



وزارة التعليم العالي والبحث العلمي
الجامعة التقنية الشمالية
المعهد التقني الدور



الحقيبة التعليمية

القسم العلمي: الإسعاف
الفوري

اسم المقرر: تمريض
طوارئ 2

المرحلة / المستوى:
الثاني

الفصل الدراسي: الثاني

السنة الدراسية: 2023
2024 -



اسم المقرر:				تمريض طوارئ 2					
القسم:				الإسعاف الفوري					
الكلية:المعهد				المعهد التقني الدور					
المرحلة / المستوى				الثاني					
الفصل الدراسي:				الثاني					
عدد الساعات الاسبوعية:				نظري	30	عملي	30		
عدد الوحدات الدراسية:				4					
الرمز:				IMA208					
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اسم المقرر النظير				/					
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اسم مدرس (مدرسي) المقرر:				لجين هاشم محمود					
اللقب العلمي:				لا يوجد					
سنة الحصول على اللقب				لا يوجد					
الشهادة :				بكالوريوس طب اسنان					
سنة الحصول على الشهادة				2023					
عدد سنوات الخبرة (تدريس)				1 سنة					

الوصف العام للمقرر

مادة تمريض الطوارئ هي مادة تعليمية تهدف إلى تجهيز طلاب التمريض بالمعرفة والمهارات اللازمة لتقديم الرعاية الفعالة للمرضى في حالات الطوارئ.

- 1- الاستجابة السريعة.
- 2- تقييم الحالة.
- 3- التعامل مع الحالات الحرجة.

الاهداف العامة

- تقديم الرعاية الفورية والحيوية.
- التشخيص السريع والدقيق.
- التفاعل الفعال مع فريق الطوارئ.

الأهداف الخاصة

- 1- تقييم الرعاية الفعالة في حالات الطوارئ الحادة.
- 2- تطوير مهارات التشخيص السريع.
- 3- تعاون مع الحالات الحرجة والصعبة.

الأهداف السلوكية او نواتج التعلم

- الاستجابة السريعة والفعالة.
- التعامل المهني مع المرضى والآسر.
- التواصل والتعاون مع الفرق الطبية الأخرى.

المتطلبات السابقة

- اذكر أي متطلبات سابقة قد يحتاجها الطالب قبل التسجيل في المقرر، مثل مواد دراسية سابقة أو مهارات معينة.

الأهداف السلوكية او مخرجات التعليم الأساسية

ت	آلية التقييم
1	تعريف الطلاب على اساسيات ومبادئ ادارة الطوارئ. الإسعافات الأولية: الإنعاش القلبي الرئوي. التعامل مع النزيف والجروح. التعامل مع الكسور والحروق.
2	إدارة الحالات الطارئة الشائعة: النوبات القلبية والسكتات الدماغية. الصدمات والتسمم. الحوادث والإصابات الرياضية.
3	تعريف الطلاب على أنواع الضمادات والمحاليل الوريدية وطرق استخدامها
4	تعريف الطلاب على استخدام الأجهزة والمعدات الطبية: أجهزة الإنعاش والتنفس الصناعي. المراقبة الطبية واستخدام أجهزة الصدمات الكهربائية.

أساليب التدريس (حدد مجموعة متنوعة من أساليب التدريس لتناسب احتياجات الطلاب ومحتوى المقرر)

الاسلوب او الطريقة	مبررات الاختيار
1. المناقشة	تقديم الخلاصة والفهم للموضوع
2. الالقاء	اكتساب الطالب مهارة تفسير النصوص
3. المحاضرة	محدد وواضح ويطبق بسهولة وهو التقليدي

الفصل الثاني من المحتوى العلمي

				الوقت		عنوان الفصل
طرق القياس	التقنيات	طريقة التدريس	العنوان الفرعي	العملي	النظري	التوزيع الزمني
	سبورة - لابتوب - اجراء التجارب المختبرية	محاضرة	إدارة المريض المصاب بالحروق، الفسيولوجيا المرضية للحروق، الاستجابة الجهازية، مرحلة الطوارئ للعناية بالحروق.	2	2	الأسبوع الأول
	سبورة - لابتوب - اجراء التجارب المختبرية	محاضرة	المرحلة المتوسطة للعناية بالحروق، جرح الحروق، العناية العامة بالجروح، الوقاية من العدوى، تغيير الضمادات، إدارة الألم، الدعم الغذائي.	2	2	الأسبوع الثاني
	سبورة - لابتوب - اجراء التجارب المختبرية	محاضرة	المرحلة المتوسطة للعناية بالحروق، جرح الحروق، العناية العامة بالجروح، الوقاية من العدوى، تغيير الضمادات، إدارة الألم، الدعم الغذائي.	2	2	الأسبوع الثالث
	سبورة - لابتوب - اجراء التجارب المختبرية	محاضرة	إدارة المريض في الجبيرة، أنواع الجبائر، المريض في الجر، أنواع الجر.	2	2	الاسبوع الرابع
	سبورة - لابتوب - اجراء التجارب المختبرية	محاضرة	إدارة المريض في الجبيرة، أنواع الجبائر، المريض في الجر، أنواع الجر، مبدأ الجر الفعال.	2	2	الأسبوع الخامس
	سبورة - لابتوب - اجراء التجارب المختبرية	محاضرة	إدارة حالات الطوارئ لمريض الكسور، أنواع الكسور، المظاهر السريرية، التشخيص.	2	2	الأسبوع السادس
	سبورة - لابتوب - اجراء التجارب المختبرية	محاضرة	إدارة حالات الطوارئ لمريض الكسور، أنواع الكسور، المظاهر السريرية، التشخيص.	2	2	الأسبوع السابع
	سبورة - لابتوب - اجراء التجارب المختبرية	محاضرة	حالات الطوارئ المتعلقة بدرجات الحرارة، ضربة	2	2	الأسبوع الثامن

المختبرية		الشمس، الإنهاك الحراري.			
سبورة - لابتوب- اجراء التجارب المختبرية	محاضرة	التسمم، تناول "السموم المبتلعه، استنشاق السموم، التعامل مع حالات التسمم في حالات الطوارئ".	2	2	الأسبوع التاسع
سبورة - لابتوب- اجراء التجارب المختبرية	محاضرة	إدارة الطوارئ للدغات الثعابين والعقرب ولدغات الحشرات.	2	2	الأسبوع العاشر
سبورة - لابتوب- اجراء التجارب المختبرية	محاضرة	إدارة الطوارئ للمرضى الانتحاريين وتعاطي المخدرات والكحول.	2	2	الأسبوع الحادي عشر
سبورة - لابتوب- اجراء التجارب المختبرية	محاضرة	ميكانيكا الجسم، وضعية الجسم، مبدأ نقل المريض.	2	2	الأسبوع الثاني عشر
سبورة - لابتوب- اجراء التجارب المختبرية	محاضرة	تغذية المعدة، الغسيل "الري"، الأعراض، المؤثرات، الرعاية التمريضية.	2	2	الأسبوع الثالث عشر
سبورة - لابتوب- اجراء التجارب المختبرية	محاضرة	خيطة الجرح في قسم الطوارئ، الغرض، مبادئ الخياطة، دور طاقم التمريض.	2	2	الأسبوع الرابع عشر
سبورة - لابتوب- اجراء التجارب المختبرية	محاضرة	الأجسام الغريبة في العين والأنف والأذن والحنجرة وإدارة الطوارئ.	2	2	الأسبوع الخامس عشر

المحتوى العلمي

Module unit-1-

Management of the Burn Patient

Burn Pathophysiology

A. Types of Burns:

- **Thermal Burns:** Caused by heat sources such as fire, hot liquids, or steam.
- **Chemical Burns:** Result from exposure to acidic or alkaline substances.
- **Electrical Burns:** Caused by electrical current passing through the body.
- **Radiation Burns:** Due to prolonged exposure to ultraviolet (UV) light or other radiation sources.

B. Burn Depth Classification:

- **First-Degree Burns:** Affect only the outer layer of the skin (epidermis), causing redness and pain.
- **Second-Degree Burns:** Extend into the dermis, leading to blistering, severe pain, and potential scarring.
- **Third-Degree Burns:** Damage all layers of the skin and underlying tissues, resulting in a white or charred appearance, and potentially no pain due to nerve damage.
- **Fourth-Degree Burns:** Extend into muscles, tendons, and bones, causing severe damage and potential loss of function.

Systemic Response to Burns

A. Inflammatory Response:

- **Release of Inflammatory Mediators:** Burns trigger the release of cytokines, histamines, and other inflammatory mediators, causing local and systemic inflammation.
- **Increased Capillary Permeability:** Leads to fluid leakage from the vascular system into the interstitial spaces, causing edema.

B. Metabolic Response:

- **Hypermetabolism:** Burns induce a hypermetabolic state, increasing energy expenditure, protein catabolism, and heat production.
- **Nutritional Needs:** Increased demand for calories and nutrients to support healing and prevent muscle wasting.

C. Immune Response:

- **Suppressed Immune Function:** Severe burns impair the immune system, increasing the risk of infections.

D. Cardiovascular Response:

- **Hypovolemia:** Loss of plasma volume due to increased capillary permeability leads to decreased blood volume and hypovolemic shock.
- **Cardiac Output:** Initial decrease in cardiac output followed by an increase as the body attempts to compensate.

Emergency Phase of Burn Care

A. Initial Assessment:

- **Primary Survey:** Focus on airway, breathing, and circulation (ABCs).
- **Secondary Survey:** Detailed head-to-toe assessment after stabilization.

B. Airway Management:

- **Intubation:** Early intubation for patients with inhalation injuries or extensive burns to prevent airway obstruction.
- **Oxygen Therapy:** Administering 100% oxygen to ensure adequate oxygenation.

C. Breathing and Ventilation:

- **Monitor for Respiratory Distress:** Assess for signs of inhalation injury, such as soot around the nose/mouth, singed nasal hairs, or carbonaceous sputum.
- **Mechanical Ventilation:** May be necessary for patients with severe respiratory compromise.

