



LOCOMOTOR DISORDERS

KLE HOMOEOPATHIC MEDICAL COLLEGE AND HOSPITAL

Basavan Kudachi, Belagavi, Karnataka

(A Constituent of Unit of KAHER Deemed to -be- University, Belagavi)

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Dr. Samuel Hahnemann

10 April, 1755 - 2 July, 1843

"Homoeopathy is a perfectly simple system of medicine, remaining always fixed in its principles as in its practice."

INDIAN JOURNAL OF HOMOEOPATHY AND INTEGRATIVE MEDICINE

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Editorial



Greetings From KLE HMC....

Dear Readers,

With great pleasure, I introduce the fourth edition of "**INDIAN JOURNAL OF HOMOEOPATHY & INTEGRATIVE MEDICINE (IJH&IM)**".

This fourth issue focuses on Locomotor Diseases, which are critical but often ignored ailments that limit a person's fundamental ability to move, function, and live freely.

While conventional methods provide structural remedies, Homoeopathy takes a dynamic, customized approach, seeking not just to ease symptoms but also to restore functional balance. In this edition Special emphasis has been given on individual and holistic approach in the treatment with maismatic understanding.

This issue combines integrative viewpoints, clinical experiences, and Repertorial analysis to confirm that homeopathy can be a potent therapy in the safe, gentle, and holistic management of locomotor problems.

Let's keep bridging the gap between traditional philosophy and contemporary clinical needs so that homeopathy can be a dependable partner in regaining mobility and movement.

Warm regards,
Dr. Govind Sulkar
Managing Editor



Message from the Desk of *Director Administration*

Dear Readers,

We at KLE Homoeopathic Medical College have been coming up with a Thematic bi annual Journal which has covered Acid peptic Disorders, fever, pain and now with joint related issues.

With great sense of pride I take this opportunity to place this 4th issue of **"INDIAN JOURNAL OF HOMOEOPATHY & INTEGRATIVE MEDICINE"** at your hands with a theme of **"LOCOMOTOR DISORDERS"** This is with a theme related JOINTS which are the greatest gift of nature which keep us mobile, stable and a structural support to our body.

A Joint what does it mean for us?

Joint is an articulation between two or more bones providing a connection which allows multiple functions like free or restricted movements of our body and also a structural support. Joints provide a flexibility to our body which is crucial for various activities of a wider range.

Broadly joints are of three types

1. Fibrous – which allow very little or no mobility. Eg. Skull sutures.
2. Cartilaginous – which have cartilage connection and allows some movement. Eg. Intervertebral discs of spine.
3. Synovial – which facilitate a free and wide range of movements Eg. Shoulder, hip, elbow knee etc.

It is a highly essential factor to understand joints which facilitate movements which is an essential necessity of a human being. Hence it becomes highly essential to understand the functions, causes and management of joint related problems.

We have made an effort to unfold various issues related to joints in this issue with a judicious, harmless and a treatment with Homoeopathic approach.

Dear readers our journey towards excellence in future too with many more vital issues.....

Dr. Mukund A. Udachankar

Director Administration,
KLE Homoeopathic Medical College & Hospital, Belagavi

A REVIEW ON ANATOMY OF JOINTS AND ITS CLASSIFICATION

Dr Rajkuwar P. Desai HOD & Professor, Department of Human Anatomy

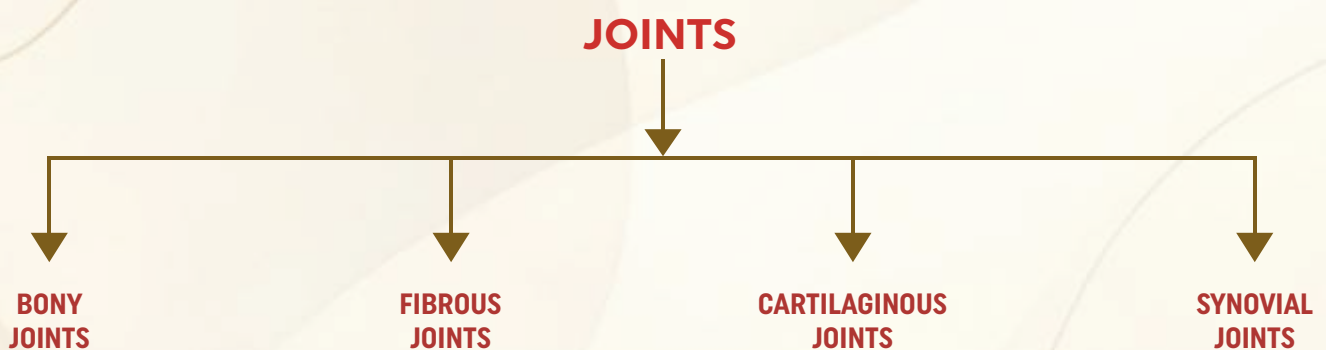
Dr Somnath P. Chitti Associate Professor, Department of Human Anatomy

Joint (articulation)—any point where two bones meet, is called joint.

Joint name—typically derived from the names of the bones involved

example: radioulnar joint

Joints are classified according to the manner in which the bones meet with each other.



- **BONY JOINTS**

- Bony joint, or synostosis- It is an immobile joint formed when the gap between two bones ossifies, and the bones become a single bone.

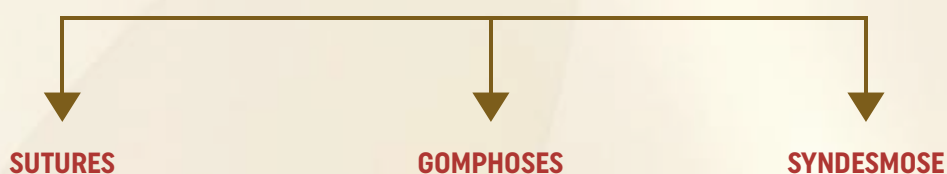
Examples:

- Left and right mandibular bones in infants
- Cranial sutures in elderly
- Attachment of first rib and sternum with old age
- Can occur in either fibrous or cartilaginous joint.

- **FIBROUS JOINTS**

- Fibrous joint, synarthrosis, or synarthrodial joint—adjacent bones are bound by collagen fibers that emerge from one bone and penetrate into the other bone.

- **Three kinds of fibrous joints**



- **SUTURES:** are the immobile or slightly mobile fibrous joints in which short collagen fibers bind the bones of the skull to each other

- **Sutures can be classified as:**

1. **Serrate:** interlocking wavy lines

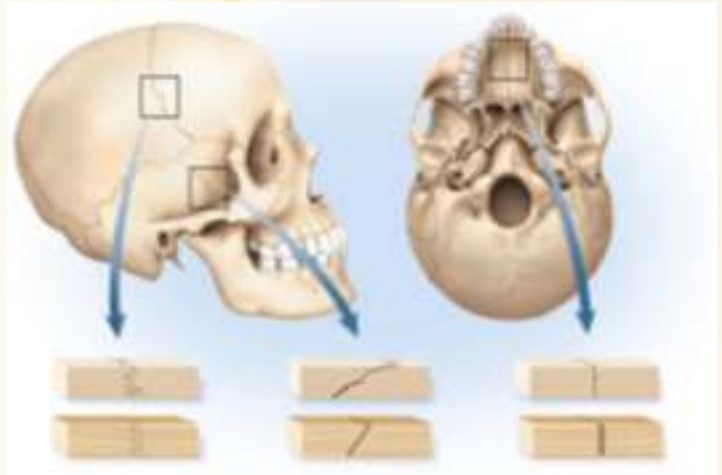
Example: Coronal, sagittal, and lambdoid sutures

2. **Lap(squamous):** overlapping bevelled edges

Example: Temporal and parietal bones

3. **Plane(butt):** straight, non-overlapping edges

Example: Palatine processes of the maxillae.
Coronal, sagittal, and lambdoid sutures.



Syndesmosis- a fibrous joint at which two bones are bound by long collagen fibers of the bones

Example of a very mobile syndesmosis: interosseous membrane joining radius to ulna allowing supination and pronation movements of the hand.

Example of a less mobile syndesmosis: joint between tibia to fibula.

Fibrous connective tissue Cartilaginous Joints

- **Cartilaginous joint, Amphiarthrosis, Oramphiarthrodial joint-** two bones are linked by cartilage

CARTILAGINOUS JOINTS

SYMPHYSES

SYNCHONDROSES

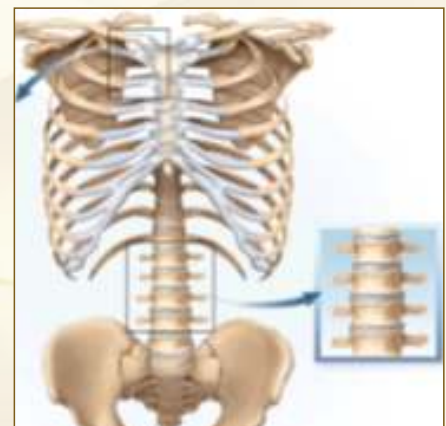
SYMPHYSES

1. **Symphysis**—two bones joined by fibrocartilage.

Example :Pubic symphysis joins with the right and left pubic bones to form the interpubic disc.

2. **Bodies of vertebrae joined by intervertebral discs**

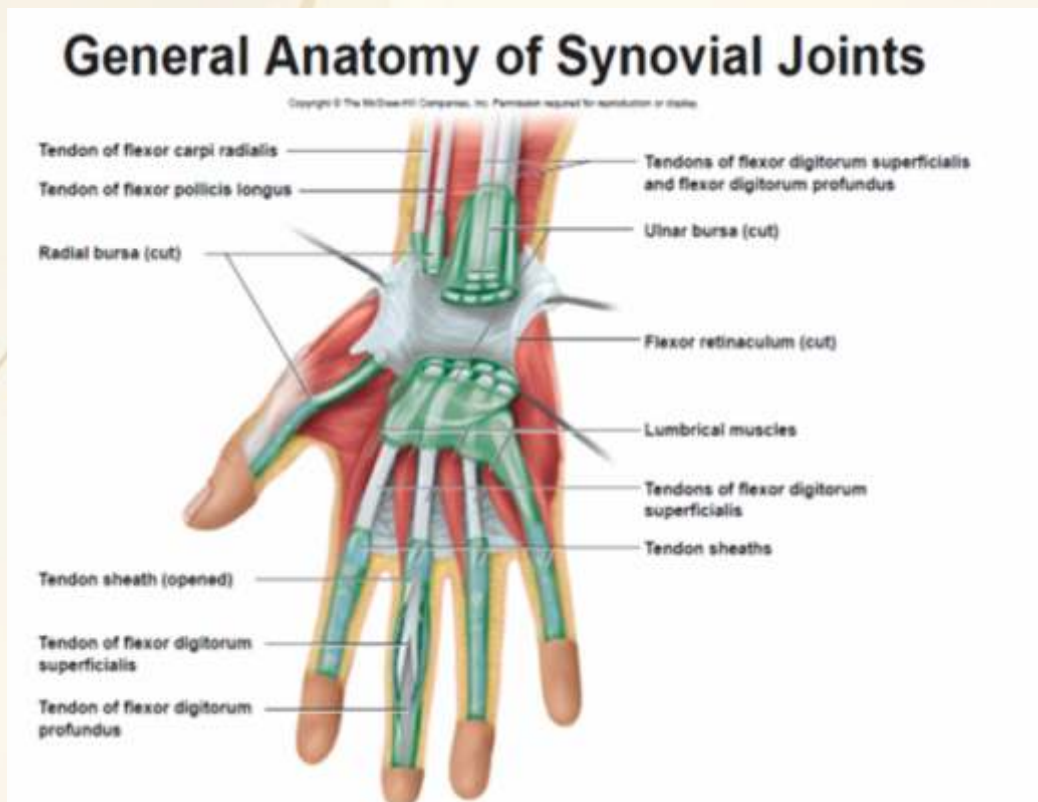
- Only slight movements between adjacent vertebrae
- Collective effect of all 23 discs gives spine considerable flexibility for the movements of vertebral column.



- Synovial joint, arthrosis, ordiarthrodial joint—joint in which two bones are separated by a joint cavity example ball & socket, shoulder joint
- Most familiar type of joint
- Most are freely mobile
- Most structurally complex type of joint.



GENERAL ANATOMY OF SYNOVIAL JOINTS



SYMPHYSES

- **Articular Cartilage:** There are the layer of hyaline cartilage that covers the facing surfaces of two bones at the articulation. Usually 2 or 3 mm thick.
- **Articular Cavity:** Which separates the articular surfaces at that particular joint. example Acetabulum cavity with head of femur.
- **Synovial Fluid:** It is the slippery lubricant in joint cavity.

1. Rich in albumin and hyaluronic acid.
2. Gives it a viscous, slippery texture like raw egg whites.
3. Nourishes articular cartilage and removes waste.
4. Makes movement of synovial joints free friction.

- **Accessory structures**

1. Tendon: strip of collagenous tissue attaching muscle to bone
2. Ligament: strip of collagenous tissue attaching one bone to another
3. Bursa: fibrous sac filled with synovial fluid, located between muscles, where tendons pass over bone, or between bone and skin .
4. Cushions muscles, helps tendons slide more easily over joints, modifies direction of tendon pull.
5. Tendon sheath: elongated cylindrical bursa wrapped around a tendon .

- **In hand and foot**

Reference :<https://www.palmbeachstate.edu/slc/Documents/AandP1ch09Lecture.pdf>

FUNCTIONS AND STRUCTURES OF JOINTS AN OVERVIEW

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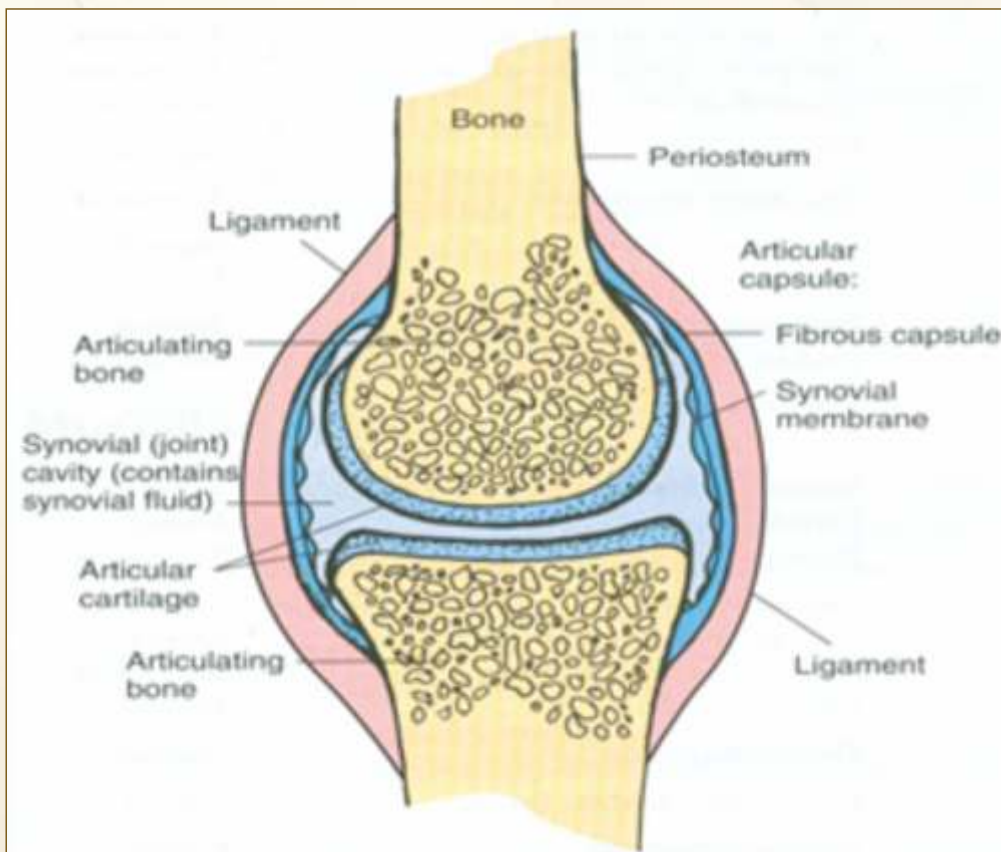
Introduction:

Joints or articulations or arthrodesis are a point of contact between two or more bones, between bone and teeth, or between bone and cartilage. They help in movement and stability to the skeleton, allowing the body to perform a variety of complex motions and physical activities. Joints also play a critical role in bearing weight and transferring forces during physical activity. Understanding the structure, classification, and functions of joints is key to appreciate their importance in human movement and homeostasis.

Objectives:

1. To know structure of joints.
2. To know functions of joints.
3. To identify the type of movements occurring at different joints.

