

Take Adequate Calcium To Make Bones Strong, Get Enough Sunlight To Avoid Chronic Pain

Bad knee? It's high strain, low strength

Umesh Isalkar | TNN

Graphic: Abir Bhadur

Pune: Twenty-year-old Aeysha cannot sit cross-legged. If she stands for a long stretch, her knees become painful and weak. Sitting in one position for a while makes her uncomfortable and when she climbs the stairs, her knees make an odd clicking noise.

Nisha (28) noticed similar symptoms seven months after she had her baby. While breast-feeding her baby, she realised that the nursing position with legs crossed was unbearable.

These are only two cases of anterior knee pain. Typically, it means pain on the front portion of the knee joint or around the knee cap. One common cause is chondromalacia, a softening of the cartilage beneath the knee cap which makes it painful. It is the most common cause of chronic knee pain affecting young and otherwise healthy individuals.

"There is an increase in the number of patients suffering from chondromalacia over the last five years. Lifestyle changes, junk food, stress, irregular work hours, lack of exposure to sunlight, sedentary life and lack of exercises are common reasons for the increasing number. On an average, one to two patients suffering from the condition are seeing every well-known orthopaedic surgeon in the city," said orthopaedic and joint replacement surgeon Surendra Patil. "There is definitely a surge in cases of chondromalacia. Creating awareness can fight the condition," added orthopaedic and joint replacement surgeon Parag Sancheti.

There is an increase in patients suffering from chondromalacia over the last five years. Lifestyle changes, junk food, stress, irregular work hours, lack of exposure to sunlight, a sedentary life and lack of exercises are common reasons for the increasing number of people with chronic knee pain

Surendra Patil | ORTHOPAEDIC & JOINT REPLACEMENT SURGEON

TODAY IS WORLD ARTHRITIS DAY

Chondromalacia occurs frequently in teenagers (especially girls) when the joint cartilage 'softens' in response to excessive and uneven pressure, due to structural changes in the legs with rapid growth, and muscle imbalance around the knee. Instead of gliding smoothly over the knee, the knee cap rubs against the thigh bone (the femur) when the knee moves. The changes can range from mild to complete erosion of the cartilage. During periods of rapid growth, especially in girls, any knee condition further accentuates it. Any sort of knee bending increases the tendency of the knee cap to fully or partially dislocate.

"A typical patient of chondromalacia is a often a teenaged girl complaining of pain around the knee cap. She may also have pain that is deep-seated that may radiate to the back of the knee. The pain comes and goes, but usually becomes prominent with squatting, kneeling, and negotiating steps, especially going down the stairs," said Patil.

WHAT'S NOT RIGHT WITH YOUR KNEES

● **Chondromalacia** is made up of chondro meaning cartilage and malacia which refers to softening. Chondromalacia patellae is the most common

cause of chronic knee pain. Also called runner's knee, this condition often affects young, otherwise healthy individuals.

● It develops due to softening of the cartilage beneath the knee cap (the patella), resulting in small areas of breakdown and pain around the knee. Instead of

gliding smoothly over the knee, the knee cap rubs against the thigh bone (the femur) when the knee moves.

● The changes can range from mild to complete erosion of the cartilage. This process is sometimes referred to as the patellofemoral syndrome.

ANTERIOR KNEE PAIN AND YOU

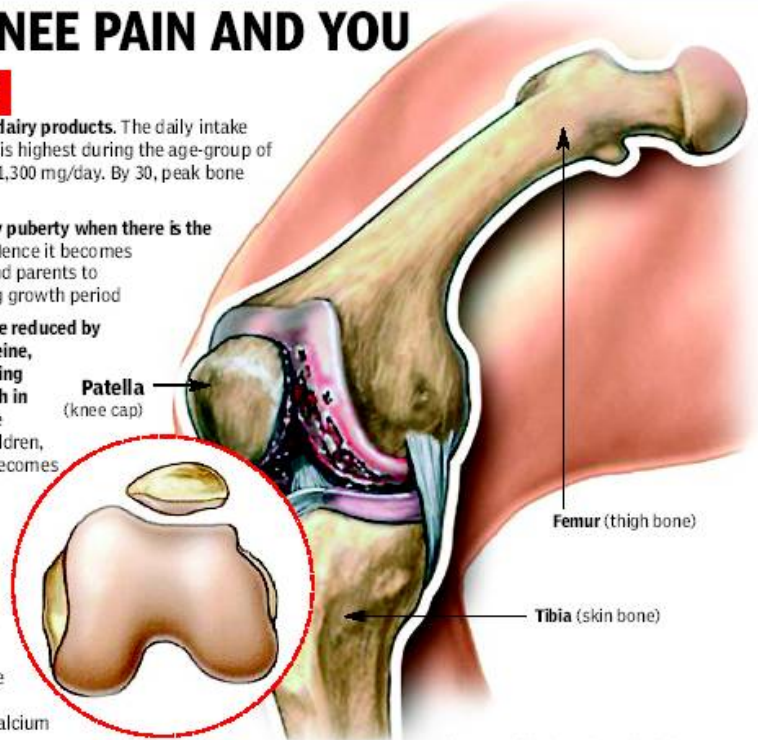
BUILD YOUR BONES

● **Calcium can be obtained from dairy products.** The daily intake depends on our age and sex. It is highest during the age-group of 10 to 18 years which is around 1,300 mg/day. By 30, peak bone mass is achieved

