

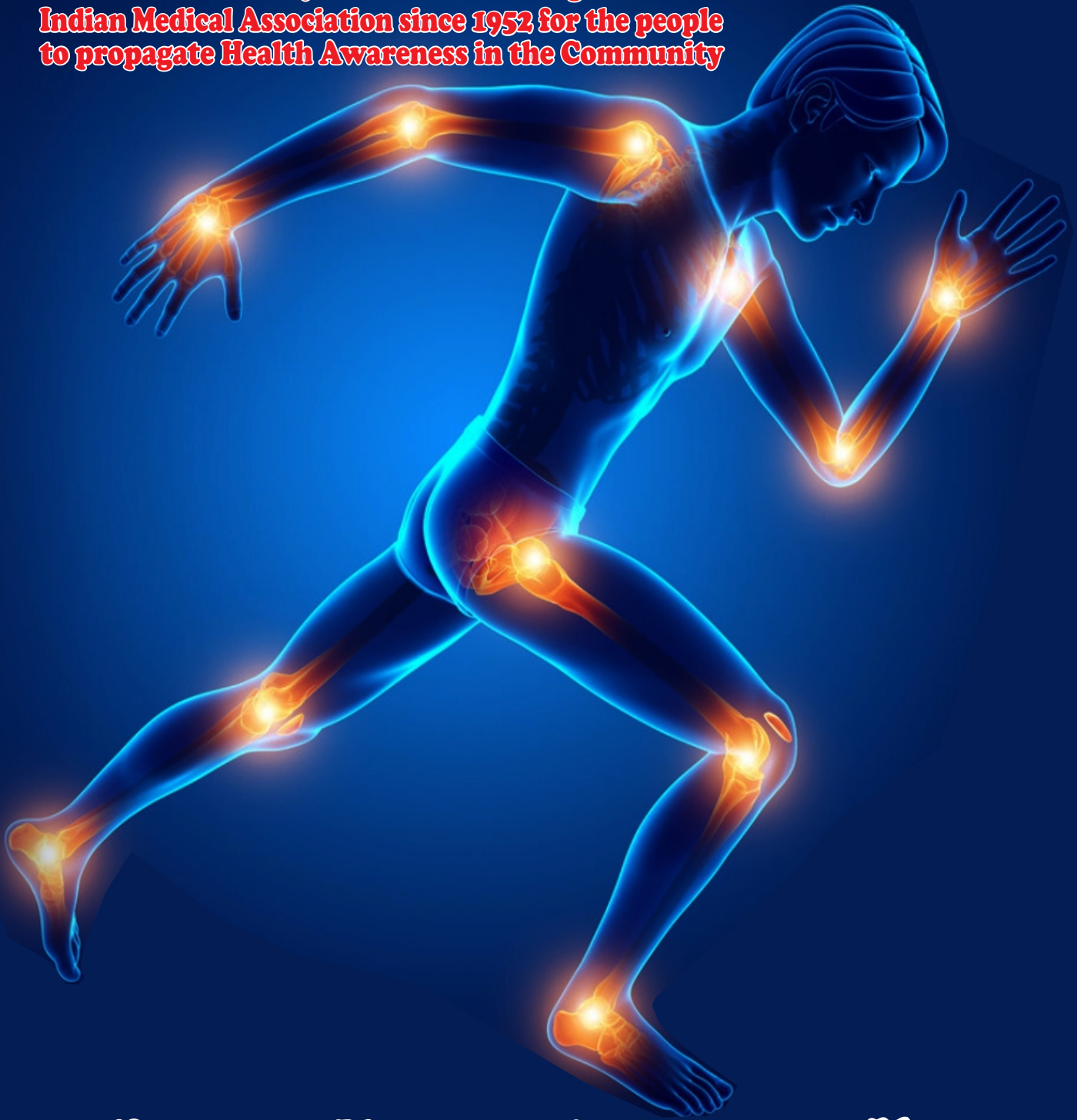
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# YOUR HEALTH

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# YOUR HEALTH

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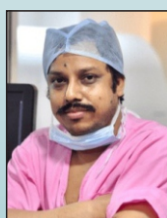


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## 12<sup>TH</sup> FEBRUARY : Let's talk about Sexual and Reproductive Health



**Dr. Khwaja Alim Ahmed**  
Hony. Editor, Your Health

Sexual and reproductive health (SRH) encompasses physical, mental, and social well-being regarding the reproductive system, covering access to contraception, STI prevention, maternal care, and freedom from violence. Key aspects include regular STI screenings, using protection, understanding fertility, and accessing education to make informed decisions about one's body.

### Key Components of Sexual and Reproductive Health

- **Contraception & Fertility:** Access to various birth control methods to decide if, when, and how often to have children.
- **STI Prevention:** Using latex condoms and getting regular screenings for infections,

including HIV, as well as accessing vaccinations (e.g., HPV).

- **Maternal/Reproductive Health:** Care during pregnancy and child-birth, as well as managing conditions like PCOS, endometriosis, and menopause.
- **Sexual Rights & Safety:** Freedom from sexual coercion, violence, and harmful practices.
- **Education:** Access to information about sexual orientation, gender identity, and healthy relationships.

### Breaking Down Barriers

Discomfort, stigma, and lack of knowledge—particularly among young people aged 15-34—can prevent individuals from seeking care. Open, non-judgmental conversations with healthcare providers and within communities are crucial for overcoming these taboos.

### Actionable Health Steps

- **Regular Check-ups:** Visit OB-GYNs or urologists for screenings and to discuss sexual health.
- **Hygiene:** Proper cleaning of genitals before and after sexual activity.
- **Vaccinations:** Utilizing available vaccines, such as those for HPV.

Ensuring comprehensive SRH services is recognized as a human right and a component of universal health coverage.

## The Mysteries of Rare Diseases with Pathology



**Prof. (Dr.) Sankar Sengupta**  
Hony. Secretary, Your Health

Imagine a hidden world of medical puzzles – diseases so uncommon, their symptoms a confusing labyrinth for doctors. This is the reality of rare diseases, affecting millions globally. But within this challenge lies a powerful tool: pathology. Let's delve into the intricate world of rare diseases and explore how pathology sheds light on diagnosis and management.

### The Baffling Labyrinth of Rare Diseases

Unlike common illnesses, rare diseases often present with a confusing array of symptoms. A chronic cough could be allergies, asthma, or something entirely different. This ambiguity makes diagnosis a frustrating odyssey for both patients and doctors.

### The Illuminating Power of Pathology

This is where pathology steps in, acting as a medical detective. Pathologists examine tissues and cells under microscopes, searching for microscopic clues. They run specialized tests to identify abnormal proteins, genetic mutations, or unique patterns that might point towards a specific rare disease.

### Challenges in the Rare Disease Landscape

However, diagnosing rare diseases through pathology has its hurdles.

