INTRODUCTION
PREOPERATIVE HEALTH STATUS EVALUATION

1.MEDICAL HISTORY

- **Medical history** is essential in assessing a **patient's overall health** before any dental or surgical procedure.
- It helps **detect systemic diseases**, **identify risk factors**, and **determine necessary treatment modifications.**

COMPONENTS OF MEDICAL HISTORY
CHIEF COMPLAINT

- The **main reason** the patient **seeks consultation**, expressed in their own words.

BIOGRAPHIC DATA

- Includes **personal information** such as name, age, sex, address, and occupation.

HISTORY OF THE CHIEF COMPLAINT

- **Describes the complaint in detail: Onset, Duration, Severity, Aggravating and relieving factors, Associated symptoms**

PAST MEDICAL HISTORY

- Covers **previous illnesses, hospitalizations, surgeries, medications, and allergies**.
- It is important for recognizing conditions that may:
  - **Affect healing**
  - **Increase bleeding**
  - Require **antibiotic prophylaxis**
  - Influence **drug selection**

REVIEW OF SYSTEMS

- A **systematic assessment of different body systems** to **detect any undiagnosed or unnoticed** medical conditions.

2.PHYSICAL EXAMINATION

- Physical examination provides **objective data** to support the medical history.

GENERAL SURVEY

- **Observation** of **Patient's appearance, Body build, Signs of pain or distress, Mental status**

VITAL SIGNS

- Includes **Blood pressure, Pulse rate, Respiratory rate, Temperature**

HEAD AND NECK EXAMINATION

- **Evaluation** of **lymph nodes, salivary glands, muscles, and temporomandibular joint** to identify abnormalities.

INTRAORAL EXAMINATION

- **Inspection of oral tissues** to **detect infection, inflammation,**

lesions, or other **pathologic** conditions.

MANAGEMENT OF PATIENTS WITH COMPROMISING MEDICAL CONDITIONS

- Patients with systemic diseases require **special consideration** to prevent complications during dental treatment.

CARDIOVASCULAR PROBLEMS

- **Cardiovascular diseases** are among the **most significant medical conditions** affecting dental care.
- These patients may have **reduced tolerance to stress** and **increased risk of medical emergencies.**

General **Dental Considerations**:
- **Short morning** appointments
- **Effective pain and anxiety control**
- **Monitoring blood pressure and pulse**
- **Limiting vasoconstrictors** when indicated

ISCHEMIC HEART

- **Ischemic heart disease** results from **reduced blood supply to the heart** and includes **angina pectoris and myocardial infarction.**

Dental Management:
- Identify **history of chest pain** or **heart attack**
- Ensure the patient has taken **prescribed medications**
- Keep **nitroglycerin** available
- Provide **stress-free treatment**
- Avoid **excessive epinephrine**
- **Postpone elective care** in **recent myocardial infarction** cases

CEREBROVASCULAR ACCIDENT (STROKE)

- **Stroke** is caused by **interruption of blood supply to the brain**, leading to **neurologic deficits.**

Dental Considerations:
- Determine the **time since the stroke occurred**
- **Avoid elective treatment** in recent **stroke patients**
- **Assess medications** (e.g., **anticoagulants**)
- **Position the patient carefully**
- **Reduce stress** and **monitor vital signs**

Patients may have:
- **Difficulty in communication**
- **Impaired gag reflex**
- **Facial paralysis**

which must be considered during treatment.

DYSRHYTHMIAS (ARRHYTHMIAS)

- **Dysrhythmias** are **abnormalities in heart rhythm.**

Dental Management:

- Identify **type and severity**
- Check for **pacemaker presence**
- Monitor **pulse before and during treatment**
- **Avoid excessive use of vasoconstrictors**
- **Manage stress and anxiety**

Serious or uncontrolled dysrhythmias require **medical consultation before dental procedures.**

CONCLUSION:

- **Proper evaluation of medical history, physical examination, and management of cardiovascular conditions** is essential in preoperative assessment.

These steps:

- Reduce the **risk of medical emergencies**
- **Allow safe delivery of dental care**
- **Improve patient outcomes**

PREOPERATIVE HEALTH STATUS

CARDIOVASCULAR PROBLEMS:

- **Patients with cardiovascular diseases** require **careful medical history evaluation** and **vital signs monitoring before dental treatment** to **prevent stress-induced cardiac complications**.
- **Elective procedures** should be postponed in patients with **uncontrolled hypertension *(≥180/110 mmHg).***
- The **use of local anesthesia with epinephrine** must be **limited** to **avoid increasing cardiac workload**.
- Patients taking **anticoagulants** should have their **INR assessed** to **minimize the risk of excessive bleeding** during invasive procedures.
- **Stress reduction protocols and emergency preparedness** are essential to ensure patient safety during dental care.

