More than half of the people who develop lupus mention joint pain as their first symptom and up to 90% have them at some times.
Lupus is like snowflakes, everyone is different and special.
Childhood SLE vs Adult SLE—Differences

• Disease activity, on average, is higher in childhood SLE than adult SLE at presentation

- Mucocutaneous
- Musculoskeletal
- Pulmonary
- Serositis
- Renal
- Neurologic
- Hematologic

*P = .009

*P = .020

[Graph showing comparisons with adolescence-onset SLE vs adult-onset SLE]
Inflammation

• Inflammation is part of the reason for muscle pain and aches.

• Any time that major inflammation exists ("strep" throat, hepatitis, cancer, lupus, acute heart attack, etc.), signs and symptoms often include fevers, sweats, chills, fatigue, weight loss, and various muscle aches, pains and weakness.

• These non-specific, non-diagnostic symptoms are signs of your body's inability to cope with whatever process has overwhelmed it.

• Because lupus is an inflammatory disease it may cause any of these problems.

• These myalgias in part are a secondary part of the overall disease.
Lupus Arthritis

• Lupus arthritis causes pain, stiffness, swelling, tenderness and warmth in your joints.

• The joints most often affected are the ones farthest from the middle of the body, such as fingers, wrists, elbows, knees, ankles and toes.

• General stiffness upon awakening, which gradually improves as the day goes on

• However, there also may be joint pain later in the day.
Rheumatoid Arthritis: Fusiform Swelling, Hand Description: Soft-tissue swelling is an early finding in rheumatoid arthritis and usually appears as typical fusiform or spindle-shaped enlargement of the proximal interphalangeal joints. The second and third fingers of this patient are most involved. These proximal interphalangeal joints are tender and have a limited range of motion.
Rheumatoid Arthritis: Hand Deformities. Erosive changes of the metacarpophalangeal joints with ulnar subluxation are evident.
Rheumatoid Arthritis: Hand and Wrist

These anteroposterior and lateral radiographs of the hand and wrist of a 61-year old female with longstanding rheumatoid arthritis demonstrate severe destruction of the wrist with good preservation of the PIP and MCP joints. This illustrates the variable distribution of involved joints in rheumatoid arthritis.
Systemic Lupus Erythematosus: Jaccoud Arthropathy, Hands
Description: This 70 year-old man with systemic lupus erythematosus has swan-neck deformities and ulnar drift (left images, nonreduced). These changes are reducible; note the correction when his hands are placed on a flat surface (right images, reduced). Radiographs show no erosions, which is characteristic of Jaccoud arthropathy.
Systemic Lupus Erythematosus: Jaccoud Arthropathy, Hand

Description:
Left, Ulnar deviation, metacarpophalangeal subluxation, and swan-neck deformities are present. There is also diffuse soft-tissue swelling. Right, A radiograph shows the deformities, but there is no true joint space narrowing or erosion, which would be expected in a patient with rheumatoid arthritis with similar hand deformities. This type of deformity in systemic lupus erythematosus is reducible and is caused by tendon laxity, rather than bony destruction, and may also be seen in post-rheumatic fever arthritis.
Systemic Lupus Erythematosus: Interphalangeal Dermatitis, Fingers
Description:
This 27 year-old woman with lupus has a rash characterized by erythematous plaques and areas of hypopigmentation and scarring. This rash is centered primarily over the interphalangeal areas, in contrast to Gottron papules of dermatomyositis which are similar in appearance but occur primarily over the joints.
Systemic Lupus Erythematosus: Vasculitis, Hands
Description:
Vasculitis develops in approximately 20 percent of patients with SLE. Vasculitis may parallel lupus activity and be associated with circulating immune complexes, low levels of serum complement, and elevated levels of anti-DNA antibodies. Extensive vasculitic lesions are seen in the upper photograph. The lower photograph was taken after treatment with corticosteroids.
Systemic Lupus Erythematosus: Cutaneous Lesions, Hand Description:

Erythematous lesions and telangiectasias are pronounced over the fingertips and palmar eminences. These vascular lesions blanch with pressure. Similar lesions are seen in other related rheumatic diseases such as mixed connective tissue disease, rheumatoid arthritis, and dermatomyositis.
Systemic Lupus Erythematosus: Antiphospholipid Antibody Syndrome, Feet