Parts of joint with functions (Figure a):



Joints are composed of several key components that work together to allow smooth, efficient movement while ensuring stability. These components include cartilage, synovial membrane, synovial fluid, ligaments, tendons, bursae, and the joint capsule.

-Cartilage is a smooth, flexible tissue that covers the ends of bones in a joint, providing a cushioning effect.

- **Function:** It reduces friction and absorbs shock during movement
The synovial membrane is a thin layer of tissue that lines the inner surface of the joint capsule.
- **Function:** This membrane produces synovial fluid, a thick, lubricating substance that helps reduce friction between the bones and cartilage. Synovial fluid nourishes the cartilage.

Synovial fluid

- **Function:** Acts as a shock absorber, cushioning the joint during movement. It reduces friction and enables the bones to move more smoothly, preventing damage and wear over time.
- Ligaments are tough, fibrous tissues that connect bones together at a joint.
- **Function:** Their primary function is to stabilize the joint by preventing excessive or abnormal movement.
- Tendons connect muscles to bones and play an essential role in joint movement.
- **Function:** When muscles contract, tendons transmit the force to the bones, enabling the joint to move.
- Bursae are fluid-filled sacs of joint.
- **Function:** They cushion the joints, reducing friction between bones, tendons, and soft tissues such as muscles or skin. They prevent damage to these tissues during movement, ensuring that the joint operates smoothly without irritation or inflammation.
- The joint capsule is a fibrous envelope that surrounds and stabilizes the joint.
- **Function:** It acts as a protective barrier, containing the synovial fluid and ensuring that the joint remains stable while allowing for movement. The joint capsule is essential for maintaining the overall structure and functionality of the joint.²

Classification of Joints:

Structural classification:

Joints can be classified based on their structure and the main types of joints are:

1. **Fibrous Joints:** These joints are connected by dense connective tissue that are rich in collagen fibers. Examples include the sutures in the skull.
2. **Cartilaginous Joints:** These joints are connected by cartilage. An example is the intervertebral joints of the spine.
3. **Synovial Joints:** These joints are formed by bones and are common type of joint. They are highly mobile and allow for a wide range of movement. These joints are characterized by a fluid-filled synovial cavity and include examples such as the knee joint, elbow joint, and shoulder joint..

Functional classification: The 3 functional joint types include:

1. Synarthrosis Joint
2. Amphiarthrosis Joint
3. Diarthrosis Joint³

Structure and function of different types of joints:

Fibrous joints: These are

- A. Sutures
- B. Syndesmoses and
- C. Interosseous membranes.

Sutures are made up of thin layer of dense irregular connective tissues. They are found in between the bones of skull.

Function: Sutures are joints formed by bones of skull and they are immovable but in infants and children they are slightly movable. They play important role in shock absorption in the skull.

Syndesmosis consists of dense irregular connective tissue arranged in bundles.

Function: Syndesmosis permit limited movement. The distal tibiofibular joint is one of the example of syndesmosis joint. They are found in between articulation of roots of teeth and their socket, and are called as gomphosis; they permit shock absorbing movements.

Interosseous membranes are substantial sheet of dense irregular connective tissue that binds neighbouring long bones and permits slight movement. They are present in between the radius and ulna in forearm and between the tibia and fibula in the leg.

Function: They help to hold the adjacent long bones together. They play important role in defining the range of motion between neighbouring bones and provide surface for attachment of muscles and produce movement of digits of hands and foot.

Cartilaginous Joints: They include

- A. Synchondroses
- B. Symphyses
- C. Epiphyseal cartilages

Synchondroses- The connecting material here is hyaline cartilage. It includes joint between ribs and manubrium of the sternum. These joints are slightly movable to immovable.

Symphyses- Here the bones are covered with hyaline cartilage and a broad, flat disc of fibrocartilage connecting the bones. They are found in junction of manubrium and sternum and in between bodies of vertebrae.

Epiphyseal cartilages – they are the growth centers during bone formation. They include the epiphyseal plate that connects the epiphysis and diaphysis of a growing bone.

Synovial joints (Figure a) - They have a space called synovial cavity between the articulating bones. The parts of joints mentioned above are the components of synovial joint. Example – Shoulder joint, Knee joint, etc.

The synovial cavity allows considerable movement at the joint. The synovial joint is thus a freely movable joint.

The articular cartilage reduces friction between bones in joint during movement and help to absorb the shock.

Types of movements at synovial joint:

- Gliding, angular movements like flexion, extension, lateral flexion and hyper extension.
- Abduction, adduction and circumduction.
- Rotation
- **Special movements** –the special movements occur only at certain joints, they include elevation, depression, protraction, retraction, inversion, eversion, dorsiflexion, plantar flexion, supination, pronation and opposition.⁴
- **Synarthrosis joints**- The immovable joints are called as Synarthrosis joints. Example –joints of skull bones.
- **Amphiarthrosis joints**- The slightly movable joints are called as Amphiarthrosis joints. Example – joints between bodies of vertebrae.

DIARTHROSIS JOINTS

The freely movable joints which allow large movements are called as Diarthrosis joints. Example – synovial joints

The type of movements occurring at different joints⁴

JOINT	MOVEMENTS
Suture	None
Atlanto-occipital	Flexion and extension
Atlanto-axial	Rotation of head
Intervertebral	Flexion, extension, lateral flexion and rotation
Vertebrocostal	Slight gliding
Sternocostal	None in between sternum and 1st pair of ribs, slight gliding between sternum and 2 nd to 7 th pairs of ribs
Lumbosacral	Flexion, extension, lateral flexion and rotation
Sternoclavicular	Gliding with limited movements
Acromioclavicular	Gliding and rotation
Radio-ulnar	Rotation of forearm
Wrist	Flexion, extension, abduction, adduction, circumduction and slight hyper extension
Inter-carpal	Gliding, flexion, extension, abduction, adduction and slight rotation
Carpometacarpal	Flexion, extension, abduction, adduction and circumduction
Metacarpophalangeal and metatarsophalangeal	Flexion, extension, abduction, adduction, circumduction
Interphalangeal	Flexion and extension
Sacroiliac	Slight gliding
Pubic symphysis	Slight movements
Tibiofibular	Slight gliding and slight rotation
Ankle	Dorsiflexion and plantar flexion
Intertarsal	Inversion and eversion
Tarsometatarsal	Slight gliding
Temporomandibular	Depression (jaw opening), elevation(jaw closing), protraction, retraction, lateral displacement, slight rotation.
Shoulder joint	Flexion, extension, hyperextension, abduction, adduction, medial rotation, lateral rotation and circumduction
Elbow joint	Flexion and extension of the forearm
Hip joint	Flexion, extension, abduction, adduction, lateral rotation medial rotation, and circumduction of the thigh
Knee joint	Flexion, extension, slight medial rotation and lateral rotation of the leg in the flexed position.

Functions of Joints:

1. Movement: Joints are crucial for facilitating movement in the human body. They allow bones to move relative to each other, enabling various types of motions such as bending, rotating, and gliding⁵
2. Support: Joints provide structural support to the skeletal system. They help maintain posture and balance by stabilizing the bones and allowing the body to bear weight.
3. Flexibility: The flexibility provided by joints is essential for performing daily activities. Joints contain cartilage, synovial fluid, and ligaments that contribute to their smooth functioning. Cartilage acts as a cushion, reducing friction between bones, while synovial fluid lubricates the joint, and ligaments provide stability and prevent excessive movement⁶
4. Protection: Joints help protect bones from wear and tear. During activities like walking, running, or jumping, joints absorb shock and distribute the impact forces across the skeletal system. This protective function helps prevent damage to the bones and other tissues⁷

Importance of joint in Movement and Exercise

Joints are critical for enabling the body's movements, whether during routine activities or intense physical exercises. They help the body absorb forces during weight-bearing activities such as running or jumping. For example, the knee joint, a synovial hinge joint, bears the weight of the body during activities like walking and running, while also allowing the leg to flex and extend smoothly. Similarly, in exercises such as squats or push-ups, the various joints involved (e.g., knee, hip, and shoulder) must work in harmony to stabilize the body and facilitate movement²

Conclusion:

Maintaining the health of joints is crucial for overall mobility and well-being. Understanding the structure and function of joints is important for optimizing health, performance in sports or exercise and also for ensuring long-term skeletal health. And Regular exercise, proper nutrition, and joint care can help reduce the risk of joint injuries and degenerative conditions of joint.

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A BRIEF REVIEW ON AUTOIMMUNE JOINT DISORDERS

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INTRODUCTION

- Autoimmune joint disorder is the condition where the body's immune system mistakenly attacks its own healthy tissues, this immune response leads to inflammation, pain and damage to the joint.
- Rheumatoid arthritis, a form of arthritis that attacks the joints lining causing swelling and pain.
- Psoriatic arthritis, a type of arthritis affecting some people with psoriasis, causing swelling and stiffness,
- Ankylosing spondylitis, affecting the spine leading to swelling between vertebrae, stiffness and pain, fusion of vertebrae
- Reactive arthritis also known as Reiter's syndrome is a type of inflammatory arthritis that develops after infection specially to joints, eyes, urinary tract.

RHEUMATOID ARTHRITIS

Rheumatoid arthritis is a chronic inflammatory autoimmune disorder affecting the small joints symmetrically progressing to larger joints. Rheumatoid arthritis affects the lining joints, causing a painful swelling that can eventually result in bone erosion and joint deformity. Peak incidence in 3rd to 4th decade of life, with 3-4 times higher predominance in females¹

Etiopathogenesis: Present concept on etiology and pathogenesis proposes that RA occurs in an immunogenetically predisposed individual to the effect of microbial agents acting as trigger antigens.

I. Immunological derangements:

1. Detection of circulating study calling rheumatoid factor (KF) against Fc portion of autologous IgG in about 80% cases of RA. RF antibodies consist of IgM and IgG class.
2. The presence of antigen-antibody complexes (IgG-RF complexes) in the circulation as well as in the synovial fluid
3. The presence of other autoantibodies such antinuclear factor (ANF), antibodies to collagen type II, and antibodies to cytoskeleton.
4. Antigenicity of proteoglycans of human articular cartilage
5. The presence of γ -globulin, particularly IgG and IgM, in the synovial fluid.
6. Association of RA with amyloidosis
7. Activation of cell-mediated immunity as observed by presence of numerous inflammatory Cells in the synovium, chiefly CD4+ T lymphocytes as well as some macrophages³.

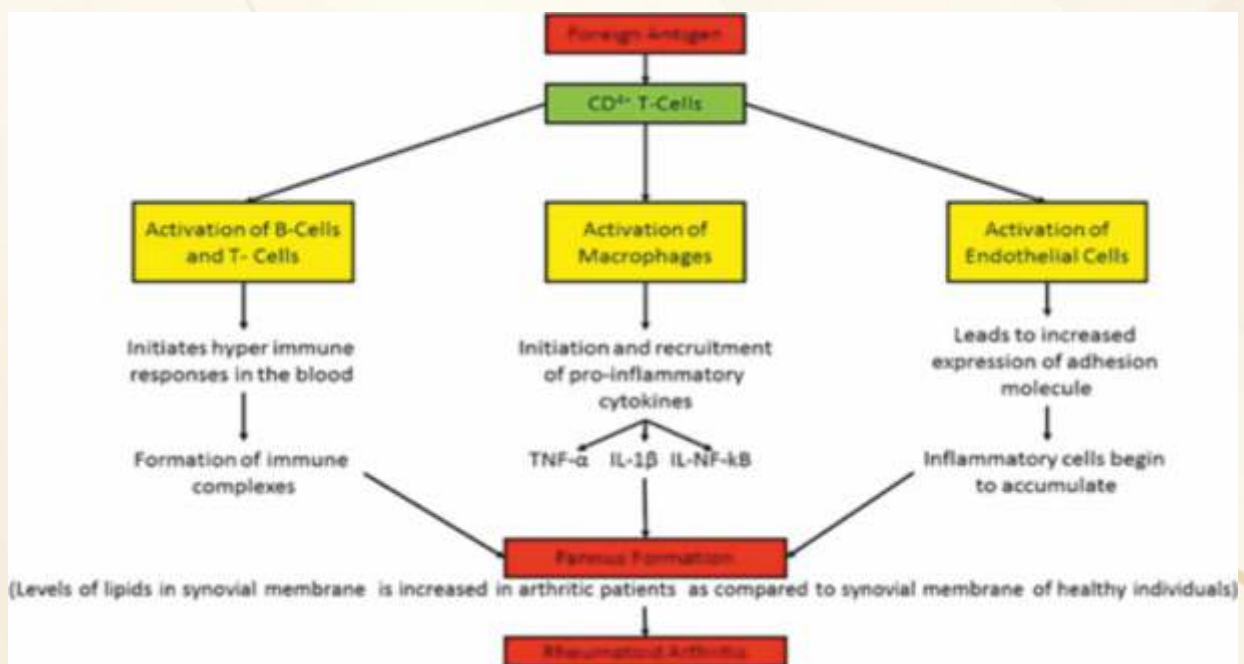
II. Trigger events:

The trigger events which initiate the destruction of articular cartilage, Various possibilities are-

1. The infectious agent such as mycoplasma, Epstein-Barr virus (EBV), cytomegalovirus (CMV) or rubella virus, either locally in the synovial fluid or systemic infection some time prior to the attack of RA
2. The possible role of HLA-DR4 and HLA-DR1 in initiation of immunologic damage.

The proposed events in immunopathogenesis of RA are as under:

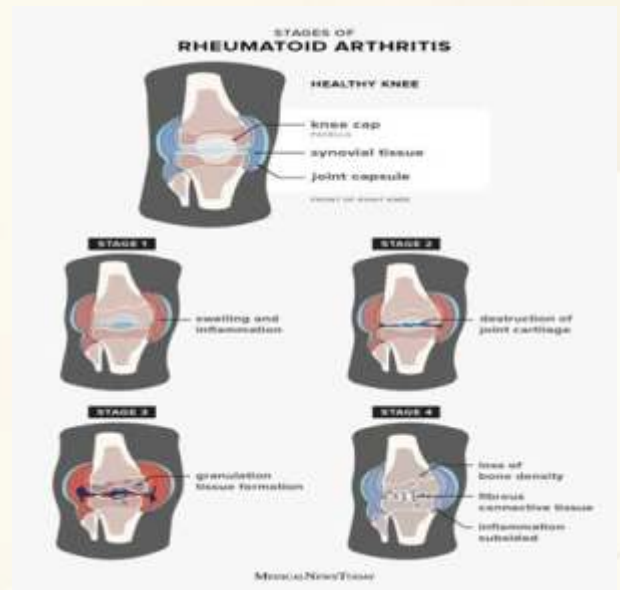
- i) In response to antigenic exposure (e.g. infectious agent) in a genetically predisposed individual (HLA-DR), CD4⁺ T-cells are activated.
- ii) These cells elaborate cytokines, the important ones being tumour necrosis factor (TNF)-alpha, interferon (IF)-gamma, interleukin (IL)-1 and IL-6.
- iii) These cytokines activate endothelial cells, B lymphocytes and macrophages.
- iv) Activation of B-cells releases IgM antibody against IgG (i.e. anti-IgG); this molecule is termed rheumatoid factor (RF).
- v) IgG and IgM immune complexes trigger inflammatory damage to the synovium, small blood and collagen
- vi) activated endothelial cells express adhesion molecules which stimulates collection in inflammatory cells
- vii) activation of macrophages releases more cytokines which cause damage to joint tissues and vascularisation of cartilage termed pannus formation
- viii) The damage and destruction of bone and cartilage are followed by fibrosis and ankyloses producing joint deformities³.



Symptoms

the early stages of RA, visible redness or swelling in the joints may not be obvious, but individuals often experience tenderness and pain. Key symptoms include:

- joint pain, tenderness, swelling, or stiffness.
- Morning stiffness that continues for 30 minutes or longer.
- Multiple joints are typically affected, not just one.
- Small joints — such as the wrists, hands, and feet — are usually the first to show signs.
- Symptoms often appear symmetrically,
- Rheumatoid nodules (firm lumps under the skin) usually near pressure points like the elbows.
- fatigue and a low-grade fever may also be present.



Diagnosis

Diagnosis of Rheumatoid Arthritis (RA):

Diagnosing RA involves a combination of medical history, physical exams, and specialized tests to identify signs of inflammation and joint damage. The key steps include:

• Medical History:

- Joint symptoms — pain, tenderness, stiffness, and mobility issues
- Family history of RA or other autoimmune diseases

• Physical Examination:

- Joint tenderness, swelling, and warmth
- Range of motion and any pain during movement
- Rheumatoid nodules (bumps under the skin)
- Signs of low-grade fever

• Blood Tests: These help detect inflammation and antibodies linked to RA:

- Erythrocyte Sedimentation Rate (ESR) and C-reactive protein (CRP): Markers of inflammation — high levels support an RA diagnosis.
- Rheumatoid factor (RF): Found in about 80% of people with RA.
- Anti-cyclic citrullinated peptide (anti-CCP) antibodies: Present in 60–70% of RA cases, though they can appear in those without RA too.