- **Limited Knowledge Base:** Due to the rarity, there might be limited information about the disease's specific pathology. This makes identifying the culprit a challenge.
- **Finding the Right Test:** Not all pathology tests are created equal. Choosing the most appropriate test for a suspected rare disease requires a deep understanding of the potential culprits and access to specialized techniques.
- **The Importance of Collaboration:** Rare disease diagnosis often benefits from a collaborative approach. Pathologists work closely with geneticists, clinicians, and researchers to piece together the puzzle.

### Navigating the Path to Better Management

Despite the challenges, pathology plays a crucial role in managing rare diseases. By identifying the specific cause, doctors can tailor treatment plans and monitor the disease's course. This personalized approach can significantly improve a patient's quality of life.

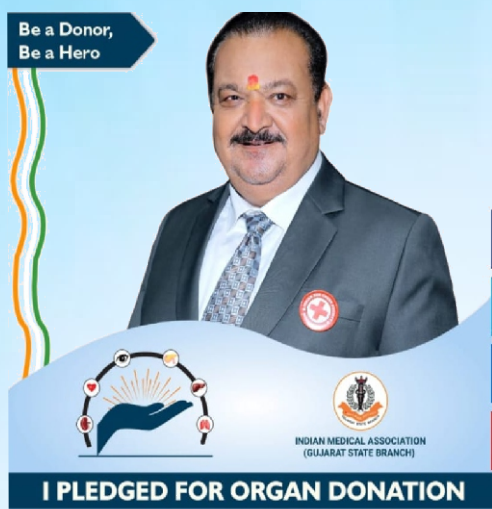
### The Beacon of Hope: Advancing Research

Pathology also plays a vital role in advancing research on rare diseases. Tissue and cell samples from diagnosed cases become invaluable resources for researchers. By studying these samples, scientists can unlock the mysteries of the disease, leading to the development of better diagnostic tools and potential treatments.

### Shining a Light on Rare Diseases

Rare diseases may be complex, but pathology offers a powerful tool for unraveling their mysteries. Through continued research and collaboration, pathologists are paving the way for a brighter future for patients with these challenging conditions.

## National Donor Day - 14th Feb 2026



*National Donor Day is observed annually on February 14th to raise awareness about organ, eye, tissue, blood, platelet, and marrow donation. Founded in 1998, it focuses on educating the public, registering new donors, and honoring those who have given or received the "gift of life," alongside supporting those waiting for transplants.*

*Key Aspects of National Donor Day Purpose: The day focuses on the "five points of life": organs, tissues, marrow, platelets, and blood. It encourages people to sign up as donors, especially as many on the waiting list need kidneys.*

*Event Period: While observed on February 14, it is part of a broader, year-round effort, which includes National Donate Life Month in April. How to Participate: People now can register at the online, through Govt website, and participate in local blood or marrow drives. Focus on Disparities: The day highlights that certain communities, are at higher risk for needing transplants, particularly for kidney failure.*

## Unicompartmental (Partial) Knee Replacement: A Smaller Surgery with Big Benefits

*Knee pain is one of the commonest problems affecting middle-aged and elderly people. For many, it limits walking, climbing stairs, and enjoying everyday life. While total knee replacement is well known, many patients are surprised to learn that not all knee arthritis requires a “full” knee replacement. In selected cases, a Partial Knee Replacement—also known as Unicompartmental Knee Replacement—can be an excellent option.*

### Understanding Knee Arthritis

The knee joint is made up of **three compartments**:

1. The inner (medial) compartment
2. The outer (lateral) compartment
3. The kneecap (patellofemoral) compartment

In many people, arthritis affects **only one compartment**, most commonly the inner side of the knee. Pain is usually localized to that side, while the rest of the knee remains healthy.

### What Is Partial (Unicompartmental) Knee Replacement?

Partial knee replacement is a surgical procedure where **only the damaged part of the knee is replaced**, while the healthy bone, cartilage, and ligaments are preserved.

Unlike total knee replacement, which resurfaces the entire joint, this surgery focuses precisely on the problem area—making it a more **anatomy-friendly and tissue-preserving procedure**.

### Who Can Benefit from Partial Knee Replacement?

Partial knee replacement is **not for everyone**, but it is ideal for carefully selected patients who:

- Have arthritis limited to one compartment of the knee



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- Experience pain mainly on one side of the knee
- Have good knee movement
- Have stable ligaments
- Do not have significant knee deformity

An orthopedic surgeon evaluates this using clinical examination, X-rays, and sometimes MRI scans.

### Advantages Over Total Knee Replacement

For the right patient, partial knee replacement offers several benefits:

- **Smaller incision and less tissue damage**
- **Less blood loss**
- **Less postoperative pain**

- **Faster recovery and rehabilitation**
- **More natural knee movement**
- **Shorter hospital stay**
- **Quicker return to daily activities**

Many patients report that the knee feels more “normal” compared to a total knee replacement.

### Recovery and Rehabilitation

Recovery after partial knee replacement is generally quicker. Most patients:

- Start walking within a day
- Go home earlier than total knee replacement patients
- Resume routine activities in a few weeks
- Return to low-impact activities like walking, cycling, and swimming comfortably

Physiotherapy plays a key role in regaining strength and confidence.

### How Long Does a Partial Knee Replacement Last?

With modern implants and proper surgical technique, partial knee replacements have shown **excellent long-term results**, often lasting **15–20 years or more** in suitable patients. Advances in surgical methods, including minimally invasive and robotic-assisted surgery, have further improved accuracy and outcomes.

### Is It Safe?

Yes. When performed on the right patient by a trained orthopedic surgeon, partial knee replacement is a **safe and reliable procedure** with high patient satisfaction.

### A Final Word

Knee replacement is not a “one-size-fits-all” solution. Partial knee replacement is an example of how modern orthopedics is moving towards **personalized treatment**, preserving what is healthy and replacing only what is damaged.

If you suffer from knee pain, consult an orthopedic specialist to understand **all available options**. Early evaluation can sometimes mean a smaller surgery—and a faster return to an active, pain-free life.



## Osteoporosis: From The Commoner's Perspective



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### The local news channel

One (apparently) fine evening: Mrs De, in conversation with her neighbour, Mrs Sen. The starter, as usual, being the local current affair.

D: Have you heard the bad news, Didi? Mashima (aunty) of flat F2 fell while going to bathroom and broken her hip bone! She has been admitted in hospital and the doctors are suggesting operation!

S: Again? She had a fracture near shoulder about 3 years back, did good without operation! Now she is 70+.... In this age, operation!!! Will it not be risky?

D: of course, it is risky. Remember C3 flat's Das-Kaku? He died after about 10 months after his operation.

S: Yes, he started walking after operation, did well ... even then, died in ten months. What happened to Mashima?

D: Oh yes, the doormat was old and curled. Mashima's foot got tangled.

S: What a misfortune! For a hundred-rupee doormat, she will now go through operation costing over a lakh of rupees, at least?

D: Nowadays, what's there in a lakh, Didi? A bhori (around 10 grams) of gold costs 1.5 times that!

After this, their topic veered to bullion then the high price of essential commodities and related topics. But we will leave them for now and focus on Mashima.

