| Discard all used disposable articles, clean, and replace reusable articles | |  | |
| Wash hands | | Prevents the spread of microorganisms. | |
|  | Record procedure in nurse’s record. | |  | |

**Nurses responsibilities**:

**Before the procedure**:

1. Explain the procedure to the patient
2. Obtain informed consent
3. Monitor the vital signs
4. Assist the patient to supine position with legs extended and flat on the bed (for Male) and supine position with legs spread in stirrup position (for female)
5. Flush the three way retention catheter
6. Clean the perennial area

**After procedure**:

1. Place the patient flat on bed
2. Monitor the vital sign and intake output chart
3. Wash and replace the all articles in the utility room
4. Record and reporting

**Complication**:

1. Allergic reaction
2. Blood in urine
3. Injury to the urethra
4. Kidney damage ( with long-term indwelling catheters)
5. Infection of the urinary tract.

**Urinary Diversions:**

Urinary diversion is defined as the process by which the urine flow is diverted. It is a surgical procedure in which the urine is diverted and re-routed from kidneys and is directed to body part other than the bladder. Through diversions, a new pathway is built for the urine to bypass and thus, urine exits from a new site.

**Indications:**

1. Tumor of the urinary bladder
2. Pelvic malignancy
3. Any birth anomaly
4. Injury or trauma to the urinary bladder
5. Other conditions that cause damage to the urinary tract

**Types:**

There can be two types or categories through which urine can be diverted from its original pathway, i.e. continent and continent

1. **Incontinent:** In the type of diversion, an appliance from outside is impaired for the urine to drain and contain since there no control on how the urine passes. The passage is to under the control. It is not essential that the urinary bladder has to be removed. There are various examples of incontinent urinary diversion. These are ureterostomy, phrostomy, vesicostomy and ileal conduit.

* **Ureterostomy:** In this type of diversion, small stoma informed on the side of abdomen, one or both ureters are brought to surface directly. As the stoma is created, a direct port of entry is provided for the microorganism to enter into the body. These stomas also impair urinary drainage.
* **Nephrostomy:** The diversion when the urine is diverted to the stomas from the kidneys.
* **Vesicostomy:** In this case, micturation from the urethra isn't possible. However, the bladder is not excised: Ureters remain attached to the bladder and an opening is attached with the bladder wall through surgical manipulations.
* **lleal conduit:** In this case, a small portion of ileum is removed. The end of the intestine is attached again. A pouch like structure is formed as the one end of removed portion is sutured. A stoma is created as the other end is brought out of the abdominal wall. This is the most common kind of diversion performed, in which the urine is drained through the ileal pouch

1. **Continent:**

* Unlike the incontinent diversion, the continent diversion helps the patient to control the urine flow. This can be done either by the intermittent catheterization of inner reservoir, i.e., Kock pouch or by straining during voiding (neobladder).
* A reservoir for urine is formed inside the body using the part of ileum. If a patient has undergone this procedure, there may be certain problems due to body image and sexuality. However, these activities are resumed shortly after the procedure.
* In the **'Kock' pouch**, small nipple valves are created as the tissue is doubled backward in the reservoir, the junction where the pouch and skin connect and the ureter and pouch connect.
* The valves fill up with the urine, which prevents the leakage and reflux of urine.
* The pouch can be emptied by inserting a catheter by the patient himself at a regular interval. In between the catheterization, the stoma is covered using a small dressing for the protection purpose. This dressing also prevents the spoilage of cloths.
* **Neobladder:** In neobladder, the original bladder is replaced with a piece of ileum since the bladder could be diseased or damaged beyond repair. This piece of ileum, acting as the bladder is then sutured to the urethra and thus, the patient can void easily with complete control over the voiding process.

|  |  |
| --- | --- |
|  |  |

**Maintenance of urinary diversions:**

* It is nurse’s responsibility to assess the client’s fluid intake and urine output.
* Also, the nurse must observe the urine and assess if there are any notable changes seen. These changes can be in reference to the color, odor, cloudiness etc.
* As stoma is created, the nurse must take care of the stoma and the skin adjoining it. Help the patient in taking care of the skin and avoiding any irritation.
* Strategies should be made to manage the stoma and prevent infection.

**Care of the patient before urinary diversion:**

* Assess cognitive ability of the patient
* Explain the procedure and expected outcome
* Prepare the patient for the stoma
* Give enema to the patient and provide preoperative care

**Care of the patient after urinary diversion:**

* Monitor intake output
* Assess the output from the stoma, i.e. urine color
* First day it will be pink in color, which will become clear on third day
* Evaluate the skin on stoma and surrounding area
* Capacity building of family and patient will be done to take care of the diversion

**Bowel Elimination:**

Bowel elimination or defecation is the expulsion of faeces from the anus and the rectum.

**Physiology of Bowel Elimination:**

The physiological factors essential to bowel function and defecation include normal GI tract function, sensory awareness of rectal distension and rectal contents, voluntary sphincter control and adequate rectal capacity and compliances. There are two centres governing the reflex to defecate. One is situated in the **medulla** and the subsidiary one is in the **spinal cord**. When parasympathetic stimulation occurs, the internal anal sphincter relaxes and the colon contracts. The defecation reflex is stimulated chiefly by the faecal mass in the rectum. When the rectum is distended the intra-rectal pressure rises, the defecation reflex is stimulated by the muscle stretch and the desire to eliminate results.

Normal defecation begins with movement in the left colon, moving stool toward the anus. When stool reaches the rectum, the distension causes relaxation of the internal sphincter and an awareness of the need to defecate. At the time of defecation, the external sphincter relaxes and abdominal muscles contract, increasing intra-rectal pressure and forcing the stool out.

Normally defecation is painless, resulting in passage of soft, formed stool. Straining, while having a bowel movement, indicates that the patient may need changes in diet or fluid intake or that there is an underlying disorder in GI function.

**Composition of Normal Faeces:**

Water: 75%

Solids: 25%

Bacteria: 30%

Undigested food fibre and dried constituents of digestive juices: 30%

Fat: 10-20%

Inorganic matter: 10-20%

Protein: 3%

**Characteristics of Stool:**

1. **Volume:** Variable. Usually 100-300 gm/day.
2. **Color:** Infant- Yellow, Adult- Brown.
3. **Odor:** Aromatic; may be affected by foods ingested.
4. **Consistency:** Soft, semi-solid and formed.
5. **Shape:** Formed stool is usually about 1 inch (2.5cm) in diameter and has the tubular shape of the colon, but may be larger or smaller, depending on the condition of the colon.
6. **Constituents:** Waste residues of digestion: bile, intestinal secretions, shredded epithelial cells, seeds, meat fibres and fat may be present in small amounts.