ISCHEMIC HEART DISEASE:

- **Patients with Ischemic Heart Disease (IHD)** require **thorough medical history evaluation** and **vital signs monitoring** before any dental procedure.
- **Stress reduction protocols**, such as **short morning appointments** and **effective pain control**, should be implemented to **prevent angina attacks.**
- The use of **local anesthesia with epinephrine** must be **limited to 0.04 mg** to avoid increased cardiac workload.
- **Nitroglycerin** should be readily available during treatment in case of chest pain.
- **Elective dental procedures** should be **postponed** in patients with **unstable angina or recent myocardial infarction.**

CEREBROVASCULAR ACCIDENT (STROKE):

- **Patients with a history of Cerebrovascular Accident (Stroke)** require **thorough medical history evaluation** and **vital signs monitoring** before dental treatment.
- **Elective dental procedures** should be **postponed for at least 6 months** after a recent stroke.
- **Stress reduction protocols and short appointments** should be implemented to **prevent recurrence of cerebrovascular events.**
- The use of **local anesthesia with vasoconstrictors** should be **limited** to **avoid sudden increases in blood pressure.**
- **Proper patient positioning and emergency preparedness** are essential to ensure safety during dental procedures.

DYSRHYTHMIAS:

- **Patients with cardiac dysrhythmias** require **careful medical history evaluation and monitoring of vital signs** before dental treatment.
- **Stress reduction protocols and short appointments** should be implemented to **prevent exacerbation of abnormal heart rhythms.**
- The use of **local anesthesia with epinephrine** must be **limited to avoid triggering arrhythmias.**
- Dentists should **avoid the use of equipment** that may **interfere with pacemakers,** such as ***electrosurgical units or ultrasonic scalers*** when not properly shielded.
- **Emergency preparedness** is essential in case of **palpitations, syncope, or cardiac complications** during the procedure.

CONGESTIVE HEART FAILURE (HYPERTROPHIC CARDIOMYOPATHY):

- **Patients with Congestive Heart Failure (Hypertrophic Cardiomyopathy)** require **thorough medical history evaluation and monitoring of vital signs** prior to dental treatment.
- **Elective dental procedures** should be **avoided** in **patients with uncontrolled or symptomatic heart failure.**
- **Stress reduction protocols and short appointments** should be implemented to **prevent cardiac decompensation.**
- The use of **local anesthesia with epinephrine** must be **limited** to **avoid increasing myocardial workload**.
- **Proper patient positioning**, such as a **semi supine position**, is essential to **prevent breathing difficulty** during dental procedures.

PREOPERATIVE HEALTH STATUS
PULMONARY PROBLEMS:

ASTHMA:

- **Patients with asthma** require **careful medical history evaluation** and **identification of known triggers** before dental treatment.
- **Stress reduction protocols and short appointments** should be implemented to **prevent bronchospasm.**
- The **patient's bronchodilator inhaler** must be readily available during the procedure.
- **Aspirin and NSAIDs** should be **avoided** as they may precipitate an **asthmatic attack.**
- Dental treatment should be **stopped immediately** if **wheezing or breathing difficulty occurs**, and the **inhaler** should be administered.

CHRONIC OBSTRUCTIVE PULMONARY DISEASE:

- **Patients with COPD** require **thorough assessment of respiratory status** before dental procedures.
- **Semi-supine positioning** is recommended to **prevent breathing difficulty** during treatment.
- **Short appointments and stress reduction protocols** should be implemented to **minimize respiratory distress.**
- **Oxygen therapy**, if needed, should be **administered cautiously** as high oxygen concentrations may depress respiratory drive.
- **Avoid the use of rubber dam** in **severe cases** as it may **compromise breathing**

PREOPERATIVE HEALTH STATUS
RENAL PROBLEMS:

RENAL FAILURE:

- **Patients with renal failure** require thorough **medical history and evaluation of renal function** before dental procedures.
- **Bleeding tendencies** should be **assessed due to platelet dysfunction** or **anticoagulant therapy.**
- **Stress reduction and short appointments** are recommended to **prevent systemic complications**.
- **Drug dosages**, especially **nephrotoxic or renally excreted medications**, should be **adjusted according to kidney function.**

RENAL TRANSPLANTATION AND OTHER ORGAN TRANSPLANTS:

- **Patients with organ transplants** are **immunosuppressed** and at **high risk for infection**.
- **Elective dental procedures** should be coordinated with the **patient's physician**.