Four important points come out of the short gossip:

1. Aged lady,
2. A simple domestic fall
3. A fracture needing costly and major operation (even if Mashima is covered by insurance / assurance, somebody, somewhere is paying. Maybe you and me, indirectly, through our taxes). The ramification is, Mashima's son has to manage leave from his office boss.
4. A preventable cause (the culprit, curled floormat, should have been thrown away).

The first point is most important for our topic (the weakened bone of an aged lady) but the other three are also prominent.

### Why should an old lady have weak bone that shatters from a simple fall?

[By the way, in medical term, the Hip bone is called the Innominate bone, forming part of pelvis. What Mashima is suffering from, is a broken upper part of THIGH bone (Proximal femur)].

Bone is dynamic tissue. Both formation and destruction processes continue within it. Every now and then, there are microscopic level 'crack's

in it, due to the forces acting on it. But there is an excellent mechanism of quick repair before the cracks become bigger. Mrs Sen would be so happy if municipality looked after the road in front of her house as quickly! When the forces are properly directed, they actually HELP to strengthen the bone by promoting bone formation and reducing destruction. Now you know why important cities are connected by better roads (proper political force) than small villages.

For repair of a road, municipality needs materials, transport to bring them there, labourers and an efficient overseer, and money to get all of these. Our body had all these. Think of Calcium, Phosphate, protein and collagen as the basic materials, vitamin (actually a hormone) D as the transporter, and a few other chemicals including some hormones as the transporting trucks. But the skilled workforce is essential to build bone out of those transported materials... there are bone cells like osteoblasts (builds), osteoclasts (take out cracks... a cracked building needs thorough scraping first, only then the mason can re-plaster, otherwise new plaster will not hold) and osteocytes (they are retired but vigilant osteoblasts, working as overseers). However, when we become old, there can be derangement of the complex mechanism (think about municipality of an old, forgotten town). If those micro-cracks are not repaired adequately and promptly, not-so-tiny holes (PORE-s) appear in the bone (ostium is the fancy name of bone). That weakens the bone, and we call the process, osteoporosis.

### So, osteoporosis is a problem of old age?

Well, yes and no. Young people can have 'bone loss' from many causes. Not all old people become so osteoporotic as to suffer fracture from simple fall (technically, fragility fracture: FF). Mashima's flat number F2 has nothing to do with it, but her age has. After third decade of our lives, the bone-forming process slows down (in males and

females both). Ladies, after their menopause, lose extra bone for about 5 years (incidentally, Mashima had an earlier menopause, so extra bone loss started early in her body).

It is like bank balance. If you build up from young age (proper diet, lifestyle and adequate vitamin D and calcium), you will have more balance at 60, the 'retirement'. If you 'spend' badly (there are numerous factors that takes more bone out of you), balance goes down rapidly.

### But Mashima had no significant symptoms....

Osteoporosis (OP) is a 'silent robber' and that is why it is dangerous. Usually, it produces no specific symptoms until a minor trauma breaks a bone, or, even under bodyweight (no injury), bones in the spine get collapsed. Think about three buildings. An un-maintained house can collapse all by itself without any earthquakes (that is your very porous vertebral bones, need no fall.). The second one needs a minor earthquake (Mashima's bones). The third one can withstand a major one (Mrs Sen's son is a health freak, a gymmy.... fell from his 450 cc but had no fractures). Gallstones can form and grow without causing any problems until they do. It is similar.

### Is there a way to tell if somebody is osteoporotic?

Yes. Bone Mineral Density (BMD) can be tested and statistically compared to the average of healthy people to get the T Score. WHO has defined that, for "normal" OP (OP can happen from several types of diseases. Those are called secondary, or abnormal, OP), T score up to (actually, down to) -1.5 indicates osteopenia and beyond that (less than -1.5), OP. The standard way of measuring BMD is called DEXA.

(By now, Mrs D and S are reading this live, and facing ME, GG!)

S: Oho, DEXA! My mom had it last year, and it was -3.

GG: You mean the T score was -3. Well, she is porous, then.

D: But she is quite well and fit! Does she have risk of fracture?

GG: Apparently, very much so, if she falls. But real-life situation is not that simple. For a limb fracture to happen, we also need a fall. In addition to the T score, there are other factors too. That is why, a FRAX scoring system was developed to predict the percentage risk of having a fracture in next ten years. Nowadays it is FraxPlus.

### **S: How can I calculate that?**

GG: Easy-peasy. Just type FRAX calculation in google! (S actually does that !!)

S: Orebbaba! Continent, Country, weight, height, previous fracture, smoking, alcohol.... Femoral neck BMD...etc.. so many things needed? And what is Glucocorticoids?

GG: A type of steroid, madam. Anyway, now you know, actually getting a fracture is not just about weakened bones. I think FRAXPlusPlus will some time consider curled floormats, missing spectacles, mosquito nets and slippery bathrooms too. Mashima had one fragility fracture (wrist) in the past. A patient of one fragility fracture has very high chance of suffering another one.

S: At least, OP is not a threat to life.

GG: Well, maybe not directly, yes. But OP can cause a 'hip' fracture even after a simple fall. And 25% of those patients die within one year of the fracture, despite proper treatment of the fracture, even in developed countries. No common cancer has that much of one-year death rate after proper treatment. So, indirectly, OP can cause death. Moreover, many patients of hip fractures may not gain full pre-fall function. The uncomfortable but harsh truth of life is that an old bedridden relative can be worse burden to the relatives than a dead one!

### **D: Can we prevent OP?**

GG: OP is a physiological component of ageing. So, it is not preventable in the sense that polio vaccine

prevents polio. But higher peak bone mass can be attained if proper care is taken at youth (so the bone bank balance can be higher at 'retirement'). The amount of bone loss can be reduced too.

### **S: You mean, my daughter, who is now 26, can build better bone stock at menopause?**

GG: Yes, of course. Regular weight-bearing exercises, balanced diet (supplements if diet does not provide enough calcium and phosphorus), avoiding junk food and beverages, having healthy regular menstrual cycles for ladies (chronic low level of 'period' may be due to less hormones, and that can reduce bone mass) are the basic need.

### **D: My Didi (elder sister) is an avid swimmer even at 56. So, she must be having good bones.**

GG: Well, swimming is a non-weight bearing exercise. It, par se, does not send the bones enough 'shock waves' to get stimulated to become stronger. Weight bearing exercises include jogging, dancing with thumping movements, and outdoor field games. Lifting weight is good for upper limbs and torso.

S: One of my colleagues has very low vitamin D. Doctor said that she is having osteomalacia. Are OP and osteomalacia different?

GG: Yes. Suppose there are two buildings under construction, each need 40 columns of concrete. One contractor constructs 30 columns, but each column has proper mixture of sand, cement, chips and steel rods. Another constructs 40 columns but uses less cement in each column. Both the buildings will become weak. The first example is quantitative, as in OP. The second building suffers from qualitative problem, as in osteomalacia. In real life situation, both often coexist in the same patient, complicating the matter more, because treatment is not exactly the same.