**Factors Affecting Bowel Elimination:**

1. **Age and development:** There is marked variation between infants and the elderly. Bowel control develops only after eighteen months. In the elderly, lack of muscle tone (atony) of the smooth muscles of the colon can result in slow peristalsis and constipation or stools become harder or some elderly people have decreased sphincter control, resulting in urgency of stools.
2. **Daily patterns:** This includes timing, frequency, position and place. Any change affects the person's routine. It is difficult to defecate when seated on a bedpan and embarrassment may further inhibit defecation. Also, for many people, defecation is a private affair, which can only be done easily in the comfort of one's own bathroom. Defecation in a shared hospital room with only a curtain separating one from a roommate or other persons may be extremely difficult.
3. **Lifestyle:** Many individuals, family and socio-cultural variables influence a person’s usual elimination habits.
4. The long-term effect of bowel training may result in a person accepting bowel elimination as a normal life process, and establishing a regular habit of defecating.
5. Preoccupation with bowel elimination, which may lead to an irregular pattern of defecation, or a feeling that bowel elimination is a dirty process.
6. The availability of toilet facilities, embarrassment about odours, and the need for privacy also affect faecal elimination patterns.
7. The language used to talk about bowel elimination or reluctance to discuss it at all, individual responses to involuntary passage of flatus (gas), and so forth, vary widely among individuals.
8. **Diet:** High-fibre foods increase the bulk in faecal material. As the bulk of faeces expands, it places pressure on the intestinal wall, which serves as a stimulus for peristalsis. When faecal material moves quickly through the intestine, there is less time for water to be reabsorbed and the resultant stool is soft and easily passed. Certain foods are difficult or impossible for some people to digest. This inability results in digestive upsets and, in some instances, the passage of watery stools. Irregular eating can also impair regular defecation. Individual who eat at the same time every day have regularly timed physiologic response to food intake and a regular pattern of peristaltic activity in the colon. Spicy foods can produce diarrhea and flatus in some individuals.

In addition to high-fibre, bulk-producing foods, other general food classifications that influence bowel elimination include the following.

1. Constipating foods: Processed cheese, lean meat, eggs and low-fibre foods.
2. Foods with laxative effect: Certain fruits and vegetables (for example, prunes); bran, chocolate, spicy foods, coffee.
3. Gas-producing foods: Onions, cabbage, beans and cauliflower.
4. **Fluids:** Daily fluid intake of 2000 to 3000 ml facilitates elimination. When fluid intake is inadequate, and output (urine or vomitus, for example) is excessive for some reason, the body continues to reabsorb fluid from the chyme as it passes along the colon. As a result, the chyme becomes drier than normal, resulting in hard faeces. In addition, reduced fluid intake slows the chymes passage along the intestines, further increasing the re-absorption of fluid from the chyme.
5. **Activity and muscle tone:** Exercise improves gastrointestinal motility and muscle tone, while inactivity decreases the tone of abdominal and perineal muscles. Weak abdominal and pelvic muscles are often ineffective in increasing the intra-abdominal pressure during defecation or in controlling defecation. Weak muscles can result from lack of exercise, immobility or improved neurological functioning. Patients who are on prolonged bed rest are prime candidates for constipation.
6. **Psychological factors:** When people are anxious, diarrhea is expected and when they are depressed, constipation occurs. Strong emotion is thought to cause constipation by inhibiting intestinal peristalsis through the action of epinephrine and the sympathetic nervous system. Stress can also cause a spastic bowel (spastic or hypertonic constipation or an irritable colon). Associated with this type of constipation are abdominal cramps increased amounts of mucus and alternating periods of constipation and diarrhea.
7. **Pathological conditions:** Many pathologic conditions result in change of bowel elimination.
8. Spinal cord injuries and head injuries decrease sensory stimulation for defecation.
9. Impaired mobility limits the patient's ability to respond to the urge to defecate.
10. Stools that are ribbon-like in appearance are due to tumour in the colon.

Changes in characteristics and frequency are the first clinical manifestations of a disease. The evaluation of stools is an important task for a nurse.

1. **Medications:** Some types of medications may affect normal bowel elimination and narcotic analgesics characteristics.

**Common problems in Bowel Elimination:**

1. **Constipation:** It refers to the passage of small, dry hard stool or the passage of no stool for a period of time. The causes are irregular defecation habits, inappropriate diet, insufficient fluid, insufficient exercises and increased psychological stress.
2. **Faecal impaction:** It is a mass or collection of hardened faeces in the folds of the rectum. The causes are prolonged retentions and accumulation of faecal material, poor defecation habits and constipation and medication.
3. **Diarrhea:** It refers to the passage of liquid faeces and an increased frequency of defecation or it is the discharge of frequent loose stool to the rapid passage of content through the intestines. The causes are emotional stress and infection.
4. **Faecal incontinence:** It refers to loss of voluntary ability to control faecal and gaseous discharge through the anal sphincter or inability to control the expulsion of faeces. The causes are spinal cord trauma and tumors of the external sphincter muscles.
5. **Flatulence:** It is the presence of excess gas in the intestine and leads to stretching and inflation of the intestines. Air or gas in the gastrointestinal tract is called flatus.

**Constipation:**

It refers to the passage of small, dry hard stool or the passage of no stool for a period of time.

**Causes of Constipation:**

1. Inadequate, irregular and restricted diet
2. Insufficient fluid intake
3. Insufficient intake of roughage in the diet so that there is little residue available to form the bulk of the faecal matter
4. No established habit pattern especially regarding timing and the failure to respond to the reflex impulse
5. Lack of exercises and prolonged rest
6. Emotional upset- nervous tension, worry, anger, fear etc.
7. Unnatural position for defecation
8. Overuse of laxatives, suppositories and enemas
9. Surgery involving the intestines and rectum
10. Malformations and obstruction of the colon
11. Systemic disorders such as cancer, heart failure, thyroid deficiency, acute infectious diseases etc.
12. Haemorrhoids and other lesions in the anal canal
13. Strange situations such as lack of privacy, change of place
14. Pendulous abdominal wall
15. Use of certain drugs e.g. sedatives
16. Excessive use of beverages such as coffee, tea etc.
17. Faecal impaction
18. Large intake of refined foods or other low residue food
19. Slower motility of the G.I. tract associated with aging
20. Embarrassment about using a bedpan

**Sign and symptoms of Constipation:**

1. Infrequent bowel movements
2. Straining to have bowel movements
3. Hard and/or small stools
4. Sense of incomplete evacuation after bowel movements
5. Lower abdominal discomfort
6. Abdominal bloating, occasionally distension
7. Anal bleeding or fissures from the trauma caused by hard stools
8. Occasionally diarrhea due to obstruction of the colon by hard stool
9. Rarely colonic perforation
10. Psychological distress and/or obsession with having bowel movements
11. Chances to have haemorrhoids and rectal prolapse

**Prevention and Management of Constipation:**

1. **Health teaching:** Any person suffering from constipation must understand the physiology of defecation and the factors affecting the defecation.
2. **Adequate intake of diet:** If dietary intake is too little, it may not stimulate the peristalsis.
3. **Adequate intake of roughage in diet:** Foods containing high fibrous content should be included in the diet such as raw and cooked vegetables, raw and cooked fruits, whole grain cereals etc.
4. **Establishing a habit pattern:** Usually the defecation reflex is found immediately after a full breakfast. So the person should find time to sit on the toilet immediately after the breakfast.
5. **Relaxation:** Have an environment conducive to relaxation because tension, anger, worry, hurry, fear etc., interfere with the defecation reflex. Reassure the nervous client.
6. **Privacy:** All person persons need privacy for defecation. Leaving the client alone and providing him privacy with curtains etc. help him to have bowel movement.
7. **Posture:** A squatting position is most effective posture during defecation because the individual can increase intra-abdominal pressure, necessary for expelling the faeces. Unless contraindicated a sitting position with the feet flat on the floor should be used for all persons.
8. **Exercise:** Any activity that improves the muscle tone of the abdominal and perineal muscles should be encouraged.
9. **Adequate amount of fluid intake:** Normally, an individual should take 2000 to 3000ml of fluid in 24 hours.
10. **Use of laxatives, suppositories and enemas:** As far as possible, these should be avoided because they are habit forming. When all the other preventive measures are falling, one of these methods may be used but their continued use must be discouraged.

