

# A Review on “Joint Problems in Young Adults Due to Lifestyle Change and Importance of Early Treatment

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**Abstract:-** People believe that joint pain is a disease of old age because Joint pain is common in older adults but it can be also particularly debilitating in young adults, due to their active lifestyles and increased physical activity. The early treatment is essential to prevent progression of the condition and minimize long-term effects on joint health. Joint disorders in young adults can be a significant cause of pain and discomfort, as well as limiting their ability to participate in physical activity. Genetics plays a significant role in the development of joint disorders, with some conditions being hereditary. Lifestyle choices such as diet, exercise, and smoking can also play a role in the development of joint disorders Arthritis is a group of more than 100 diseases causing chronic pain and joint inflammation. Most Common joint disorders in young adults include osteoarthritis, rheumatoid arthritis, and gout. Treatment options vary depending on the condition, and prevention involves a combination of lifestyle choices, environmental factors, and early intervention. With proper treatment and prevention, young adults with joint disorders can maintain their independence and engage in meaningful activities, improving their overall quality of life. In this study, we provide an overview of the Joint problem in young adults highlight the major factor, and discuss future directions.

**Keywords:-** Osteoarthritis, Rheumatoid Arthritis, Sacroiliac Joint Pain, Hyperuricemia, Psoriatic Arthritis, Juvenile Idiopathic Arthritis, Septic Arthritis, Ankylosing Spondylitis.

## I. INTRODUCTION

People believe that joint pain is a disease of old age because Joint pain is common in older adults and not affect young adults. Joint pain is not just an old person's disease. Such disbelief can be because the most common reason for joint pain is a type of arthritis, i.e. osteoarthritis and it usually affects the older age group, but young adults are particularly vulnerable due to their active lifestyles and increased physical activity. (1) Joint disorders, which also known as musculoskeletal disorders, can affect young adults in many ways and are very common in them and causes significant pain, stiffness, inflammation, degeneration and reduced mobility, which can impact on their quality of life or trauma to the joints. (2) Joint disorders in young adults can be a significant cause of pain and discomfort, as well as limiting

their ability to participate in physical activity. (3,4) The incidence of joint disorders in young adults is increasing worldwide, and many factors contribute to their development, including genetics, environmental factors, and lifestyle choices. Genetics plays a significant role in the development of joint disorders, with some conditions being hereditary. Environmental factors such as exposure to toxins, pollution, and infection can also contribute to the development of joint disorders. (5) Lifestyle choices such as diet, exercise, and smoking can also play a role in the development of joint disorders Arthritis is a group of more than 100 diseases causing chronic pain and joint inflammation. (6,7) Most Common joint disorders in young adults include osteoarthritis, rheumatoid arthritis, and gout.

## II. ETIOLOGY

There are various factors that triggers the arthritis and joint pain among young adults. The etiology of arthritis varies with the type of arthritis. In osteoarthritis, the major contributory factors include advancing age, female sex, joint trauma, and obesity. Some genetic factors have been described such as mutations in genes encoding types II, IV, V, and VI collagens. (8,9)

Rheumatoid arthritis (RA), on the other hand, is an autoimmune systemic inflammatory disorder. An interplay between several genetic factors (HLADRB1 and others) and environmental factors (smoking) leads to activation and dysfunction of the immune system leading to inflammation in RA. (10)

In Gout, prolonged hyperuricemia leads to uric acid deposition in joints, which then leads to joint inflammation. There are several genetic mutations that can cause hyperuricemia, although this accounts for less than 10% of gout. (11,17) The majority of patients with gout are under-excretors i.e. they are not able to get rid of all the uric acid that is produced in them as a result of endogenous or exogenous purine metabolism. Male sex, advancing age, chronic kidney disease, alcoholism, and certain drugs such as the diuretics are additional risk factors for hyperuricemia and gout. (18)

Septic arthritis is acute arthritis that is rare in the general population, but patients with pre-existing risk factors such as immunodeficiency, advancing age, diabetes mellitus,

prosthetic joints, rheumatoid arthritis, and intravenous drug abuse are at a higher risk.

Arthritis can frequently be seen in patients with other autoimmune diseases and is one of the most common clinical features in patients with systemic lupus erythematosus (SLE). (13,16) Other diseases frequently associated with arthritis include inflammatory bowel disease, psoriasis, celiac disease, Sjogren syndrome, systemic sclerosis, dermatomyositis, mixed connective tissue disease (MCTD), etc.