D. Circulation and Fluid Resuscitation:

- **IV Access:** Establish large-bore IV access for fluid administration.
- **Fluid Resuscitation:** Use formulas such as the Parkland formula to calculate fluid needs (e.g., 4 mL/kg/%TBSA burned of Lactated Ringer's solution, with half given in the first 8 hours and the remainder over the next 16 hours).
- **Monitor Urine Output:** Aim for 0.5-1 mL/kg/hr to ensure adequate renal perfusion.

E. Wound Care:

- **Initial Wound Care:** Cleanse the wound with sterile saline, remove debris, and cover with sterile dressings.
- **Pain Management:** Administer analgesics to manage pain.

F. Preventing Hypothermia:

- **Maintain Warm Environment:** Use warm IV fluids and blankets to prevent heat loss.

G. Escharotomy:

- **Indications:** Perform escharotomy if there is evidence of compartment syndrome or compromised circulation due to circumferential burns.

H. Tetanus Prophylaxis:

- **Tetanus Immunization:** Administer tetanus prophylaxis if the patient's immunization status is uncertain or if more than 5 years have passed since the last booster.

Summary

Managing burn patients involves understanding the pathophysiology of burns and the systemic responses they induce. Initial emergency care focuses on stabilizing the patient by managing the airway, breathing, and circulation, performing fluid resuscitation, providing wound care, preventing hypothermia, and ensuring pain control. Burn management requires a multidisciplinary approach to address both immediate and long-term needs, including infection prevention, nutritional support, and rehabilitation.

Module unit-2,3-

Intermediate Phase of Burn Care

The intermediate phase of burn care typically begins after the initial 48-72 hours post-burn injury. This phase focuses on continued stabilization, wound care, prevention of complications, and preparation for eventual rehabilitation.

Burn Wound Management

A. Assessment:

- **Depth and Size:** Regular assessment of the burn depth and total body surface area (TBSA) affected.
- **Healing Progress:** Monitor for signs of healing such as granulation tissue formation and epithelialization.

B. Debridement:

- **Types of Debridement:** Mechanical, enzymatic, surgical, or autolytic methods to remove dead tissue and promote healing.
- **Frequency:** Debridement should be performed regularly to prevent infection and promote wound bed preparation for healing or grafting.

General Wound Care

A. Cleansing:

- **Technique:** Use sterile saline or mild antiseptic solutions to clean the wound.
- **Frequency:** Perform cleansing during each dressing change.

B. Moist Wound Environment:

- **Dressing Selection:** Choose dressings that maintain a moist environment to promote healing.
- **Common Dressings:** Hydrocolloids, hydrogels, alginates, and foam dressings.

C. Coverage:

- **Temporary Coverage:** Use materials such as Biobrane, xenografts, or allografts for temporary coverage.

- **Permanent Coverage:** Autografting using the patient's own skin for permanent wound closure.

Infection Prevention

A. Topical Antimicrobials:

- **Agents:** Silver sulfadiazine, mafenide acetate, and silver nitrate.
- **Application:** Apply as per protocol to prevent microbial growth on the wound surface.

B. Systemic Antibiotics:

- **Indications:** Use systemic antibiotics in cases of confirmed infection or sepsis.
- **Culture and Sensitivity:** Tailor antibiotic therapy based on culture and sensitivity results.

C. Sterile Technique:

- **Dressings:** Use sterile techniques during dressing changes to minimize the risk of contamination.
- **Hand Hygiene:** Ensure rigorous hand hygiene protocols are followed by all healthcare personnel.

Dressing Changes

A. Frequency:

- **Depends on Dressing Type:** Some dressings may require daily changes, while others (e.g., silver-impregnated dressings) may be left in place for several days.
- **Condition-Based:** More frequent changes if there is excessive exudate, signs of infection, or if the dressing becomes dislodged.

B. Procedure:

- **Preparation:** Gather all necessary supplies before starting.
- **Gentle Removal:** Carefully remove old dressings to avoid damaging new tissue.
- **Reapplication:** Reapply new dressings using aseptic technique.

Pain Management

A. Pharmacologic:

- **Analgesics:** Use of opioids (e.g., morphine) and non-opioid analgesics (e.g., acetaminophen, NSAIDs).
- **Sedatives and Anxiolytics:** Benzodiazepines for anxiety associated with dressing changes and procedures.
- **Adjunctive Therapies:** Gabapentin for neuropathic pain.

B. Non-Pharmacologic:

- **Relaxation Techniques:** Guided imagery, deep breathing exercises, and other relaxation methods.
- **Distraction:** Music therapy, virtual reality, or engaging activities during procedures.

Nutritional Support

A. Increased Caloric Needs:

- **Hypermetabolic State:** Burns significantly increase metabolic rate, requiring higher caloric intake.
- **Caloric Requirements:** Typically 1.5 to 2 times the normal caloric intake.

B. Protein Requirements:

- **Increased Protein:** Essential for wound healing and preventing muscle catabolism.
- **Sources:** Lean meats, dairy, legumes, and protein supplements.

C. Micronutrients:

- **Vitamins and Minerals:** Vitamins A, C, D, E, and zinc are crucial for wound healing.
- **Supplementation:** Consider supplements to ensure adequate intake of essential micronutrients.

D. Enteral vs. Parenteral Nutrition:

- **Enteral Nutrition:** Preferred route if the gastrointestinal tract is functional.
- **Parenteral Nutrition:** Used if enteral feeding is not possible or insufficient.

Summary

The intermediate phase of burn care involves comprehensive wound management, infection prevention, regular dressing changes, effective pain management, and robust nutritional support. By addressing these areas, healthcare providers can promote optimal healing, prevent complications, and prepare the patient for long-term recovery and rehabilitation.

Module unit-4,5-

A cast is a rigid external immobilizing device that is molded to the contours of the body.

- **The purposes of a cast are :**

1. immobilize a body part in a specific position.
2. apply uniform pressure on underlying soft tissue.
3. correct a deformity.
4. to support and stabilize weakened joints.

Type of Cast :

1. Short arm cast .
2. Thumb spica cast
3. Long arm cast
4. Short leg cast
5. Long leg cast
6. Walking cast
7. Body cast
8. Spica cast
 - Shoulder spica cast (jacket)
 - Hip spica cast (Trunk)

Several types of materials are used to make casts:

1. **Plaster casts** – mold very smoothly to the body's contours. The cast initially emits heat and takes about 15 minutes to cool and 24 to 72 hours to dry. It must be handled carefully until dry.
2. **Fiberglass casts** – are dry in 10 to 15 minutes and can bear weight 30 minutes after application.

3. **Polyester-cotton knit casts** – take about 7 to 10 minutes to dry and can withstand weight bearing almost immediately.

Assessment. Assess the following before and after cast application:

1. Evaluate the client's pain, noting severity, nature, exact location, source and alleviating and exacerbating factors.
2. Assess neurovascular status.
3. Inspect for and document any skin lesions, discoloration, or nonremovable foreign material.
4. Evaluate the client's ability to learn essential procedures, such as applying slings correctly, crutch walking, or using a walker.

Traction:

is the application of a pulling force to an injured part of the body or extremity.

Indications for skin traction:

1. temporary management of neck femur fracture
2. femoral shaft fracture in children
3. displaced fracture of acetabulum
4. after reduction of dislocation of hip
5. to correct minor fixed flexion of deformities of hip and knee

Principles of Effective Traction:

- the patient's body weight and bed position adjustments supply the needed counter traction.

Types of Traction:

- Manual traction.
- Skin Traction.
- Skeletal Traction.
- Cervical traction.

Skeletal Traction:

placing a pin, wire, or screw in the fractured bone. After one of these devices have been inserted, weights are attached to it so the bone can be pulled into the correct position. This type of surgery may be done using a general, spinal, or local anesthetic to keep you from feeling pain during the procedure.

Skin Traction

Skin traction is far less invasive than skeletal traction. It involves applying splints, bandages, or adhesive tapes to the skin directly below the fracture.

Dangers of skin traction:

1. Distal edema
2. Vascular obstruction
3. Peroneal nerve palsy
4. Skin necrosis over bony prominences

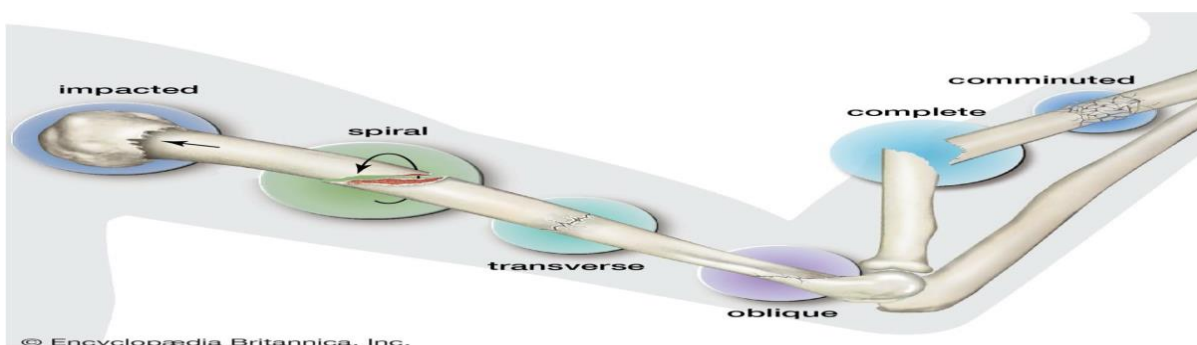
Maximum weight for skin traction is 6.7 kg

Complication of traction:

1. Skin breakdown /pressure areas
2. Neurovascular impairment
3. Compartment syndrome
4. Joint contracture
5. Constipation from immobility and analgesics

Module unit-6,7-

Fracture



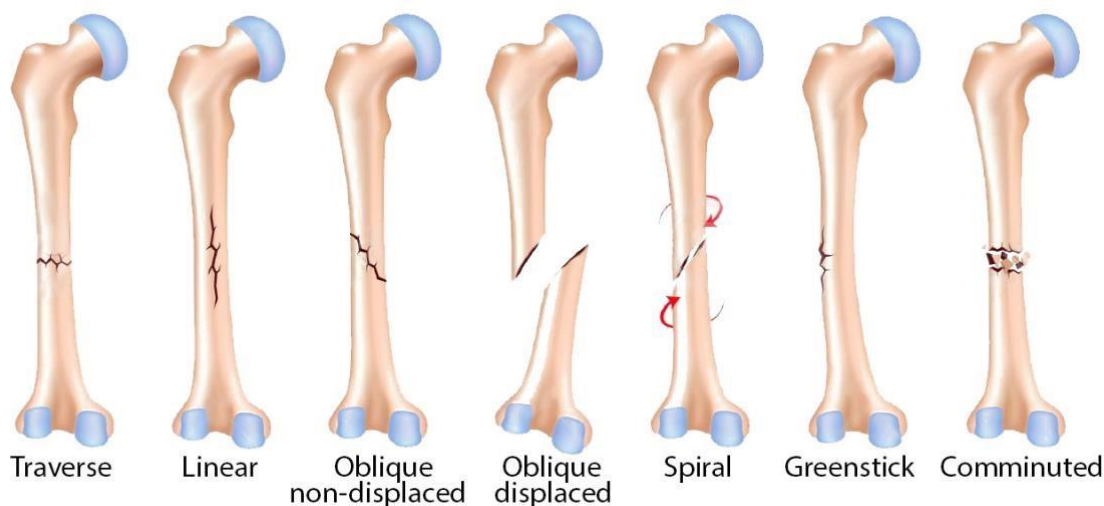
Fracture: is a partial or complete break in the bone. When a fracture happens, it's classified as either open or closed.