**Diarrhea:**

It refers to the passage of liquid faeces and an increased frequency of defecation or it is the discharge of frequent loose stool to the rapid passage of content through the intestines.

**Causes of Diarrhea:**

1. **Intestinal infection (Enteritis):** Diarrhea is caused by mucosal damage by the organisms or their toxins e.g. Salmonellosis, Ulcerative colitis, Amoebiasis and food poisoning.
2. **Nervous tension:** This type of emotional or psychogenic diarrhoea results from excessive stimulation of the parasympathetic nervous system which increases both mobility and secretions of the colon.
3. **Dietary indiscretions:** Individuals vary in their tolerances to some foods and fluids. Some people may have allergies to certain foods and respond with diarrhoea to the allergen.
4. **Medications:** Some medications are irritants to the gastro intestinal tract and can cause diarrhoea as side effects e.g. antibiotics, iron preparations.
5. **Abuse of cathartics:** Excessive irritation of the colon from overuse of cathartics leads to diarrhoea.
6. **Mechanical causes:** Incomplete obstruction of the bowel may be caused by stenosis, adhesions and tumours etc.
7. **Other causes:** Many other conditions cause diarrhoea such as malabsorption syndromes, post vagotomy, irritable colon, narcotic withdrawal etc.

Diarrhoeal responses may be precipitated by lactase deficiency, gluten intolerance or a specific food allergy.

**Sign and symptoms of Diarrhea:**

1. Abdominal pain
2. Cramping
3. Frequency of stools (more than 3/day)
4. Hyperactive bowel sounds or sensations
5. Loose or liquid stools
6. Urgency

**Nursing care in Diarrhoea:**

1. **Replacement of fluid and electrolytes:** The fluid lost from the body should be replaced immediately to prevent shock and collapse of the client. When oral fluids are tolerated by the client, the fluids may be given in plenty orally. If there is marked dehydration, the fluids are given by the I.V. route.

Potassium losses may be great with diarrhoea and therefore food and fluids containing potassium should be encouraged.

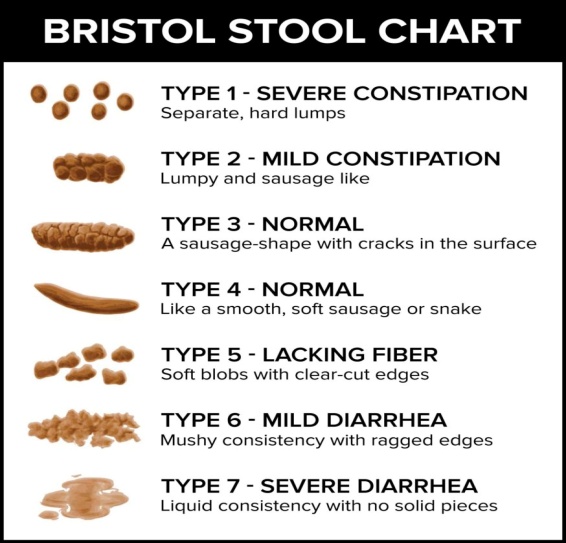
1. Small frequent feedings of blend food may be helpful to meet the nutritional requirements of the client. Avoid foods containing chillies, spices, excessively hot and cold foods etc., because they stimulate peristalsis.
2. Make arrangement for the use of bedpan or commode which is placed in a convenient and accessible place.
3. **Care of the skin:** Skin excoriation around the anal region can be prevented by proper cleaning and drying of the area after each defecation.
4. **Adequate rest:** Reducing the physical activity is helpful in lessening the bowel activity.
5. **Psychological support:** If the cause of diarrhoea is sustained anxiety, the client should be reassured.
6. Medications: The usual medication which are administered to the clients with diarrhoea are antidiarrhetics, demulcents, astringents, intestinal antiseptics, sedative and antispasmodics.

**Monitoring Bowel actions:**

Bowel habits are variable between individuals and are influenced by lifestyle, eating habits and mental state. The average adult will pass **100-150gm** of faeces once per day; change in this pattern and change in the nature of faeces passed can indicate disease. The health care professional will therefore need to monitor the bowel action of clients where actual or potential problems are indicated. Normal faeces are made up of **75% water** and **25% solid constituents** (cellulose, dead epithelial cells, bacteria, mucus and bile pigments). Faecal matter is normally brown in color, soft inconsistency and cylindrical inform.

The care giver should observe the client’s faeces to identify any changes and this should be documented in the client’s records or on stool chart along with frequency of passage and appearance of the faeces.

**The Briston Stool chart:**

****

**Other less common abnormalities are:**

1. Pale, putty-colored faeces, indicative of problems in the biliary system
2. Presence of pus or excessive mucus, suggesting infection or inflammation
3. Black and tarry stools (Melina) with a characteristic smell of altered blood, suggestive of bleeding somewhere in the large bowel
4. Fresh blood in the faeces, which can indicate haemorrhoids or other abnormality
5. Black stools also occur as a result of taking iron tablets
6. Parasites
7. Foreign bodies, particularly in children, who may for example have swallowed a coin or placed something in their rectum.

All of these abnormalities usually require further investigation; therefore, a faecal specimen will be required.

**Types of Specimen of Faeces:**

* Routine microscopic culture
* Occult blood
* Ova and cyst

**Observation of Specimen of Faeces:**

Waste product of gastro intestinal tract is excreted out through faeces/stool. So examination of stool helps in diagnosis of GI Tract problems and infections. The normal and special points to be observed in stool are given as follows:

|  |  |  |
| --- | --- | --- |
| **Characteristics** | **Normal findings** | **Special considerations** |
| Volume | Variable | The volume of the stool depends on the amount the person eats and the nature of the diet. E.g. the diet high in roughage produces more faeces than a soft, bland diet. Consistently large diarrheal stools suggest a disorder in the small bowel or proximal colon; small, frequent stools with urgency to pass suggest a disorder of the left colon or rectum. |
| Color | Infant: Yellow  Adult: Brown | The color of the stool is influenced by diet. For example, the stool will be almost black if the person eats red meat and dark green vegetables. The stool will be light brown if the diet is high in milk and milk products and low in meat.  The absence of bile may cause the stool to appear white or clay colored.  Certain drugs influence the color of the stool. E.g. iron salts cause the cause the stool to be black.  Antacids cause it to be whitish.  Bleeding high in the intestinal tract causes a stool to be black owing to the digestion of the blood.  Bleeding low in the intestinal tract will result in fresh blood in the stool.  Stool darkens with standing. |
| Odor | Aromatic; may be affected by foods ingested | The odor of the stool is influenced by its pH value, which normally is neutral or slightly alkaline.  Excessive putrefaction causes a strong odor.  The presence of blood in the stool causes a unique odor. |
| Consistency | Soft, semi-solid and formed | The consistency of the stool is influenced by fluid and food intake and gastric motility. The less time stool spends in the intestine, the more liquid the stool. Many pathologic conditions influence consistency. |
| Shape | Formed stool is usually about 1 inch (2.5cm) in diameter and has the tubular shape of the colon, but may be larger or smaller, depending on the condition of the colon | A gastrointestinal obstruction may result in a narrow, pencil-shaped stool. Rapid peristalsis thins the stool. Increased time spent in the large intestine may result in hard, marble like faecal mass. |
| Constituents | Waste residues of digestion: bile, intestinal secretions, shredded epithelial cells, seeds, meat fibres and fat may be present in small amounts | Internal bleeding, infection, inflammation and other pathologic conditions may result in abnormal constituents. These include blood, puss, excessive fat, parasites, and mucus. Foreign bodies also may be found in the stool. |