- **Antibiotic prophylaxis** may be required to prevent opportunistic infections.
- **Stress reduction and short appointments** are important to **avoid systemic complications.**

HYPERTENSION:

- **Patients with hypertension** require **monitoring of blood pressure** before and during dental treatment.
- **Elective procedures** should be **postponed** if **blood pressure is uncontrolled *(≥180/110 mmHg).***
- **Local anesthesia with vasoconstrictors** should be used **cautiously to avoid further elevation of blood pressure**.
- **Stress reduction protocols and short appointments** help **prevent hypertensive crises.**

HEPATIC DISORDERS:

- **Patients with liver disease** require **thorough medical history and assessment of liver function** before dental procedures.
- **Bleeding tendencies** should be **evaluated** due to **impaired clotting factor production**.
- **Drug metabolism** may be **altered**, so **medications should be chosen carefully** and **dosages adjusted** if necessary.
- **Stress reduction and short appointments** help **prevent systemic complications** during treatment.

ENDOCRINE DISORDERS:

- **Patients with endocrine disorders**, such as **thyroid or adrenal dysfunction**, require **medical history review and evaluation of hormone status** before dental procedures.
- **Stress reduction protocols and short appointments** are essential to **prevent endocrine crises.**
- **Drug interactions and metabolism** should be considered based on the specific disorder.
- **Emergency preparedness** is necessary in case of hypo- or hyperfunction episodes during treatment

DIABETES MELLITUS:

- **Patients with diabetes** require **assessment of blood glucose levels** before dental treatment.
- **Stress reduction and short appointments** help **prevent hypoglycemic or hyperglycemic episodes.**
- **Infection risk** is **higher,** so **strict aseptic technique and oral hygiene counseling** are important.
- **Medications and anesthesia** should be **considered carefully,** and **elective procedures** should be **scheduled when blood sugar is controlled.**

ADRENAL INSUFFICIENCY:

- **Inadequate adrenal corticosteroid production**
- Commonly **due to chronic corticosteroid therapy**

Clinical Features

- **Weakness, fatigue, weight loss**
- **Hyperpigmentation** (primary)
- **Moon face, buffalo hump** (secondary)

Dental Considerations

- Risk of **adrenal crisis** during stress
- May require **supplemental steroids** for **major surgery**
- Use **anxiety-reduction protocol**
- **Monitor vital signs closely**

HYPOTHYRODISM:

Cause

- **Excess T3 and T4** (often ***Graves disease***)

Signs & Symptoms

- **Weight loss, sweating**
- **Tachycardia, palpitations**
- **Fine brittle hair**
- **Possible exophthalmos**

Dental Management

- **Defer surgery** until controlled
- Avoid **excessive epinephrine**
- **Monitor pulse and BP**
- **Refer if suspected** but undiagnosed

HYPERTHYRODISM:

Early Symptoms

- **Fatigue**
- **Weight gain**
- **Constipation**
- **Dry skin** and **brittle hair**
- **Hoarseness**

Dental Implication

- **Mild cases** → usually **no modification needed**
- Dentist may help in early recognition

PREOPERATIVE HEALTH STATUS

HEMATOLOGIC PROBLEMS:

HEREDITARY COAGULOPATHIES:

Key Concern: Excessive bleeding

Important History

- **Prolonged bleeding**
- **Easy bruising**
- **Epistaxis**
- **Heavy menstruation**

Management Principles

- Consult **physician/hematologist**
- Obtain **coagulation tests** (***PT, PTT, platelet count***)
- Use **local hemostatic measures**
- Give **clear postop bleeding instructions**

THERAPEUTIC ANTICOAGULATION:

Common drugs

- **Warfarin**
- **Heparin**

Key principle

- Coordinate with **physician**

Warfarin

- **Check INR**
- **Safe range: 2–3**

Heparin

- **Delay surgery** until **drug effect wears off**

PREGNANCY:

General rule

- **Postpone elective surgery** if possible
- If surgery is necessary **Consult obstetrician**
- Use **lead shielding**
- Use **low-risk drugs**
- **Avoid NSAIDs** (***3rd trimester***)
- **Avoid nitrous oxide** in ***1st trimester***
- **Avoid prolonged supine position**

POSTPARTRUM (BREASTFEEDING):