### **S: So, OP is not entirely preventable. Is there any medicine to reduce bone loss?**

GG: Yes. Nowadays several medicines are

available. Some reduce bone loss, and some actually helps to build new bone, some have dual action.

**D: What are those, and how are they used? Which dose?**

GG: The dosage and method of use can only be directed by a doctor after examining the patient and some lab tests. The consulting doctor who has examined the patient (but NOT somebody in social/ visual / printed media, even in Your Health magazine) is the best person to formulate a treatment plan. And the race (to avoid the fragility fracture) has to be run lifelong.

Bisphosphonates such as Alendronate and Risedronate, and Denosumab inhibits resorption of bone. Dronates are classically first line medicines -- available in oral formulations and less costly than denosumab injections

Bone-builder Teriparatide and Romosozumab were once considered second line of defence. Recent trend is to use them from the very beginning in high-risk cases and fragility fracture cases, along with antiresorptive medicines.

S: Is that a costly affair?

GG: Unfortunately, yes. Insurance policies do not cover outpatient expenses. But consider the suffering after a major fracture in old age. The suffering is not only limited to the patient but apply to the near relatives.

D: So, the old proverb “prevention is better than cure” is true here also?

GG: Not so, madam.

S: How come?

GG; In this case, “prevention is hundred times better than attempting cure”!

D and S: “attempting”?

GG: Yes, “attempting”. We the orthopaedic surgeons have tough times fixing a fragility fracture than fracture of healthy bone. The fixation devices like screws or the joint replacement implants can become loose because of the poor quality of the bones. The relatives may think that the implant or even the surgeon failed, while actually the bone fails to hold the implants.

D: Now I remember, Mrs Chatterjee had to undergo two operations after one fracture... probably because of this loosening.

GG: Not only that. Suppose a weak bone has fractured and being operated for repair or replacement. It can fracture at a different area during that operation also!

S: How dangerous! Mashima can have another fracture in the operation theatre!!

GG: The doctors remain very cautious. After all, who wants to have his or her reputation to go down? But some possibility is definitely there.

D: If than happens...?

GG: The surgeon will have to do another operation with another implant. This hugely increases magnitude of the surgery and that may not be well-tolerated by the patient. And that increases the hospital bill too.

S: Now I think, doc, your statement “prevention is hundred times better than treatment” is wrong.

GG (thinking that all the discussion has gone down the drain): How come?

S: Prevention of OP is thousand times more important than attempting treatment!

I fainted from her boomerang attack, and could not follow what happened next.

## Avascular Necrosis of the Femoral Head — Understanding the Disease and Modern Treatment Options



**Dr. Soumen Kar**

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Hip pain in adults — particularly those in their 30s to 50s — is often dismissed as a muscle strain or arthritis. However, in some individuals, the cause may be a condition known as **Avascular Necrosis (AVN)** of the femoral head. Early recognition and modern treatment options can make a significant difference in preserving the natural hip joint and maintaining quality of life.

### What is Avascular Necrosis?

The hip joint is a ball-and-socket joint. The “ball” portion is the **femoral head**, the top of the thigh bone. Like all living tissue, bone requires a steady blood supply.

**Avascular Necrosis** occurs when the blood supply to the femoral head is reduced or interrupted. Without adequate nourishment, bone tissue weakens and dies. Over time, this may lead to collapse of the femoral head and arthritis of the hip joint.

In simple terms, AVN is a condition where part of the hip bone gradually deteriorates because it is not receiving enough blood.

### Who is at Risk?

AVN can affect anyone, but certain factors increase the risk:

- Long-term steroid use
- Excessive alcohol intake
- Trauma or fracture around the hip
- Blood disorders (e.g., sickle cell disease)
- Autoimmune diseases
- Post-COVID steroid therapy (in recent years)
- Sometimes — no identifiable cause (idiopathic)

### Symptoms

Early AVN may produce minimal symptoms, which is why diagnosis can be delayed. Common complaints include:

- Pain in the groin, thigh, or buttock
- Pain while walking or climbing stairs
- Stiffness of the hip
- Limping in later stages

As the condition progresses, pain may occur even at rest.

### Diagnosis

Early detection is crucial. Evaluation typically includes:

- Clinical examination
- X-rays (may be normal in early stages)
- **MRI scan** — the most sensitive test for

early diagnosis

Identifying AVN before bone collapse opens the door to joint-preserving treatments.

### Treatment Options

Treatment depends on the stage of the disease, patient age, and functional needs.

#### 1. Non-Surgical Measures

- Activity modification
- Medications for pain
- Limited weight-bearing

These may help symptoms but generally do not stop disease progression.

#### 2. Joint-Preserving Surgical Treatments (Early Stages)

##### Core Decompression

A small channel is drilled into the affected bone to reduce pressure and improve blood flow. This may slow progression in selected cases.

##### Biological Therapies — Cultured Bone Cell Implantation (OsGrow Therapy)

One of the most promising advances in recent years is regenerative therapy using the patient's own bone cells.

##### How it works:

1. A small sample of bone marrow is harvested from the patient
2. Bone-forming cells are cultured and multiplied in a laboratory
3. These cells are implanted into the affected femoral head (usually along with core decompression)

##### Potential benefits:

- Enhances bone regeneration

- May delay or prevent collapse
- Preserves the natural joint
- Particularly useful in younger patients

This therapy represents a shift toward **biological restoration rather than replacement**, though appropriate patient selection remains crucial.

#### 3. Joint Replacement (Advanced Stages)

When collapse and arthritis occur:

- **Total Hip Replacement** provides excellent pain relief and function
- Modern implants offer durable long-term outcomes

However, preserving the natural joint whenever possible is preferable in younger individuals.

##### Why Early Detection Matters

AVN is a progressive condition. Once structural collapse occurs, joint-preserving options become limited.

Timely diagnosis allows access to regenerative and minimally invasive treatments that may:

- Maintain mobility
- Delay major surgery
- Improve long-term outcomes

##### Take-Home Message

Persistent hip pain should not be ignored — particularly in individuals with known risk factors. Avascular Necrosis is treatable, and advances such as **cultured bone cell implantation therapies like OsGrow** are expanding the possibilities for joint preservation.

Consultation with an orthopedic specialist and early imaging can make a meaningful difference in managing this condition effectively.

## Robotics in Joint Replacement: Precision, Safety, and a Better Recovery



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### Joint pain is caused by arthritis, injury, or wear and tear.

It is debilitating and can significantly affect daily life. When medications, physiotherapy, and lifestyle changes no longer provide pain relief, joint replacement surgery—most commonly of the knee or hip—can restore mobility and reduce pain. Over the past decade, an exciting advancement has transformed this field: robotics in joint replacement.

### What Does “Robotic” Joint Replacement Mean?

Robotic joint replacement does not mean that a robot performs the surgery on its own. Instead, it refers to computer-assisted robotic systems that

help surgeons plan and perform surgery with exceptional accuracy. The surgeon remains fully in control at all times, using the robotic system as a highly sophisticated tool—much like GPS navigation assists a driver.