**Flatulence:**

It is the presence of excess gas in the intestine and leads to stretching and inflation of the intestines. Air or gas in the gastrointestinal tract is called **flatus.**

Air that moves from the digestive tract through the mouth is called **belching.**

**Causes of Flatulence:**

Gas can be caused by certain foods. People may have gas if they:

1. Eat foods that are hard to digest, such as fibre. Sometimes, adding more fibre into the diet can cause temporary gas.
2. Eat or drink something their body cannot tolerate. For example, some people have lactose intolerance and cannot eat or drink dairy products.

**Other common causes of gas are:**

1. Antibiotics
2. Irritable bowel syndrome
3. Inability to absorb nutrients properly (malabsorption)
4. Inability to digest nutrients properly (maldigestion)
5. Swallowing air while eating

**Signs and symptoms of Flatulence:**

1. Abdominal swelling, distension or bloating
2. Bad breath
3. Belching
4. Change in bowel habits
5. Constipation
6. Diarrhea
7. Heartburn
8. Nausea with or without vomiting

**Procedure of passing of flatus tube:**

1. Check the doctor’s order
2. Assess the perineum of the client
3. The client is placed in a comfortable position preferably sim’s or side lying position and most suited position is side lateral
4. The flatus tube is taken and any lubricating agent is applied on the tip
5. Wash hands and separate the buttocks
6. About 4-6 inches of the tube is inserted inside the rectum and the other end of tube, which is free, is placed in water in a kidney tray
7. The bubbling present in the water indicates the passage of gas
8. This procedure should not last >20 minutes. However, it can be repeated every 3-4 hours to prevent any rectal injury
9. Wash hands and clean and dry the anal area

**Nursing care in Flatulence:**

1. Observation of vital signs
2. Assess the level of pain
3. Set a comfortable position
4. Give a warm compress on the area of the abdomen

**Enema:**

Enema is the introduction of solution into rectum and sigmoid colon. It is the injection of fluid into the lower bowel through the rectum for the purpose of cleaning or to provide medication or nourishment.

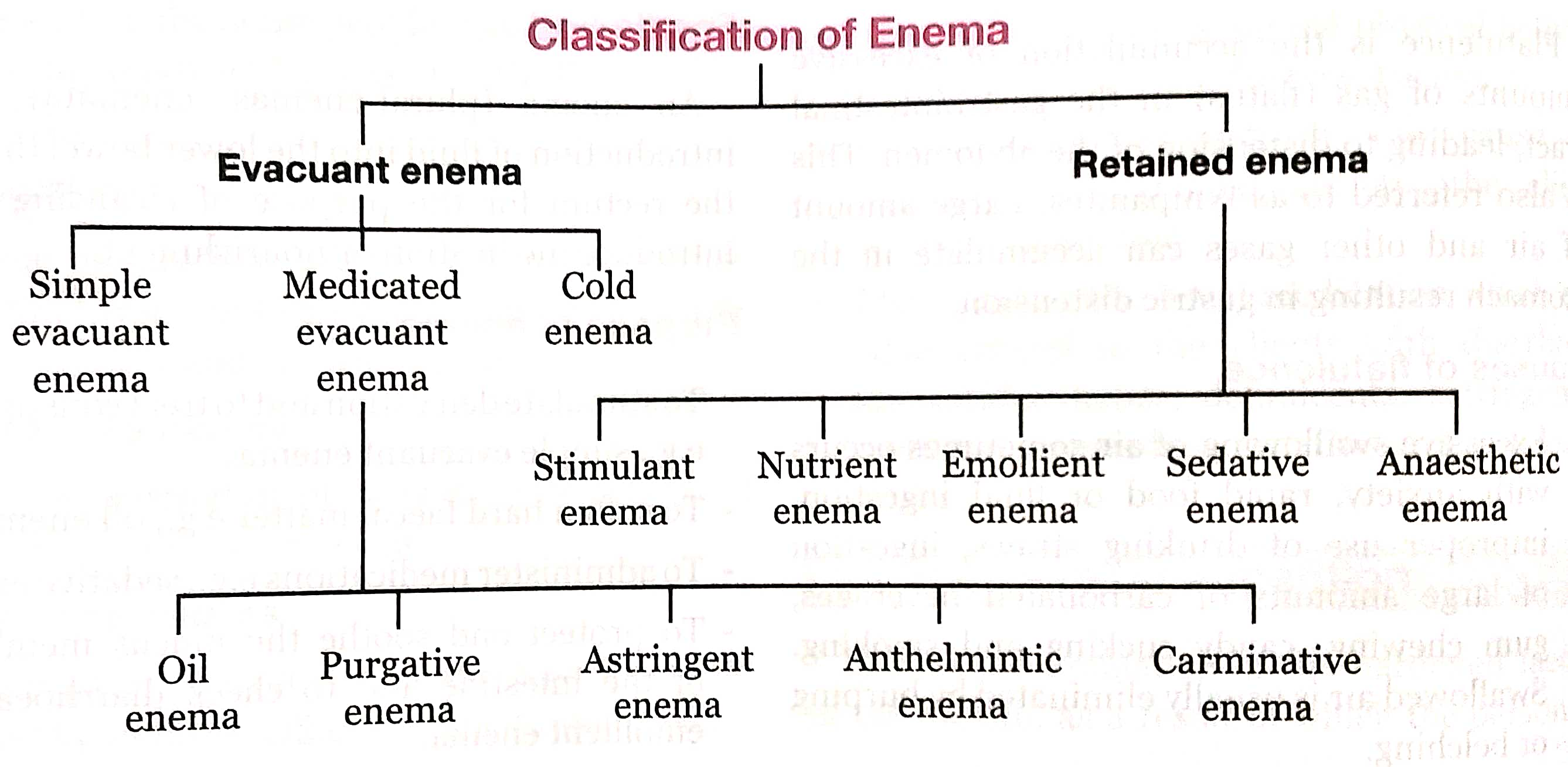
**Indication of Enema:**

1. Stimulate the bowel movement and cleaning the large bowel e.g. Soap and water enema
2. Stimulate peristalsis
3. Relieving flatulence or distension
4. Soothing irritated mucosa of the colon
5. To supply fluids and nutrients

**Purposes of Enema:**

1. To remove faecal matter
2. Relieve constipation and gaseous distension
3. Establish normal bowel function
4. Relieve straining on defecation
5. Emptying bowel before diagnostic tests, surgery and childbirth

**Types of Enema:**



**Evacuant Enema (Cleansing Enema):**

This type of enema is given to clean the bowel and patient holds it for **5-10 minutes** minimum.