Key Principle: ***Avoid drugs harmful to infant via breast milk***

Generally Safe (moderate doses)

- **Lidocaine**
- **Acetaminophen**
- **Penicillin**
- **Cephalexin**
- **Erythromycin**

Drugs to avoid

- **Corticosteroids**
- **Aminoglycosides**
- **Tetracyclines**

SEIZURE DISORDERS:

Preoperative assessment

- **Type and frequency of seizures**
- **Medication compliance**

Management

- **Anxiety-reduction protocol**
- **Avoid hypoglycemia and fatigue**
- **Defer if poorly controlled**

ETHANOLISM (ALCOHOLISM):

Major concerns

- **Liver dysfunction**
- **Drug interactions**
- **Withdrawal risk**

Withdrawal signs

- **Tremors**
- **Hypertension**
- **Delirium tremens**

Management

- **Hospital care for severe cases**
- **Adjust liver-metabolized drugs**
- **Monitor for oversedation**

PREVENTION AND MANAGEMENT OF MEDICAL EMERGENCIES

PREPAREDNESS IN EMERGENCIES

- **Continuing Education** – The dentist must keep their **knowledge of emergency management current**.

- **Staff Training** – Office staff should be **trained to assist effectively during emergencies.**

- **Access to Help** – Have a system to **quickly contact other healthcare providers** if needed.
- **Emergency Equipment** – Keep **essential tools and supplies ready** to manage serious patient problems.

PREVENTION

- An understanding of the relative frequency of emergencies and knowledge of those likely to produce serious morbidity and mortality is important when setting priorities for preventive measures.

PREPARATION

- **Preparedness** is **crucial in managing medical emergencies**, second only to prevention.
- It involves:
- **keeping the dentist's knowledge current,**
- **training staff to assist,**
- having a **system to contact other healthcare providers,**
- **and equipping the office with necessary emergency tools and supplies.**

EMERGENCY SUPPLIES FOR THE DENTAL OFFICE

- **Oxygen & Delivery System** – For patients experiencing **breathing difficulties or shock.**
- **Airway Management Tools** – Includes **oropharyngeal/nasopharyngeal airways and suction** to keep airways clear.
- **Emergency Drugs** – Medications like **epinephrine, antihistamines, and glucose** for common emergencies.
- **Monitoring Equipment** – Devices like **blood pressure cuffs and pulse oximeters** to track vital signs.
- **First Aid Kit** – **Basic supplies** for managing minor injuries or stabilizing patients until help arrives. (***ex. Bandages, guaze, antiseptic wipes)***

MEDICAL EMERGENCIES

1.HYPERSENSITIVITY REACTIONS

- Range from **mild skin reactions** (***hives, itching, swelling***) to **severe anaphylaxis**.
- **Common triggers**: **local anesthetics, latex, medications, or dental materials.**
- **Signs: swelling of lips/tongue, difficulty breathing, rash, dizziness.**
- **Immediate action**: **administer epinephrine, call emergency services, maintain airway.**

2.CHEST DISCOMFORT/ CARDIAC EMERGENCIES

- Includes **angina pectoris and myocardial infarction** (***heart attack)***.
- **Signs: pressure, tightness, or pain in chest/arm/jaw, shortness of breath, sweating, nausea.**
- **Risk factors: history of heart disease, high blood pressure, stress, or older age.**
- **Immediate action: stop treatment, monitor vitals, give nitroglycerin if prescribed, call EMS.**

3.RESPIRATORY DIFFICULTY

- May be **caused** by **asthma attacks, choking, airway obstruction, or allergic reactions.**
- **Signs: wheezing, coughing, cyanosis (bluish lips/fingers), inability to speak or breathe.**
- **Immediate action: clear airway, use bronchodilator if asthma, perform Heimlich maneuver if choking, call EMS if severe.**

A. ASTHMA

- A **chronic inflammatory airway condition** causing **bronchospasm.**
- **Signs: wheezing, shortness of breath, chest tightness, coughing.**
- Triggered by **stress, allergens, or strong odors.**
- **Management: stop treatment, position upright, administer bronchodilator (inhaler), give oxygen if needed.**

B. HYPERVENTILATION

- **Rapid, deep breathing** usually caused by ***anxiety or panic***.
- **Signs: dizziness, tingling in fingers, lightheadedness, chest tightness.**
- Common in **anxious dental patients.**
- **Management: reassure patient, encourage slow breathing, have patient rebreathe into cupped hands** (***avoid oxygen unless hypoxic).***

C. CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD)

- A **progressive lung disease** (e.g., ***chronic bronchitis, emphysema***) that limits airflow.
- **Signs: chronic cough, difficulty breathing, fatigue, cyanosis.**
- Patients may be **sensitive to high oxygen levels.**
- **Management: position upright, administer low-flow oxygen cautiously, monitor closely.**

D. FOREIGN BODY ASPIRATION

- **Inhalation of dental materials or instruments** into the airway.
- **Signs: sudden coughing, choking, inability to speak or breathe.**

- **Management: encourage coughing if partial blockage; perform Heimlich maneuver if complete obstruction; call EMS.**

ALTERED CONCIOUSNESS

- An alteration in a patient's level of consciousness may result from a large variety of medical problems.
- The **altered state** can range **from mild light-headedness to a complete loss of consciousness**.

A. VASOVAGAL SYNCOPE

- The **most common medical emergency in dentistry**; caused by **sudden drop in heart rate and blood pressure.**
- Triggered by **anxiety, fear, pain, or sight of blood.**
- **Signs: pallor, sweating, dizziness, nausea, slow pulse, temporary loss of consciousness.**
- **Management: stop treatment, place patient in supine position with legs elevated, maintain airway, monitor vitals, administer oxygen if needed**.

GASTRIC CONTENTS ASPIRATION

- **Inhalation of vomit into the lungs**, especially in sedated or unconscious patients.
- **Signs: coughing, choking, breathing difficulty after vomiting.**
- **Management: turn patient to the side, suction airway immediately, provide oxygen, seek emergency care.**

A. LOCAL ANESTHETIC TOXICITY

- Occurs when **excessive local anesthetic enters systemic circulation** (***overdose or intravascular injection).***
- **Early signs: dizziness, ringing in ears (tinnitus), metallic taste, agitation, confusion.**
- **Severe signs: seizures, respiratory depression, cardiac arrest.**
- **Management: stop injection immediately, maintain airway, administer oxygen, monitor vitals, manage seizures, call emergency medical services (EMS) if severe.**

B. DIABETES MELLITUS (HYPOGLYCEMIA EMERGENCY)

- **Most common diabetic emergency in dentistry** is ***low blood sugar (hypoglycemia).***
- **Causes: missed meals, excessive insulin, long dental procedures.**
- **Signs: sweating, shakiness, confusion, rapid pulse, loss of consciousness.**
- **Management:** if **conscious, give oral glucose (*juice, glucose tablets)***; if **unconscious,**

administer glucagon (if available) and **call EMS.**

C. ORTHOSTATIC HYPOTENSION

- **Sudden drop in blood pressure** when patient **stands up quickly.**
- Common in **elderly patients** or those taking **antihypertensive medications.**
- **Signs: dizziness, lightheadedness, blurred vision, possible fainting after sitting up.**
- **Management: return patient to supine position, monitor vital signs, allow slow gradual repositioning.**

D. SEIZURE

- **Sudden uncontrolled electrical activity in the brain;** may occur in **epileptic patients** or due to **stress, hypoglycemia, or drug reactions.**
- **Signs: muscle jerking, loss of consciousness, jaw clenching, possible tongue biting.**
- **Management: stop treatment, remove instruments, protect patient from injury, do not restrain or place objects in mouth, maintain airway after seizure, call EMS if prolonged *(>5 minutes*).**

E. THYROID DYSFUNCTION

- Includes **hyperthyroidism and hypothyroidism** emergencies.
- **Hyperthyroid crisis (*thyroid storm)*: fever, rapid heart rate, hypertension, agitation**.
- **Hypothyroid crisis (*myxedema coma)*: extreme fatigue, slow heart rate, hypothermia, decreased consciousness.**
- **Management: stop treatment, monitor vitals, provide supportive care, activate EMS immediately.**

F. ADRENAL INSUFFICIENCY

- Occurs when the **adrenal glands fail to produce enough cortisol**, especially in patients with chronic steroid use.
- **Signs: fatigue, weakness, low blood pressure, nausea, vomiting, confusion, possible loss of consciousness.**
- Triggered by **stress, surgery, or infection.**
- **Management: stop dental procedure, position supine, provide oxygen, monitor vitals, administer IV hydrocortisone if available, call EMS.**

G. CEREBROVASCULAR COMPROMISE (STROKE/TRANSIENT ISCHEMIC ATTACK)

- **Disruption of blood flow to the brain** causing **brain tissue damage.**
- **Signs: sudden weakness or numbness (usually on one side), difficulty speaking, facial droop, vision problems, dizziness.**
- **Immediate action: stop treatment, position patient**

comfortably, maintain airway, monitor vital signs, call EMS immediately.