- **Open fracture (also called compound fracture):** The bone pokes through the skin and can be seen, or a deep wound exposes the bone through the skin.

- **Closed fracture (also called simple fracture):** The bone is broken, but the skin is intact.

Types of fracture:

- **Greenstick.** This is an incomplete fracture. A portion of the bone is broken, causing the other side to bend.
- **Transverse.** The break is in a straight line across the bone.
- **Spiral.** The break spirals around the bone; common in a twisting injury.
- **Oblique.** The break is diagonal across the bone.
- **Compression.** The bone is crushed. This causes the broken bone to be wider or flatter in appearance.
- **R Comminuted.** The bone has broken into three or more pieces and fragments are present at the fracture site.
- **Segmental.** The same bone is fractured in two places, so there is a "floating" piece of bone.



Symptoms of fracture:

The following are the most common symptoms of a fracture. However, each person may experience symptoms differently. Symptoms of a broken or fractured bone may include:

- Sudden pain

- Trouble using or moving the injured area or nearby joints
- Swelling
- Obvious deformity
- Warmth, bruising, or redness

How is a fracture diagnosed?

In addition to a complete medical history (including asking how the injury happened) and physical exam, tests used for a fracture may include the following:

- **X-ray.** A diagnostic test which uses invisible electromagnetic energy beams to make pictures of internal tissues, bones, and organs on film.
- **Magnetic resonance imaging (MRI).** An imaging test that uses large magnets, radiofrequencies, and a computer to produce detailed pictures of structures within the body.
- **Computed tomography scan (also called a CT or CAT scan).** This is an imaging test that uses X-rays and a computer to make detailed images of the body. A CT scan shows details of the bones, muscles, fat, and organs.

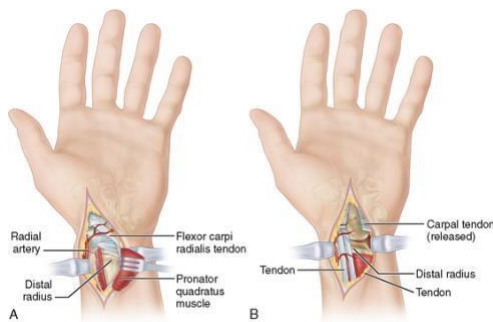


How is a fracture treated?

The goal of treatment is to put the pieces of bone back in place, control the pain, give the bone time to heal, prevent complications, and restore normal use of the fractured area.

Treatment may include:

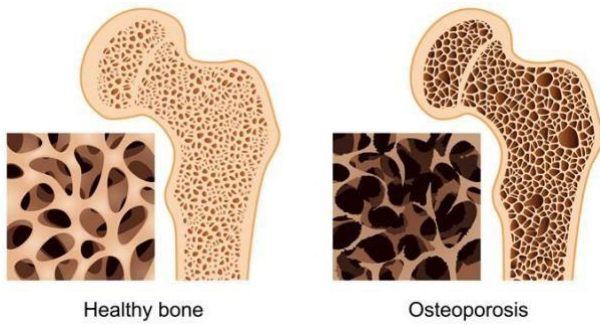
- **Splint or cast.** This immobilizes the injured area to keep the bone in alignment. It protects the injured area from motion or use while the bone heals.
- **Medicine.** This may be needed to control pain.
- **Traction.** Traction is the use of a steady pulling action to stretch certain parts of the body in a certain direction. The purpose of traction is to stretch the muscles and tendons around the broken bone to help the bone ends to align and heal.
- **Surgery.** Surgery may be needed to put certain types of broken bones back into place. Occasionally, internal fixation (metal rods or pins located inside the bone) or external fixation devices (metal rods or pins located outside of the body) are used to hold the bone fragments in place while they heal.



Fractures can take months to heal as broken bones “knit” back together when new bone is formed between the broken parts.

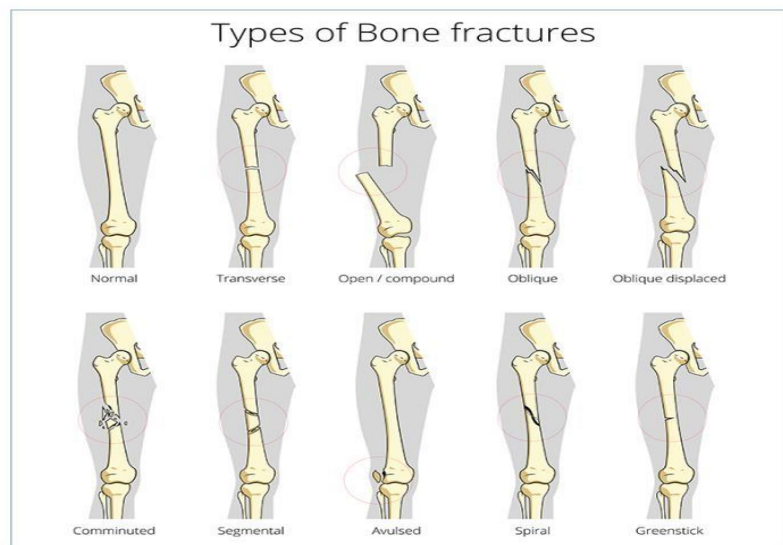
What can I do to prevent fractures?

1. Follow a healthy diet that includes vitamin D and calcium to keep bones strong.
2. Do weight-bearing exercises help to keep bones strong.
3. Do not use any form of tobacco. Tobacco and nicotine increase the risk of bone fractures and interfere with the healing process.
4. Osteoporosis is a common cause of fractures in older people. Talk to your healthcare provider about your risk of osteoporosis and get treatment if you have it.



Key points about fractures

- A fracture is a partial or complete break in the bone. There are many different types of fractures.
- Bone fractures are often caused by falls, trauma, or as a result of a direct blow or kick to the body. Overuse or repetitive motions can cause stress fractures. Fractures can also be caused by diseases that weaken the bone. These include osteoporosis or cancer in the bones.
- The main goal of treatment is to put the pieces of bone back in place so the bone can heal. This can be done with a splint, cast, surgery, or traction.
- You should see a healthcare provider any time you think you may have a broken bone.



Module unit-8-

Temperature emergencies, heat stroke, heat exhaustion.

A high temperature is called a fever (or sometimes a high fever). Fever itself is not an illness. A fever is usually a symptom of an underlying condition, usually an infection.

What temperature is a fever?

It is usually agreed that a person with a temperature of 38°C or higher has a fever. However, a temperature over 37.5°C can be considered to be a mild fever. Fevers occur in both children and adults and are very common, particularly in children. Fevers are often accompanied by sweating.

What is a normal temperature?

The normal body temperature changes throughout the day. These changes can be caused by exercise, eating, sleeping and even the time of day. The temperature is usually highest in the early evening and lowest in the early hours of the morning. The average body temperature, taken with a digital thermometer in your mouth, is 37°C (98.6°F), but anywhere between 36.5°C (97.7°F) and 37.2°C (98.96°F) is considered normal. Armpit temperatures tend to be 0.2°C to 0.3°C lower than this.

When to seek emergency medical care

Call your doctor if you or your child has a temperature of 103 degrees or higher. You should always seek emergency medical care for a fever if you're experiencing the following symptoms:

- temperature of 100.4°F (38°C) or higher in children under three months of age
- irregular breathing

- confusion or sleepiness
- seizures or convulsions
- severe headache
- skin rash
- persistent vomiting
- abdominal pain
- pain while urinating

Heat stroke: is the most serious heat-related illness. It occurs when the body can no longer control its temperature: the body's temperature rises rapidly, the sweating mechanism fails, and the body is unable to cool down. When heat stroke occurs, the body temperature can rise to 106°F or higher within 10 to 15 minutes.

How do you control heat stroke?

1. Put the person in a cool tub of water or a cool shower.
2. Spray the person with a garden hose.
3. Sponge the person with cool water.
4. Fan the person while misting with cool water.
5. Place ice packs or cool wet towels on forehead, armpits.
6. Cover the person with cool damp sheets.

Why no fluids for heat stroke?

cooling alone may improve hypotension and cardiac function by allowing blood to redistribute centrally. Aggressive fluid resuscitation generally is not recommended because it may lead to pulmonary edema

Heat exhaustion: is the body's response to an excessive loss of water and salt, usually through excessive sweating.

Heat exhaustion is most likely to affect:

- The elderly
- People with high blood pressure
- Those working in a hot environment

Symptoms

Symptoms of heat exhaustion include:

- Headache
- Nausea
- Dizziness
- Weakness
- Irritability
- Thirst
- Heavy sweating
- Elevated body temperature
- Decreased urine output

What are the stages of heat stress?

1. Heat cramps
2. Heat exhaustion
3. Heat stroke

What vitamin is good for heat exhaustion?

Vitamin C. Research has shown that vitamin C (ascorbic acid) supplementation helps the body physiologically respond to heat stress

What are the long term effects of heat exhaustion?