Left lateral position is the most suitable position for any enema. However, in case of high bowel enema, knee chest position may be given.

* **Simple enema:** This enema in given for many purposes such as for the stimulation of defecation and for the treatment of constipation

Other purposes:

* To relieve flatulence
* Helps in relieving urinary retention
* Before surgeries or X-ray, to clean the bowel
* For stimulation of uterus and initiating contractions

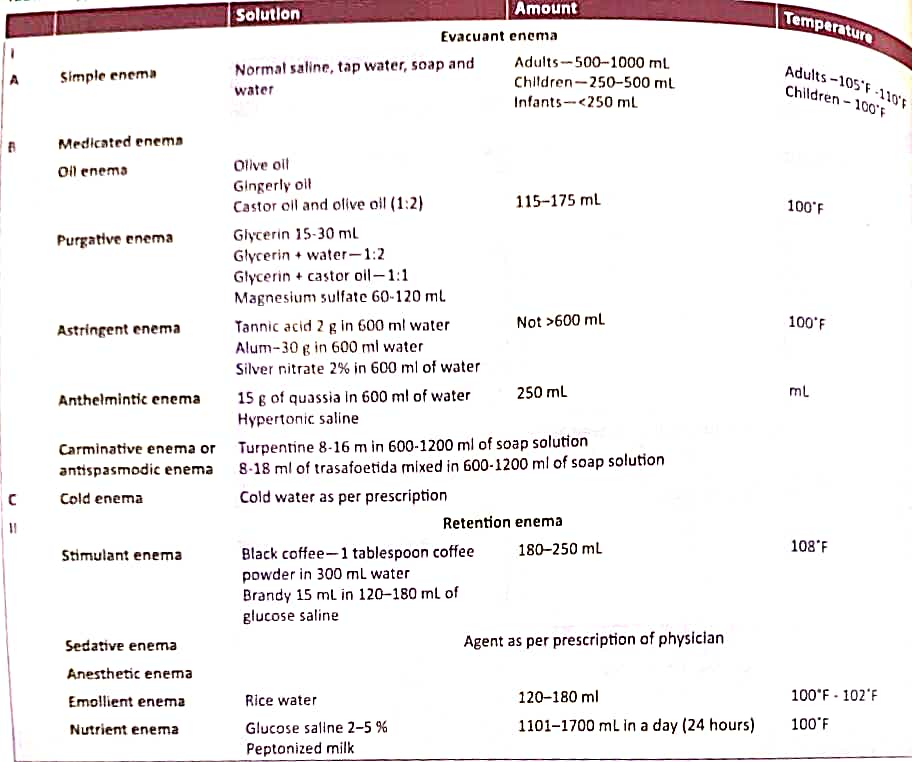
In this enema either soap water or normal saline can be used.

* **Medicated enema:** It is when addition of some agent is done in the water like glycerine or oils.
* **Oil enema:** In case the patient is suffering from severe constipation, oil enema can be provided to soften the fecal matter. This enema is also given in postrectal surgeries to facilitate the first bowel movement to avoid strain and injury. Oil enema has to be followed by soap and water enema. In oil enema, oils such as **olive oil, sweet oil, and castor oil along with olive oil** in the proportion of 1:2 can be given. The solution has to be at least 115 ml and can range up to 175 ml.
* **Purgative enema:** The enema which helps in increasing the intestinal motility (contraction of bowel) for active evacuation of bowel contents is purgative enema. This results in the irritation of the mucus lining and stimulation of gut movements. To administer this enema, solutions such as **pure glycerin, glycerin along with water, or glycerin along with castor oil** can be given. There is a special classification of this enema, called **the 1-2-3 enema**. In this **magnesium sulfate, glycerin and water** are used in the quantities of **30 ml, 60 ml. and 90 ml** respectively.
* **Astringent enema:** In case the inner lining of gut is inflamed or is bleeding, this enema helps in lessening mucus discharge, contracting the blood vessels and providing temporary relief from the inflammation. Such symptoms are present in case the patient has dysentery or colitis. This enema can be useful in those cases. **Alum, tannic acid or 2% silver nitrate** can be used in these enemas.
* **Anthelmintic enema:** If there is presence of worms inside the intestine, this enema is given as a treatment. Soap and water enema should precede this enema. After cleansing the bowel with soap and water enema, the worms can come directly in contact with an anthelmintic enema. A **hypertonic saline or quassia infusion** can be used for this enema.
* **Carminative enema or antispasmodic enema:** This enema is used for the release of gaseous contents of abdomen and thus helps in the relieving of distension. For the administration of this enema, solutions such as **turpentine. Tr. Asafoetida and milk and molasses** can be used.
* **Cold enema:** When a patient suffers from high body temperature, most probably this enema is given. This enema is also given if a patient suffers from heat stroke However, this can lead to an extreme decrease in body temperature leading to hypothermia.

**Retention Enema:**

It is type of enema which patient needs to hold for **30-minute or more**. In case of nutrient enema the nutrients shall be absorbed through intestine then only the enema will be effective.

* **Stimulant enema:** As the name suggests, the enema is given to stimulate the patient in case of shock, collapse or opium poisoning. Stimulating agents such as **black coffee or brandy** can be given as retention enema.
* **Sedative enema:** To induce sleep, sedative drugs such as **potassium bromide or paraldehyde** is given in the form of enema.
* **Anesthetic enema:** Drugs such as **avertin** (150-300 mg/kg body weight) are administered to induce an anesthetic effect in a client.
* **Emollient enema:** A bland solution is introduced in the rectum to assess if the patient is having diarrhea and for soothing purpose. This is called emollient enema. **Starchy solutions** are used for the enema.
* **Nutrient enema:** In order to introduce food, fluids inside the body, nutrient enema is administered.

****

**General instructions for giving Enema:**

1. The appropriate size catheter or rectal tube need to be used.
2. The rectal tube needs to be smooth and flexible.
3. The rectal tube is lubricated with a water soluble lubricant or with Vaseline to facilitate insertion and to decrease irritation of the rectal mucosa.
4. The temperature of the solutions needs to be adjusted according to the purpose of the enema.
5. The amount of the solution need to be administered depends upon the type of the enema and age and size of the person.
6. Left lateral position should be provided to the client.
7. The height of the cane should be adjusted to regulate the flow of solution according to the type of enema administered.
8. The length of time that the enema solution is retained will depend upon the purpose of enema and the ability of the client to contract the external sphincter to retain the solution.
9. Make sure the whole apparatus used for the administration of enemas is in a good working condition.
10. Regulate the flow of fluid according to the type of the enema.
11. If the rectum is impacted, attempt to remove the faecal matter with a gloved finger. The bowels should be cleaned out by a simple enema before giving retention enema.
12. Prevent air from entering into the rectum.
13. Listen to the complaints of the client and do not ignore any discomfort however small they are.
14. Pre-packed enemas will have their own instruction which need to be followed unless there are other instructions from the physician.