Description:
This 28 year-old woman with systemic lupus erythematosus and antiphospholipid antibody syndrome developed multiple necrotic skin ulcers (left). Ulcers resolved with anticoagulation (right).
Jaccoud’s Arthropathy: Swan Neck Deformities, Hand

Description: These swan neck deformities result from recurrent synovitis and inflammation of the joint capsule causing deformities without erosions. The deformities are usually reducible but may later become fixed. Jaccoud’s arthropathy is associated with recurrent rheumatic fever but can also be seen in systemic lupus erythematosis.
Lupus Myositis

- Some people with lupus develop myositis, an inflammation of the skeletal muscles that causes weakness and loss of strength.
- Lupus myositis often affects the muscles of your neck, pelvis, thighs, shoulders and upper arms; difficulty in climbing stairs and getting up from a chair are early symptoms.
- An exercise program supervised by a physical therapist is helpful in regaining normal muscle strength and function.
Upper left, A normal nailfold capillary pattern shows the uniform morphology and homogeneous distribution of the small capillary loops just below the cuticle. Upper right, Capillaroscopy in a patient with systemic sclerosis illustrates dilation of isolated capillary loops, with loss of surrounding loop structures. Lower right, The abnormal pattern is from a patient with childhood dermatomyositis. Dilated capillary loops are present, as well as areas of arborized clusters of capillary loops. This patient also has cuticular overgrowth. Lower left, Distortion of the normal capillary loop architecture is seen in a patient with adult dermatomyositis. Note the loss of normal homogeneous distribution of the capillaries and the alterations in the morphology of the vessels, including the dilated and enlarged "giant" capillary loops.
Lupus muscle weakness myopathy

- Muscle weakness also may be a side effect of certain drugs used to treat lupus and related conditions, including prednisone and other corticosteroids, cholesterol-lowering drugs and hydroxychloroquine (Plaquenil®).

- Therefore, drug-induced muscle disease should be ruled out as a cause of weakness.

- Drug-induced muscle weakness usually does not produce elevated levels of muscle enzymes as is seen in lupus myositis.

- Adjusting or stopping the drugs that are causing the muscle weakness usually brings about an improvement of muscle strength.
Tendonitis and Bursitis

• A tendon is a strong rope-like structure made of tough fibers that attaches muscle to bone.
• A bursa is a small sac containing a slippery fluid that is usually found near a joint and allows muscles, bones, and tendons to move easily.
• Pain is the major symptom of both conditions.
• Different areas of your body may be affected; common areas include the elbow (tennis elbow), the finger (trigger finger) and the shoulder.
• In addition, tendons and bursas are both lined with synovial membrane, which is a target for inflammation in lupus arthritis.
Fibromyalgia

• Fibromyalgia can occur in people with Lupus as well as in many other medical problems
• It is Not Specific to Lupus and is Not Lupus
• In some cases there is evidence of an overactive neurological system by functional MRI
The Three Graces (Charities)
The three goddesses generally accepted as the Graces represented grace, charm and beauty also had other qualities that they were associated with: Aglaia represented elegance, brightness and splendor.
Thalia represented youth, beauty and good cheer.
Euphrosyne represented mirth and or joyfulness.
The main role of the Three Graces was to bestow beauty, charm, and goodness on young women and to give joy and the feeling of well being to people in general. Closely associated with the Nine Muses they were also considered patrons of music, poetry and dance.

Antonio Canova’s statue The Three Graces is a Neoclassical sculpture, in marble, of the mythological three charites, daughters of Zeus.

Hermitage Museum, Saint Petersburg, Russia
Fibromyalgia - Trifecta

• Poor Sleep
• Poor exercise
• Poor control of stress and psychological problems
Fibromyalgia

• Fibromyalgia can occur in people with Lupus as well as in many other medical problems

• It is Not Specific to Lupus and is Not Lupus
Carpal Tunnel Syndrome

• Pressure on the central nerve in the wrist causes a condition called carpal tunnel syndrome.
• It is characterized by tingling, numbness, and pain in the fingers, which sometimes affects the entire hand.
• This can be caused by many condition beyond Lupus
• When carpal tunnel occurs with lupus, it is usually because inflammation in your wrist is putting pressure on the nerves.
Osteoporosis

