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Treatment Options to Consider Before Knee Replacement Surgery

Background:

- Most people with knee arthritis can manage their condition successfully without surgery and can avoid knee replacement if offered non-surgical treatment.
- Before recommending surgery for knee arthritis, non-surgical interventions tailored to the person should be trialled – including education, self-management, physical activity, braces and weight management.
- Performed at the right time for the right people, surgery can have a dramatic benefit.

Treatment:

1. **Live with the symptoms.**
2. **Lifestyle modifications.** Lifestyle solutions are key for managing knee arthritis, including exercise, maintaining a healthy weight and a nutritious diet. Weight loss is both therapeutic (improves knee pain) and prophylactic (delays time to joint replacement). The Australian Joint Replacement Registry data shows that Class 3 obese patients undergo knee replacement 7 years younger than normal weight individuals.
3. **Physical conditioning.** Physical activity and graded exercises are safe and beneficial for people with knee arthritis. An example is the evidence-based hip and knee arthritis program called GLA:D (Good Life with Arthritis: Denmark), which includes progressive exercises, pain management and dietary education. Look for health professionals accredited with the GLA:D program.
4. **Braces.** Specific braces designed to reduce the load on single knee joint compartments (e.g., medial knee joint) are available. These can assist in symptom control during activity and enable exercise rehabilitation.
5. **Medications.** NSAIDs are the first-line medicine after an assessment of risks. They are preferred to paracetamol due to greater efficacy. Opioids should be avoided since the significant risk of harm outweighs the benefits for knee arthritis.
6. **Intra-articular injections.** Intra-articular corticosteroid injections should be used judiciously - as an adjunctive, short-term treatment for pain relief. There is inconclusive evidence supporting the use of other injectables including hyaluronic acid, platelet-rich plasma (PRP), adipocyte cell suspensions or mesenchymal stem cells.
7. **Rheumatoid (inflammatory) arthritis patients.** Rheumatologist assessment to determine suitability for Rheumatoid arthritis (RA) medical management which focuses on early intervention with disease-modifying antirheumatic drugs (DMARDs) to achieve remission and prevent permanent joint damage, and the need for joint replacement.
8. **Nerve treatments.** There are multiple nerves around the knee (genicular nerves) that can be targeted to help relieve pain. Genicular nerve ablation, is a minimally invasive, image-guided procedure that usually uses heat to deactivate sensory nerves around the knee, providing 3–12+ months of pain relief for knee arthritis.
9. **Artery treatments.** The knee has a number of small arteries supplying blood to the joint (geniculate arteries). Genicular Artery Embolisation is a minimally invasive, image guided, procedure (performed by a radiologist) that involves injecting tiny particles to reduce blood flow to inflamed synovial tissue (lining the joint). It typically provides pain relief and improved function for up to 12 months. Repeat treatments can be performed.
10. **Knee arthroscopy.** Arthroscopy (key hole surgery) has a limited role in helping arthritic knee pain. It might be considered in cases where there are 'mechanical' symptoms such as locking of the knee, but in most cases of uncomplicated knee arthritis arthroscopic procedures are not offered.
11. **Osteotomy.** This is a procedure that involves cutting the tibia (shin bone) or the femur (thigh bone) and changing the alignment of the leg. This takes pressure off the painful arthritic side of the knee and transfers it to the non-arthritic side. It is generally reserved for younger patients and can reliably give 10–15 years of improved pain and function in well selected patients.



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