**Nursing Assessment:**

1. Check for the diagnosis of the client
2. Look for the date of surgery, if performed or scheduled
3. Assess if the client is in sound mind to follow any instructions
4. Check the type of enema that has been ordered by the physician
5. See if the doctor has ordered to collect any sample or specimen
6. Examine the rectal area
7. See if any assistance is required, and if required, call a help
8. Gather all the articles required

**Articles required:**

A tray containing:

* Enema can
* Rectal tube
* Mackintosh
* Towel
* Jelly or Vaseline
* Water
* Paper bag
* Bed pan
* Specimen bottles if needed
* Clean bedsheets
* IV stand
* Toileting tray

**Preparation for the procedure:**

**Nurse:**

* Nurse should have the knowledge of the procedure
* Should be aware about the nursing consideration involved

**Environment:**

* Collect the articles
* Pull curtains to provide privacy to the client
* Arrange all the articles in the close vicinity of the patient
* Adjust the height of IV pole to hang the enema can

**Patient:**

* Explain the procedure to the patient
* Explain the need to perform this procedure
* Provide left lateral position to the patient
* Explain the enema may cause slight discomfort
* Cover the client and expose only the perineal region
* Place mackintosh and towel under the perineum to avoid the soiling of bed

**Procedure:**

|  |  |
| --- | --- |
| **Steps of procedure** | **Rationale** |
| 1. Perform hand hygiene | To avoid cross infection |
| 1. Attach the can with the tubing. Then clamp the tubing | For preparation of enema solution |
| 1. Prepare the solution in the can. Maintain the temperature. Test the temperature. The solution should not be too hot | Temperature must be between 21 and 43 degrees |
| 1. Using the IV stand, hang the can, keeping in mind that the height from the anus should not be more than 45 cm. | The more the height, the more the pressure of solution |
| 1. Loosen the clamp and let the solution flow through the tubing and let it flow into the kidney tray. After expelling the air, pinch the tube | To expel the air from the tube |
| 1. Apply any lubricant on the tip of tube | To facilitate the insertion of tube |
| 1. Insert around 8-10 cm tubing inside the anal cavity after the buttocks are separated | To administer the enema |
| 1. After insertion, release the tubing from the pinch and observe if the solution is flowing through the tubing and is getting into the anal cavity | To administer the enema |
| 1. Suggest the client, that he/she should take deep breaths as the enema is being administered | Helps in distraction and also facilitates the flow of enema |
| 1. Stop the procedure in case the client feels discomfort | To avoid discomfort |
| 1. Using gauze pieces with one hand, gently remove the tubing from the anus and the gauze pieces should be held against the tube | Gauze pieces remove the fecal matter from the tubing |
| 1. Discard the rag pieces and detach the rectal tube |  |
| 1. Provide comfortable position and replace the articles |  |

**After care:**

1. The fluid should be retained inside the anal cavity for about 15-30 minutes
2. Provide bedpan when required. Assist the client in reaching the bathroom
3. Observe the client and the results of enema
4. If doctor has ordered for obtaining samples, collect them
5. Provide and assist the client in perineal care
6. Take all the articles and disinfect them. Store them in their appropriate place
7. Wash hands and document the procedure

**Suppositories:**

Suppositories are defined as a form of medication, solid in nature, which melts or dissolves inside the body due to the body’s temperature. The suppositories are inserted inside the body’s cavities such as rectum, vagina and urethra.

Since the suppositories are semisolid and meant to melt at room temperature, they are stored in cool places, such as refrigerator. If not kept inside the refrigerator, insertion becomes difficult.

There are different types of suppositories such as glycerine suppositories, dulcolax suppositories.

**Procedure:**

|  |  |
| --- | --- |
| **Steps of procedure** | **Rationale** |
| 1. Explain the procedure to the client | To build and maintain interpersonal relationship |
| 1. Place the client in a position which is most suited for the procedure and the client is comfortable | To provide comfort to the client |
| 1. Wash hands. Wear gloves | For hygiene purposes |
| 1. Take the suppository package and remove the suppository. Hold the suppository in the right hand between two fingers | To insert the suppository inside the anal cavity |
| 1. Buttocks are to be separated with the left hand and insert the suppository inside the anus | To insert the suppository inside the anal cavity |
| 1. It is worth considering that the suppository must pass the external sphincter and it should be pushed beyond the internal sphincter using index finger | To avoid the suppository from being expelled from the anal canal |
| 1. Patient can also insert the suppository if nurse is confident that patient is capable of following the instructions. |  |
| 1. Instruct the client to retain the suppository for at least 20-30 minutes or even longer if comfortable | For the suppository to work on the intestinal walls |

**After care:**

1. It is the responsibility of the nurse to ensure the comfort of the patient after the procedure
2. Clean and tidy up the patient
3. Observe the patient
4. Document about the type of suppository, timing of insertion and the effect of suppository, timing of evacuation of bowel

**Bowel wash:**

**Definition:**

Washing out of colon with large quantities of solution, to clear the colon of faeces is called bowel wash.

**Purposes:**

1. To prepare colon for specific surgical or diagnostic procedures
2. To dilute and remove toxic agents that may be present in large intestine
3. To reduce temperature in hyperpyrexia and heat stroke
4. To supply fluid and electrolytes that are absorbed from intestine
5. To stimulate peristalsis
6. To relieve inflammation
7. To keep the individual clean in case of fecal incontinence

**Contraindications:**

1. Bleeding hemorrhoids
2. Chronic diarrhea
3. Rectal surgeries/infection
4. Intestinal obstructions
5. Rectal polyps
6. Massive colon carcinoma
7. Loose anal sphincter
8. Debilitation
9. Anal fistula
10. Intestinal diverticulum
11. Painful skin lesions around anus

**Solutions used:**

1. Plain water
2. Cold water
3. NS, NaCo3 solution 1-2%
4. Antiseptic solution, silver nitrate 1:5000
5. KMNO4 1:5000
6. Thymol 1:100
7. Boric solution 1-2%
8. Tannic acid 1:100

Amount of solution used 2-3 litres or till the return flow is clear

**Temperature of the solution:**

1. For cleansing purpose 1040 F
2. For reducing temperature 80-900 F

**Articles needed:**

1. Colon lavage set with tubing and glass connection
2. Rectal tube (adult: 22-30 Fr, children: 12-18 Fr)
3. Vaseline
4. Rag pieces/tissues
5. Mackintosh with towel
6. Jugs with hot and cold water
7. Kidney tray
8. Funnel with tubing
9. Bucket
10. Bath thermometer
11. Solutions
12. Bedpan with lid
13. Duster/towel
14. Perineal toileting tray
15. Clean disposable gloves
16. Plastic apron

**Procedure:**

1. Check the doctor’s order for any specific instructions
2. Explain to the patient about procedure and how he/she has to co-operate
3. Wash hands and don gloves
4. Prepare solution at required temperature
5. Attach the tubing and the rectal tube with funnel. Pour the solution in it and check for leakage
6. Lubricate the tip of rectal tube with the funnel
7. Fill the funnel with the solution and expel the air from the tubing by allowing a small amount of fluid into the kidney tray. Pinch tube or close it with clamp
8. Maintain the patient left lateral position and bring close to the edge of bed. Separate the buttocks to visualize the anus clearly and insert the tip of tube about 4 inches while the patient exhales a deep breath
9. Lower the funnel below the level of rectum
10. Raise the funnel and allow the fluid to run in, continue to pour more fluid into funnel before the funnel is empty
11. When 200-300 ml of fluid has gone inside, pinch the tube before the funnel is completely empty and invert it into the bucket and siphon off the fluid
12. When return flow ceases, turn the funnel upright and pour more solution, lower the funnel until air from the tube has been expelled. Then raise the funnel and repeat the procedure
13. Temporarily stop the procedure if the patient develops any discomfort
14. Continue the procedure until all the fluid ordered has been given or until the return flow is clear
15. Gently remove the rectal tube by pulling it through 3-4 layers of rag pieces/tissue papers
16. Discard the tissue papers in the paper bag. Place the funnel with tubing in the kidney tray
17. Assist the patient to the toilet tray and assist for perineal care
18. Change the bed linen if soiled, give comfortable position
19. Take articles to the utility room, disinfect funnel tubing, catheter and bucket. Clean, dry and replace
20. Remove gloves and wash hands
21. Record the type of procedure and the result with date and time in nurse’s record

**Digital Evacuation of impacted Feces:**

The digital evacuation of impacted feces is defined as the process in which the fecal material is broken into portions digitally and then removed in portions.