• Imaging Tests: Used to check for joint damage:

- X-rays, ultrasounds, and MRIs can reveal bone erosions or cartilage loss.
- If no damage is detected early on, it may mean RA is in its initial stages.

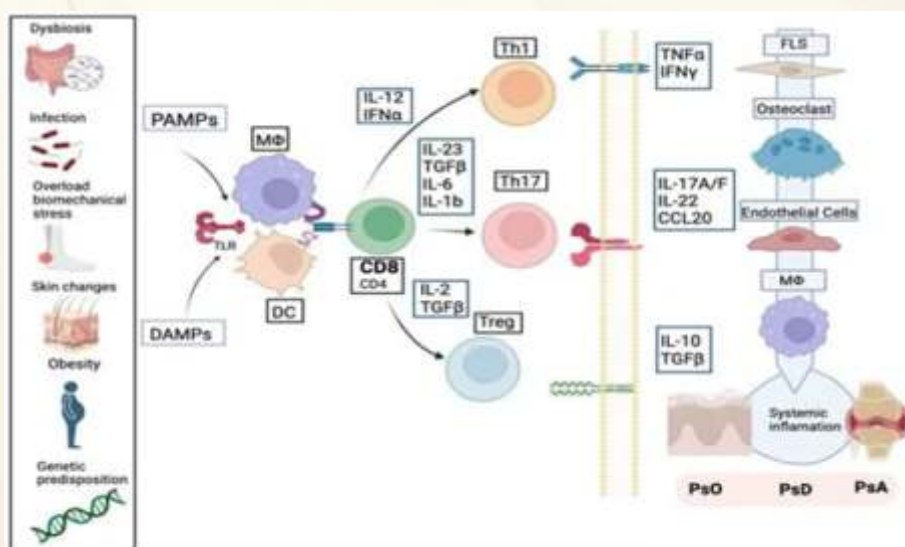
PSORIATIC ARTHRITIS

Psoriatic arthritis is a chronic inflammatory disease of the joints that linked to skin condition called psoriasis. The classic feature of psoriatic arthritis includes dactylitis (sausage –like appearance), skin lesion, nail lesions. The abnormal immune response causes the inflammation in joints as well as overproduction of skin cells.

Around 40% of people with psoriatic arthritis have a hereditary- passed from biological parents to their children, some of environmental factors triggers like infection, trauma, stress, obesity and smoking.^{5,8}

Pathogenesis

The pathogenesis of psoriatic arthritis is far from clear, a predisposing genetic factor background in the presence of environmental factors, such as infection, microbiota, obesity, biochemical stress on the entheses or smoking could activate the innate immune system and precipitate the onset of the disease by activating dendritic cells, macrophages which present antigens through type major histocompatibility complex¹ to T cells mainly CD8 through toll-like receptor type² this favours the local release of cytokine by triggering the innate and adaptive immune response, IL-12, IFN- α stimulate Th1 response. Which release TNF α and IFN- γ , IL-23, TGF β . IL-6 and IL-1b activates the Th17. IL22, IL26, and CCL20. Moreover, regulating and deactivating the inflammatory cascade requires the response mediated by Treg cells through IL-2 and TGF β . These release cytokines interact with their transmembrane receptors, promoting the release of more cytokines and attracting endothelial cells, macrophages, fibroblasts. Keratinocytes, dendritic cells, epithelial cells, chondrocytes, osteoblasts. Activation of immune system leads to synovitis, enthesitis, erosion, lesions in the articular cartilage and skin⁶



Symptoms of psoriatic arthritis include:

- pain, swelling and stiffness in 1 or more joints
- swollen fingers or toes
- nails changing from their usual colour, or tiny dents or pits developing in nails feeling drained of energy
- about 25-70% of patients have axial involvement and nail pitting often accompanies distal interphalangeal joint.
- Five classic presentation of joint involvement in psoriasis
 1. inflammatory distal interphalangeal joint involvement
 2. peripheral polyarthritis, often symmetrical as seen in RA
 3. Spondyloarthropathy; spondylitis and sacro-ilitis
 4. Asymmetrical, oligoarthritis
 5. Arthritis mutilans^{5,8}



Diagnosis

Proper medical history is very important for the diagnosis of the Psoriatic arthritis -past history of skin involvement is seen 20-30 % of cases'

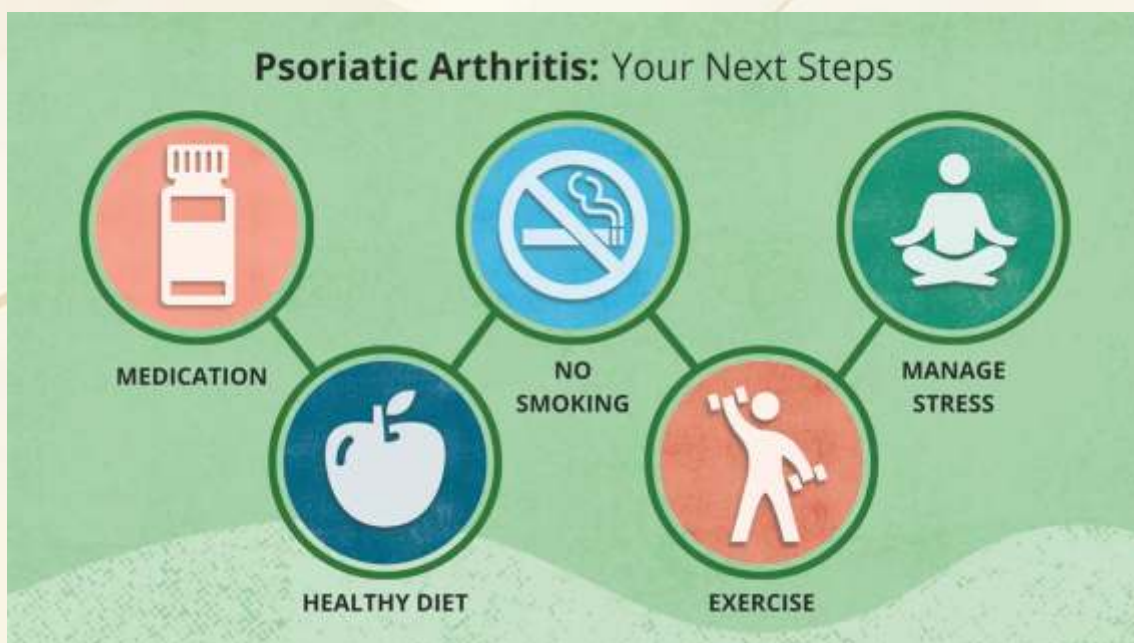
Physical examination of the joints for swelling, pain, tender, deformity of the joints

Imaging testing- x ray- can help pinpoint changes in the joints that occur in psoriatic arthritis

Laboratory test-Rheumatoid factor (RF) is negative, increased ESR, C reactive protein often normal.

Joint fluid test- affected joint sample of fluid is collected to exclude other form of disease like presence of uric acid crystal

HLA-B27 found in 50% of cases^{5,7,8}



REACTIVE ARTHRITIS

Reactive arthritis (Reiter's syndrome) is inflammatory arthritis that triggered by a bacterial infection. It causes pain and stiffness of the joints, often seen in people age between 20 and 40 high predominance in men as a result of sexual transmitted infection.

Infection like Chlamydia and trachomatis, often cause the disease, gut infection like salmonella from eating food or handling objects that have the bacteria. Inflammations of the joints, eyes, Urinary tract are the hallmark of reactive arthritis

It is also linked with the gene HLA-B27 have risk of getting reactive arthritis (Johns Hopkins medicine)^{9,10}

Symptoms

- The symptoms range from mild to severe, usually starts from 1 to 6 weeks after the infection of GIT, urinary tract, genitals.
- Joint pain and stiffness- painful, red, swollen, especially larger joints of the lower limb knees or ankle, enthesitis, dactylitis
- Inflammation of the cervix, fallopian tube, vulva or vagina increased and burning urine
- Conjunctivitis, uveitis
- Fever, weight loss, skin rashes, fever, fatigue. Other forms of symptoms¹¹

Pathogenesis

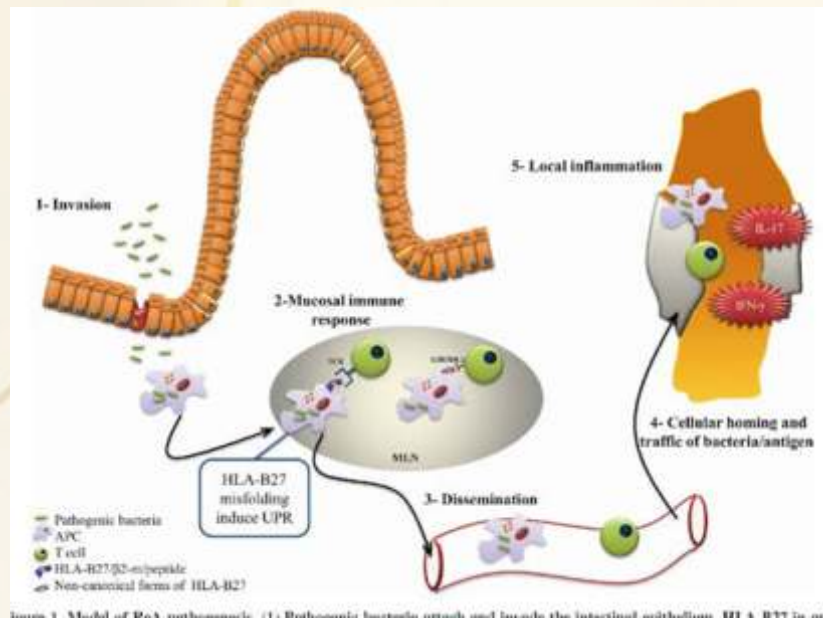
Despite knowing it is triggered by the bacterial infection (GIT, urogenital) the pathogenesis of the reactive arthritis is not known fully. The environmental and genetic factor both plays a role in causing the disease including impaired elimination of causative microbes, persistence in their antigens in the joints, host immune response and genetics factor like presence of the molecules HLA-B27.

The classical bacterial triggering this arthritis are invasive and causing primary infection by the entry of the pathogen through GIT or urogenital mucosa from there disseminate to other organs such as lymphoid tissue, spleen, liver, joints. The entire bacteria and its products traffic from initial site of infection to the joints. The impaired eliminations of causative microbes and the collection of the antigens to the joints could be responsible of pathological immune response in the joint.¹²

An imbalance in the cytokine level may be responsible for persistence of causative microbes and also reflect the pathological immune response in the joint. The diminished level of TNF produced by peripheral blood mononuclear cells (PBMC) of patient with reactive Arthritis and elevated levels of IL 10 have been demonstrated at the beginning of the disease. At the chronic stage of arthritis TNF produced by PBMC and CD3+ and IFN- γ + cells from blood and synovial fluid have been reported. few studies observed in patients with seronegative arthritis, enriched amount of CD4+ and IL17 cells within synovial fluid could contribute to the disease. the genetic factor described to be related with genetic arthritis HLA-B27 is a class 1 histocompatibility molecule. it has been postulated that it presents arthritogenic bacterial peptides to CD8+ and T cells thus stimulating and autoimmune response to the disease.

The heavy chains of HLA-B27 have a tendency to misfolded forming homodimers and heterodimers due to aberrant disulfide in endoplasmic reticulum of the cells activates multiple signalling pathways that orchestrate known as unfolded protein response UPR. additionally, the non-canonical form of HLA B27 antigen expressed on cell surface are possible to be recognised by killer immunoglobulin receptor such as KIR3DL2 on CD4+ T cells then triggering the inflammation.

Other genetic factors (IL-23R, IL-1R2, TNF RS1, TRADD) it is possible that these factors may have significance in reactive arthritis since individuals negative for HLA B27.¹²



Laboratory studies

- In an acute phase reactants increased ESR and C Reactive protein, normocytic normochromic anaemia along with mild leukocytosis and thrombocytosis IgA antibodies to specific bacterial antigens have been reported, Rheumatic factor and anti-nuclear antibodies are negative
- **Synovial fluid analysis:** high WBC counts and elevated polymorphonuclear leucocytes
- **Gram staining and culture:** are negative to exclude the septic arthritis. Throat stool or urogenital tract cultures can be performed to isolate causative organisms
- Serological techniques for detection of Chlamydia species include PCR
- **Radiography:** early disease processes no abnormality levels, long term reactive arthritis shows periosteal reaction and proliferation at the sites of tendon insertion are visible, exuberant plantar spurs are common in hands and feet adjacent marginal erosions with adjacent bone proliferation is visible Spinal radiographic finding shows sacroilitis and syndesmothytes
- HLAB27 results are positive in 65 in 96% of cases, this test is helpful to support the diagnosis of reactive arthritis.^{9,10,11.}



ANKYLOSIS SPONDYLITIS

Ankyloses spondylitis is type of arthritis that causes inflammation in the joints and ligaments of the spine and also affects peripheral joints like knees, ankles, hips. especially the sacro iliac joints this Inflammation in the joints and tissues cause stiffness and in severe cases the vertebrae fuse causing rigid and inflexible spine.

Causes: it is an auto immune disease when our immune system attacks your body instead of protecting it. Certain factors increase the risk of disease.

- 1 family history and genetics: Biological related or 1st degree relatives are likely to suffer with the AS, this condition is autoimmune in nature when immune system attacks own body instead of protecting it. Genetic mutations are closes linked to have,they are more than 60 muted genes causing the disease, gene variation can cause the disease especially HLA B27 is a primary gene increasing the risk of developing AK
- 2 Age factor: Development of symptoms of AS before the age 45, however some people may develop the disease when they are children or teens, predominately in males
- 3 Other conditions like crohn's disease, ulcerative colitis, psoriasis may develop the disease¹³

Pathogenesis

Genetic factors: (HLA B 27) this gene belongs to MCH class 1 receptor family, there are 4 domains of this molecule a depicted; regions $\alpha 1$, $\alpha 2$ are located at the top of the proteins where antigen binding occurs, the

$\alpha 3$ heavy chain is located adjacent to the cell surface partially penetrates the cell membrane the 4th domain is β^2 microglobulin which is associated with rest of HLA B27 molecule

The 3rd main features distinguish HLA B27 from other forma of HLA class 1 molecules, glutanine is substituted for methanine located at the 45 position

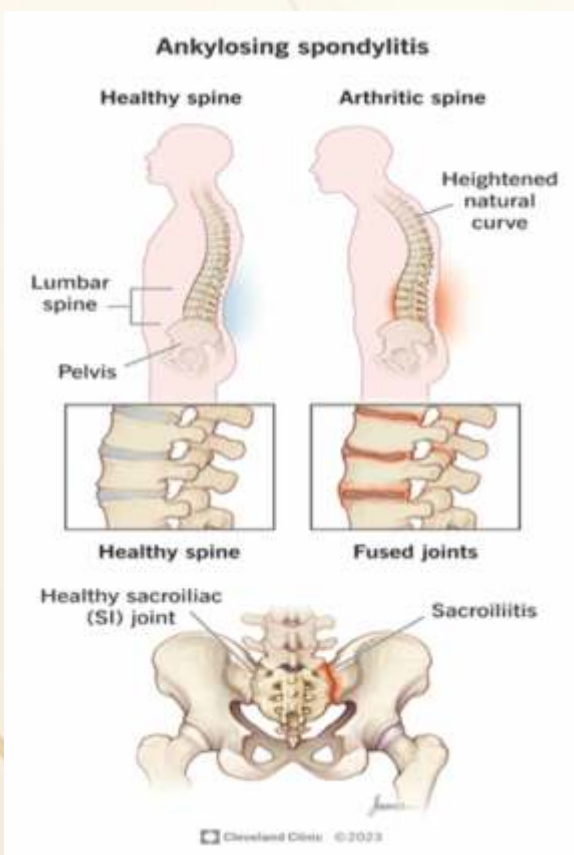
The 2nd feature is the unpaired cysteine this feature enables formation of homodimers and oligomers of free heavy chains which are thought to contribute development of AS. Thirdly there is Lys residueat position 70 that increases the reactive of cysteine. even though HLA B27 is the most commonly recognized genetic factor in developing AS is only around 20% suggesting that other factors such as environment,immune, anatomical phenomenon are responsible for pathogenesis of AS

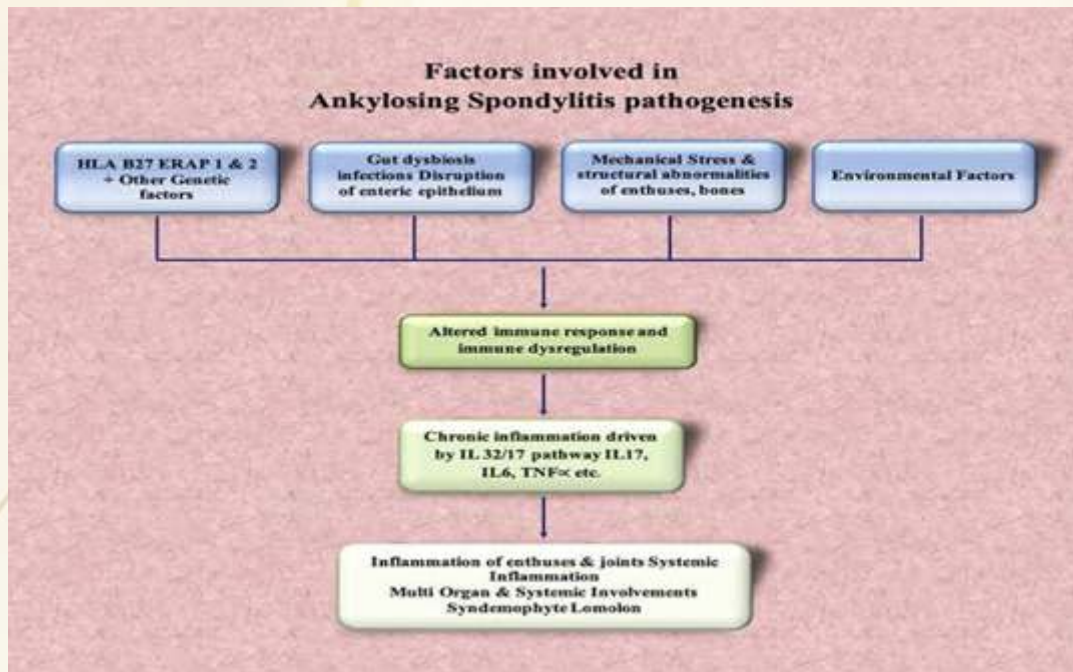
2. Other HLA B genes have been recognised for development of disease HLA -B 730, HLA -B16, HLA-B 35, 31, 32,38, 39, 33. More than 90% of genetic risk single nuclear polymorphism are associated with IL 23 R gene.