### How Robotics Is Used in Surgery

Before surgery, advanced imaging such as CT scans or digital X-rays is used to create a 3D model of the patient's joint. This allows the surgeon to plan the operation in detail—deciding the exact size, position, and alignment of the artificial joint even before entering the operating theatre.

During surgery, the robotic system provides real-time feedback, guiding the surgeon and ensuring that bone cuts are made within safe, pre-planned boundaries (stereo-tactic or Haptic boundary).

### Why Precision Matters

The success of a joint replacement depends heavily on accurate alignment and positioning of the implant. Even small errors can lead to pain, stiffness, uneven wear, or early failure of the artificial joint.

Robotic assistance helps improve implant alignment, balance surrounding ligaments more accurately, and reduce variability between patients. As a result, the replaced joint often feels more natural and functions better.

### Benefits for Patients

For many patients, robotic-assisted joint replacement offers several advantages:

- Better accuracy and consistency
- Less damage to healthy bone and soft tissues
- Reduced pain and blood loss during surgery
- Faster rehabilitation and recovery
- Potentially longer-lasting implants

### Is Robotic Surgery Safe?

Robotic systems used in joint replacement are rigorously tested and approved by regulatory

authorities worldwide. Safety features prevent the robot from moving outside planned areas, and the surgeon can override the system at any time. Robotics is designed to enhance safety, not replace human expertise.

### Who Can Benefit?

Robotic-assisted joint replacement is commonly used for knee and hip replacements. It may be particularly beneficial for patients with complex joint deformities or those seeking a personalized surgical approach. However, not every patient requires robotic surgery, and the surgeon's experience remains the most important factor.

### Looking Ahead

Robotics represents a major step toward personalized medicine in orthopaedics. As technology evolves, future systems may further improve outcomes, reduce recovery time, and make joint replacement even more reliable.

### In Summary

Robotics in joint replacement combines human surgical skill with advanced technology to deliver greater precision, safety, and predictability. For patients suffering from disabling joint pain, it offers renewed hope for a faster, more confident return to an active life.



## Skin and joint diseases

Skin and joint diseases can often coexist mostly due to autoimmune diseases, means diseases that occur because your immune system mistakenly attacks against own organ like skin, joints or it can be due to inflammatory diseases which occurs due to over active immune system which releases cytokines or certain chemicals, that cause symptoms of inflammation in both skin and joints, so we see skin and joint symptoms.

Often skin rash can precede or follow joint symptoms. Some skin rashes or signs can actually help to diagnose underlying joint diseases or rheumatological diseases. So, multidisciplinary approach can help successful management of such diseases.

**Psoriatic arthritis** patient can present with scaly skin rash along with various degree of joint pain. Sometimes pits on the nail can suggest more chances to develop arthritis. Psoriasis with arthritis can be controlled with proper treatment.



Psoriatic Arthropathy with psoriasis lesion hand

Treatment with methotrexate, cyclosporin, phosphodiesterase inhibitor like Apremilast, JAK inhibitors or biologics like INF inhibitors, adalimumab, secukinumab and ixekizumab (IL 17 Receptorinhibitor), guselkumab( IL 23 inhibitor) can help to control disease, but close monitoring of blood parameters are very important and reactivation of tuberculosis or hepatitis b and hepatitis c infection should be closely monitored. Biologics are effective in many refractory cases, but very expensive, making it difficult to afford for majority of the population.

**Rheumatoid arthritis (RA)** is one of the commonest arthritis seen, patients can show skin changes either due to the disease process, or sometimes few skin diseases are more commonly seen in this group of



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patients or sometimes as a side effect of drugs used to treat them.

Patients can present with red palms, skin nodules (rheumatoid nodules over bony prominences,) painful small lesions known as vasculitis due to inflammation of the small vessels in the skin and subcutaneous tissue, non-healing skin ulcers. Treatment of RA includes DMARDS (Disease Modifying Anti Rheumatic Drugs).



Rheumatic Hand Deformity with nodules

Side effects of medication could be various drug induced reaction, or sometimes patient can mistakenly take wrong dose of medication, most commonly methotrexate, instead of weekly dose patient takes daily, which can lead to severe

pancytopenia, ulcerative skin lesion, oral ulcers, which needs urgent attention and treatment.



Mouth ulcers and skin ulceration secondary to Methotrexate Toxicity

**Systemic Lupus Erythematosus (SLE)** is another disease where American Rheumatology Association have included four skin signs as criteria to diagnose SLE. Malar rash meaning red mild scaly rash over cheeks, discoid rash meaning scaly coin shaped rash, photosensitivity meaning redness on sun exposure and oral ulcers. SLE can be associated with multi organ symptoms, so early diagnosis and treatment can prevent serious progression of the disease. Photo protection is the corner stone for managing skin symptoms, apart from drug treatment.

**Scleroderma** means tightening oh skin which usually makes difficult to open your mouth, fingers become thinner and skin gets tight leading to difficulty in moving fingers associated with joint stiffness, ulcers over finger tips, breathing difficulty due to associated lung fibrosis or digestion issues. Many a time they could be part of Mixed connective diseases (MCTD).



Scleroderma acral changes

**Dermatomyositis**, patient can present with extreme muscle weakness, violaceous rash around eyes, skin lesion over knuckles of hand, along with variable other symptoms like joint pain, stiffness in 30% patients.

**Stills disease** specially Adult onset Stills disease diagnostic triad includes, fever, arthritis and evanescent means transient skin rash, specially seen during fever spike.

**Lyme's disease** caused by tick bite ( Ixodes ), due to transfer of bacteria Borrelia Burgdorferi. In first stage it can present with erythematous skin rash at the site of tick bite, but at later stage it can present as arthritis. So, history of travel and evolution of the disease is very important.

**Behcet's disease** is another not so uncommon serious autoimmune disease that is diagnosed with triad of arthritis, conjunctivitis (red eye) and oral or genital ulcers.

**Sarcoidosis** patients frequently suffer from arthritis and skin rashes can present in various forms, sometimes skin test or skin biopsy can help to clinch the diagnosis. Sarcoidosis can be the cause of Erythema Nodosum or painful leg lesion along with ankle swelling.

**Reiters disease** is also known as reactive arthritis, patient can present with joint symptoms, symptoms of urethritis and scaly skin rashes.

**SAPHO syndrome** fortunately rare, presents with severe acne, palmo planter pustulosis with bone inflammation, osteitis, hyperostosis, synovitis affecting chest, spine, joint. Any severe acne patients complaining of joint symptoms this entity must be ruled out.

Another entity which is also quite commonly seen is allergic contact dermatitis after implant treatment can occur within 2 months or it can present later as well. Proper conservative treatment can help to control this reaction.



Allergic contact dermatitis after implant surgery

Managing skin and joint diseases needs comprehensive approach that includes medical treatment, lifestyle modification, physiotherapy depending on the patient. Patient must understand their disease condition, make informed choices, adherence to treatment, regular follow up visits can help successful management of such diseases.