Before the procedure is initiated, it is suggested that oil enema should be given and the patient must hold it for 30 minutes. After the digital evacuation is done, remaining fecal matter can be removed using a clear enema or by using a suppository.

**Procedure:**

|  |  |
| --- | --- |
| **Steps of procedure** | **Rationale** |
| 1. Nurse, along with any other assistant first need to provide comfort to the client | To ease the client and avoid anxious behaviour |
| 1. Provide the client with suitable position, which is either right or left side lying position. The back should be toward the nurse | If patient lies in right position, sigmoid colon is at the top, and due to gravity, feces can be removed easily. If the patient lies on the left side, sigmoid colon is accessed easily |
| 1. Then an absorbable pad is placed under the buttocks and a bedpan is kept in easy reach | To prevent spillage and receive the fecal matter |
| 1. Drape the client such that only the perineum is exposed | To avoid unnecessary exposure |
| 1. Wear clean gloves. Lubricate the index finger | For hygiene purpose and for easy insertion of finger inside the rectum |
| 1. The finger is inserted inside the rectum, gently. The finger is then moved along the rectal length | To evacuate the feces |
| 1. Break the stool using the finger. The hardened stool is dislodged. Consider that the mucosa should not be injured in this process | To evacuate the feces |
| 1. As the stool is dislodged, work in a way that the stool is brought downwards. Keep removing the feces, as much as possible | To evacuate the feces |
| 1. After the feces are removed, ask to the client to clean the buttocks and anal area. After the procedure is done, provide the client with a bedpan. The digital stimulation can lead the client to feel the urge to defecate |  |
| 1. Document the procedure | To maintain the records |
|  |  |

**Colostomy care:**

A Colostomy is an artificial opening created in the bowel through abdominal wall by which stool passes through. It may be temporary and permanent. The colostomy (colon – large intestine) opening is called a stoma. Stool passes through the stoma into a pouch attached to the stoma on the outside of the abdomen.

**Definition of colostomy care:**

Colostomy care is a procedure in which the stoma around the skin is cleansed, bag is emptied, and hygiene is maintained to prevent irritation and infection.

**Definition of colostomy:**

A surgically created opening between the colon and the abdominal wall to allow fecal elimination is called colostomy. It may be a temporary or permanent diversion.

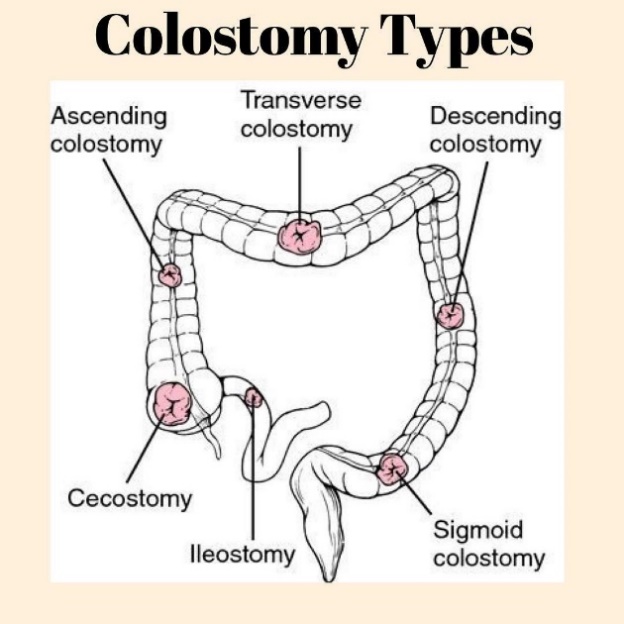
A colostomy may be placed in any segment of the large intestine (colon) which will influence the nature of fecal discharge.

Transverse and descending colostomies are the most common types.

The large intestine is the terminal portion of the GI tract. Structurally cecum, colon, rectum and anal canal are the four major regions of the large intestine.

**Types of colostomy**:

Ascending colostomy–

* An ascending colostomy empties from the ascending colon.
* The ascending colostomy is placed on the right side of the abdomen.
* The output is liquid which contains digestive enzymes.
* Drainable pouch and skin protection is essential

Transverse colostomy–

* It is in the upper abdomen, either in the middle or toward the right side of the body.
* It produces a malodorous, mushy drainage because some of the liquid has been reabsorbed.

Descending colostomy-

* Lower left side of the abdomen.
* A descending colostomy produces increasingly solid fecal drainage.
* Most often, output is firm and can be controlled.

Sigmoid colostomy-

* Done few inches lower than descending colostomy
* Stools from sigmoidostomy are of normal of formed consistency, and the frequency of discharge can be regulated.
* And odors can usually be controlled.

**Stoma:**

A stoma is the part of the intestine (small or large) that is brought above the abdominal wall to become the outlet for discharge of intestinal waste.

A normal stoma is generally pink -red in color and moist. Initially in the double barreled colostomy the proximal and distal loops of bowel are sutured together for about 10 cm and both ends are brought up onto the abdominal wall, slight bleeding may occur when the stoma is touched and this is considered normal. A person does not feel the stoma because there are no nerve endings in the stoma.

Stoma constructions are described as single, loop, divided, or double barreled colostomies.

* The single stoma is created when one end of bowel is brought out through an opening onto the anterior abdominal wall.
* In the loop colostomy, a loop of bowel is brought out onto the abdominal wall and supported by a plastic bridge or by a piece of rubber tubing. A loop stoma has two openings: the proximal or afferent end, which is active, and the distal or efferent end, which is inactive. The loop colostomy is usually performed in an emergency procedure and is often situated on the right transverse colon. It is a bulky stoma that is more difficult to manage than a single stoma.
* The divided colostomy consists of two edges of bowel brought out onto the abdomen but separated from each other .The opening from the digestive or proximal end is the colostomy. The distal end in this situation is often referred to as a mucous fistula, since this section of bowel continues to secrete mucus. The divided colostomy is often used in situations where spillage of feces into the distal end of the bowel needs to be avoided. In the double barreled colostomy the proximal and distal loops of bowel are sutured together for about 10 cm and both ends are brought up onto the abdominal wall.

**Purposes:**

* To establish a regular pattern of leakage.
* To observe stoma and surrounding skin.
* To prevent leakage
* To empty the pouch content.
* To prevent intestinal obstruction.
* To prevent excoriation of skin around the stoma.
* To educate the patient and family regarding care of colostomy and collecting bag.

**Indication**:

Patients who have colostomy/ileostomy stoma with pouch.