Killer Immunoglobulins receptors i.e. KIR3DL² R is regulated on activated CD4+ T cells and there are increased levels of

these cells in patients with AS compared with healthy individuals.

Structural integrity of anatomical in patients could predispose certain individuals to the development of AS like mucosal integrity plays important role in gut bysbiosis and factors that weaken the mucosal layer predispose to entry of inflammation and possible generation aberrant immune pathway¹⁴



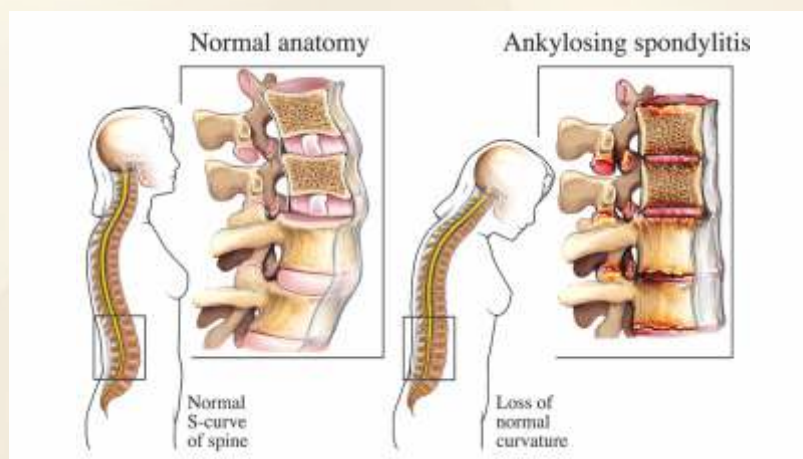


Psoriatic arthritis is a chronic inflammatory disease of the joints that linked to skin condition called psoriasis. The classic feature of psoriatic arthritis includes dactylitis (sausage –like appearance), skin lesion, nail lesions. The abnormal immune response causes the inflammation in joints as well as overproduction of skin cells.

Around 40% of people with psoriatic arthritis have a hereditary- passed from biological parents to their children, some of environmental factors triggers like infection, trauma, stress, obesity and smoking.^{5,8}

Pathogenesis

The pathogenesis of psoriatic arthritis is far from clear, a predisposing genetic factor background in the presence of environmental factors, such as infection, microbiota, obesity, biochemical stress on the entheses or smoking could activate the innate immune system and precipitate the onset of the disease by activating dendritic cells, macrophages which present antigens through type major histocompatibility complex¹ to T cells mainly CD8 through toll-like receptor type² this favours the local release of cytokine by triggering the innate and adaptive immune response, IL-12, IFN- α stimulate Th1 response. Which release TNF α and IFN- γ , IL-23, TGF β . IL-6 and IL-1b activates the Th17. IL22, IL26, and CCL20. Moreover, regulating and deactivating the inflammatory cascade requires the response mediated by Treg cells through IL-2 and TGF β . These release cytokines interact with their transmembrane receptors, promoting the release of more cytokines and attracting endothelial cells, macrophages, fibroblasts. Keratinocytes, dendritic cells, epithelial cells, chondrocytes, osteoblasts. Activation of immune system leads to synovitis, enthesitis, erosion, lesions in the articular cartilage and skin⁶



A BRIEF REVIEW ON INFECTIVE JOINT DISORDERS (SEPTIC ARTHRITIS)

Dr. R. C. Hiremath Professor-HOD- Department of Practice of medicine

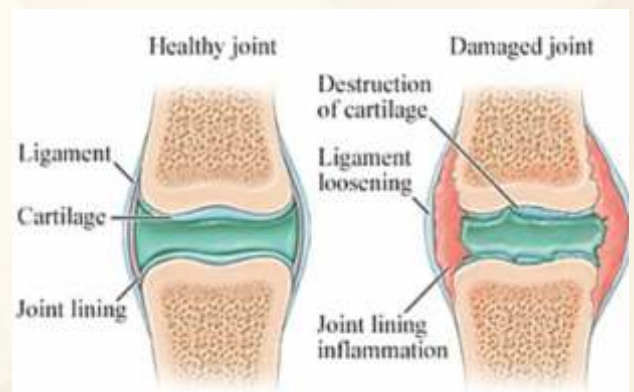
Dr. Jessica Monteiro Associate Professor Department of Practice of medicine

Dr. Apurva Ajane Assistant Professor of Practice of medicine

Synonyms : Septic Arthritis, Infectious Arthritis, Suppurative Arthritis, Pyogenic Arthritis

Introduction

Infective arthritis, also known as septic arthritis, is an inflammatory condition of the joints caused by an infectious agent.¹ Infective arthritis is characterized by the invasion of a joint space by pathogenic microorganisms, most commonly bacteria. This infection triggers a vigorous inflammatory response within the synovium, leading to the destruction of articular cartilage and subchondral bone. While any joint can be affected, the large weight-bearing joints such as the knee and hip are most frequently involved. The incidence of septic arthritis varies depending on age, underlying medical conditions, and geographic location. It represents a significant clinical challenge due to its potential for rapid joint destruction and systemic spread of infection, necessitating urgent diagnosis and aggressive management to prevent long-term disability and mortality.



Epidemiology

• Incidence and Prevalence

Geographical location and demographic characteristics have a substantial impact on the occurrence of infective arthritis. The annual incidence of septic arthritis in the general population ranges from 2 to 5 cases per 100,000 and 28 to 38 cases per 100,000 in patients with rheumatoid arthritis, to 40–68 instances (100,000 persons) per year among patients using joint prostheses³.

• **Causes:**

A wide array of microorganisms can cause septic arthritis, with the specific etiology often varying based on patient demographics and risk factors. The most common causative agents include²

1) **Bacteria:**

- **Staphylococcus aureus:** This is the most frequent pathogen across all age groups, accounting for a significant proportion of cases, particularly in adults [2]. Methicillin-resistant *Staphylococcus aureus* (MRSA) is an increasing concern.
- **Streptococci:** Group A *Streptococcus* (*Streptococcus pyogenes*) and Group B *Streptococcus* (*Streptococcus agalactiae*) are important pathogens, especially in neonates and young children. Other streptococcal species can also cause septic arthritis.
- **Neisseria gonorrhoeae:** This is a common cause of septic arthritis in sexually active young adults, often presenting as a migratory polyarthritis followed by a localized monoarthritis [3].
- **Gram-negative bacilli:** Organisms such as *Escherichia coli*, *Pseudomonas aeruginosa*, and *Klebsiella pneumoniae* are more frequently seen in elderly individuals, intravenous drug users, and those with underlying immunosuppression or recent invasive procedures [4].
- **Haemophilus influenzae:** Once a common cause in young children, its incidence has significantly decreased due to widespread vaccination.
- **Anaerobic bacteria:** These are less common and often associated with direct inoculation or contiguous spread from an adjacent infection.
- **Mycobacteria:** *Mycobacterium tuberculosis* can cause a chronic, indolent form of septic arthritis, typically affecting a single joint (often the hip or spine) [5].
- **Borrelia burgdorferi:** The causative agent of Lyme disease can lead to Lyme arthritis, a form of inflammatory arthritis that can sometimes mimic septic arthritis, although the pathogenesis differs.

2) **Viruses:** Viral arthritis is generally self-limiting and less destructive than bacterial septic arthritis. However, certain viruses like parvovirus B19, rubella virus, and hepatitis B and C viruses can cause joint inflammation that may need to be differentiated from bacterial infection.

3) **Fungi:** Fungal septic arthritis is rare and typically occurs in immunocompromised individuals, those with indwelling catheters, or following direct inoculation. Common fungal pathogens include *Candida* species, *Aspergillus*, and *Cryptococcus*.

• **Risk Factors:**

Several factors can increase an individual's susceptibility to developing septic arthritis:

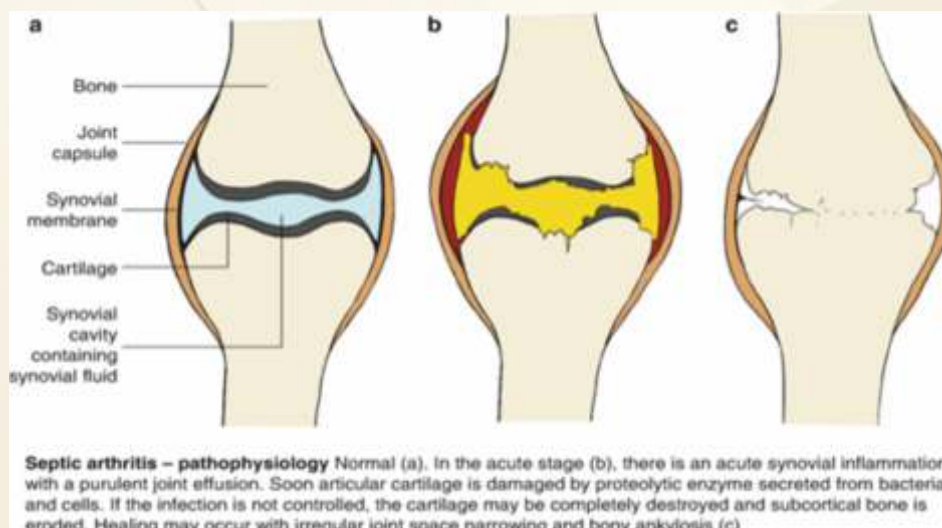
- **Age Extremes:** Neonates and elderly individuals have an increased risk due to immature or declining immune function, respectively.
- **Pre-existing Joint Disease:** Conditions such as rheumatoid arthritis, osteoarthritis, gout, and prosthetic joints provide a potential nidus for infection and can impair local host defenses [6].
Systemic Immunosuppression: Patients with conditions like diabetes mellitus, HIV infection, malignancy, and those receiving immunosuppressive medications (e.g., corticosteroids, chemotherapy, TNF-alpha inhibitors) are at higher risk.
- **Intravenous Drug Use:** Injection drug use can lead to bacteremia and hematogenous seeding of joints, often involving unusual pathogens and sites.
- **Recent Joint Surgery or Injection:** Invasive procedures can introduce microorganisms directly into the joint space.

- **Skin and Soft Tissue Infections:** Cellulitis, abscesses, and infected wounds can serve as a source of bacteremia.
- **Trauma to the Joint:** Penetrating trauma can directly introduce pathogens, while blunt trauma

- **Pathogenesis**

The pathogenesis of septic arthritis involves a complex interplay between the invading microorganism and the host immune response. The typical routes of infection are:

- **Hematogenous Spread:** This is the most common route, where bacteria from a distant site of infection (e.g., skin, respiratory tract, urinary tract) enter the bloodstream and subsequently seed the synovial membrane.
- **Direct Inoculation:** This can occur through penetrating trauma, joint surgery, or intra-articular injections.
- **Contiguous Spread:** Infection can spread from an adjacent bone (osteomyelitis) or soft tissue infection into the joint space.
- Once microorganisms reach the synovium, they proliferate rapidly in the nutrient-rich synovial fluid. This triggers a vigorous inflammatory cascade involving the release of pro-inflammatory cytokines (e.g., TNF-alpha, IL-1, IL-6), chemokines, and matrix metalloproteinases (MMPs) from synovial cells and infiltrating immune cells (neutrophils).
- Neutrophils are recruited in large numbers to the joint space and release proteolytic enzymes and reactive oxygen species in an attempt to eradicate the infection. However, these inflammatory mediators and enzymatic activities also contribute significantly to the destruction of articular cartilage, ligaments, and subchondral bone. Increased intraarticular pressure, protease and cytokine release from chondrocytes and synovial macrophages, and bacterial and inflammatory cell infiltration of the cartilage all contribute to the degradation of cartilage, which starts within 48 hours²



- **Types:**

- Septic arthritis can be classified based on several factors, including the causative organism, the number of joints involved, and the presence of specific predisposing conditions:
- **Non-gonococcal Arthritis:** This is the most common type, accounting for over 80% of cases. Staphylococcus aureus and streptococci are frequent culprits. It can arise from hematogenous spread from a distant infection (e.g., skin infection, pneumonia), direct inoculation (e.g., trauma, surgery, injection), or contiguous spread from adjacent osteomyelitis.

- **Gonococcal Arthritis:** Gonococcal arthritis is a bacterial arthritis that results from the bacteremic spread of *Neisseria gonorrhoeae*, a sexually transmitted pathogen and typically affects young, sexually active individuals. It often presents in two phases:
- **Disseminated Gonococcal Infection (DGI):** Characterized by fever, chills, migratory polyarthralgia, tenosynovitis (inflammation of tendon sheaths), and characteristic skin lesions (pustules on an erythematous base). Blood cultures may be positive during this phase.
- **Localized Septic Arthritis:** One or a few joints (commonly the knee, wrist, or ankle) become overtly inflamed with significant effusion. Synovial fluid culture is more likely to be positive in this stage.
- **Syphilitic Arthritis:** Osteochondritis of the long bones is made worse in early congenital syphilis by periarticular edema and immobilization of the affected limbs (Parrot's pseudoparalysis). A late onset of persistent painless synovitis with effusions of big joints (Clutton's joint) especially the knees and elbows, is the cause of congenital syphilis, which usually manifests between the ages of 8 and 15.²
- **Prosthetic Joint Infection (PJI):** This is a serious complication of joint replacement surgery. It can occur early (within weeks of surgery) due to perioperative contamination, or late (months to years later) due to hematogenous seeding or local spread. Causative organisms often include *Staphylococcus aureus*, coagulase-negative staphylococci, streptococci, and gram-negative bacilli. PJI can present with persistent pain, stiffness, swelling, and potentially a draining sinus tract. Diagnosis and management are often complex, frequently requiring surgical intervention.
- **Mycobacterial Arthritis (Tuberculous Arthritis):** This is a chronic, indolent infection caused by *Mycobacterium tuberculosis*. It typically affects a single weight-bearing joint (hip or knee) or the spine (Pott's disease). The most typical manifestation is granulomatous monoarthritis that is persistent. People who have visceral or disseminated tuberculosis may develop reactive symmetric polyarthritis, often known as Poncet's disease syndrome. Symptoms develop gradually over weeks to months and include pain, swelling, and stiffness. Systemic symptoms are often less prominent than in acute bacterial arthritis. Diagnosis requires a high index of suspicion and often involves synovial fluid analysis, mycobacterial culture (which can take several weeks), and histological examination of synovial tissue showing granulomatous inflammation with caseation necrosis.
- **Fungal Arthritis:** This is a rare form of septic arthritis that typically occurs in immunocompromised individuals. Common causative fungi include *Candida* species, *Aspergillus*, and *Cryptococcus*. The presentation is often subacute or chronic, with insidious onset of joint pain and swelling. Diagnosis requires synovial fluid culture and fungal identification.
- **Viral Arthritis:** While most viral arthritis are non-erosive and self-limiting, they can sometimes mimic early septic arthritis. Differentiation relies on clinical context, serological testing for specific viruses, and typically less severe joint inflammation with negative bacterial cultures.
- **Clinical Features**
 - The most prevalent form of monoarthritis is acute or subacute;
 - The joint is usually swollen, red, and hot, and it hurts both when moving and when at rest. The knee and hip are the most common sites.
 - The usual Oligo- or monoarthritis may develop after migrating arthralgia and low-grade fever.
 - In addition, there might be uncomfortable, pustular skin lesions¹

- Usually found in young, sexually active people, gonococcal arthritis can manifest as synovitis and migratory arthritis.
- Immunocompromised Individuals: may manifest in unusual ways, occasionally affecting several joints.¹

• Investigations

• Blood Cultures:

- Positive for the causative organism .50–70% of infections are caused due to infection by *S. aureus* and can be detected by blood cultures, but they are less often negative for infections caused by other pathogens.