- **Early recognition** is critical to reduce long-term complications.

PRINCIPLES OF SURGERY

1.DEVELOPING A SURGICAL DIAGNOSIS

MAKE DECISIONS BEFORE ANESTHESIA

- The decision to perform surgery **must be made before anesthesia.**

- It should be **based on:**
  - **Patient history**
  - **Signs and symptoms**
  - **Physical exam**
  - **Lab and imaging results**

- The surgeon **analyzes all data** and decides:
  - **Is surgery needed?**
  - **What procedure is best**?

2. PRESURGICAL EVALUATION

STEP 1: COLLECT ACCURATE DATA

- **Patient interview**
- **Physical examination**
- **Lab tests**
- **Imaging**
- **Consultations if needed**
- **Never accept poor-quality or incomplete data.**

STEP 2: ORGANIZE AND ANALYZE

- List **possible diagnoses**.
- **Eliminate those not supported by evidence.**
- Use **clinical experience + evidence-based science.**
- Decide whether **surgery is indicated.**

3. BASIC REQUIREMENTS FOR SURGERY

1: GOOD VISIBILITY

Requires:

- **Adequate access** (***proper mouth opening, flap design***)
- **Good lighting** (***overhead light or headlight***)
- **Clear field** (***remove blood with suction***)

2. GOOD ASSISTANCE

- A **trained assistant** should anticipate the surgeon's needs.
- Surgery is difficult without proper help.

3. ASEPTIC TECHNIQUE

- **Prevents contamination by microbes.**
- Essential for **reducing infection risk.**

4. INCISION PRINCIPLES

- Use a **sharp blade of proper size**.
- Make **firm, continuous strokes** (***avoid repeated short cuts***).
- **Avoid damaging important structures** (***nerves, vessels***).
- **Hold blade perpendicular for clean wound edges.**

- **Place incisions over healthy bone and attached gingiva** when possible.

5. FLAP DESIGN

- **Flaps** are created for **better access or tissue movement.**

PREVENT FLAP NECROSIS

- **Base** must be **wider than the top.**
- **Length** should **not exceed base width.**
- Maintain **good blood supply.**
- **Avoid twisting or overstretching.**

PREVENT FLAP DEHISCENCE (WOUND OPENING)

- **Suture over healthy bone**.
- **Handle tissue gently.**
- **Avoid tension during closure.**

PREVENT FLAP TEARING

- Make **flap large enough** from the start.
- **Add releasing incisions** if needed.

6. TISSUE HANDLING

Excellent results depend on gentle handling:

- **Avoid crushing or excessive pulling.**
- **Prevent overheating when cutting bone** (***use irrigation).***
- Keep **tissues moist**.
- Use **only physiologic substances**.
- **Gentle technique** = **better healing + fewer complications.**

7. HEMOSTASIS (CONTROL BLEEDING)

Why it matters:

- **Maintains visibility.**
- **Prevents hematoma.**
- **Reduces infection risk.**

Methods:

- **Pressure** (***gauze or hemostat***)
- **Thermal coagulation** (***cautery)***
- **Suture ligation**
- **Vasoconstrictors or procoagulants**

8. DEAD SPACE MANAGEMENT

- **Dead space** = **empty space left in a wound → may fill with blood → infection risk.**

Prevention:

- **Suture tissue layers** properly
- Use **pressure dressings**
- Use **packing** if needed
- Use **drains** when necessary

9. DECONTAMINATION & DEBRIDEMENT

- **Irrigate wounds** to **reduce bacteria.**
- **Remove dead tissue and debris**.
- Use **sterile saline or water**.

10. INFLAMMATION & EDEMA CONTROL

Swelling depends on:

- **Amount of tissue injury**
- **Type of tissue involved**

Control methods:

- **Gentle surgical technique**
- **Head elevation post-surgery**
- **Corticosteroids** (***if given before tissue damage***)

11. PATIENT HEALTH & HEALING

Healing depends on:

- **Good immune function**
- **Proper nutrition**
- **Adequate oxygen and blood supply**

Conditions that **delay healing**:

- **Uncontrolled diabetes**
- **Kidney or liver failure**
- **Cancer**
- **Heart or lung disease**
- **Long-term steroid use**
- **Malnutrition**

Before Elective Surgery:

- **Optimize patient's general health.**
- **Correct nutritional deficiencies.**
- **Ensure patient is medically stable.**