**General instructions:**

* Use the right size pouch and skin barrier opening.
* Change the pouching system regularly.
* Be careful when pulling the pouching system away from the skin.
* Clean the skin around the stoma with water.
* Watch for sensitivities and allergies to the adhesive, skin barrier, paste, or pouch material.
* The colostomy bag should empty when it is one – third to one – half full of flatus of feces as they become heavy and have increased risk of spillage.
* Flatus may cause a pouch to balloon out this requires immediate attention because if flatus is not released, the pouch may separate from the skin barrier causing seepage or fecal contents or release of fecal odor. Open the clamp and release the flatus.
* Measure the patient’s fluid intake and output.
* Stoma site should be always dry. Presence of moisture increases the chance for candida or yeast infection.
* Return of peristalsis causes an increase in flatus, advice patients that this is indicative of bowel functioning, also tell them to avoid gas- containing food since there is no way to voluntary control passing of flatus.

**Preparation of the articles:**

|  |  |
| --- | --- |
| **Articles** | **Rationale** |
| Rubber sheet | To prevent soil |
| Warm water | To clean the stoma area |
| Sterile gloves | To prevent contamination |
| Gauze pads | To wipe the surrounding stoma |
| Bowl | To keep the warm water |
| Skin barrier eg: zinc oxide | To prevent skin irritation |
| Disposable colostomy bag | To drain the content |
| Stoma measuring guide | To measure the correct size |
| Kidney tray | To collect soiled dressings |
| Scissor | To cut the proper size |
| Screen | To provide privacy |
| Deodorant | To minimize foul odor |
| Pencil /pen | To mark the colostomy bag opening size |

**Procedure:**

|  |  |
| --- | --- |
| **Nursing action** | **Rationale** |
| **Before care** | |
| Explain procedure to the patient and explain to him how he has to co-operate | Helps in obtaining co-operation of the patient. |
| Assemble the necessary equipment nearby | Organization facilities performance of the task |
| Assess the location of the stoma and the type of colostomy performed | Indicates the section of bowel in which it is located and serves as a predictor of the type of fecal drainage |
| **During care** |  |
| Wash hands and done gloves | Prevents cross-infection |
| Place screen around the patient bed | Maintain privacy during procedure |
| Place the patient in a comfortable position  ( fowlers , semi fowler’s in bed) | Provides comfort while during procedure |
| Empty the partially filled colostomy bag into the bed pan if it is drainable pouch | Emptying the contents before removal of the pouch prevents accidental spillage of fecal material. |
| Remove the appliance slowly beginning at the top while keeping the abdominal skin taut. If any resistance is felt , use warm water or adhesive solvent to facilitate removal | Careful removal protects the underlying skin from damage and minimizes discomfort for the patient. |
| Use tissue paper to remove the excess fecal material from the stoma. Cover the stoma with a gauze pad. | Gauze absorbs any drainage from the stoma |
| Assess stoma appearance and surrounding skin condition. Moisturized pinkish red is considered as normal | Dark red or purplish indicate ischemia; brown or black and dry indicates necrotized stoma.  Inform to physician |
| Apply paste type skin barrier (zinc oxide), if required allow the paste to dry for 1- 2 minutes. | Establish a smooth surface for the application of skin barrier and pouch. |
| Apply the skin barrier and appliance together.   * Select size of stoma opening by using the measurement guide. * Trace same size circle on the back at the center of the skin barrier. * Use scissors to cut an opening ¼ or 1/8 inch larger than stoma. * Remove the backing to expose sticky side. * Remove gauze and covering stoma. * Place barrier and pouch over the stoma and gently press onto skin while smoothing out creases or wrinkles. * Hold the pouch in place for 5 minutes. | Placing both the skin barrier and appliance together over the stoma makes application of pouch prevents escape of odors and feces. |
| Instill deodorant if required. |  |
| Close the pouch if it is drainable by folding the end upward and using a clamp or clip according to manufacturer’s direction. | A tightly sealed appliance will not leak and cause embracement and discomfort for the patient. |
| **After care** | |
| Dispose of old pouch and soiled equipment | Prevent spread of micro-organism |
| Reposition the patient | Enhances the comfort of the patient |
| Observe the condition of the skin barrier and adhesive | Confirms the position of bag and facilities to recheck if any escape of odor and feces |
| Auscultate bowel sounds and observe the characteristics of stool. | Identifies any change in the bowel function. |
| Report for any complication. |  |
| Removes gloves and perform hand hygiene | Prevents cross infection |
| Document appearance of stoma condition, condition of peristomal skin, and patient’s reaction to the procedure. | Facilities continuity of care. |

**Emptying colostomy bag without changing:**

|  |  |
| --- | --- |
| Empty contents into bedpan or toilet, rinse pouch with taped water. | Rinsing provides clean appearance and minimizes odor. |
| Wipe the lower 2 inches of the pouch with toilet tissue. | Drying the lower section of pouch removes additional fecal material. |
| Instill deodorant in bag and uncuff edge of the pouch and apply the clamp | Prevents bad odor. clamp secures closure of the appliances |
| Dispose off used equipment, discard gloves and wash hands | Prevents spread of microorganism. |
| Document the procedure | Ensures accurate records. |

**Health education:**

Colostomy care is an essential aspect of living with a colostomy. A colostomy is a surgical procedure that involves creating an opening in the abdomen, through which the end of the large intestine (colon) is brought to the surface of the skin to form a stoma. Waste material is then eliminated from the body through this stoma. The following are some health talks on colostomy care:

* Maintaining hygiene: It is crucial to keep the stoma and the skin around it clean and dry to avoid irritation, infection, and other skin problems. Use lukewarm water and a mild soap to clean the stoma and the skin around it. Pat the skin dry with a soft towel and avoid using any harsh or perfumed products that can cause irritation.
* Proper appliance fit: An appropriately fitting colostomy appliance is essential to prevent leakage and maintain comfort. Ensure that the appliance is not too tight or too loose, as this can cause irritation and discomfort.
* Regular appliance changes: Depending on the type of colostomy, the frequency of appliance changes will vary. It is essential to follow the schedule recommended by your healthcare provider. Be sure to change the appliance if it starts to leak or if you notice any skin irritation or redness.
* Diet and hydration: A balanced and nutritious diet and adequate hydration are important for maintaining overall health and preventing constipation. Consult with your healthcare provider or a registered dietitian for specific dietary recommendations based on your individual needs.
* Exercise: Exercise is essential for maintaining overall health and promoting bowel function. Speak with your healthcare provider about appropriate exercise options based on your individual needs.
* Emotional support: Living with a colostomy can be emotionally challenging. It is essential to seek support from family, friends, or support groups to cope with the changes that come with living with a colostomy.

**Exercise:**

**Short Answer Questions:**

1. Explain the factors affecting urination.
2. What can be the alterations in urination?
3. Differentiate diarrhea and constipation.
4. Explain bowel diversion ostomies
5. Describe about the basics of urinary elimination and the factors which affect it.

**Long Answer Questions:**

1. Elaborate the alterations in urinary elimination and bowel elimination.
2. Describe the process of bowel elimination and the factors affecting it.
3. Explain the role of nurse in caring for a patient with condom drainage.
4. Explain bladder irrigation and urinary diversions.
5. Discuss various types of enemas.