• Synovial fluid culture :

- The synovial fluid can be plainly purulent, serosanguineous, or murky. Numerous neutrophils are confirmed to be present by Gram-stained smears. Since infection and crystal-induced illness can sometimes coexist, and because gout and pseudogout can clinically mimic septic arthritis, the synovial fluid should be checked for crystals.

• Synovial biopsy :

- A synovial biopsy may be needed if synovial fluid findings are negative and suspicion for septic arthritis remains⁷
- Nucleic acid amplification (NAA)-based assays for bacterial DNA or MALDI-TOF:
- This can be useful for the diagnosis of partially treated or culture-negative bacterial arthritis

• Inflammatory markers :

- Erythrocyte sedimentation rate and C-reactive protein tend to be elevated in septic arthritis but are nonspecific.²

- **Imaging:** While MRI can identify the degeneration of articular cartilage, which is characterized by rough, fuzzy, and shedding articular cartilage at the injured region, X-rays are frequently used to assist distinguish between disorders like osteomyelitis²

• Diagnosis

The diagnosis of septic arthritis is based on the history of exposure, clinical presentation and physical examination and associated findings of investigations. The symptoms of septic arthritis can resemble those of other forms of arthritis. A history of fever, joint pain, and swelling is present in almost 50% of individuals with septic arthritis. However X-rays and CT are helpful in the differential diagnosis of acute osteomyelitis.

• Management

Septic arthritis should be considered in adults presenting with acute monoarticular arthritis. A delay in diagnosis and treatment of septic arthritis can lead to permanent morbidity and mortality. Subcartilaginous bone loss, cartilage destruction, and permanent joint dysfunction can occur if appropriate antibiotic therapy is not initiated within 24 to 48 hours of onset⁸

Cohort studies demonstrated that medical management is not inferior to surgical management of septic arthritis. However, 30% of cases ultimately required surgical management, including about one-half of shoulder and hip arthritis cases, because of poor response to medical therapy⁹⁻¹⁰

• Homoeopathic Approach

The below mentioned homoeopathic remedies provide a symptomatic cure when indicated acutely based on the symptoms and when indicated as an constitutional remedy help in providing a complete relief of symptoms. Few of the commonly indicated remedies are: Ruta, Arnica , Formica rufa, Rhustox, Belladonna, Lycopodium, Aconite¹¹.

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A REVIEW ON SURGICAL APPROACH TO LOCOMOTOR DISORDERS

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Locomotor disorder refers to the musculoskeletal framework of our body. It is usually the synergistic action of bones, ligaments, tendons which give stability in stance, posture & movement.

Locomotor system assessment requires proper clinical diagnosis before any surgical intervention and initiation of pre-surgery physiotherapy & post-surgery rehabilitation measures for maintain optimum joint movements so as to carry his routine activity tasks.

The coordinated and controlled movements are governed by joints and the specific movements according to the type of joint.

In locomotor system we should always proceed in these steps for right assessment-

- a) Look
- b) Feel
- c) Move

LOOK:

Look for the deformities of spine & extremities in general inspection. Look at the eyes for any signs of horner's syndrome.

a) Gait:

The gait phase includes the time between the initial contact of foot with the ground & succeeding initial contact of the same limb.

There are usually two phases in gait namely

- a) Stance phase which constitutes 60% of gait activity
- b) Swing phase which constitutes 40% of gait activity

b) Focused Inspection:

Adequately expose the joint above & below for examination. Always expose the other limb for comparison. It is comfortable for examination if the patient remains standing for the initial part of examination. When a seating arrangement is made for patient such as couch make sure that it is in the center of the room. So that both sides of examination can be carried out without any visual constraints. Most of the joints are covered by synovial membrane enclosing synovial fluid, soft tissue & skin.

- **Always look for the skin surrounding the joint for**

Surgical scars, Bruises, Erythematous lesions, Ulcers, Rashes, Sinus tract's, Hair loss, Anhidrosis, Raised lesions, Pigmentations etc.

- Look for the soft tissues for any lump. Swelling, muscle wasting, muscle fasciculation
- Look for any abnormality in the bone alignment & any deformity

FEEL:

Before examination by palpation method ask if there are signs of tenderness for superficial joints like knee. Check the joint line alignment & any lumps or tenderness. Ensure that you don't cause any pain while assessing. Watch for any facial grimace while you feel.

Skin:

The aim of sensory assessment is to establish if there is particular pattern of sensory loss. Look for any particular dermatomal involvement. Perform the screening test by slightly stroking both limbs. Record whether the patient feels any variation of perception sense while stroking. If no abnormality is perceived while assessing there is no necessity of spending more time on neurological assessment.

Soft tissues:

- Check for any tenderness, lumps, pulse etc

Bone:

Palpate the bony contour of the joint & assess for tenderness for superficial joint such as knee joint. The bony contour can be checked for misalignment & can also be checked for lumps & tenderness.

MOVE:

- Usually there are three stages in assessment of movement
 - a) Active- Ask the patient to move the joint within the limits of their pain or stiffness
 - b) Passive- Movement of the limb passively by the physician. Record the degree of movements by goniometer according to the joint movements of particular joint

variety.

c) **Stability**- Stability has a static and dynamic component. Static tests usually assess the integrity of ligament & joint surfaces. Dynamic tests assess the integrity & functioning of muscles & tendons in a joint. Record power using the medical research council grading system.

GRADE	DESCRIPTION
0	No movement
1	Flicker of movement
2	Active movement with gravity eliminated
3	Active movement against gravity
4	Active movement against resistance but power less than full
5	Normal power

Consider the muscle that drives each movement, the peripheral nerves that supply them & nerve root values for assessment of movement in the motor function; dermatome & peripheral nerves involved in the sensory function.

Based on type of limp also general assessment can be done & possible pathology of joint can be ascertained and asserted by thorough clinical examination. Here are some of the examples viz.

LIMP	PATHOLOGY
Antalgic	Hip Joint Arthritis
Trendelenburg	Weakness of hip abductors
High Stepping Gait	Foot drop secondary to common peroneal nerve palsy
Spastic	Cerebral palsy
Ataxic	Cerebellar pathology

Certain conditions require surgical intervention based on the pathology involved and the intensity of pain and/ stiffness or to prevent complications arising out of the pathological progression of the condition.

In case of Degenerative & Joint Disorders:

For conditions like osteoarthritis & rheumatoid arthritis these are the most frequently used surgical interventions-

- a) Arthroplasty is considered for hips, knees & shoulder joint. Total joint replacement is the surgical approach for the completely deteriorated functioning of major joints.
- b) Hemiarthroplasty or partial joint replacement method is considered as surgical intervention often for hip fractures.
- c) Arthrodesis means joint fusion procedure considered for smaller joints like wrist, ankle & spine.
- d) Osteotomy is the procedure where part of the bone is cut to realign and reshape the contour of bone for proper positioning of joint. It is commonly performed for joints like jaw, elbow, spine, shoulder, hips, knees, legs
- e) Arthroscopic synovectomy is the removal of inflamed synovial lining considered in case of early rheumatoid arthritis.

- **For post traumatic joint damage the surgical interventions considered are**

- i) Ligament reconstruction procedure for anterior & posterior cruciate ligaments restores knee stability after major injury/twisting injury
- ii) Meniscectomy is the meniscus repair procedure used to treat meniscal tears of knee either lateral or medial or both.
- iii) Chondral grafting procedure involves harvesting small portions of cartilage & transplanting where there is area of loss of cartilage. Micro fracture surgery can also be resorted to in case of fractures of small portions of cartilage.

For Spinal Conditions-

a) Degenerative spine conditions

For such conditions Laminectomy/Laminotomy removes part or whole of the lamina part of vertebra to relieve pressure in case of spinal stenosis.

b) Spinal fusion procedure

This procedure is resorted to fuse adjacent vertebrae to stabilize spine in case of instability or severe disc related disorders or spondylolisthesis.

c) Artificial disc surgery is the alternative to spinal fusion procedure to maintain mobility of the spinal joint.

d) Foraminotomy is the procedure where there is widening of neural foramen is done to relieve nerve

- **compression.**

For Spinal disorders like kyphosis, scoliosis or lordosis spinal instrumentation can be considered with aid of rods, screws & grafts to correct the curvature of spine.

Growing rods & magnetically controlled rods are used in children with scoliosis to allow spinal growth while maintaining the correction of spine.

For Spinal cord injuries & paralysis decompression surgery can be considered to reduce spinal cord compression after trauma.

- Invasive neuro-stimulation can be considered in cases of epilepsy & chronic pain. Some of them include spinal cord stimulation device can disrupt the signal & provide relief. Deep brain stimulation can be used to target specific areas of brain regions involved in perception of pain signal. Vagus nerve stimulation can be thought of particularly in reducing the frequency of seizures in epilepsy.

• For Neuromuscular Disorders

- In case of spasticity & contractures selective dorsal rhizotomy involves severing certain sensory nerves fibers in lower spinal cord particularly in children with cerebral palsy.
- Tendon lengthening or release procedures are helpful in case of contractures of hamstrings, hip flexors & achilles.
- Tendon transfer procedure is considered when there is loss of functioning of tendon/severed tendon for replacement by functioning tendon for mobility purpose.
- In case of movement disorders, deep brain stimulation is used where electrodes are placed in brain to manage parkinson's disease or dystonia.
- Intrathecal baclofen pump placement measure is considered which delivers muscle relaxants directly to spinal fluid via a surgically implanted pump & catheter to treat severe intractable spasticity & dystonia.

For peripheral Nerve Disorders

- In case of nerve compression syndromes like carpal tunnel syndrome, carpal tunnel release procedure is resorted to. In case of cubital tunnel syndrome ulnar nerve transposition relieves the nerve entrapment.
- Nerve grafting is considered in case of severed nerves. Synthetic nerve conduit is a procedure where biocompatible, artificial tube is used in nerve repair to guide axonal regeneration & create a supportive environment for nerve regeneration; alternative to autograft procedure.
- Oberlin transfer surgery is resorted to restore elbow flexion especially in case of brachial plexus injury. It involves transferring a bundle of nerve fibers (fascicle) from the ulnar nerve to the motor branch of biceps muscle.
- Osseo-integration procedure is particularly used in amputees, where a metal device is implanted directly into the residual bone allowing for direct attachment of prosthetic limb which eliminates the need for traditional socket.
- Targeted muscle reinnervation is used where severed nerves are re-routed to new muscle targets improving prosthetic control & can potentially reduce pain & neuroma formation in amputees.
- In case of congenital & acquired limb deformities, Ilizarov technique; external ring fixator is used to treat complex fractures, non-union, deformities & bony defects through gradual bone lengthening & reshaping.
- Distraction osteogenesis is being used to lengthen the bones of the extremities & is commonly being used to treat mandibular deformities.
- Epiphysiodesis is the procedure useful in paediatric orthopaedics. It alters or stops bone growth at the growth plate of bone which is often used to treat limb length discrepancies.
- Guided growth surgery/ temporary hemi-epiphysiodesis is minimally invasive procedure used to correct angular deformities like bow legs or knock-knees in children by temporarily slowing growth on one side of the bone using plates or screws, allowing gradual straightening of limbs.

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METABOLIC JOINT DISORDERS- A BRIEF REVIEW

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METABOLIC JOINT DISORDER

Introduction

Metabolic joint disorders are classified into acquired and inherited.

Inherited disorders are caused by genetic defects affecting metabolism, while acquired metabolic disorders may include lifestyle factors or other conditions.¹

Inherited metabolic disorders are due to genetic defects that disrupt the body's ability to process certain substances and lead to joint problems.¹

- **Gaucher's disease**

It is an autosomal recessive disease and is very common lysosomal storage disease. It is caused by mutation in the GBA1 gene and leads to deficiency of beta glucocerebrosidase. An abnormal lipid accumulates in lysosomes of various organs.

- **Types**

- GD1- Gaucher's disease of childhood/adulthood- There is no neurological involvement.
- GD2- (Infancy) - With acute neuropathic features
- GD3- With presence of chronic neuropathic features. Which includes Pain in bones, osteoporosis and pathological features with vascular necrosis and deformities like kyphosis may be seen²

- **Fabry's disease**

This is an X-linked disorder that results from mutation in the alpha galactosidase gene. Clinical presentation of the disease- telangiectatic lesions on skin, corneal and lenticular opacities, hypohydrosis, acroparesthesia and small vessel disease of kidney, brain and heart.³

Metachromatic leukodystrophy

This is a lysosomal storage disease which is commonly listed under leukodystrophies as well as among the sphingolipidoses.

- **In the late infantile form-** The disease manifestations are seen after 15-24 months, affected children have difficulty in walking after first year of life. Symptoms include rigid muscles, weakness and muscle wasting, delay in development, convulsions, paralysis, loss of vision and dementia. Children may become comatose and may die if untreated.

- **Children with Juvenile form**- (between 3 and 10 years) - Symptoms include impaired school performance, deterioration at mental level, dementia and then similar symptoms like infantile form may develop but with slow progression.
- The adult form commonly begins after 16 years of age. The disease may manifest as psychiatric disorder or progressive dementia.⁴

- **Acquired metabolic disorders**

- Metabolic syndrome
- Osteoarthritis
- Hyperuricemia and gout

- **Other relevant consideration**

Osteoporosis(Decrease in the bone mineral density and bone mass)
Osteomalacia(Softening of bones)

- **Metabolic syndrome**

Metabolic syndrome is clustering of at least three of the following five medical conditions like non alcoholic fatty liver, Increase in blood sugar, increase in blood pressure, low level of serum high density lipoprotein and high serum triglycerides and in a women with polycystic ovarian syndrome. And is much more common in individuals who are obese.

- **Gout and Hyperuricemia**

Gout is an inflammatory response to mono sodium urate crystals formed secondary to hyperuricemia. The clinical manifestation are acute synovitis, chronic erosive and deforming arthritis, tophi, nephrolithiasis and interstitial nephritis.