Some common causes:

- A. Calcium** – A diet lacking in calcium increases the risk of fractures, early bone loss, and lower bone density.
- B. Tobacco / alcohol consumption**-Alcohol and tobacco use can lower bone mineral density. Stop drinking alcohol, chewing tobacco, and smoking.
- C. Food intake** – Severely reducing food intake and being underweight impair bone in both men and women.
- D. Exercise** – Osteoporosis risk is higher for those who are not physically active.
- E. Drugs** – Long-term usage of corticosteroid medications such as prednisone, cortisone, prednisolone, and dexamethasone is harmful to bone.
- F. Too much salt in food**-There is clearly a connection between eating a lot of salt and having low bone density. Your body releases more calcium in your urine when your sodium intake increases.

### III. SYMPTOMS

The symptoms of joint disorders in young people can vary depending on the condition. Some common symptoms include joint pain, Lower back pain (SI joint pain), fatigue, grating sounds from joints, stiffness, swelling, and reduced range of motion. (14) Young people with joint disorders may also experience fatigue, muscle weakness, and difficulty sleeping. Some joint disorders, such as rheumatoid arthritis, can also affect other parts of the body, such as the eyes and skin. (15)

### IV. CAUSES OF SI JOINT PAIN

SI joint pain, also known as Sacroiliac joint pain, is one of the most common symptoms of arthritis in younger adults. Symptoms usually begin with buttock or lower back pain that gradually travels down the leg as time progresses. The pain is typically caused by trauma that causes ligaments to loosen or tighten. These traumatic events could include pregnancy, vaginal childbirth, poor exercise/weightlifting habits, injuries to the pelvic or buttock region and more. Patients that suffer from SI joint pain may also experience pain when bending over or standing for long periods of time. Muscle spasms in the lower back region may also occur as the pain worsens. (19)

## V. TYPES OF ARTHRITIS IN YOUNG ADULTS

There are many types of arthritis that can be found in young adults. It is important to be aware of these specific joint conditions to address symptoms and seek treatment options in their early stages. (19,20)

### A. Inflammatory Arthritis

This type of arthritis is characterized by inflamed joints. Some of these include; Rheumatoid arthritis, Psoriatic arthritis Juvenile idiopathic arthritis Our immune system normally responds to infections and other diseases with the production of antibodies, (21) However, there are cases where it can mistakenly attack the joints. When this happens, the joints and even some internal organs are damaged Rheumatoid Arthritis: In rheumatoid arthritis, the immune system targets the joint lining called synovium. The persistent inflammation may break down the joint and permanently damage it.

#### ➤ Rheumatoid arthritis

Rheumatoid arthritis is an autoimmune condition that occurs when the immune system attacks the body's joints lining called synovium. The persistent inflammation may breakdown the joint and permanently damaged it. While the condition is more common in middle-aged and older individuals, it can affect young adults too. The younger the patient when symptoms begin, the more severe they tend to be. (22)

A 2018 study of 52,840 people, 10,568 of whom had RA, identified RA as an independent risk factor for certain conditions. It found that young adults with RA may have an increased risk of cerebrovascular diseases (CVD), such as stroke and coronary artery disease, and that the risk of CVD or coronary artery disease was 2.35 times higher in young adults with RA. (27)

#### ➤ Psoriatic Arthritis:

In psoriatic arthritis, the immune system attacks the skin causing psoriasis and the inflammation of the connective tissue linking the tendons or ligaments to the bones.

#### ➤ Juvenile Idiopathic Arthritis (or JIA)

JIA is the most common type of arthritis in kids and teens, and in some cases begins before the age of sixteen. It is also caused by autoimmunity and may lead to joint damage, growth problems, and eye damaged. Patients may experience joint pain, stiffness and/or swelling that can last a few months up to a few years. (23,25)

A 2020 population-based study followed Norwegians with juvenile arthritis for 18 years. At the end of the study, 46% Trusted Source still had active arthritis, and most people still needed to take medication. Just 33% achieved remission without disease-modifying drugs.

➤ *Infectious Arthritis or Septic Arthritis:*

These are forms of arthritis caused by an infection in the joint. The majority of infectious arthritis is bacterial. The most common organism is *Staphylococcus aureus*, some bacteria that lives on healthy skin. Infectious arthritis can also be viral or fungal. (34) In most cases, it happens when an infection from another part of the body contacts the joint through the bloodstream. Less common infections can also enter the joint through wounds on or near the joint.

*B. Degenerative Arthritis*

➤ *Osteoarthritis*

Osteoarthritis (OA), also known as the “wear and tear” disease, is the most common type of arthritis. This degenerative condition can be caused by obesity or lack of exercise from sitting for long periods of time. Osteoarthritis results in the breakdown of joint cartilage. As a result, joint bones rub against each other which leads to pain, stiffness, or Sacroiliac joint pain. Many young people suffer from this condition and its resulting loss of mobility. (29)

Because it happens due to gradual wear on the joints, OA is more common in older adults. A 2020 review of 88 studies found a global prevalence of knee OA of 16% Trusted Source among people over the age of 15 years and 22.9% among people over the age of 40 years.