## Management of Trauma in Primary Care



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### 1. Principles

- **Safety first:** ensure scene safety for patient & provider.
- **Golden hour:** early stabilization saves lives.
- **Do not delay referral** for definitive care if red flags are present.
- **Treat what kills first**, not what looks dramatic.

### 2. Primary Survey – ABCDE

#### A – Airway with C-spine protection

- Look for obstruction, stridor and altered voice.
- Jaw thrust (avoid head tilt if trauma suspected).
- Suction blood/vomit.
- Apply cervical collar, if available.
- If airway compromised → urgent referral.

#### B – Breathing

- Check RR, SpO<sub>2</sub>, chest movement.
- Look for pneumothorax, open chest wounds.
- Give high-flow oxygen (10–15 L/min), if SpO<sub>2</sub> <94% or major trauma.
- Seal open chest wounds (3-sided dressing).

#### C – Circulation & bleeding

- Control external bleeding:
- Direct pressure → pressure bandage → tourniquet if needed.
- Check pulse, BP, capillary refill.
- Start IV line (large bore) if trained.
- Give IV fluids cautiously (normal saline/RL), if hypotensive.
- Suspect internal bleeding if shock with no visible bleed → urgent referral.

#### D – Disability (Neurological)

- AVPU (Alert, Voice, Pain, Unresponsive) / GCS (Glasgow Coma Scale)
- Pupils size & reaction.
- Any seizure, LOC (loss of consciousness) → refer.

#### E – Exposure

- Fully expose to look for injuries.
- Prevent hypothermia (blanket).

### 3. Secondary Survey (after Stabilization)

- Head-to-toe examination.
- Pain assessment.
- Mechanism of injury (Road Traffic Accident, Fall, Assault).
- Tetanus immunization status.
- Comorbidities, anticoagulant use (important in elderly).

### 4. Common Injuries & Primary Care Management

#### Soft tissue injuries (Cuts, Abrasions)

- Clean with saline.
- Remove foreign bodies.
- Suturing if clean, <12 hrs (face <24 hrs).
- Antibiotics only if contaminated/high risk.
- Tetanus prophylaxis.

#### Sprains & strains

- RICE (Rest, Ice, Compression, Elevation).
- NSAIDs (if no contraindication).
- Immobilization.

#### Suspected fractures

- Immobilize (Splint).
- Do not attempt reduction unless trained.
- Analgesia.
- Refer for X-ray & ortho care.

**Head injury**

- Observe at least 24 hrs, if mild.
- **Red flags** → immediate referral:
- Repeated vomiting
- Severe headache
- LOC, seizures
- GCS <15
- On anticoagulants

**Burns (minor)**

- Cool with running water (20 min).
- Cover with clean non-adhesive dressing.
- No oils, toothpaste.
- Refer if:
- 10% Total Body Surface Area
- Face, hands, genitalia
- Electrical/chemical burns

**5. Analgesia in Primary Care**

- Paracetamol ± NSAIDs.
- Tramadol for moderate–severe pain (caution in elderly).

- Avoid masking serious injury before assessment.

**6. When to Refer Immediately (Red Flags)**

- Airway/breathing compromise
- Shock or uncontrolled bleeding
- Altered sensorium
- Polytrauma
- Suspected spinal injury
- Major fractures/open fractures
- Pediatric or geriatric trauma with instability

Remember, in primary care, early recognition, stabilization, bleeding control, and timely referral are more important than definitive treatment.

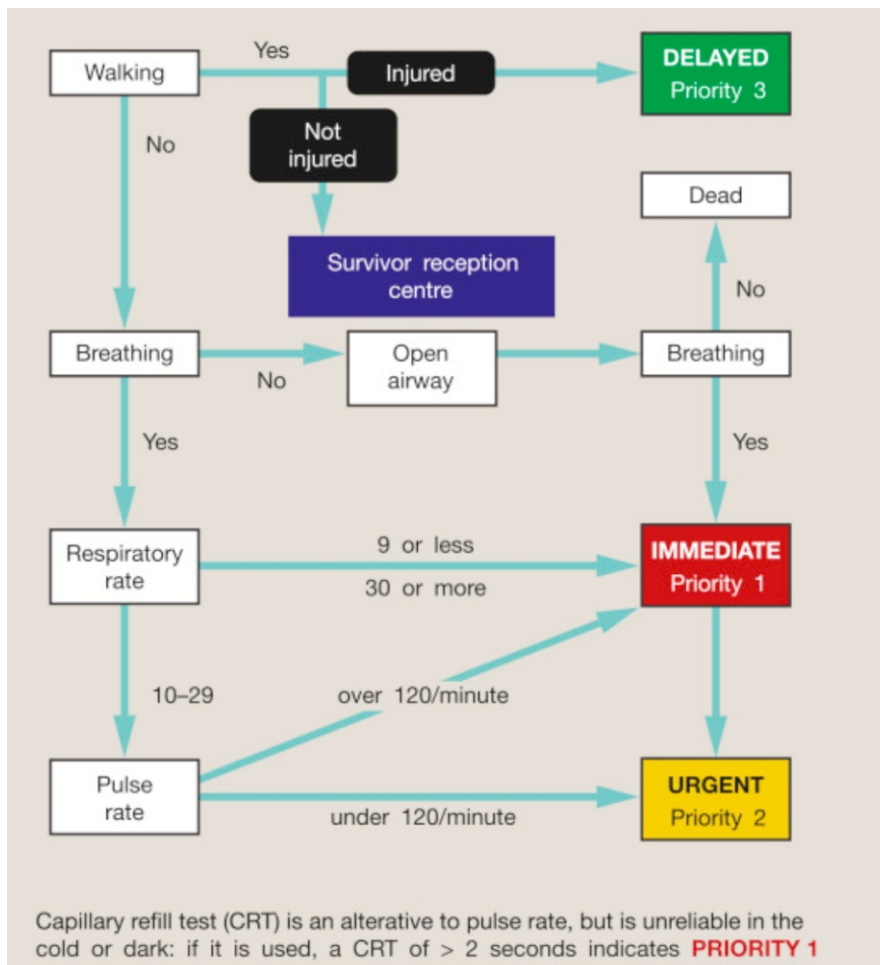
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- COVID booster (if due)

**Once in lifetime**

- PCV20 (or PCV13 + PPSV23)
- Shingles vaccine (2 doses)



## GERIATRIC ORTHOPAEDICS: PRESENT SCENARIO AND FUTURE DIRECTIONS



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### Abstract

The rapid growth of the elderly population has led to a significant rise in age-related musculoskeletal disorders, posing major challenges to healthcare systems in India. Geriatric orthopaedics focuses on the prevention, diagnosis, and management of these conditions, aiming to restore mobility, maintain independence, and improve quality of life in older adults. Osteoporosis, degenerative joint diseases, fragility fractures, and spinal disorders are common in this age group and are associated with high morbidity and healthcare utilisation. Current management emphasises early surgical intervention, stable fixation techniques, joint replacement surgeries, and comprehensive rehabilitation. However, poor bone quality, delayed healing, multiple comorbidities, and postoperative

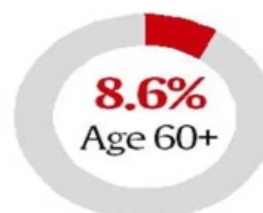
complications remain significant concerns. Future directions include preventive orthopaedics, personalised treatment strategies, technological innovations such as robotic surgery and smart implants, and emerging regenerative therapies. A multidisciplinary, holistic approach is essential for optimising outcomes in geriatric orthopaedic care.