- **Clinical features**

Gout can occur in four phases

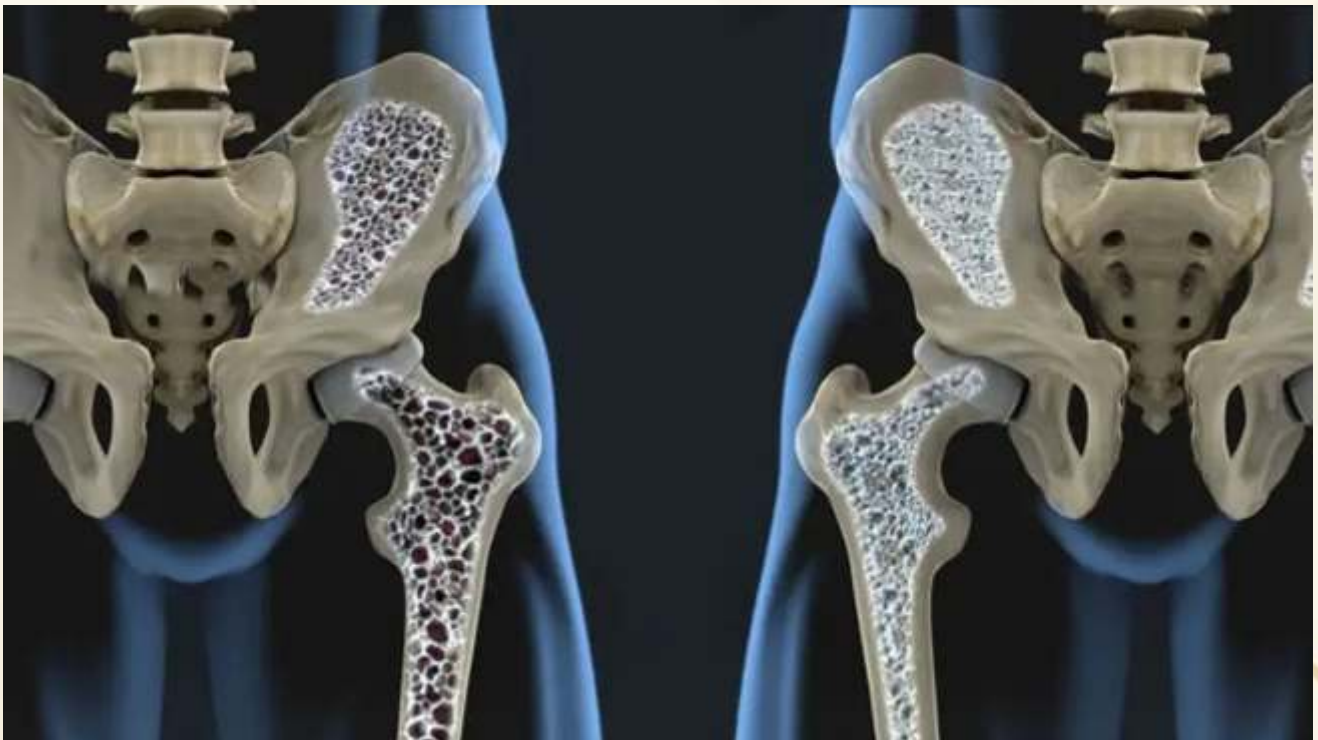
- a) Asymptomatic hyperuricemia- Incidental finding of hyperuricemia may never lead to gout. During acute stage of gout serum uric acid levels may not be elevated . And is generally asymptomatic but is capable of producing hypertension and vascular disease as a complication.
- b) Acute gouty arthritis – The first metatarsophalangeal joint (big toe) is the classic site for gout. The attack is acute. Clinical the symptoms start at night, joint and its surrounding area is swollen, hot, red, shiny and extremely painful and is associated with fever and chills. The symptoms may recover in one or two weeks if left untreated.
- c) Interstitial gout- In this type of gout second attack appears after many years or never occurs, after the first attack. The frequency of attacks and the number of sites gradually increases with time.
- d) Tophaceous gout (Chronic gout)- When there is uncontrolled increase in uric acid levels of long duration more than 10 years, there is a development of chronic form of gout. The tophi appear as firm, nodular and fusiform swellings. Mostly commonly the disease is located in great toe. The symptoms appear either early as 3 years or as late as 40 yrs after first attack.²

- a) Joint pain which is diffuse in nature
- b) Weakness in muscles causing difficulty in walking
- c) Reduced calcium levels
- d) Diminished Stature and compression of vertebrae
- e) Pelvis is flattened

f) Softening and Weakened bones causing and easy fracturing and bending of bones.⁶

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ROLE OF LIFESTYLE IN LOCOMOTOR DISORDERS A BRIEF REVIEW

AUTHORS

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KEY WORDS:

locomotor disorders, obesity, sedentary lifestyle. Arthritis, osteoporosis, gout, physical activities

INTRODUCTION:

Locomotor diseases encompass a wide range of musculoskeletal disorders that affect movement, including arthritis, osteoporosis, back pain and other joint or muscle-related conditions. These diseases significantly impact an individual's quality of life by limiting mobility, causing pain, and leading to disability if not managed properly.

Lifestyle factors, including physical activity, diet, weight management, smoking, alcohol consumption, sleep, and stress levels, play a crucial role in the prevention, development, and management of locomotor diseases. With an increasing prevalence of sedentary lifestyles, obesity, and unhealthy dietary habits, understanding the role of lifestyle modifications in maintaining musculoskeletal health is vital¹.

UNDERSTANDING LOCOMOTOR DISEASES:

Locomotor diseases involve disorders of bones, muscles, joints, ligaments and tendons, leading to restricted movement.

The most common locomotor diseases include:

1. **Osteoarthritis** – it's a degenerative joint disease causing pain and stiffness.
2. **Osteoporosis** – it's a condition where bones become weak and brittle.
3. **Rheumatoid Arthritis** – it's an autoimmune disease that affects the joints.
4. **Gout** – it's a form of arthritis caused by uric acid crystal buildup.
5. **Lower Back Pain** – it's often associated with poor posture, injury, or degeneration.
6. **Muscle Atrophy** – it's loss of muscle mass due to inactivity or disease.

These conditions are influenced by age, genetic predisposition, environmental factors, and lifestyle choices².

THE IMPACT OF LIFESTYLE ON LOCOMOTOR DISEASES

Lifestyle plays a crucial role in musculoskeletal health. Poor lifestyle choices can contribute to the onset and progression of locomotor diseases, whereas positive changes can help prevent and manage them effectively.

1. Physical Activity and Exercise

Regular exercise is essential for maintaining musculoskeletal health.

Benefits include:

- Strengthening bones and muscles
- Enhancing joint flexibility and reducing stiffness
- Preventing osteoporosis by improving bone density
- Reducing the risk of falls and fractures
- Managing pain in conditions like arthritis.

Sedentary Lifestyle Risks:

- Muscle atrophy and weakness
- Increased stiffness of joint
- Increased risk of osteoporosis and arthritis
- Chronic lower back pain.

Recommended exercises include

- weight-bearing exercises (such as- walking, jogging),
- yoga,
- resistance training and stretching exercises³.
- aerobic fitness training- can produce long term reduction in pain and disability⁴.

2. Nutrition and Bone Health

A well-balanced diet is crucial for preventing locomotor diseases.

Key nutrients include:

- Calcium- Essential for bone density.
Found in- dairy, leafy greens, and fortified foods.
- Vitamin D- it helps in calcium absorption.
Found in- Sunlight exposure, fatty fish, fortified foods.
- Protein- Supports muscle growth and repair.
Found in- lean meats, eggs, legumes.
- Omega-3 Fatty Acids- Reduces inflammation in joints.
Found in- fish, nuts, seeds.
- Magnesium and Zinc- Important for bone strength.
Found in- nuts, seeds, whole grains.

Poor nutrition can lead to weak bones, joint inflammation, and an increased risk of musculoskeletal disorders³.

3. Weight Management and Its Role in Joint Health

Excess body weight increases stress on weight-bearing joints, accelerating cartilage wear and contributing to:

- Osteoarthritis, particularly in knees and hips
- Chronic joint pain and stiffness
- Increased inflammation in musculoskeletal tissues
- Losing even a small amount of weight can significantly reduce joint pain and slow disease progression².

4. Smoking and Alcohol Consumption

- **Smoking:** It reduces blood flow to bones and muscles, increasing the risk of fractures and delaying healing. Smoking also contributes to osteoporosis and rheumatoid arthritis.

- **Alcohol:** Excessive consumption of alcohol interferes with calcium absorption, weakens bones, and exacerbates inflammation, increasing the likelihood of arthritis and muscle weakness³.

5. Sleep and Stress Management

- **Sleep:** Poor sleep quality has been linked to increased pain sensitivity and delayed musculoskeletal recovery. Chronic sleep deprivation can exacerbate arthritis symptoms and muscle pain.
- **Stress:** High stress levels trigger inflammation, worsen chronic pain conditions and contribute to muscle tension. Stress management techniques such as meditation, deep breathing and regular physical activity can help to reduce these effects².

PREVENTIVE AND THERAPEUTIC MEASURES:

Adopting a healthy lifestyle can prevent locomotor diseases and improve the quality of life for those already affected.

1. Lifestyle Modifications for Prevention

- **Regular Exercise** – Incorporate strength training, flexibility exercises, and low-impact activities.
- **Healthy Diet** – Consume calcium, vitamin D, and anti-inflammatory foods.
- **Weight Control** – Maintain a healthy weight to reduce joint stress.
- **Avoid Smoking and Limit Alcohol** – Protect bone and joint health.
- **Adequate Sleep and Stress Management** – Improve recovery and reduce inflammation³.

2. Rehabilitation and Medical Support

For individuals with locomotor diseases, additional interventions may be necessary:

- **Physical Therapy** – Helps maintain mobility and strength.
- **Medications** – Pain relievers, anti-inflammatory drugs, and supplements like glucosamine.
- **Surgical Interventions** – Joint replacements or corrective procedures for severe cases⁴.

Conclusion

Lifestyle choices significantly influence the onset, progression, and management of locomotor diseases. Regular physical activity, a nutrient-rich diet, maintaining a healthy weight, avoiding harmful habits, and managing stress can collectively promote musculoskeletal health.

By adopting a proactive approach and making informed lifestyle modifications, individuals can prevent locomotor diseases, alleviate symptoms, and improve overall well-being.

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A REVIEW ON THE ROLE OF PALLIATION IN LOCOMOTOR DISORDERS

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Dr Jayatheerth Kulkarni Assistant Professor, Forensic Medicine and Toxicology.

Introduction:

Locomotor disorders affect movement and mobility, including conditions like arthritis, muscular dystrophy, spinal cord injuries, and neurological diseases such as Parkinson's and multiple sclerosis. These disorders can cause long-term pain, reduced movement, and a lower quality of life. While some conditions cannot be cured, palliative care helps manage symptoms, provide comfort, and improve daily life¹

Understanding Palliative Care in Locomotor Disorders:

Palliative care focuses on symptom relief rather than curing diseases. It helps reduce pain, improve movement, and provide emotional and psychological support. Unlike end-of-life care, palliative care can be used alongside treatments aimed at improving function.²

Key Aspects of Palliative Care in Locomotor Disorders:

- **Pain Management**

Chronic pain is a major issue in locomotor disorders. Medications such as NSAIDs, opioids, and muscle relaxants help reduce pain. Other treatments include physiotherapy, acupuncture, and electrical nerve stimulation (TENS)³. Lifestyle changes, new techniques like regenerative medicine, and nerve blocks can also help⁴.

- **Improving Mobility**

Assistive devices like braces, walkers, and wheelchairs help maintain independence. Physiotherapy strengthens muscles and joints, while occupational therapy helps patients adjust to daily life⁵. New technology, like robotic exoskeletons and smart mobility aids, is improving movement for people with severe limitations⁶.

- **Psychological and Social Support**

Living with limited mobility can cause stress and depression. Counseling, support groups, and cognitive-behavioral therapy (CBT) can help patients cope⁷. Community involvement and peer mentorship programs improve emotional well-being and give hope to patients and their families⁸.

- **Nutrition and Diet**

A healthy diet supports musculoskeletal health. Anti-inflammatory foods, protein, vitamin D, and calcium help prevent further deterioration⁹. Nutrition counseling is crucial to avoid deficiencies that could worsen symptoms. Proper hydration and weight management are also important¹⁰.

- **Complementary Therapies**

Alternative treatments such as yoga, hydrotherapy, and meditation help with pain relief and relaxation¹¹. Homeopathy and herbal medicine may offer additional benefits when used alongside conventional treatments. These therapies should be evidence-based and part of a multidisciplinary plan.

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- **Interdisciplinary Care Team**

Effective palliative care requires a team approach. Physicians, physiotherapists, occupational therapists, nutritionists, psychologists, and social workers work together to create personalized care plans. Home-based care and community support services improve accessibility¹².

Emerging Trends in Palliative Care

- **Telemedicine and Remote Rehabilitation:** Virtual therapy and online consultations make care accessible to those with mobility challenges¹³.
- **Personalized Medicine:** Genetic research and biomarkers help tailor treatments to individuals¹⁴.
- **Regenerative Medicine:** Stem cell therapy and tissue engineering are being explored for restoring mobility¹⁵.

- **Wearable Technology:** Smart devices like motion sensors and biofeedback tools help track movement and customize therapy 16.
- **Holistic Approaches:** More healthcare systems now integrate conventional and complementary therapies for better patient outcomes 17.

Challenges and Future Directions

Despite progress, challenges remain in palliative care for locomotor disorders. Access to specialized care, financial constraints, and varying healthcare policies affect treatment availability. Awareness about the importance of palliative care in chronic musculoskeletal disorders needs improvement 1.

Future efforts should focus on:

- Expanding access to multidisciplinary palliative care worldwide.
- Encouraging patient-centered and culturally sensitive care.
- Strengthening research on innovative therapies.
- Advocating for policies that support long-term palliative care integration.

Conclusion:

Palliative care is crucial in managing locomotor disorders, reducing pain, and improving mobility and mental health. Combining medical treatments with holistic approaches ensures comprehensive care. As technology and research advance, palliative care will continue evolving to offer better support and improved quality of life for patients with movement disorders 16.

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OVERVIEW OF LOCOMOTOR CONDITIONS WITH HOMOEOPATHIC THERAPEUTICS

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THERAPEUTICS

Locomotor diseases encompass a wide range of disorders affecting the muscles, bones, and joints. Common conditions include arthritis, back pain, and soft tissue injuries, all of which significantly impact global disability rates and quality of life. Conventional treatments such as medication, physical therapy, and surgery, while effective, have limitations. Homeopathy offers a holistic approach that helps alleviate pain and improve overall well-being in individuals with locomotor disorders.⁴

Overall, various studies indicate the potential of homeopathy in managing locomotor disorders. However, further large-scale trials are necessary to validate these findings and explore its effectiveness in broader rheumatic conditions.⁴

ACTAEA SPICATA

This remedy is effective for rheumatic conditions, especially targeting small and wrist joints. It has successfully treated wrist rheumatism. Symptoms include tearing pain in the lower back, with a primary focus on the right arm and wrist. There are also rheumatic pains in the fingers, ankles, and toes. The pain is intense, tearing, and pulling, worsening with touch or movement. A notable symptom is joint swelling caused by minor exertion. The wrist appears swollen and red, with increased discomfort upon movement.^{1,2,4}

AGARICUS MUSCARIUS

Key indications for this remedy include jerking, twitching, trembling, and itching. There is pain with spinal sensitivity to touch, particularly in the dorsal region. Lumbago worsens in open air, and the patient may experience a stiff back and hip pain. Rheumatic symptoms improve with movement. Weakness in the lower back, unstable gait, cramps in the soles of the feet, and pain in the shinbone are also present. Neuralgia in locomotor ataxia, lower limb paralysis with arm spasms, leg numbness when crossed, and paralytic pain in the left arm are common. Painful muscle contractions occur in the calves, and symptoms appear diagonally, affecting the right arm and left leg.^{1,2,4}

ARNICA MONTANA

This remedy is particularly effective in cases where an injury, even one from the distant past, has contributed to the current condition. It is suitable for issues arising after trauma, overuse of an organ, or physical strains. It is associated with cerebral congestion and acts as a muscular tonic. It is also helpful in emotional traumas like grief, remorse, or financial loss. Symptoms include body and limb aches resembling bruises, sprained joints, and a sensation of the bed being too hard. It has a noticeable impact on the blood and venous system, leading to stasis, ecchymosis, haemorrhages, and relaxed blood vessels with black-and-blue marks. There is a predisposition to bleeding, low-grade fevers, tissue degeneration, and septic conditions with slow-maturing.^{1,2,4}

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BELLIS PERENNIS

This remedy is beneficial for sprains and bruises, particularly for deep tissue injuries after major surgeries. It influences the muscular fibers of blood vessels, leading to significant muscular soreness and a feeling of lameness, as if from a sprain. Post-gout limb weakness and sore joints with muscular discomfort are common. Itching occurs on the back and inner thighs. Pain radiates along the front of the thighs, and the wrist may feel constricted, as if bound by an elastic band. This sensation also occurs in sprains, accompanied by extreme soreness. It is useful for conditions like "railway spine."^{1,2,4}

BRYONIA ALBA

Pain associated with this remedy is typically stitching or tearing and worsens with movement. There is painful neck stiffness, along with rheumatic stiffness and tightness in the nape of the neck. The lower back experiences stitches and stiffness. Knees become stiff and painful, while the feet may swell with heat. Joints appear red, swollen, and hot, with stitching and tearing pains that worsen with the slightest motion. Pressure causes pain at every point. There is constant movement of the left arm and leg, and stitching pains affect the shoulder and arm joints. The arm swells around the elbow, and the elbow and hand joints also become swollen. The wrist feels dislocated when moved. The hip joint may crack or dislocate while walking.^{1,2,4}

CAUSTICUM

Primarily acts on chronic rheumatic, arthritic, and paralytic conditions, characterized by tearing and pulling pain in muscles and fibrous tissues, along with joint deformities and progressive muscle weakness. It leads to tendon contractures, stiffness between the shoulders, and dull pain in the nape of the neck. Symptoms may include left-sided sciatica with numbness, localized paralysis, and dull, tearing pain in the hands and arms. There is a sensation of heaviness and weakness, instability in the forearm and hand muscles, numbness, and loss of sensation in the hands. Weak ankles make walking painful, and rheumatic pain in the limbs improves with warmth, particularly in bed. Other signs include burning joint pain, slow development in walking, unsteady gait with frequent falls, restless legs at night, knee cracking and tension, and stiffness in the knee hollow.^{1,2,4}