Potential complications of heat exhaustion include: severe kidney injury

Which food reduce body heat?

Some of the best cooling foods for body include foods like cucumber, watermelon, coconut water, mint, buttermilk, etc. These foods have cooling properties that help our body regulate body temperature better during summer.

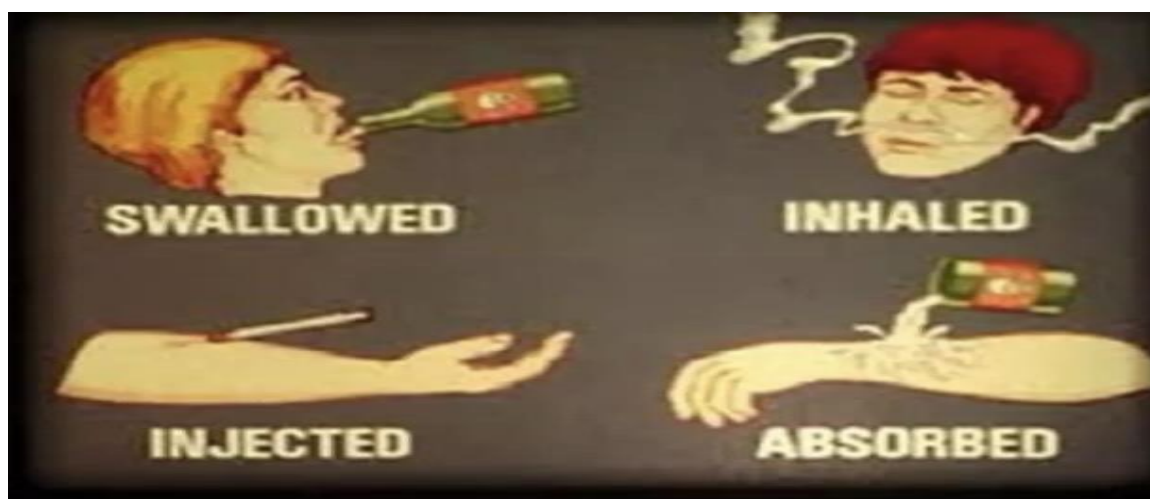
What medication is used for heat exhaustion?

Lorazepam: It may be used intravenously and is well absorbed after intramuscular injection. Its onset of action is within minutes.

Note: do not give them aspirin or paracetamol (it will not help the raised temperature and may be harmful).

Module unit-9-

Poisoning, ingested " swallowed poisons, inhaled poisons, Emergency management of poisoning



Poisoning: is the harmful effect that occurs when too much of a poison, or substance that is harmful to the body, has entered the body. Poisons can be swallowed, inhaled, injected or absorbed through the skin.

What causes poisonings?

- Medicines. Iron pills and pain medicines are among the most common causes of fatal poisonings in small children.
- Cleaning products.
- Plants.
- Cosmetics.
- Paints and solvents.



Symptoms of poisoning:

- Dizziness, disorientation, drowsiness, and faintness
- Nausea, vomiting, diarrhea, and stomach pain
- Rash
- Sores or redness around the mouth
- Drooling or foaming
- Trouble breathing
- Headache
- Shaking
- Seizures (uncontrolled electrical activity in the brain)



Classification of poisoning: -

Swallowed poisoning: are substances that can cause damage if too much is absorbed by the body. Swallowed poisons include chemicals, fungi.

Inhaled poisoning: it occurs when someone has been exposed to a toxic fume.

Ingested poisoning: an ingested poison is that which is introduced into the digestive tract by means of the mouth.

Types of Poisoning

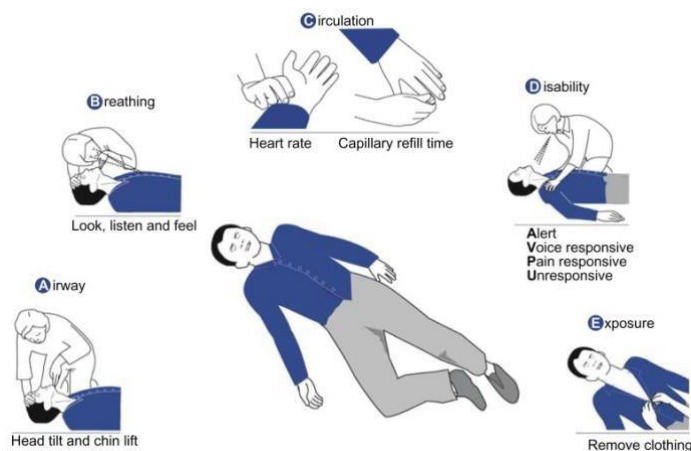
Fulminant: Produced by a massive dose of a poison. Death occurs very rapidly, without symptoms i.e. collapse suddenly

Acute: A single large dose or several small doses taken in a short period

Chronic: Produced by small doses taken over a long period

What is (ABCDE) management of poisons?

- 1-The standard airway
- 2-Breathing
- 3-Circulation
- 4-Disability
- 5-Exposure

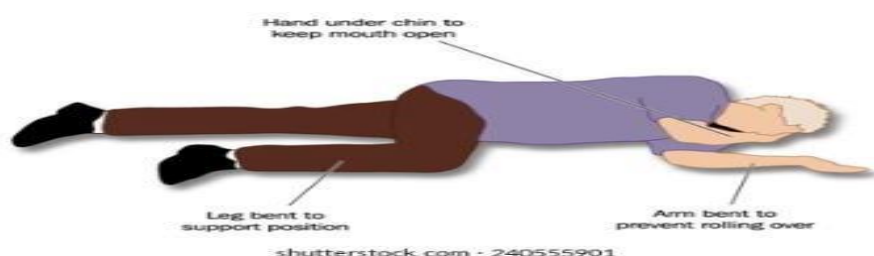


Conscious casualty

- 1 Listen to the patient and give reassurance.
- 2 Find out what sort of poison is involved and keep any containers for medical aid to see.
- 3 DO NOT induce vomiting or give anything to eat or drink. 4 Wash any corrosive substance off the mouth and face with water, or wipe off.

Unconscious casualty

Place the patient in the recovery position if unconscious and breathing and continue to check their airway and breathing regularly.



Swallowed poison. Remove anything remaining in the person's mouth. If the suspected poison is a household cleaner or other chemical, read the container's label and follow instructions for accidental poisoning.

Inhaled poison. Get the person into fresh air as soon as possible

Absorbed Poisons

- 1 Protect yourself (if possible) use protective clothing such as gloves, goggles, and so on.
- 2 Wash the substance off immediately.
- 3 Ask the patient to remove any contaminated clothing.
- 4 Flush the patient's skin with running water.
- 5 Wash gently with soap and water and rinse well.

Food poisoning: Food poisoning, a type of foodborne illness, is a sickness people get from something they ate or drank.

How long does food poison last?

Well, fortunately, you'll usually recover from the most common types of food poisoning within 12 to 48 hours. Your goal should be to make sure that your body gets enough fluids so that you don't become dehydrated. Don't eat solid **food** until diarrhea has passed, and avoid dairy products.

What I should eat after food poisoning?

You can start with what's called the BRAT diet, which stands for: bananas, rice, apples, toast,"

Module unit-10-

Emergency Management of Snake, Scorpion, and Insect Bites

Snake Bites

A. Initial Assessment:

- **Identify the Snake:** If safe, identify the snake to determine if it is venomous.
- **History:** Gather information about the bite time, symptoms, and any first aid already administered.
- **Symptoms:** Look for signs of envenomation such as pain, swelling, bruising, and systemic symptoms like nausea, vomiting, difficulty breathing, and altered mental status.

B. First Aid:

- **Keep the Patient Calm:** Minimize movement to slow the spread of venom.
- **Positioning:** Keep the affected limb immobilized and at or slightly below heart level.
- **Clean the Bite:** Clean the bite area with soap and water. Do not cut the wound or suck out the venom.
- **Remove Constrictions:** Remove rings, bracelets, and other constricting items from the affected limb.

C. Emergency Care:

- **IV Access:** Establish intravenous access for fluid administration.
- **Monitor Vitals:** Regularly monitor blood pressure, heart rate, respiratory rate, and oxygen saturation.
- **Antivenom:** Administer antivenom if indicated and available. Dosage depends on the type of snake and severity of envenomation.
- **Pain Management:** Administer appropriate pain relief (avoid NSAIDs due to potential bleeding risk).
- **Tetanus Prophylaxis:** Update tetanus immunization if needed.
- **Advanced Support:** Provide respiratory support if there is respiratory distress or paralysis. Treat any anaphylactic reactions promptly with epinephrine.

Scorpion Bites

A. Initial Assessment:

- **Identify the Scorpion:** If possible, identify the scorpion to determine if it is venomous.
- **Symptoms:** Look for localized pain, swelling, redness, and systemic symptoms such as muscle twitching, sweating, nausea, vomiting, difficulty breathing, and hypertension.

B. First Aid:

- **Keep the Patient Calm:** Reassure the patient and minimize their movement.
- **Positioning:** Keep the affected limb immobilized.
- **Clean the Bite:** Clean the sting area with soap and water.

C. Emergency Care:

- **IV Access:** Establish intravenous access for fluid administration.
- **Monitor Vitals:** Regularly monitor blood pressure, heart rate, respiratory rate, and oxygen saturation.
- **Antivenom:** Administer antivenom if indicated and available, especially in severe cases.
- **Pain Management:** Administer appropriate pain relief.
- **Symptomatic Treatment:** Manage symptoms such as muscle spasms and respiratory distress.
- **Tetanus Prophylaxis:** Update tetanus immunization if needed.
- **Advanced Support:** Provide respiratory support if there is respiratory distress or paralysis.

Insect Bites and Stings

A. Initial Assessment:

- **Identify the Insect:** If possible, identify the insect to determine potential reactions.
- **Symptoms:** Look for localized pain, swelling, redness, itching, and systemic symptoms such as hives, difficulty breathing, and anaphylaxis.

B. First Aid:

- **Remove the Stinger:** If stung by a bee, remove the stinger by scraping it out with a flat object. Do not squeeze the stinger as this can release more venom.
- **Clean the Bite:** Clean the bite or sting area with soap and water.

- **Cold Compress:** Apply a cold compress to reduce swelling and pain.