● **Most of bone mass achieved by puberty when there is the greatest rate of bone growth.** Hence it becomes imperative for the individual and parents to supplement this calcium during growth period

● **Calcium absorption may also be reduced by excessive consumption of caffeine, alcohol and soft drinks containing phosphates and diet that is high in animal proteins.** Hence lifestyle modifications, education of children, avoiding harmful substances becomes the responsibility of parents

● **Vitamin D is like a hormone which helps us to absorb calcium.** There are very few dietary sources of Vitamin D. When exposed to sunlight pre Vitamin D in the skin gets converted to Vitamin D which further gets converted to active forms in the liver and kidney responsible for absorption of calcium from the dietary sources



X-rays of the knee are generally normal in chondromalacia but may show a slight displacement of the knee cap

SUN YOURSELF

Not many urban Indians are exposed to sunlight. Most of the time is spent inside a car, office or at home. We require at least 30 minutes of sunlight exposure to the hands, arms and the face to produce adequate amount of Vitamin D. It is a common deficiency among pregnant women, newborns, school children, young

adults and the home bound. The minimum daily intake of vitamin D should be around 800 to 1,000 IU. Parents should encourage children to play outdoors, rather than promoting for indoor games, computers and get exposed to sunlight. Adults should also understand the importance of sunlight exposure.

Short-arc extensions are done sitting up or lying down. Use a rolled-up towel to support your thigh while you keep your leg and foot in the air for 5 seconds. Lower your foot as you bend your knee slowly. Repeat 10 times for each leg

Straight-leg raises are done lying down. Lift your whole lower limb at the hip with the knee extended, and keep it up in the air for 5 seconds. Then lower slowly. Repeat 10 times for each leg, twice a day

Push the knees down to the floor. Hold for 5 seconds. Repeat 10 times each leg, twice a day. Stationary bicycling improves exercise tolerance. Keep your leg straight on the down stroke. Start with 15 minutes and work up to 30 minutes a day

Moreover, in many teenagers, the components of quadriceps muscle — the vastus lateralis and vastus medialis — are not well-balanced. The vastus lateralis tends to be more powerful than the vastus medialis, thus increasing the tendency of the knee-cap to dislocate laterally. This uneven and excessive pressure on the lateral facet of the knee-cap leads to cartilage “softening” and breakdown, said Patil.

“Also during breast-feeding, there is a high demand for calcium and other supplements. Since the baby is the focus, calcium gets shifted out from the bone to meet increased demands. This results in softening of cartilage. Typically, if this increased demand is not considered and supplemented, the softened cartilage — after being subjected to high pressures of cross-legged sitting (feeding position) or climbing, starts paining,” said Patil.

Another age-group in which chondromalacia occurs is in the 40s and beyond. “It can happen in the older age-group when the joint cartilage breaks down as part of the wear-and-tear process that occurs with the rest of the body. The knee-cap cartilage is one of the earliest places where cartilage breakdown occurs, and is slowly progressive, leading to degenerative arthritis (osteoarthritis) in the knee joint,” said Sancheti.

“Other factors that may precipitate chondromalacia

include trauma, overuse, or abnormal forces on the knee joint. It can develop in skiers, runners, cyclists, and soccer players, especially if someone is knock-kneed or flat-footed,” said physiotherapist Pankaj Chopade.

With specific exercises to balance muscles and a proper stretching routine, the problem of chondromalacia can be resolved in most cases. Exercising every day is important for treatment, he added.

“Most individuals can undergo effective treatment by resting the knee and adhering to a proper physical therapy programme along with medical treatment,” said Sancheti.

About 85 per cent of patients with chondromalacia improve with conservative treatment alone and require no further therapy. While it is not always possible to prevent chondromalacia, avoiding trauma and abnormal stresses on the knee and keeping the leg muscles strong and flexible may be able to help to prevent its development in many cases.

“In only about 15 per cent cases does the pain persist or worsens to the extent that surgical correction of the knee joint may be needed. This typically happens if there is some biomechanical mal-alignment in the knee or the lower limb. Or if there is significant progression of disorder that has caused a structural change,” said Patil.

Finally, arthroscopic surgery may be used to smoothen the surface of the joint cartilage and clean out cartilage fragments that cause the joint to catch during bending and straightening. This determination can only be made by a proper evaluation and diagnosis, he added.

“A healthy and nutritious diet is one of the corner stones of ensuring strong, healthy bones at every stage of life. Parents should encourage their children to play outdoors and get exposed to sunlight. Adults should also understand the importance of sunlight exposure,” says physiotherapist Zainab Shamsuddin.