CIMICIFUGA RACEMOSA (ACTAEA RACEMOSA)

The upper spine is highly sensitive, accompanied by stiffness and muscle tightness in the neck and back. There is intercostal discomfort and rheumatic pain affecting the muscles in these areas. Pain extends to the lumbar and sacral regions, radiating down the thighs and hips. A crick in the back is present, alongside a restless sensation in the limbs. The muscles and joints experience aching and soreness, particularly in larger muscle groups. Rheumatic symptoms are linked to muscle bellies, resulting in weakness, trembling, and spasmodic muscle actions. Choreic movements often occur in conjunction with these rheumatic conditions, with jerking in the limbs and stiffness in the Achilles tendon. The lower extremities feel heavy, with aching and tenseness. The joints are affected by rheumatic pain, causing heat and swelling. Writing becomes difficult due to finger tremors, and walking is challenging due to limb trembling. Restlessness persists due to uneasiness in the limbs.^{1,2,4}

COLCHICUM AUTUMNALE

This remedy prominently affects the muscular tissues, periosteum, and synovial membranes of the joints. It is particularly effective in alleviating gouty paroxysms and is more beneficial for chronic conditions of these areas. Symptoms include redness, heat, swelling, and tearing pain, which worsen in the evening, at night, or with touch. Stubbing the toes causes intense discomfort. There is marked prostration, internal coldness, and a tendency to collapse. Other effects include exhaustion from night-watching or intense study, with electric shock-like sensations through one side of the body. Suppressed perspiration can cause adverse outcomes, and sharp pain may radiate down the left arm. Warm weather brings tearing pain in the limbs, while cold weather triggers stinging sensations. Pins-and-needles feelings affect the hands and wrists, with numbness at the fingertips. Pain occurs in the front of the thigh, and the right plantar reflex is absent. Limbs feel lame, weak, and tingly, with symptoms worsening in the evening or warm weather. Joints are stiff, feverish, and affected by shifting rheumatism, with pain worsening at night. Inflammation impacts the great toe and heel, making them extremely sensitive to touch or movement. The fingernails experience tingling. Weakness causes knees to knock together, making walking difficult. Legs and feet exhibit oedematous swelling and coldness.^{1,2,4}

CUPRUM METALLICUM

Is effective in treating spasms, cramps, and convulsions that begin in the fingers and toes. It is particularly beneficial for conditions involving violent, intermittent, and contractive pain, as well as tonic and clonic seizures, convulsions, and epilepsy. Symptoms include muscle twitching and jerking, cramps in the palms, extreme limb fatigue, and spasms in the calves and soles. Clonic spasms often start in the fingers and toes.^{1,2,4}

EUPATORIUM PERFOLIATUM

Also known as "Bone-set," is recognized for its effectiveness in alleviating deep-seated limb and muscle pain associated with certain febrile conditions. Symptoms include severe aching in the back and bones of the extremities, tenderness in the flesh, pain in the arms and wrists, swelling of the left great toe, and gouty soreness with inflamed joint nodules, often accompanied by headaches. There is also a pounding pain in the nape and occiput, which improves after getting up, as well as bruised-like back pain, weakness in the lower back, trembling in the back during fever, and intense soreness and aching in the limbs, as if they have been beaten or bruised.^{1,2,4}

KALIUM IODATUM

Primarily affects fibrous and connective tissues. Useful for rheumatism in the neck, back, feet—especially heels and soles—worsened by cold and damp conditions. Causes severe bone pain, thickened periosteum (notably the sensitive tibia), and night-time rheumatic pain. Leads to joint contractions, knee effusion, lower back and coccyx pain, and a limping gait due to hip discomfort. Sciatica worsens at night and when lying on the affected side. Sitting causes a crawling sensation in the lower limbs, which improves when lying down.^{1,2,4}

KALMIA LATIFOLIA

Effective for rapidly shifting rheumatic pains. Affects the upper spine, extending pain to the shoulder blades and down the arms. Causes severe back pain, localized spinal pain, and deltoid rheumatism, especially on the right side. Pain extends from hips to knees and feet, often covering large areas or multiple joints. Symptoms include weakness, numbness, tingling, and cold sensations in the limbs. Associated with ulnar nerve pain and index finger discomfort. Joints become red, hot, swollen, with numbness and tingling in the left arm.^{1,2,4}

LEDUM PALUSTRE

This remedy is particularly suited for individuals with a rheumatic constitution, addressing the entire progression from functional pain to altered secretions and the deposition of solid, earthy matter in tissues. Rheumatic symptoms typically begin in the feet and travel upward. It also affects the skin, causing eruptions similar to Poison Oak, for which it serves as an antidote, as well as for insect stings. There is a noticeable lack of natural body heat, yet the heat of the bed is intolerable. It is effective for puncture wounds caused by sharp instruments or bites, especially when the affected area feels cold. It is indicated for tetanus accompanied by muscle twitching near the wound. Gouty pain radiates throughout the foot, limbs, and joints, especially smaller joints, causing swelling, heat, and paleness. Symptoms include a throbbing sensation in the right shoulder, pressure that worsens with motion, and cracking joints, which are aggravated by bed warmth. It is associated with gouty nodules and swelling at the ball of the great toe. Rheumatic symptoms often start in the lower limbs and progress upward. There is ankle swelling, painful soles that make walking difficult, and a tendency for ankles to sprain easily.^{1,2,4}

LITHIUM CARBONICUM

Causes paralytic stiffness and joint itching. Induces rheumatic pain in shoulders, arms, fingers, and small joints. Foot pain extends to the knee, with swelling and tenderness in finger and toe joints, relieved by hot water. Forms nodular swellings in joints and ankle pain while walking. Creates a sensation of soreness in bones, joints, and muscles, as if beaten.^{1,2,4}

LYCOPodium CLAVATUM

There is a burning sensation between the shoulder blades, resembling hot coals, along with pain in the lower back. Symptoms include numbness and tearing or drawing pain in the limbs, particularly during rest or night time. The arms feel heavy, and the shoulder and elbow joints experience tearing pain. Temperature imbalances in the feet occur, with one foot hot and the other cold. Chronic gout leads to chalky deposits in the joints, while excessive sweating affects the feet. Pain in the heel feels like stepping on a pebble, and callosities on the soles are painful, with contraction of toes and fingers. Sciatica is predominant on the right side, making lying on the affected side difficult. Numbness in the hands and feet persists, with temperature differences between the right foot (hot) and the left (cold). Night time cramps affect the calves and toes, while limbs may go numb or experience twitching and jerking. There is tension and contraction extending from the nape of the neck to the base of the skull, accompanied by neck stiffness, occasionally triggered by lifting heavy objects.^{1,2,4}

MEDORRHINUM

A significant remedy for chronic rheumatism. Causes back pain with burning heat, heavy legs aching through the night, and restless limbs. Leads to weak ankles prone to twisting, burning in hands and feet, enlarged finger joints, and gouty deposits. Heels and soles become tender. Patients experience sharp shoulder pain worsening with movement and darting pain when still. Legs feel heavy, walking becomes difficult, and numbness extends from knee to hip in the left leg. Thunderstorms aggravate knee pain, which moves upward. Symptoms worsen when relaxing, such as when trying to sleep. Trembling in legs occurs from the knees down.^{1,2,4}

MERCURIUS SOLUBILIS

This powerful remedy impacts nearly every organ and tissue, transforming healthy cells into inflamed or necrotic ones and decomposing the blood, leading to severe anaemia. When used homoeopathically and guided by its clear symptoms, this destructive force can be harnessed for life-saving purposes. It primarily affects the lymphatic system, as well as membranes, glands, internal organs, and bones. There is bruised pain in the lower back, especially when sitting, and tearing pain in the coccyx, relieved by pressing on the abdomen. The limbs feel weak, with bone pain that worsens at night. The patient is highly sensitive to cold and experiences oily perspiration. The extremities tremble, particularly the hands, and conditions like paralysis agitans may occur. Joints suffer lacerating pain, and cold, clammy sweat is prominent at night, along with dropsical swelling in the feet and legs. There is burning and drawing pain in the back and nape of the neck, accompanied by rigidity and rheumatic swelling in these areas. Muscles in the neck experience shooting pains, while glands in the neck become swollen and inflamed, causing shooting and pressive pain. In the loins, there is shooting pain, weakness, and instability. The sacrum, back, and shoulder blades feel bruised, with sharp rheumatic pains in the shoulders and arms, mostly at night or during movement. Jerking is present in the arms and fingers, with hot, red arthritic swelling from the elbow to the hand. Hand tremors and weakness make tasks like feeding or dressing difficult. Cracking and a sensation of paralysis in the hands are present, with cramp-like contractions and swelling in the finger joints. The wrists are rigid and swollen, with stiffness in the right wrist joint. Sharp rheumatic pain affects the hip joints, thighs, and knees, worsening at night or with movement, often with cold sensations in the affected areas. Pulsating pain may

indicate the beginning of suppuration. There is drawing pain in the tibia, along with significant weakness, heaviness, and weariness in the thighs and legs. Knees feel weak and unstable, making standing difficult. Thighs feel rigid, torpid, and cramp-prone, while legs may swell due to dropsy. The hamstrings feel tense, as though the tendons are shortened. Skin eruptions, such as itching miliary rashes or tetters, occur on the legs and thighs. Cramps affect the legs, calves, and toes, while swelling, sharp pain, and wrenching sensations occur in the feet, particularly in the instep, heels, and metatarsal bones. Feet are cold and sweaty, with painful toe swelling.^{1,2,4}

ONOSMODIUM VIRGINIANUM

Characterized by back pain, fatigue, and numbness in the legs, particularly behind the knees. Causes a staggering gait, as if the sidewalk is too high, leading to exaggerated steps. Leads to left scapular pain, severe muscle weakness, and weariness in legs, knees, hands, arms, and shoulders. Causes an overall sense of instability while walking.^{1,2,4}

RHODODENDRON FERRUGINEUM

A well-known remedy for rheumatic and gouty conditions, particularly in hot weather. Symptoms worsen before storms. Causes joint swelling, gouty inflammation of the big toe, and tearing pain in limbs—especially on the right side—that worsens with rest and stormy weather. Neck stiffness and shoulder pain are common. Pain appears in bones, shifting with weather changes. Patients struggle to sleep unless their legs are crossed. Rheumatic and arthritic pains feel like periosteal inflammation, with redness, swelling, and wrenching joint pain. Particularly affects smaller joints and ligaments, causing tingling, weakness, and stiffness.^{1,2,4}

RHUS TOXICODENDRON

Acts on fibrous tissues—joints, tendons, and aponeuroses—causing pain and stiffness. Useful for post-operative complications. Characterized by tearing pain, stiffness in the lower back that improves with motion or firm support, and worsening when sitting. Causes a stiff neck, swollen joints, and pain in tendons, ligaments, and fascia. Rheumatic pain spreads across large areas, particularly the neck, lower back, and limbs, improving with movement. Patients experience soreness at bone condyles, limb stiffness, and sensitivity to cold air. Sciatica worsens in cold, damp weather and at night. Leads to numbness, tingling, paralysis-like weakness, trembling after exertion, and loss of power in the forearms and fingers.^{1,2,4}

RUTA GRAVEOLENS

It primarily affects the periosteum, cartilage, eyes, and uterus. There are issues related to straining of flexor tendons, with a tendency for deposits to form in the periosteum, tendons, and joints, especially around the wrist. Problems arise from overexertion of the ocular muscles. The body feels generally painful, as if bruised. Sprains can lead to lameness and lingering pain. There's jaundice, accompanied by intense fatigue, weakness, and feelings of despair. Bones feel injured and bruised, with the spine and limbs experiencing similar sensations. Pain affects the lower back and loins, and legs feel weak and give way when rising from a chair, causing hips and thighs to feel fragile. There is stiffness and pain in the wrists and hands, and contraction of the fingers. Ganglia may develop. Sciatica worsens when lying down at night, with pain radiating from the back down through the hips and thighs. The hamstrings feel tight and sore, and there is aching in the Achilles tendon. Stretching the limbs causes pain in the thighs, and there are aches in the bones of the feet and ankles. Lastly, there's significant restlessness.^{1,2,4}

OSTEO-ARTHRITIC NOSODE

Research has shown its effectiveness in treating osteoarthritis. Causes swelling and pain in the right wrist, shoulder, and forearm, with occasional redness. Induces muscular pain in the right hip and pain in the Achilles tendon. Symptoms worsen with initial movement but improve with continued motion. General aggravations occur at night and with first movements, while prolonged activity brings relief.^{3,4}

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A COMPREHENSIVE REVIEW ON THE MIASMATIC APPROACH OF JOINT DISEASES

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INTRODUCTION:

Dr. Samuel Hahnemann discovered the theory of chronic disease after 12 years of progressive study into his cases and observations which he described as Miasms- obstacles to cure. Dr. Samuel Hahnemann's classification of miasms includes psora, sycosis, syphilis.

Psora is the chief fundamental cause of all the chronic diseases which relates to functional disturbances of non-venereal character. In joint disorders, typically psora has a varied presentation:

- Joint pains aggravation morning, forenoon, evening, open air
- Alternating with colic, pain in forehead, uterine hemorrhage
- Contraction of joints
- Stiffness of joints agg morning, evening
- Trembling of joints of upper limbs during convulsion
- Twitching of joints
- Weakness of joints in the morning, forenoon, movement, walking, after diarrhea

Sycosis, a venereal miasmatic disease relating to extra growth disturbances after the suppression of gonorrhea. This undoubtedly contributes to irreversible pathological conditions like hyperplasia, hypertrophy, tumor formation, ostentation and excess. The sycotic presentation of joint disorders is primarily characterized by outgrowth of bone tissue – example: osteophytes formation in osteoarthritis. The varied presentation of sycosis in joint disorders is as follows:

- Pains agg, damp cold weather,
- Gouty rheumatism of joints alternating with asthma, pain in forehead, in debilitating men
- Rheumatic joint pain after suppressed gonorrhea and ascending type
- Arthritic nodosities which are painful and agg on motion
- Stiffness of joint agg heat, lying down, numbness, after sleep
- Trembling of joints of hands along with brights disease
- Weakness of joints of lower during fever and menses

Syphilis, a venereal miasm resulting after the suppression of a chancre, primarily symbolized as destruction or degeneration. This miasm typically presents with irreversible pathological changes: ulcer, malignancies, congenital malformations. The syphilitic presentation of joint disorders is as follows:

- pain agg, night, warmth of bed, neuralgic pain,
- gangrenous abscess in the joints of the upper limbs.

Miasms and common joint disorders

1. DEGENERATIVE DISEASES OF JOINT (osteoarthritis, spondylosis, osteoporosis)

Osteoarthritis is the most common form of chronic disorder of synovial joints. It is characterized by progressive degenerative changes in the articular cartilages over the years, particularly in weight bearing joints.

Types:

- Primary osteoarthritis
- Secondary osteoarthritis- due to trauma



Clinical Presentation:

- Pain due to synovitis- PSORA
- Morning stiffness- SYCOSIS
- Diminished mobility- SYPHILIS
- Pain which aggravates on movement- PSORA
- Nodules formation- Heber den's nodes- SYCOSIS

Over all osteoarthritis presents to be a – sycosyphilitic disease

2. RHEUMATOID ARTHRITIS (autoimmune disorders of the joints)

Rheumatoid arthritis is a common chronic, systemic disease and a systemic inflammatory polyarthritis with extra-articular involvement

• Pathological changes:

Autoimmune disorder – SYPHILIS

ARTICULAR LESIONS

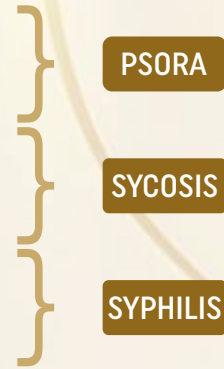
- Formation of articular lesions in the small joints- SYCOSIS
- Marked thickening of the synovial membrane due to edema, congestion
- Intense inflammatory cell infiltrate in synovial membrane
- Foci of fibrinoid necrosis and fibrin deposition

• EXTRAARTICULAR LESIONS

- Rheumatoid nodule found in subcutaneous tissue over pressure points- SYCOSIS
- The nodule centrally consists of fibrinoid necrosis and cellular debris- SYPHILIS

Clinical presentation:

- Neuralgic pain is usually relived by quiet, rest and warmth.
- Worse by motion
- Numbness of extremities with tingling
- Stiffness and soreness especially lameness in joints
- Infiltration of inflammatory deposits
- Its produced violent palpitations with beating of the body
- Pain worse by approach of a storm, damp, humid atmosphere
- Stitching, shooting, lancinating pains worse at night
- Infiltration of inflammatory deposits which are permanent



3. GOUT

Gout is a disorder of purine metabolism manifested by increased serum uric acid concentration and recurrent attacks of acute arthritis.