### Introduction

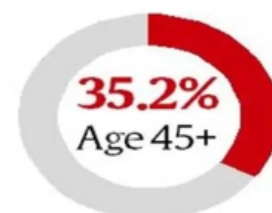
The proportion of individuals aged 60 years and above

is increasing steadily, particularly in developing countries such as India. Age-related musculoskeletal disorders significantly impair mobility, independence, and quality of life, leading to increased hospital admissions and healthcare costs. Geriatric orthopaedics has therefore emerged as a vital subspecialty addressing the unique needs of the ageing population.

## ELDERS IN INDIA



**103.84 million**  
out of India's  
**1.21 billion**  
population  
(Census 2011)  
are senior  
citizens



**By 2050, an**  
estimated  
**600 mn** out of  
**1.7 bn** Indians  
will be of  
pre-retirement  
age or older

*Source: International Institute for Population Sciences*

### Demography of the Geriatric Population in India

India is experiencing a rapid demographic transition with a steadily increasing elderly population. Individuals aged 60 years and above constitute a

growing proportion of the population due to improved healthcare and rising life expectancy. This age group is projected to expand significantly in the coming decades, leading to a higher prevalence of age-related musculoskeletal disorders such as osteoporosis, degenerative joint diseases, and fragility fractures. The rising geriatric population has resulted in increased healthcare utilisation, longer rehabilitation needs, and greater demand for specialized geriatric orthopaedic services focused on mobility preservation, independence, and quality of life.

### Current Scenario in Geriatric Orthopaedics

Ageing is associated with progressive loss of bone density, muscle mass, and joint cartilage. Osteoporosis predisposes elderly individuals to fragility fractures following low-energy trauma. Hip fractures, especially fractures of the neck of femur and intertrochanteric region, are linked with high mortality and prolonged rehabilitation. Degenerative joint diseases such as osteoarthritis of the knee and hip cause chronic pain and functional limitation, while spinal disorders contribute to deformity and neurological symptoms.

Present management strategies focus on early surgical intervention, use of implants designed for osteoporotic bone, and joint replacement surgeries to restore mobility. Early mobilisation and structured rehabilitation are critical in preventing postoperative complications such as deep vein thrombosis, pressure sores, and pulmonary infections. Medical management of osteoporosis plays a key role in secondary fracture prevention. Medical management of osteoporosis includes adequate calcium and vitamin D supplementation, along with anti-resorptive agents such as bisphosphonates or denosumab, and anabolic therapies like teriparatide in high-risk patients. Lifestyle modification, fall prevention, and treatment of secondary causes are essential components.

**Table 1. Surgical Management of Common Geriatric Orthopaedic Conditions**

Condition	Surgical Procedure	Preferred Technique / Implant	Primary Goal	Postoperative Focus
Neck of femur fracture	Hemiarthroplasty / Total hip replacement	Cemented prosthesis	Early weight bearing	Early mobilization, DVT prevention
Intertrochanteric fracture	Internal fixation	PFN / DHS with augmentation	Stable fixation	Physiotherapy, fall prevention
Distal radius fracture	Closed reduction / ORIF	Volar locking plate	Restore function	Early wrist mobilization
Vertebral compression fracture	Vertebroplasty / Kyphoplasty	Bone cement augmentation	Pain relief, stability	Postural rehabilitation
Knee osteoarthritis	Total knee arthroplasty	Computer-assisted / robotic TKA	Pain relief, alignment	Quadriceps strengthening
Hip osteoarthritis	Total hip arthroplasty	Cemented or hybrid THA	Restore mobility	Gait training
Periprosthetic fractures	Revision fixation / revision arthroplasty	Long-stem prosthesis	Implant stability	Prolonged rehabilitation
Non-union fractures	Revision fixation	Bone grafting / biologics	Promote union	Close follow-up

**Table 2. Medical Management of Osteoporosis in the Elderly**

Treatment Category	Drug / Intervention	Mechanism of Action	Indications in Elderly	Key Considerations
Nutritional therapy	Calcium supplements	Provides substrate for bone mineralization	All elderly individuals	Ensure adequate dietary intake; avoid hypercalcemia
Vitamin supplementation	Vitamin D	Enhances calcium absorption and bone mineralization	Vitamin D deficiency, fracture prevention	Monitor serum vitamin D levels
Antiresorptive agents	Bisphosphonates (Alendronate, Zoledronic acid)	Inhibit osteoclast-mediated bone resorption	Postmenopausal osteoporosis, fragility fractures	Renal function assessment required
RANKL inhibitors	Denosumab	Suppresses osteoclast formation and activity	High fracture risk, bisphosphonate intolerance	Risk of rebound fractures if discontinued
Anabolic agents	Teriparatide	Stimulates new bone formation	Severe osteoporosis, multiple fractures	Limited duration of therapy
Hormonal therapy	Selective estrogen receptor modulators	Reduce bone turnover	Postmenopausal women	Risk of thromboembolic events
Lifestyle modification	Weight-bearing exercise	Improves bone strength and balance	Fall-prone elderly	Tailor to functional capacity
Fall prevention	Vision correction, home modification	Reduces fall risk	All geriatric patients	Multidisciplinary approach required

### Challenges in Present Practice

Poor bone quality complicates fracture fixation and increases the risk of implant failure. Delayed fracture healing, multiple comorbidities, and frailty increase perioperative risk and prolong recovery. Higher rates of infection, nonunion, postoperative delirium, and falls further complicate outcomes in geriatric patients.

## Future Directions and Advances in Geriatric Orthopaedics

The future of geriatric orthopaedics is shifting from reactive fracture care to proactive, preventive, and personalised management. Early identification and treatment of osteoporosis, sarcopenia, and balance disorders, along with structured fall-prevention programs, aim to reduce fracture incidence and disability before injury occurs.

Technological innovations are transforming surgical care. Robotic-assisted and navigation-guided surgeries improve precision in joint replacement and fracture fixation, ensuring better alignment, reduced soft-tissue damage, and faster functional recovery.

Smart implants embedded with sensors can monitor load, stability, and fracture healing in real time, allowing early detection of implant failure or complications.

Artificial intelligence is increasingly used in preoperative planning to predict surgical outcomes, optimize implant selection, and individualize treatment strategies based on patient frailty and comorbidities.

Three-dimensional printing enables the creation of patient-specific implants and guides, particularly useful in complex fractures and revision surgeries.

Regenerative and biological therapies represent a promising frontier.

Stem cell therapy, growth factors, advanced biomaterials, and tissue engineering techniques enhance bone and cartilage regeneration, potentially delaying or reducing the need for major joint replacement surgeries.