C. Emergency Care:

- **Anaphylaxis Management:** If there are signs of anaphylaxis (e.g., difficulty breathing, swelling of the face or throat, rapid heartbeat), administer epinephrine immediately and call for emergency medical help.
- **Antihistamines:** Administer oral or intravenous antihistamines to reduce allergic reactions.
- **Corticosteroids:** Use corticosteroids to manage severe allergic reactions.
- **Pain Management:** Administer appropriate pain relief.
- **Monitor Vitals:** Regularly monitor blood pressure, heart rate, respiratory rate, and oxygen saturation.

Summary

Emergency management of snake, scorpion, and insect bites involves immediate first aid to minimize venom spread, monitoring vital signs, administering appropriate medications such as antivenom, pain relief, and managing any severe reactions like anaphylaxis. Early and effective intervention is crucial to reduce morbidity and mortality associated with these bites and stings.

Module unit-11-

Emergency Management of Patients with Drug and Alcohol Abuse

General Principles

1. Initial Assessment:

- **Primary Survey (ABCs):** Assess airway, breathing, and circulation. Ensure the patient has a patent airway, adequate breathing, and stable circulation.
- **Vital Signs:** Measure blood pressure, heart rate, respiratory rate, oxygen saturation, and temperature.
- **Glasgow Coma Scale (GCS):** Assess the patient's level of consciousness.
- **History and Physical Examination:** Obtain a thorough history of the substance(s) used, the quantity, the route of administration, the time of last use, and any co-ingestants.

2. Safety:

- **Protect the Patient and Staff:** Ensure the environment is safe to prevent harm to the patient or healthcare providers. Patients may be agitated or violent.
- **Use Restraints if Necessary:** Physical or chemical restraints may be needed to manage agitation or violence, but they should be used as a last resort and with careful monitoring.

Drug Abuse

A. Opioids:

1. **Signs and Symptoms:**
 - Pinpoint pupils, respiratory depression, altered mental status, bradycardia, hypotension, and decreased bowel sounds.
2. **Management:**
 - **Airway Management:** Ensure a patent airway; provide supplemental oxygen and ventilatory support if needed.
 - **Naloxone (Narcan):** Administer naloxone to reverse opioid effects. The initial dose can be 0.4 to 2 mg IV/IM/IN, repeated every 2-3 minutes as needed. Larger doses may be required for synthetic opioids like fentanyl.
 - **Monitor:** Observe the patient for recurrence of symptoms as naloxone has a shorter half-life than many opioids.
 - **Supportive Care:** Provide intravenous fluids for hypotension and monitor for complications like aspiration.

B. Stimulants (e.g., Cocaine, Amphetamines):

1. **Signs and Symptoms:**
 - Agitation, tachycardia, hypertension, hyperthermia, chest pain, seizures, and paranoia.
2. **Management:**
 - **Sedation:** Use benzodiazepines (e.g., lorazepam, diazepam) to manage agitation and seizures.
 - **Cooling:** For hyperthermia, use external cooling measures and intravenous fluids.
 - **Antihypertensives:** Use agents like labetalol for severe hypertension. Avoid beta-blockers alone due to the risk of unopposed alpha-adrenergic stimulation.
 - **Cardiac Monitoring:** Monitor for arrhythmias and manage chest pain with nitrates and calcium channel blockers.

C. Benzodiazepines:

1. **Signs and Symptoms:**

- Drowsiness, confusion, ataxia, respiratory depression (rare with benzodiazepine overdose alone), and hypotension.

2. **Management:**

- **Airway Management:** Ensure a patent airway and provide supportive care for respiratory depression.
- **Flumazenil:** Consider flumazenil (benzodiazepine antagonist) in specific cases, such as iatrogenic overdose in a benzodiazepine-naive patient, but it is generally avoided due to the risk of seizures.
- **Supportive Care:** Provide intravenous fluids for hypotension and monitor vital signs.

D. Hallucinogens (e.g., LSD, PCP):

1. **Signs and Symptoms:**

- Hallucinations, agitation, aggression, tachycardia, hypertension, and hyperthermia.

2. **Management:**

- **Sedation:** Use benzodiazepines to manage agitation and hallucinations.
- **Supportive Care:** Provide intravenous fluids, monitor vital signs, and manage hyperthermia with cooling measures.

Alcohol Abuse

A. Acute Alcohol Intoxication:

1. **Signs and Symptoms:**

- Slurred speech, ataxia, nystagmus, altered mental status, hypoglycemia, and respiratory depression in severe cases.

2. **Management:**

- **Airway Management:** Ensure a patent airway and provide oxygen and ventilatory support if needed.
- **Thiamine:** Administer thiamine (100 mg IV/IM) before glucose to prevent Wernicke's encephalopathy.
- **Glucose:** Check blood glucose and administer dextrose if hypoglycemia is present.
- **Supportive Care:** Provide intravenous fluids and monitor vital signs.

B. Alcohol Withdrawal:

1. **Signs and Symptoms:**

- Tremors, anxiety, agitation, hallucinations, seizures, and delirium tremens (DTs).

2. Management:

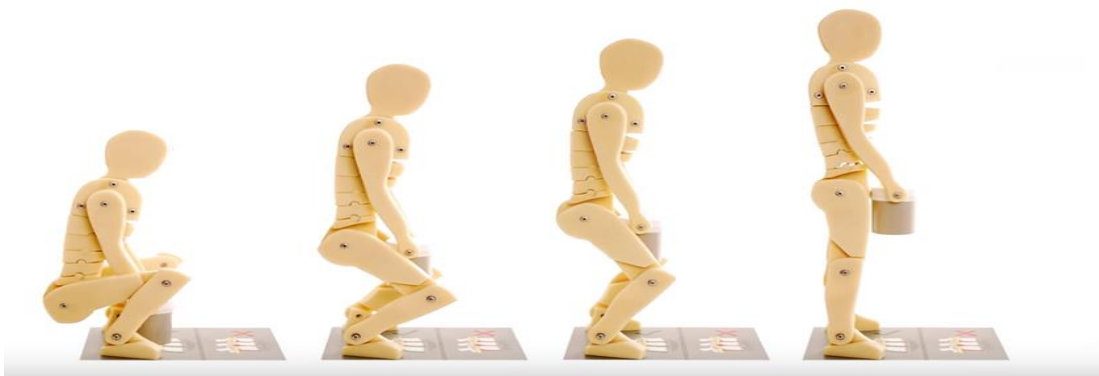
- **Benzodiazepines:** Use benzodiazepines (e.g., lorazepam, diazepam) to manage withdrawal symptoms and prevent seizures.
- **Thiamine:** Administer thiamine (100 mg IV/IM) to prevent Wernicke's encephalopathy.
- **Hydration:** Provide intravenous fluids and correct electrolyte imbalances.
- **Monitor:** Regularly monitor for complications like seizures and DTs.

Summary

The emergency management of patients with drug and alcohol abuse focuses on stabilizing vital functions, reversing the effects of the substance, managing withdrawal symptoms, and providing supportive care. Each substance has specific treatments and considerations, but all require a thorough assessment, continuous monitoring, and a multidisciplinary approach to ensure the best outcomes for the patient.

Module unit-12-

Body mechanics, Body position, Principles of transportation of patients.



Body Mechanics

A. Definition:

- Body mechanics refers to the way the body moves and maintains balance while making the most efficient use of all its parts.

B. Importance:

- Proper body mechanics are crucial for preventing injury, especially to the musculoskeletal system, during activities such as lifting, bending, and moving.

C. Principles of Body Mechanics:

- 1. Maintain a Stable Center of Gravity:**
 - Keep your center of gravity low by bending your knees and hips when lifting or lowering objects.
- 2. Maintain a Wide Base of Support:**
 - Spread your feet apart to increase stability.
- 3. Keep Objects Close to Your Body:**
 - Hold objects close to your center of gravity to reduce strain on your back.
- 4. Avoid Twisting Movements:**
 - Turn your entire body instead of twisting your spine.
- 5. Use Your Legs, Not Your Back:**
 - Lift with your legs, keeping your back straight to prevent injury.

Body Position

A. Types of Body Positions:

- 1. Supine Position:**
 - Lying on the back with the face up.
- 2. Prone Position:**
 - Lying on the stomach with the face down.
- 3. Lateral Position:**
 - Lying on the side, often used to relieve pressure on certain body parts.
- 4. Fowler's Position:**
 - Semi-sitting position with the head of the bed elevated 45-60 degrees.
- 5. Semi-Fowler's Position:**
 - Head of the bed elevated 30-45 degrees, used for patients with respiratory issues.
- 6. Trendelenburg Position:**
 - Lying on the back with the body tilted so that the head is lower than the feet, often used to improve venous return.

B. Importance of Proper Body Position:

- Ensures patient comfort and safety.
- Prevents complications such as pressure ulcers and respiratory problems.
- Facilitates certain medical procedures and examinations.

Principles of Transportation of Patients

A. Preparation:

- **Assess the Patient:**
 - Evaluate the patient's condition to determine the level of assistance required.
- **Plan the Move:**
 - Determine the best method for transport, considering factors like distance, patient's condition, and available equipment.
- **Prepare Equipment:**
 - Ensure all necessary equipment (e.g., wheelchairs, stretchers) is available and in good working order.

B. Safety Measures:

- **Explain the Procedure:**
 - Inform the patient about the transportation process to reduce anxiety and ensure cooperation.
- **Ensure Securement:**
 - Secure the patient with safety belts or straps to prevent falls during transport.
- **Use Proper Body Mechanics:**
 - Follow the principles of body mechanics to avoid injury to both the patient and healthcare provider.

C. Techniques for Patient Transport:

1. **Using Wheelchairs:**
 - Ensure the wheelchair is locked during transfers.
 - Position the wheelchair close to the patient and use a gait belt if necessary.
2. **Using Stretchers:**
 - Ensure the patient is securely strapped to the stretcher.
 - Use at least two healthcare providers to push the stretcher, especially when navigating through doors or over uneven surfaces.
3. **Using Transfer Boards or Slings:**

- Utilize transfer boards or mechanical lifts for patients who are unable to assist in their transfer.