• What is Osteoporosis?
  • Osteoporosis is a disease of the bones.
  • It happens when you lose too much bone, make too little bone or both.
  • As a result, your bones become weak and may break from a minor fall or, in serious cases, even from simple actions, like sneezing or bumping into furniture.
Osteoporosis
When you have lupus you are at risk for osteoporosis for many reasons:

• Lupus: The disease itself is a risk factor.
• Drugs: Some drugs prescribed for lupus, especially corticosteroids, reduce bone mass.
• Hormone levels: Changes in levels of protective hormones (like estrogen) also reduce bone mass.
• Nutrition: Inadequate calcium and Vitamin D in your diet can prevent bone from growing normally.
• Exercise: Inadequate bone-building exercise also can prevent bone from growing normally.
• Gender: Women have smaller, less dense bones than men.
Bone Health in Women with Lupus

- Women with lupus are nearly 5 times more likely to experience a fracture from osteoporosis than those without lupus
- Likely contributors to this increased risk include
  - Glucocorticoid use
  - Sun avoidance (contributing to vitamin D deficiency)
  - Disease-related mechanisms

Avascular Necrosis

- Avascular necrosis (AVN) of the bone (also called aseptic necrosis or osteonecrosis) is characterized by reduced blood flow and increased pressure within a portion of the bone.
- Weakening of the bone occurs, causing tiny breaks, and eventually the bone surface collapses.
- AVN is associated with long-term use of high doses of corticosteroids, alcohol abuse, sickle cell anemia, pancreatitis, trauma and other conditions.
- When AVN develops in people with lupus it can be from lupus or a result of corticosteroid use.
Avascular Necrosis in Systemic Lupus Erythematosus: Ficat Stage IV, Hips

Description:
Left, The joint space is well maintained. There is an area of relative radiolucency at the weight-bearing surface of the femoral head. Early flattening of the head is shown. Right, The disease has progressed to cause narrowing of the joint space and sclerosis of the femoral head. In case of lups with avascular necrosis, it is difficult to tell if lups vascular involvement or steroid use are the primary cause of the lesion. Roentgen Diagnosis of Rheumatoid Arthritis, 1969. Courtesy of Charles C. Thomas, Publisher, Ltd., Springfield, Illinois.
Avascular Necrosis: Femoral Head

Left, The normal medullary trabeculae in the gross specimen are fairly uniform and faintly pink, as befits moderately vascular tissue. They are readily distinguishable from the intervening marrow spaces. In contrast, trabeculae are difficult to distinguish from marrow spaces in the chalk-white zone (B) because both bone and marrow are necrotic. The gray zone (C) separating normal from necrotic bone is darker than the normal area because of increased vascularity. The gray zone is comparable to the zone of advancing organization found at the periphery of any healing infarct. Here new bone has formed on the scaffolding of necrotic bone; the thick new spicules are more radiopaque than the normal bone. The radiographic finding of this separation is called the crescent sign (arrows). This defect occurred because the articular cartilage, with which the subchondral bone plate interdigitates, is not necrotic and retains its elasticity. In contrast, the necrotic subchondral bone plate and subjacent medullary bone have lost the tensile strength on which their structural integrity depended.

Right, The distinction between the radiolucent articular cartilage and the radiopaque subchondral bone plate is much more readily seen on the radiograph than in the Gross Specimen. It is noteworthy that the bone necrosis has not resulted in a loss of calcium.
Systemic Lupus Erythematosus: Osteonecrosis, Ankle

Description:
This 46 year-old man with systemic lupus erythematosus treated with corticosteroids developed osteonecrosis of the tibia, talus and navicular bones. X-ray revealed multiple sclerotic geographic bone lesions. An MRI demonstrated geographic lesions with low signal on T1 (middle) and high signal on STIR (right) images. These characteristics reflect bone infarction. Risk factors include corticosteroid therapy, vascular compression, decompression sickness, vasculitis, sickle cell anemia, antiphospholipid antibody syndrome, systemic lupus erythematosus, and alcohol use.
Nancy Cohen Founded the Georgia Lupus Foundation in Atlanta

• You have seen here a review of a variety of musculoskeletal findings that people with Systemic Lupus Erythematosus can have.

• We used to have monthly chapter meetings in Buckhead often at the Peachtree Christian Church

• Whenever I spoke about lupus and arthritis Nancy would point out that she never had joint complaints with her lupus

• The point is that not everyone with lupus will have musculoskeletal complaints.

• It depends on what your snowflake is.