Telemedicine and remote monitoring further support postoperative care, rehabilitation, and long-term follow-up, improving access and continuity of care for elderly patients.

**Table 3. Future and Advanced Techniques in Geriatric Orthopaedic Surgery**

Advancement	Description	Clinical Application in Elderly	Advantages	Limitations / Considerations
Robotic-assisted surgery	Use of robotic systems for bone preparation and implant placement	Total hip and knee arthroplasty	Improved accuracy, better alignment, reduced soft-tissue damage	High cost, learning curve
Navigation-guided surgery	Computer-assisted real-time surgical guidance	Joint replacement, deformity correction	Enhanced precision, reduced malalignment	Requires infrastructure and expertise
Smart implants	Implants with embedded sensors to monitor load and healing	Fracture fixation and arthroplasty	Early detection of loosening or failure	Limited availability
3D-printed customized implants	Patient-specific implants and surgical guides	Complex fractures, revision surgery	Better implant fit, reduced operative time	Cost and production time
Artificial intelligence (AI)	AI-based preoperative planning and outcome prediction	Implant selection, risk stratification	Personalized treatment planning	Dependence on data quality
Minimally invasive surgery	Smaller incisions with less tissue disruption	Hip fracture fixation, spine surgery	Less pain, faster recovery	Technical difficulty
Augmented reality (AR)	Visual overlay of anatomical structures during surgery	Complex joint replacement	Improved intraoperative visualization	Still evolving technology
Regenerative therapies	Stem cells, growth factors, biologics	Non-union fractures, early osteoarthritis	Enhanced healing, may delay surgery	Limited long-term evidence
Advanced biomaterials	Bioactive scaffolds and bone substitutes	Osteoporotic fracture fixation	Improved bone-implant integration	Cost considerations
Tele-rehabilitation	Remote monitoring and guided physiotherapy	Postoperative elderly patients	Improved access, compliance	Requires patient adaptability

## Conclusion

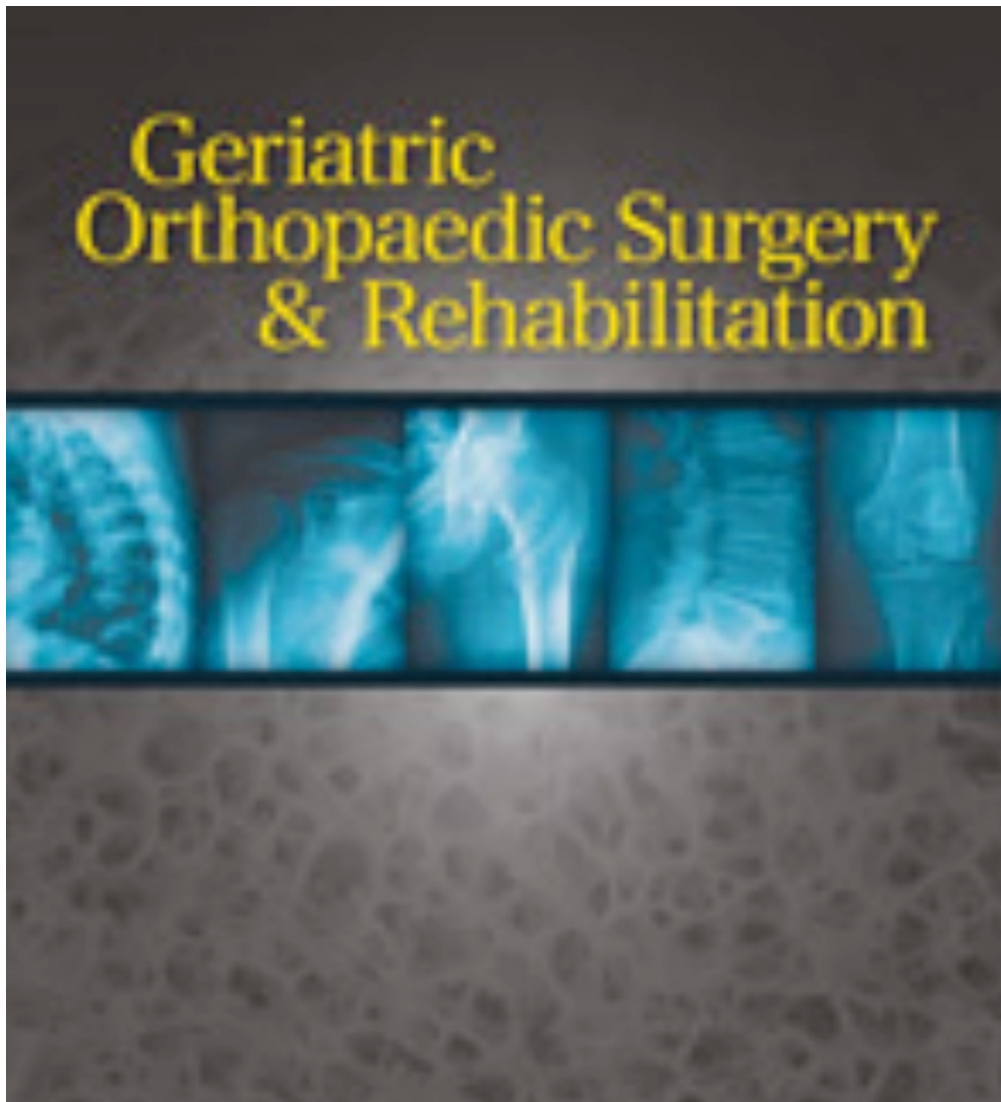
Geriatric orthopaedics has emerged as a vital subspecialty in response to the rapidly ageing population and the growing burden of musculoskeletal disorders among older adults. Fragility fractures, degenerative joint diseases, and spinal disorders significantly impair mobility, independence, and quality of life, while also increasing healthcare utilisation and costs. Early surgical intervention, appropriate implant selection for osteoporotic bone, and structured rehabilitation have improved outcomes, yet challenges related to poor bone quality, comorbidities, frailty, and postoperative complications persist.

The future of geriatric orthopaedic care lies in a shift toward preventive, personalized, and multidisciplinary management. Optimisation of bone health, fall-prevention strategies, and early identification of at-risk individuals are essential to

reducing fracture incidence and disability. Advances in technology, including robotic-assisted surgery, smart implants, artificial intelligence, and 3D-printed customized implants, promise greater precision and improved functional recovery. Emerging biological and regenerative therapies offer potential to enhance bone and cartilage healing and may delay the need for major surgical interventions. Ultimately, a holistic approach integrating surgical expertise, medical management, rehabilitation, and patient education is key to preserving mobility, independence, and quality of life in the elderly population.

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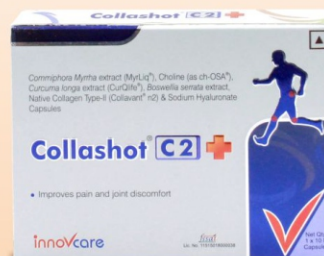
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