4. **Manual Lifting:**

- Use a team approach for heavy or immobile patients to distribute the weight and reduce the risk of injury.

D. Special Considerations:

- **Patients with Mobility Issues:**
 - Use additional support and take extra care to prevent falls or injuries.
- **Patients with IV Lines or Medical Devices:**
 - Ensure all lines and devices are secure and do not get dislodged during transport.
- **Emergency Situations:**
 - Prioritize speed and efficiency while ensuring patient safety.

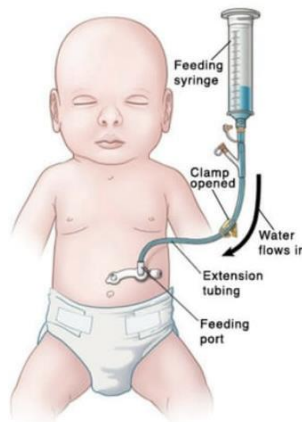
Summary

Understanding and applying the principles of body mechanics, proper body positioning, and safe patient transportation techniques are essential for preventing injuries, ensuring patient safety, and providing high-quality care. Proper training and awareness of these principles are crucial for healthcare providers to perform their duties effectively and safely.

Module unit-13- **Gastric gavage, lavage 'irrigation, purpose** **Indications, nursing care**

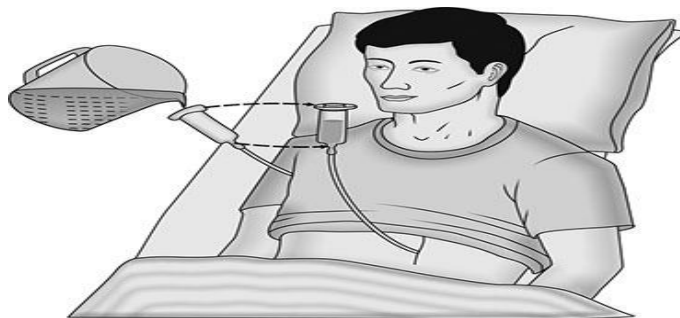
Gastric gavage: is an artificial method of giving fluids and nutrients through a tube that has been passed into the oesophagus and stomach through the nose, mouth or through an opening made on the abdominal wall.

Patients who have the inability to ingest, swallow or chew foods but are able to digest and absorb nutrients require feeding via tubes. Tube feedings deliver liquid feeding formula directly to the stomach, duodenum or jejunum.



Objective of Gastric Gavage

- To provide a means of alimentation when the oral route is inaccessible.



Indications of Gastric Gavage

1. Gastrointestinal diseases and surgery
2. Hyper metabolic states (burns, multiple trauma, sepsis, cancer)
3. Certain neurologic disorders (stroke and coma)
4. Following certain types of surgery (head and neck, esophagus)

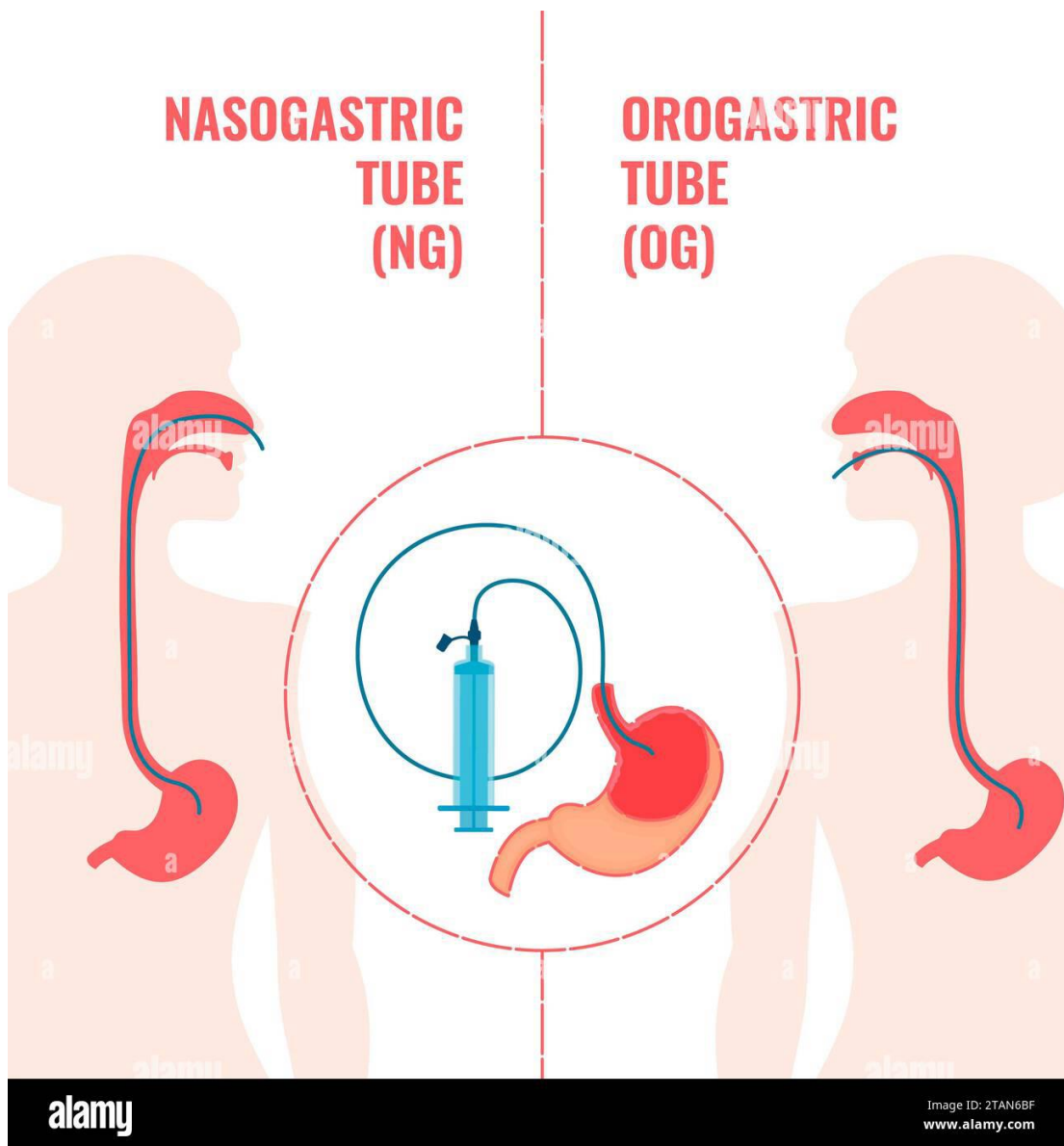
Contraindication of Gastric Gavage

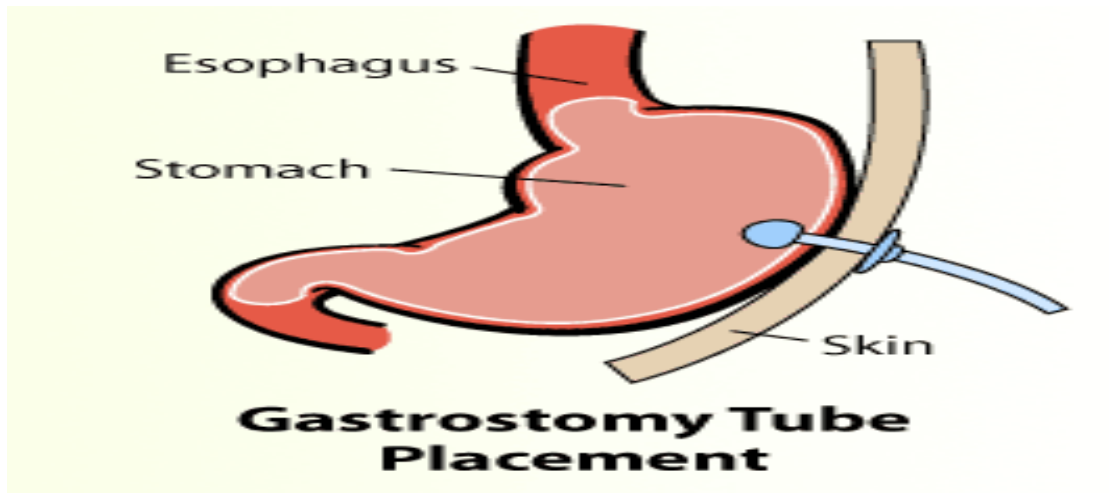
- Absent bowel sounds

Administration of feeding solution to an improperly placed tube may cause aspiration into the lungs

Types of Gastric gavage:

1. Nasogastric tube feeding
2. Or gastric feeding
3. Gastrostomy tube feeding





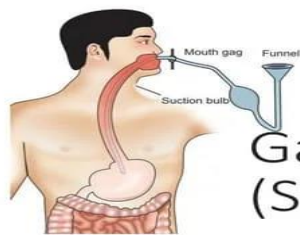
What is the name of the gastric gavage tube?

Gastrostomy or gastric feeding tube. A gastric feeding tube (G-tube or "button") is a tube inserted through a small incision in the abdomen into the stomach and is used for long-term enteral nutrition



Gastric lavage

Gastric lavage, also commonly called stomach pumping or gastric irrigation, is the process of cleaning out the contents of the stomach using a tube. Since its first recorded use in early 19th century, it has become one of the most routine means of eliminating poisons from the stomach.



Gastric Lavage (Stomach Wash)

Objective

To remove ingested toxic substance from the stomach as soon as possible to reduce potential lethal complications.

Indication

For patients who are believed to have ingested a potentially life-threatening amount of a toxic substance. Usually more effective within one hour of ingestion

Purpose:

1. Remove unabsorbed poison after ingestion.
2. Diagnosis and stop gastric hemorrhage.
3. Clean stomach before diagnostic procedures.
4. Remove liquid or small particles of material from stomach.

Preparation

- Explain the procedure, make sure patient understands and agrees to co-operate.
- Obtain informed consent from patient for the procedure.
- Need intubation to protect airway if patient is drowsy or comatose
- Obtain informed consent for the procedure from relatives (though no legal authority) if patient is drowsy or comatose. If no relatives are available and the procedure is deemed necessary and lifesaving, two doctors can sign the consent form.