➤ *Ankylosing spondylitis*

Ankylosing spondylitis is a form of inflammatory arthritis that affects the spine and its joints and ligaments. This results in the fusion of vertebrae, causing pain and stiffness in young adults as the condition worsens. (33)

*C. Reactive Arthritis*

In reactive arthritis, an infection in another part of the body triggers inflammation of the joint. Unlike the previous type, the infection is not present in the joint itself. Systemic infections that may trigger arthritis: (24)

- Mumps
- Rheumatic fever
- Measles
- Hepatitis

*D. Arthritis*

Metabolic arthritis like gout results due to dysfunctional metabolism Gout occurs due to fluctuating uric acid levels, a waste product, in the body. It usually happens in the joint of the big toe but can also manifest in other medical condition such as kidney failure and heart failure, can increases a person’s risk for developing it.

A 2019 study found that from 2015 to 2016, 3.2% Trusted Source of American adults experienced gout. It suggested that gout may be a more serious risk factor of poor heart health in people under 40 years old.

Additionally, being diagnosed with gout as a young adult correlates with an increased risk of another gout flare-up.

## VI. TREATMENT

There is not permanent cure for arthritis. Instead, treatment focuses on reducing inflammation and pain management for joint disorders in young adults, including medication, physical therapy, and surgery. (44) Medications such as nonsteroidal anti-inflammatory drugs (NSAIDs). Physical therapy can help improve joint mobility, muscle strength, and flexibility. Surgery may be necessary in some cases to repair or replace damaged joints. Treatment depends on the type of arthritis a person has. For example, drug to reduce uric acid may help relieve the pain of gout. In general, though, treatment

- **Lifestyle changes:** Some changes, such as quitting smoking, eliminate factors that make arthritis worse. Reaching a moderate weight can decrease stress on the joints, while eating a healthy and balanced diet may ease inflammation. (46)
- **Anti-inflammatory and non-opioid medications:** These can help with flare-ups and ease pain.
- **Disease-modifying drugs:** These are drugs that can reduce inflammation and slow the progression of arthritis.
- **Exercise:** This can help ease the pain of arthritis. Some people find that physical therapy helps them find new and healthy ways to move their body.

## VII. BENEFITS OF EARLY TREATMENT

- **Reduce Pain:** Early treatment can help reduce pain associated with joint disorders. This can help young adults maintain their daily activities and improve their overall quality of life.
- **Preserve Joint Function:** Early treatment can help preserve joint function and prevent the progression of joint damage. This is particularly important in young adults, as it can help maintain their ability to engage in physical activity and avoid disability later in life.
- **Reduce Need for Surgery:** Early treatment can help reduce the need for surgical interventions. Surgery can be particularly risky in young adults, as it can lead to long-term complications and reduced mobility.
- **Improve Quality of Life:** Early treatment can improve the overall quality of life for young adults with joint disorders. By reducing pain, preserving joint function, and minimizing the need for surgery, young adults can maintain their independence and engage in meaningful activities.

## VIII. PREVENTION

Preventing joint disorders in young adults involves a combination of lifestyle choices, environmental factors, and early intervention. A healthy diet and regular exercise can help maintain joint health and reduce the risk of developing joint disorders. Avoiding smoking and exposure to toxins can also help reduce the risk of joint disorders. Early intervention and treatment can also help prevent the progression of joint disorders and reduce the risk of complications. (48,49,50,)

Some lifestyle modifications (51)

- A. Maintain a healthy weight:** Obesity can put strain on your joints and create pain. Getting rid of extra pounds eases this strain and lessens pain. Consult a doctor and try to lose a few pounds to relieve some of the strain on your joints and prevent further deterioration.
- B. Healthy and proper diet:** For a healthy life, one needs a balanced diet that includes fruits, vegetables, grains, legumes, and dairy products. Bone health depends on dietary elements like calcium, magnesium, and potassium as well as vitamins like vitamin D.
- C. Getting enough sleep:** Giving rest to Muscles can help minimise swelling and inflammation. You can better control your discomfort if you get adequate sleep at night.
- D. Exercise:** Exercise makes the muscles around your joints more robust, which may ease stiffness. On alternate days of the week, try to get in at least 20 to 30 minutes of light to moderate physical activity. Pick mild, low-impact exercises like swimming, jogging, or walking. Yoga is also highly beneficial for managing pain and increasing joint flexibility.
- E. Correct posture:** Correct posture while sitting and standing helps to prevent back and other joint problems.

## IX. CONCLUSION

Joint disorders can be particularly debilitating in young adults, and early treatment is essential to prevent progression of the condition and minimize long-term effects on joint health. Treatment options vary depending on the condition, and prevention involves a combination of lifestyle choices, environmental factors, and early intervention. With proper treatment and prevention, young adults with joint disorders can maintain their independence and engage in meaningful activities, improving their overall quality of life.

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