Pathological Changes:

- Acute gouty arthritis – characterized by acute synovitis with precipitation of needle shaped monosodium urate crystals – PSOROSYCOTIC
- Chronic tophaceous arthritis – recurrent attacks of acute gouty arthritis with deposits of urate- SYCOSIS
- Tophi in soft tissue- a tophus is a mass of urate located in per articular tissues and subcutaneous tissues. They are surrounded by inflammatory reaction- SYCOSIS
- Renal lesions- like acute urate nephropathy, chronic urate nephropathy, uric acid nephrolithiasis- SYCOSYPHILIS

Clinical presentation:

- Acute exacerbation of the chronic disease – PSOROSYCOTIC
- Rapid onset reaching maximum severity in 2 to 6 hours and often waking the patient in the early morning
- Severe pain often described as worse pain ever
- Extreme tenderness such that the patient is unable to wear a sock
- Marked swelling with overlying red shiny skin

Chronic

- Painful tophi, with chronic kidney disease- SYCOSIS

4. JOINT AND BONE TUMORS (osteosarcoma, chondrosarcoma, Ewing's sarcoma, metastatic bone disease)- SYCOSYPHILITIC

Osteosarcoma is the most common malignant tumor of the bone characterized by formation of osteoid or bone or both directly by sarcoma cells

Pathological Changes

- Sarcoma cells- are undifferentiated mesenchymal stromal cells with marked pleomorphism and polymorphism – SYCOSIS
- They show hyperchromatism and atypical mitosis

Clinical Presentation

- Symptom of bone pain particularly with activity
- Pain and swelling at the local site- usually at the growing ends of long bones
- A palpable tender mass – SYCOSIS

- Decreased range of motion of adjacent joint with possible effusion
- Pain of weight bearing.
- Local or regional lymphadenopathy

CONCLUSION:

irrespective of the type of the disease, the miasm under which it classifies solely depends upon the stage of the disease, ailments from, presentation, mental disposition of the individual. A thorough study of these components will help us to arrive at the appropriate obstacle to cure.

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A REVIEW ON THE GENERAL CARE OF JOINTS

Athours:

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Introduction

An active lifestyle and continued mobility depend on healthy joints. In addition to preventing diseases like arthritis, proper joint care improves general health, particularly as we age. Here are some doable suggestions to help you maintain the functionality and health of your joints in daily life.

Inadequate joint care can cause pain, discomfort, and decreased mobility over time. The deterioration of cartilage in joints leads to conditions such as osteoarthritis, one of the most prevalent joint illnesses. This might make it difficult to move freely by causing discomfort, edema, and stiffness. By putting joint health first via appropriate maintenance, you may postpone or stop the development of these disorders, keeping your joints flexible and powerful.

decreased mobility over time. The deterioration of cartilage in joints leads to conditions such as osteoarthritis, one of the most prevalent joint illnesses. This might make it difficult to move freely by causing discomfort, edema, and stiffness. By putting joint health first via appropriate maintenance, you may postpone or stop the development of these disorders, keeping your joints flexible and powerful.



How to keep your joints Healthy ?

Maintaining your joints requires a lifetime of dedication..You may maintain the strength and flexibility of your joints by changing your lifestyle and forming healthy habits.

Here are some tips to maintain the joints health

1. Keep your weight in check

Carrying too much weight strains your joints, especially weight-bearing joints like the lower back, hips, and knees. Your chance of developing joint-related disorders like osteoarthritis can be decreased by dramatically reducing the load on your joints through weight loss or maintenance.

2. Continue to Be Active-for healthy joints, regular exercise is essential. Exercise increases flexibility, strengthens the muscles around your joints, and supports healthy joint function in general.

3. Maintain Proper Posture

Misalignment and increased joint tension can result from poor posture. Maintaining excellent posture whether standing, sitting, or lifting guarantees that your joints are supported appropriately. Long-term joint discomfort or damage is less likely as a result.

4. Consistently Stretch

You may increase joint range of motion and flexibility by including stretching exercises in your everyday regimen. By maintaining the flexibility of the muscles and tissues around the joints, stretching helps to improve mobility and avoid stiffness.

5. Adopt a Diet That is Good for Joints

Joint health can be supported by a well-balanced diet high in minerals like calcium, vitamin D, and omega-3 fatty acids. Leafy greens, salmon, nuts, and seeds are among the foods that help lower inflammation and maintain healthy bones, all of which are essential for supporting joints.

6. Power Up Your Core

Stronger abs and back muscles help your balance. That means you're less likely to fall or get injured. Add core (abdominal, back, and hip) strengthening exercises to your routine. Pilates and yoga are great workouts to try.

7. Quit smoking right away

'Smoking is harmful to your overall health' is a well-known fact that can't be denied. This harm includes affecting your bones and joints which play a major role in the movement of your body. Smoking lowers bone density, increases the likelihood of fractures, and interferes with bone repair. Quitting smoking improves bone health and lowers the chance of joint disorders.

8. Limit alcohol intake

Alcohol can harm bone and joint health in many ways. It might cause problems with calcium and vitamin D absorption, both of which are necessary for bone health. Alcohol can also harm the cells that form new bone, increasing the risk of fractures. Furthermore, drinking can contribute to inflammation, which may increase pain in the joints. For these reasons, it is generally advised that alcohol be used in moderation for optimal bone and joint health.

8. Get adequate sleep

Sleep is critical for overall wellness and also encounters a major role in bone and joint function. During sleep, the body generates hormones that aid in bone formation and repair. Furthermore, sleep aids in the reduction of inflammation, which can harm bones and joints. When you don't get enough sleep, your body's inflammatory markers rise. These markers can cause bone and joint degeneration, as well as worsen pain. Finally, sleep aids in the regulation of the body's metabolism. When you are sleep-deprived, your metabolism slows down. This might result in weight gain, which puts additional strain on your bones and joints.

9. Using the wrong muscles for certain jobs

You should inherit smart techniques when carrying something heavy or doing any kind of heavy task. When you put too much strain on little muscles, your joints pay the price. For example, if you need to open a heavy door, use your shoulder instead of your fingers.



Bend your knees and push up with your strong leg muscles while lifting something off the floor. When carrying something, keep it close to you in the palms of your hands to avoid stressing your fingers.

10. Take additional supplements

Apart from Calcium and Vitamin D mentioned above, there are some other supplements you can take to maintain healthy bones and joints. To proceed with this, it's always advisable to get a consultation from your doctor in the first place.

- **Vitamin K2**

Vitamin K2 helps deliver calcium to the bone. Vitamin K2 deficiency can lead to low bone density and increase your risk of a fracture.

- **Magnesium**

Magnesium helps your body use Vitamin D and Calcium. Magnesium deficiencies may contribute to osteoporosis. Adequate magnesium levels can reduce the risk of fractures and promote healing.

- **Collagen**

Collagen is an essential protein that plays a role in everything from skin structure to blood clotting to bone health. Hydrolyzed Collagen can boost bone density and assist in osteoporosis.

When to Get Joint Pain Help

It's critical to get medical help if you have chronic joint pain, swelling, or stiffness that prevents you from going about your everyday activities. Joint issues can be identified and treated early on to prevent worsening of the condition. Our experts offer complete joint health care, which includes joint-related disease diagnosis, treatment, and rehabilitation.

An active, pain-free existence is based on healthy joints. You may guard against sickness and injury to your joints by adopting preventative measures including keeping a healthy weight, exercising, and maintaining proper posture. Making joint health a priority now will guarantee that you have more strength, mobility, and freedom for many years to come.

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A REVIEW ON THE REPERTORIAL APPROACH TO LOCOMOTOR DISORDERS

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Locomotor disorders are conditions that affect the muscles, bones, and joints, making it difficult to move. They can include arthritis, osteoporosis, and muscle injuries.

Common locomotor disorders

- **Arthritis:** Joint inflammation
- **Osteoporosis:** Bones lose calcium and become less dense, more likely to break
- **Bone fractures:** Can be caused by accidents or falls
- **Back and neck pain:** Can be caused by a number of conditions
- **Tendonitis:** A mechanical injury that can occur due to overuse
- **Muscle or ligament strains:** Mechanical injuries that can occur due to overuse

Other locomotor disorders Myasthenia gravis, Muscular dystrophy, Cerebral palsy, and Spondylosis.

Risk factors

- Aging
- Family history
- Certain medical conditions
- Taking certain medications
- Excessive alcohol consumption
- Illegal drug use
- Vitamin deficiencies

Symptoms of locomotor disorders include pain, stiffness, weakness, joint noises, and difficulty moving.

Other symptoms include:

- **Limited range of motion:** Inflammation, swelling, and fluid accumulation in joints can restrict movement.
- **Malalignment:** Misalignment of bones, joints, or muscles.
- **Impaired balance:** Difficulty maintaining balance.
- **Difficulty walking:** Difficulty walking due to pain, stiffness, or other symptoms.
- **Numbness and tingling:** Pain that radiates along a nerve, often accompanied by tingling or numbness.
- **Weakness:** True weakness means that full effort doesn't generate normal muscle contractions.

Homoeopathy can bring great relief in symptoms of locomotor disorders. Homoeopathic treatment offers a balanced approach to wellness through constitutional treatment and with minimum side effects. Repertory proves to be of great help in finding the most suitable remedy for any locomotor disorders. Starting from the basic repertories like Kent, BTPB and BBCR and even modern repertories like Complete repertory, synthesis, Murphy's Repertory etc has vast collection of locomotor related rubrics and plenty of proved and reprovved remedies included in the repertory literature. Following are some examples of the same.

SL. NO	Section	Rubric	Name of the Repertory
1.	Extremities	Bones: Marrow Condyles Periosteum Joints Alternating with skin complaints Ankylosis, with spurious Pain Pain:Walking:While Pain:Warmth:Agg Weather:Cold:Agg Weather:Warm:Agg Weakness Weakness:Back strain, after Back: Cervical region Coccyx Dorsal region Lumbar region: Spine, vertebrae Pain: Sciatica, sciatic nerve Pain:Sciatica, sciatic nerve:Alternating:Numbness, with Pain:Sciatica, sciatic nerve:Left:Standing, after long Pain:Sciatica, sciatic nerve:Left:Extending to:Toes, tips of	Complete
2.	Bones	Bones, general, (see Periosteum) Condyles Fine, bones Epiphyses Hollow, bones especially Idiopathic, bone complaints Long, bones, curved Porous, bones, complaints of Sutures, or symphysis, complaints of Broken, bones, (see Fractures) Blunt, instruments, from, bones bare or crushed and splintered Broken, down, easily, by probe Bone, spurs, (see Exostoses, Tumors) Cheek bones, right Face Head	Murphy's Repertory

SL. NO	Section	Rubric	Name of the Repertory
2.	Bones	Jaw, lower Brittle, bones Fractured, often bones:Sensation, of Bones-Cancer, bones Bones-Swelling, bones Interstitial distension Nodes:Painful, syphilitic Swelling, bones:Osteophyte LAMENESS, back Cold, from taking Childbirth, after difficult Muscles-Tendonitis Tendons, general:Feel, as if being pulled out Tendons, general:Falls, contusions or injuries Tone, loss of muscle:Movement, with dread of Clinical-Osteitis deformans, Paget's disease Osteogenesis, imperfecta Osteomalacia, bones, softening of Osteoporosis, brittle bones Osteoporosis, brittle bones Pain, nerves, along the:Paralytic weakness and trembling, with Paralysis, agitans, (See Parkinson's Disease)	Murphy's Repertory
3.	Extremities Extremities pain Generalities	Numbness (see tingling) Numbness (see tingling):Lying,while Numbness (see tingling):Night:Waking,on Nodules:Forearm Nodules:Lower limbs Swelling:Joints: Exertion,after Swelling:Joints:Oedematous Swelling:Upper limbs:Lymphatic Swelling:Upper limbs:Painful Swelling:Upper limbs:Painless Stiffness:	Kent's Repertory

SL. NO	Section	Rubric	Name of the Repertory
3.	Extremities Extremities pain Generalities	Convulsion,during Exertion,after Stiffness:Paralytic Weakness: Paralytic Periodic Standing,while Rheumatic Paralysis: Hemiplegia:Right Hemiplegia:Left Hemiplegia:Mental shock,after Paralysis:Old people Trembling: Anger,after Trembling:Paralyzed parts Pain: Morning:Waking,on Pain:Changes of the weather Pain:Joints:Cold:After exposure to Pain:Joints:Exertion,after Pain:Joints:Gouty Caries of bone: Joints Callosities,horny: On hands: With deep cracks Pain: Paralyzed parts Pain: Periosteum Pain:Burning: Bones: Menses, during	Kent's Repertory
4.	Locomotor System	Back:Bent, arch-like, opisthotonos Pains, in general:Between scapulae Body:Bruised, sore feeling, all over Coccyx:Pain (Coccygodynia) Pain (Coccygodynia):Bruised:Injury from Extremities:Lameness, stiffness Extremities:Pain:Bone-pains Extremities:Pain:Neuralgic, lancinating, tearing, shooting	Boericke's Repertory

SL. NO	Section	Rubric	Name of the Repertory
3.	Extremities Extremities pain Generalities	Pain, neuralgia, in general:Aching Pain, neuralgia, in general:Bruised, soreness Bones:Fracture (See Brittle):Often Growth defective Bones:Marrow:Pain in Bones:Ossification slow Bones:Periosteum:Inflammation Bones:Tuberculosis of	Phatak's Repertory

References:

1. Kent's Repertory of the Homoeopathic Materia Medica
2. Complete Repertory
3. Murphy's Repertory
4. Boericke's Repertory
5. Phatak's Repertory

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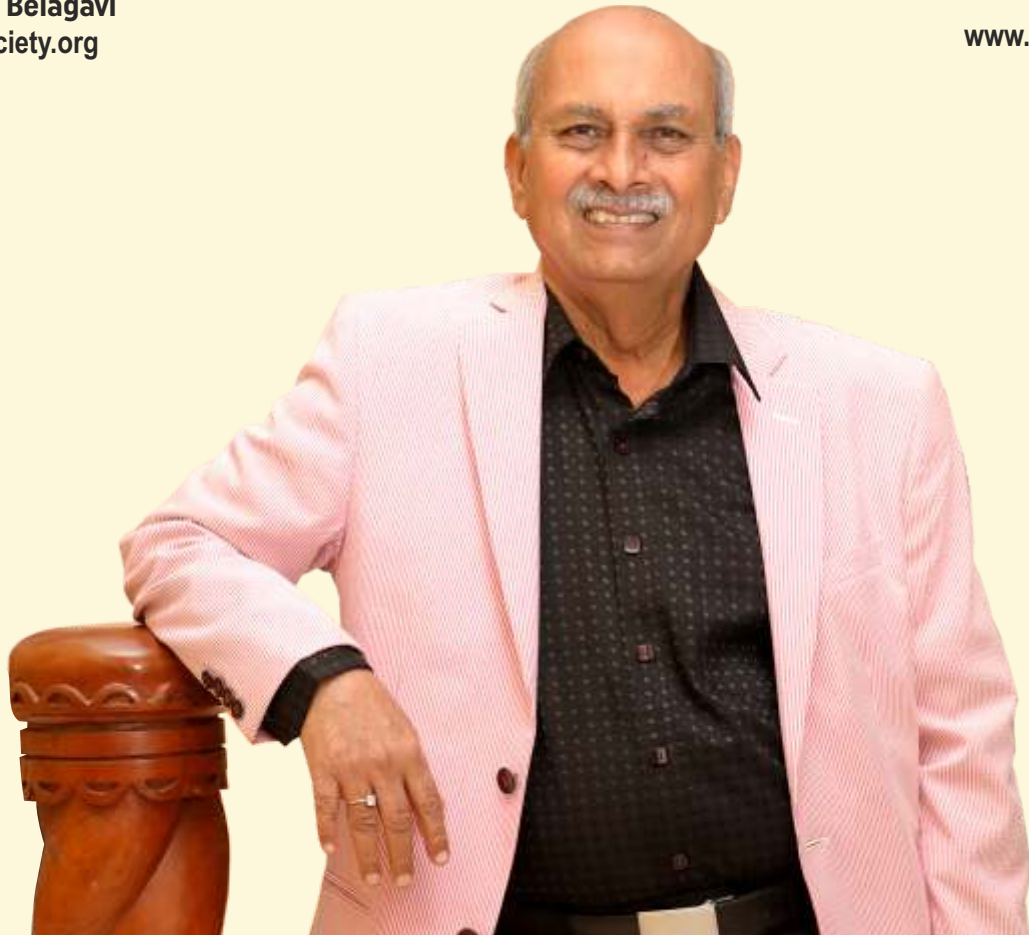


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