The Procedure

Passage of a thick wide-bored plastic tube into the stomach and wash out the toxic substance repeatedly with Normal Saline / Water. At the end of lavage, 50gm of activated charcoal may be given into the stomach to absorb the residual toxic substance

Complications

The reported complication rate of gastric lavage is around 3%. Serious complications are rare. The commonest seen complication is mucosal injury and bleeding (Usually will heal up spontaneously). Other rarely reported but serious complications include:

- perforation of oesophagus, stomach or small bowel;
- aspiration pneumonia;
- fluid and electrolyte imbalance;
- cardiac arrhythmia;
- hypothermia;
- laryngospasm

After the Procedure

After Gastric Lavage, patient will be arranged for a short period of observation. Patient usually requires subsequent management.

What is the time limit for gastric lavage?

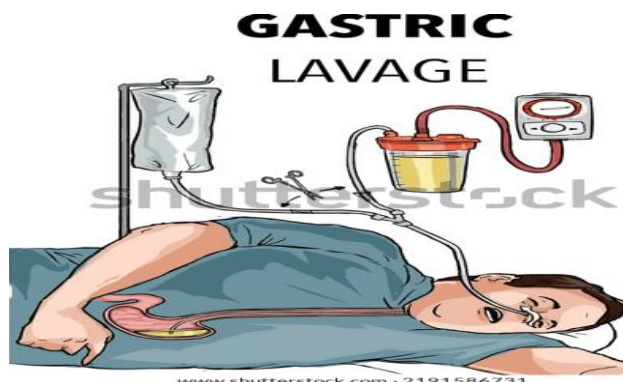
These authors recommended that gastric lavage should be performed only within 30-60 minutes after ingestion of toxic doses of a drug/poison. Later lavage usually has no clinical benefit

What is the best position for gastric lavage?

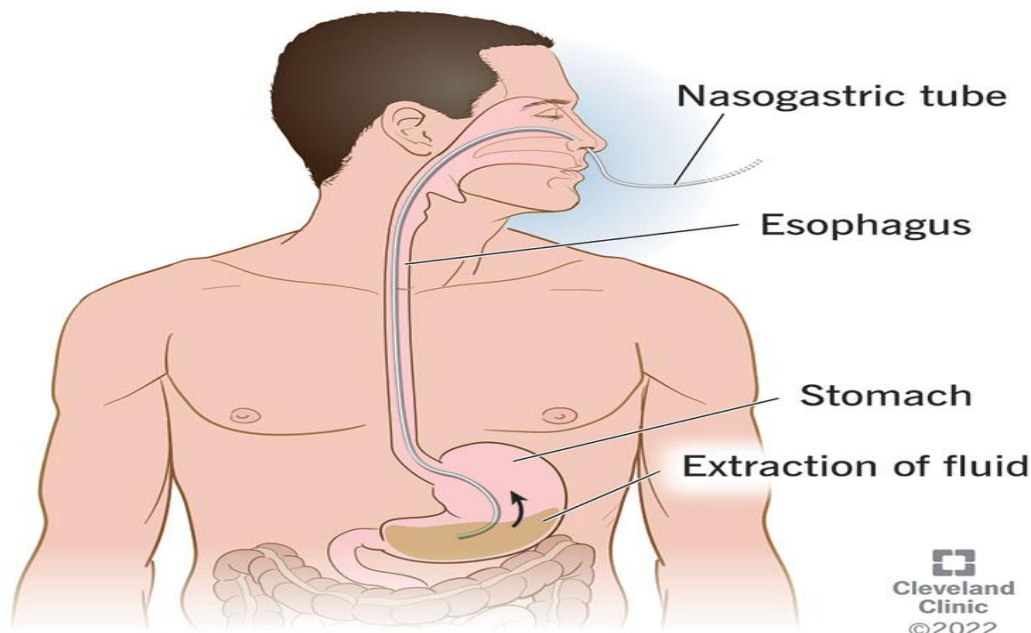
Place patient in the left lateral decubitus position with the head lowered about 10'

So This: -

1. decreases the passage of gastric contents into the duodenum during lavage,
2. reduces the possibility of pulmonary aspiration of gastric contents.
3. Restrain the uncooperative patient's hands



Stomach Pumping



What the solution used in gastric lavage?

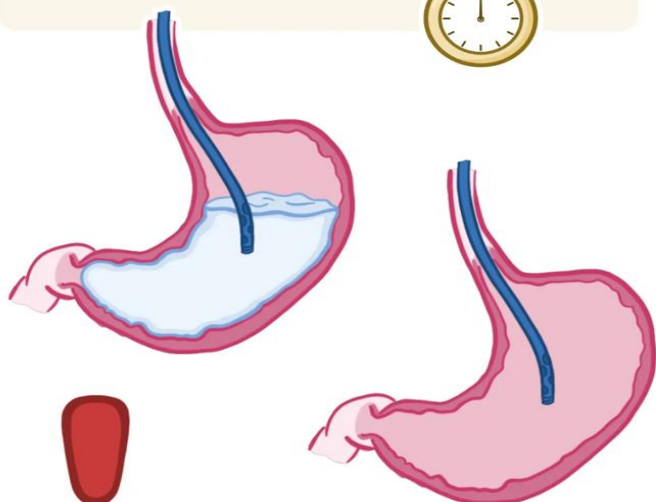
Warm water or saline is infused into the tube, with approximately 5 to 10 ml/kg per cycle to moderately distend the stomach.

Is activated charcoal used in gastric lavage?

Activated charcoal, for example, is an oral suspension that can adsorb many ingested toxins through direct contact. It can be used instead of gastric lavage since it's often safer and more effective. In some cases, it can even be combined with gastric lavage for an additional benefit.

BACKGROUND

- * **INVASIVE PROCEDURE** involving **CLEANING & REMOVING STOMACH CONTENTS**
- ~ "STOMACH PUMPING"
- ~ **IDEAL < 1hr** since **INGESTION**



INDICATIONS

- * **EVALUATING GI BLEEDS**
- * **GI DECONTAMINATION** in **TOXIC & LIFE-THREATENING SITUATION**
 - ~ **INGESTION** of **POISONS** or **DRUG OVERDOSE**
- * **COLLECTING SPECIMENS** for **DIAGNOSTIC PURPOSES**
- * **CHILDREN ≤ 12yo** with **SUSPECTED PULMONARY TUBERCULOSIS**



CONTRAINDICATIONS

- * **AACT & EAPCCT RECOMMEND AGAINST USE** for **ROUTINE POISONING**
- * **GASTROINTESTINAL HEMORRHAGES** like **COAGULOPATHIES** or **AFTER SURGERY**
- * **CAUSTIC INGESTION** (**↑↑** or **↓↓ pH**)
- * **WHEN AIRWAY UNPROTECTED** like **WHEN ESSENTIAL REFLEXES ARE LOST & NO ENDOTRACHEAL INTUBATION PERFORMED**



RISKS

- * **POTENTIAL** for **INCOMPLETE CONTENT REMOVAL**
- * **INVASIVE, PAINFUL, TIME-CONSUMING**
- * **RISK** for **COMPLICATIONS**
 - ~ **BRADYCARDIA, ESOPHAGEAL or GASTRIC PERFORATION, ASPIRATION PNEUMONIA, HYPOXIA, ELECTROLYTE IMBALANCES, & IATROGENIC DAMAGE**

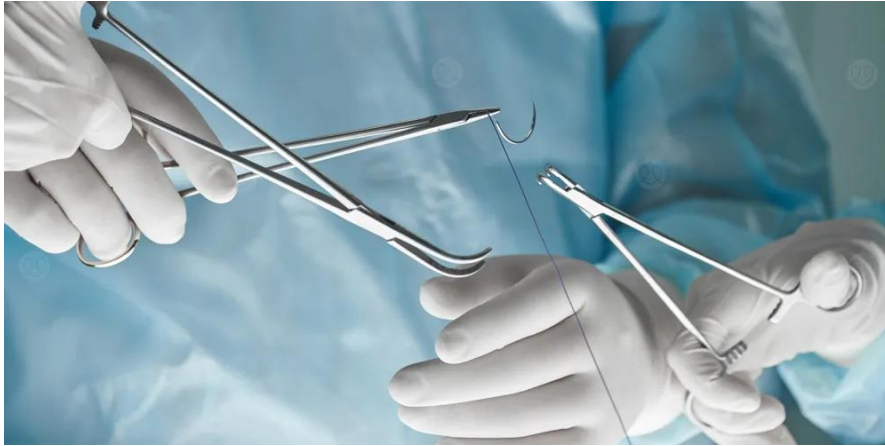


ALTERNATIVE TREATMENTS

- * **ACTIVATED CHARCOAL** **PREFERRED** **INSTEAD**
- * **ANTIDOTE** to **TOXIC SUBSTANCE**
- * **WHOLE-BOWEL IRRIGATION**

Module unit-14-

Suturing of wounds in emergency department, Purpose, principle of suturing, Role of nursing staff.



Wound is a reversible or irreversible outcome of injury in which the part effected is torn, cut or punctured. This may be due to trauma, surgery or health disorders.

Wound-definitions

- A loss of continuity of the skin or mucous membrane which may involve soft tissues, muscles, bone. Wounds can even be classified based on the time at which it heals as acute and chronic.

Types of wounds

Wounds fall into two broad categories: **open or closed.**

1- Open wound; is any internal or external injury that leaves internal tissue exposed to the external environment. An open wound involves a break in the skin that leaves the internal tissue exposed. Open wounds may result from falls, blunt trauma, and surgery

2-Closed wound: tissue damage and bleeding occur under the surface of the skin. Examples of closed wounds include bruises.

Note: The priority of treating wounds is to stop the bleeding first, then clean and suturing the wound and then dressing it.



Closed Wound - Contusion



Open Wound

Wound Management & Suturing

Obtain a clear history of how the wound occurred

- Establish the possibility of foreign material in the wound (Always x-ray if caused by glass)
- Depth of wound
- Is healing through primary closure appropriate
- Tetanus status
- Allergies to drugs/dressing
- General health i.e. diabetic, anti-coagulation
- Patients' age/physical condition/occupation/medical history
- When the wound was inflicted. Suturing a wound > than 6 hours old may increase the risk of infection and be contraindicated.

The type of wound will dictate the technique of suturing for example, closure of small fresh wounds is best achieved using **interrupted sutures**. All **Dog bites** are **“high risk”** wounds and should not be sutured unless the failure to do so may have cosmetic implications.

Principles of Wound Management

There are four main principles of wound management

1. deal with priorities first ABCDE.
2. check area distal to wound for neurovascular + motor damage, skin colour temperature, and distal pulses.
3. Decrease likelihood of infection.
4. Promote optimal healing which may require suturing.

Wound Cleansing

Wound cleansing is perhaps the **most important** aspect of wound management. All wounds will heal eventually if infection is avoided and this is best achieved by thorough cleansing of the wound.

Wounds which are not grossly contaminated should be thoroughly cleansed with **warm sterile solution of 0.9% sodium chloride**.

Cleaning of a wound may be more of a physical than a clinical process and the need to irrigate, clean or even scrub the wound should be considered. Wounds that are obviously contaminated should be thoroughly irrigated, then cleaned with a broad-spectrum antiseptic solution.

The main aim of irrigation: is to flush out small particles of dirt.

Scrubbing with a sterile nail brush toothbrush may also be necessary to remove dirt which, if left in place, could cause infection.

Suturing Procedure

1. Selecting the suture material

Suture material should be flexible enough for use in any operation, the only variable being determined by tensile strength.

There are two types of sutures:

- a) Absorbable (temporary support)
- b) Non-absorbable (permanent support).

A) Absorbable (catgut)

This type of suture is capable of being absorbed by living mammalian tissue. It is manufactured from the submucosal layer of sheep intestine or beef intestine, and is available in plain or chromic.

Plain: loses half its strength in 10-14 days and all its effective strength in 21 days. Complete absorption occurs within 30-50 days.

Chromic: loses half its strength in 11-14 days and all its effective strength in 28 days. Complete absorption occurs within 45-90 days.

B) Non - absorbable

These sutures can be made from silk, polyester or stainless steel.

2. Selecting the Size of Suture Material

If the suture used for wound closure is too thick wound healing can be delayed.

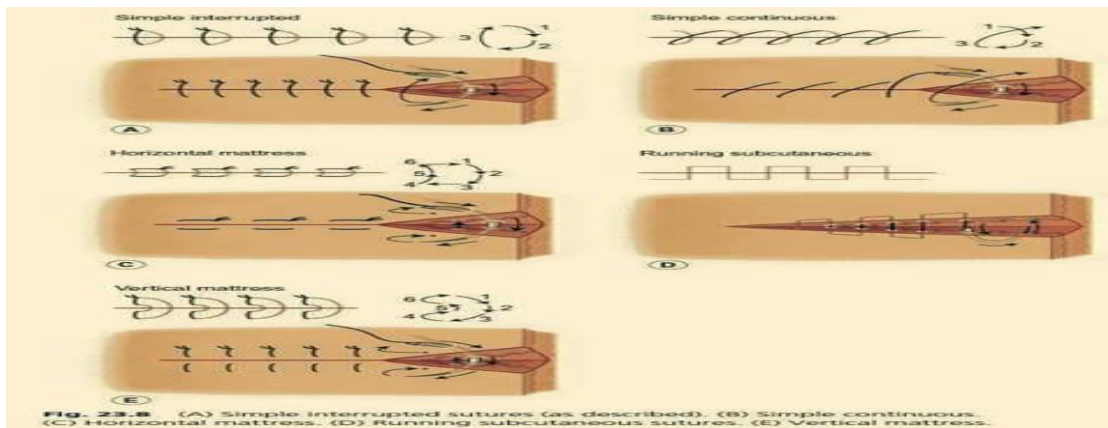
3. Selecting the surgical needles for suturing

Needle types, shapes, strength and using of needle handle

4. Selecting the type of suture

The following are the most common:

- Simple interrupted
- Vertical mattress
- Horizontal mattress
- Sub-circular.



What is the purpose of suturing a wound?

Wound suturing is a procedure performed to close the wound from an accident or surgical wound.

Purposes of wound suturing are;

1. to stop bleeding
2. reduce pain and infection
3. repair the cutaneous wound
4. minimize scarring
5. maximize wound healing

What is the most common type of suturing?

Simple interrupted suture: It is the most common and simple form of suturing technique. The suture is placed by inserting the needle perpendicular to the epidermis. Inserting it perpendicularly helps in a wider bite of deeper tissue to be included in the suture than at the surface leading to rapid wound healing

What is the best suture for the face?

The 5-0 or 6-0 sutures should be used for the face, and 4-0 sutures should be used for most other areas. The 3-0 sutures work well for the thicker skin on the back, scalp, palms.

What to do after sutures?

Keep the wound dry, the first 24 hours you can wet the wound for a short time, for example in the shower. Pat the wound dry immediately after it gets wet. Do not soak the wound or swim until the sutures have been removed. Only use creams or ointments (emollients) recommended by your doctor

What is the best local anesthetic for suturing?

1% or 2% lidocaine, has been a commonly used method for pain management during laceration repair. Lidocaine relieves pain by blocking the sodium channels in the local nerve fibers and has proven to be effective, particularly for deeper lacerations, may be effective in reducing bleeding

Which blade is used for suture removal?

Surgical Pearl: The use of the no. 12 scalpel blade for the removal of sutures



How can we remove the suture?

Sutures are gently elevated with forceps, and one side of the suture is cut. The suture is then gently grasped by the knot and gently pulled toward the wound or suture line until the suture material is completely removed. If the suture is pulled away from the suture line, the wound edges may separate.

Complications of Removing Stitches

After removing stitches, if you have redness, fever, pain, swelling and if the issue comes out from the wound area, a specialist need to be seen.

Wound reopening: If the sutures removed too early or if force is applied on the wound area, it can reopen. The wound need to be rest it or doctor maybe let the wound close itself naturally.

Excessive scarring: If the sutures are not removed on time and the patient keep them all too often, it may cause permanent scar.



Module unit-15-

Foreign Bodies in the Eye, Nose, Ear, and Throat: Emergency Management

Foreign Bodies in the Eye

A. Signs and Symptoms:

- Pain, redness, tearing, blinking, and feeling of something in the eye.
- Decreased vision or blurred vision.
- Sensitivity to light.

B. Emergency Management:

1. Assessment:

- Assess the patient's vision and check for any visible foreign body.
- Examine the eye using a penlight or ophthalmoscope.

2. First Aid:

- **Do Not Rub the Eye:** This can cause further injury.

- **Rinse the Eye:** Use sterile saline or clean water to flush out the foreign body. Direct the flow from the inner corner to the outer corner of the eye.
- **Blinking:** Encourage the patient to blink repeatedly to help dislodge the foreign body.

3. Medical Intervention:

- **Eversion of Eyelid:** If the foreign body is under the eyelid, gently evert the eyelid and remove the foreign body with a moistened cotton swab.
- **Local Anesthetic:** Instill a few drops of local anesthetic (e.g., proparacaine) if necessary.
- **Ophthalmology Referral:** Refer to an ophthalmologist for deeper or more embedded foreign bodies, or if there is concern for corneal abrasion or other serious injury.

Foreign Bodies in the Nose

A. Signs and Symptoms:

- Unilateral nasal discharge, often foul-smelling.
- Nasal obstruction, pain, or discomfort.
- Possible bleeding.

B. Emergency Management:

1. Assessment:

- Inspect the nasal passages with a light source and nasal speculum if available.

2. First Aid:

- **Blowing the Nose:** Have the patient attempt to blow their nose gently while occluding the opposite nostril.
- **Avoid Probing:** Do not use instruments to probe the nose as it may push the foreign body further in.

3. Medical Intervention:

- **Positive Pressure Technique:** For cooperative patients, occlude the unaffected nostril and blow air into the patient's mouth to expel the foreign body from the nose.
- **Instrument Removal:** Use forceps or suction devices to remove visible and easily accessible foreign bodies.
- **ENT Referral:** Refer to an ENT specialist for deeply embedded or difficult-to-remove foreign bodies.

Foreign Bodies in the Ear

A. Signs and Symptoms:

- Ear pain, itching, or discomfort.
- Hearing loss or a feeling of fullness.
- Possible discharge or bleeding.

B. Emergency Management:

1. Assessment:

- Examine the ear canal and tympanic membrane with an otoscope.

2. First Aid:

- **Avoid Probing:** Do not attempt to remove the foreign body if it is deeply embedded or if there is a risk of pushing it further in.

3. Medical Intervention:

- **Irrigation:** Use warm water irrigation if the foreign body is non-organic and there is no perforation of the tympanic membrane.
- **Instrument Removal:** Use appropriate tools like alligator forceps, ear cures, or suction devices for removal.
- **ENT Referral:** Refer to an ENT specialist for complicated cases, such as deeply embedded foreign bodies or if there is damage to the ear canal or tympanic membrane.

Foreign Bodies in the Throat

A. Signs and Symptoms:

- Pain or discomfort in the throat.
- Difficulty swallowing or breathing.
- Gagging, coughing, or choking.

B. Emergency Management:

1. Assessment:

- Assess the patient's airway, breathing, and circulation (ABCs).
- Perform a thorough examination of the mouth and throat using a light source and tongue depressor.

2. First Aid:

- **Encourage Coughing:** If the patient is able to cough, encourage them to do so to try to expel the foreign body.
- **Heimlich Maneuver:** If the patient is choking and unable to breathe, perform the Heimlich maneuver (abdominal thrusts) to dislodge the foreign body.

3. Medical Intervention:

- **Direct Visualization:** Use laryngoscopy or other instruments to visualize and remove the foreign body if it is accessible.
- **Endoscopy:** For deeply embedded or non-visible foreign bodies, refer for esophagoscopy or bronchoscopy by a specialist.
- **Emergency Tracheostomy:** If the airway is completely obstructed and cannot be relieved by other means, perform an emergency tracheostomy or cricothyroidotomy.

Summary

Emergency management of foreign bodies in the eye, nose, ear, and throat requires prompt and appropriate assessment and intervention to prevent complications. Initial first aid measures often involve careful removal techniques, while more complex cases necessitate referral to specialists. Proper training and preparedness are essential for healthcare providers to handle these emergencies effectively.

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