PREVENT ARTHRITIS!
MAINTAIN HEALTHY KNEES
SO THAT YOU CAN
PRESERVE YOUR SAJDAH IN SALAT

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OSTEARTHRITIS

- Common type of arthritis especially over age of 40-50 years

- It is a biomechanical failure of the joint

- It is not associated with significant inflammation

- It can cause pain, stiffness, joint swelling, bony outgrowths
OA is not an inevitable consequence of aging

Age related changes may be one component of a multidimensional process

Neuromuscular contribution to pathophysiology beyond decrease in muscle strength and / or proprioception

Influence of pain, disuse and misuse / complex interactions between these factors

RISK FACTORS FOR OA

- Age
- Gender
- BMI
- Biomechanics
- Metabolic disorders (acromegaly, hemochromotosis, ochronosis)
- Congenital abnormalities (sticklers syndrome)
- Injury
- Infection
- Occupational triggers
- Bone mineral density
- Meniscectomy
- Inflammatory arthritis (CPPD, RA)
- Genetics
- Hyper mobility syndrome (EDS type 3)
- Congenital disorders
And observe Prayer and pay the Zakat, and bow down with those who bow.

(2:44)

Hadith of the Holy Prophet saw ‘verily there is cure in salat’
For an 80 Kg person, 5 daily prayers burn about 80 calories a day.

*Takbir* at the beginning of salat, we move hand and shoulder muscles thereby increasing the flow of blood towards torso. *Akamat* performs a similar function.

The most important function in salat is *sajdah*. This posture increases fresh supply of blood to our brain.
PHYSICAL BENEFITS OF SALAT

Helps to lower cholesterol level and BP and this with healthy diet helps to lower risk of gout.
In *tashah'hud* position, our hip, elbow, knee joints, backbone, wrist joints move in a way that it provides a form of relaxation. Pressure is applied on the body parts as if it was a kind of massage which releases tension.

- Helps to keep muscles limber and improves bone health. Weak bones can lead to high risk of fractures as we age.
These body movements performed during salat are an excellent source of exercise for our heart as well.

According to a Hadith of the Holy Prophet, "There is an organ in the body, when it is healthy, the whole body is healthy, and when this is sick, the entire body becomes sick". It is the heart.
Salat therefore, has many orthopedic benefits for all Muslims. Next time you offer salat, thank Almighty Allah that He made you a Muslim. Indeed, there is cure in salat.

A Muslim who offers salat regularly has very little chance of getting arthritis as we exercise our bones and joints while we offer salat.
Fig. 1.2 The characteristics of OA. Normal versus osteoarthritic synovial joint.

- Irregular thickening and remodeling of subchondral bone, with sclerosis and cysts.
- Thickening, distortion and fibrosis of the capsule.
- Fibrillation, loss of volume and degradation of articular cartilage.
- Modest, patchy, chronic synovitis.
- Osteophytosis and soft tissue growth at joint margin.
CMC OA

- Common cause of thumb pain
- Can be injected with steroid
DEGENERATIVE DISC DISEASE

- Most common cause of back and neck pain
- 80% of adults experience at least one episode
- Affects men and women equally
- Starts in the 40s, sometimes sooner
Pain often felt after inciting event – sudden forced flexion or rotational movement

Classic diskogenic pain is exacerbated by activities that load the disk

Symptoms are mitigated by lying on the side with hips and knees flexed (fetal position), by changing positions frequently.
DEGENERATIVE DISC DISEASE

- Symptoms

- Diagnosis

- Treatment: physical therapy, medications, injections, surgery
AIMS OF TREATMENT

1. Alleviate pain
effective use of medications, adjunctive therapy

2. Improve function and limit disability

3. DMOADS
experience to date has not been encouraging
NON PHARMACOLOGICAL THERAPY

- Exercise
- Quadriceps strengthening
- Weight loss if indicated
- Load reduction aids
- Wedges, use of canes and special shoes for load reduction
INFLUENCE OF MALALIGNMENT

Normal

Bowleggedness (Vargus)

Knock Knees (Valgus)
NON PHARMACOLOGICAL THERAPY

- Medially wedged insoles for valgus/ lateral compartment OA
- Lateral wedges for varus knee / medial compartment OA
LOAD REDUCTION AIDS

- Use of cane for patients with weight bearing pain

- Use of valgus brace for patients with medical compartment OA

- Risk of venous clots
  Gaasbeek et al, Sc direct 2007
  Krohn et al, Cir Opin Rheumatol 2010
  Draper et al, J B J sx 2000
Knee OA exercises
**Knees to chest**
Lie on your back, knees bent. Bring one knee up and pull it gently into your chest for 5 seconds. Repeat up to 5 times on each side.

**Back stretch**
Lie on your back, hands above your head. Bend your knees and roll them slowly to one side, keeping your feet on the floor. Hold for 10 seconds. Repeat 3 times on each side.  

**NB:** Upper knee should be directly above lower knee.

**Pelvic tilt**
Lie down with your knees bent. Tighten your stomach muscles flattening your back against the floor. Hold for 5 seconds. Repeat 5 times.

**One-leg stand**
Holding onto something for support if needed, bend one leg up behind you. Hold for 5 seconds. Repeat 3 times on each side.

**Deep Lunge**
Kneel on one knee, the other foot in front. Facing forwards, lift the back knee up. Hold for 5 seconds. Repeat 3 times on each side.
Plantar fascia stretch
Sit down and rest the arch of your foot on a round object (e.g. a tin of beans). Roll the arch in all directions for a few minutes. Repeat this exercise at least twice daily.

Wall push
a) Facing a wall, put both hands on the wall at shoulder height and place one foot in front of the other. The front foot should be approximately 30 cm (12 inches) from the wall. With the front knee bent and the back knee straight, bend the front knee towards the wall until the calf in your back leg feels tight. Relax and repeat 10 times.

b) Repeat a) but bring the back foot forward a little so that the back knee is slightly bent. Repeat the 10 times.

Towel pickup
Sit down with a towel on the floor in front of you. Keeping your heel on the ground, pick up the towel by scrunching it between your toes. Repeat 10–20 times. As you improve, add a small weight such as a tin of beans to the towel.

Achilles tendon and plantar fascia stretch
Loop a towel around the ball of your foot and pull your toes towards your body, keeping your knee straight. Hold for 30 seconds. Repeat 3 times on each foot.
Topical agents

- Diclofenac gel
- Capsaicin cream
Starting acetaminophen (Tylenol) up to 4 gm is a reasonable first time approach
Towheed et al, Cochrane review 2006
• Remain the main stay of treatment

• However use is often limited by toxicity

• Should not be used in combination

• Lack of response to one does not preclude response to a different type

Kokebie et al, J Ms Med 2008
SIDE EFFECTS OF NSAIDS

- Rash and hypersensitivity reactions
- Abdominal pain, GI bleeding
- Impairment of renal, hepatic and BM function and platelet aggregation
- CNS dysfunction in elderly
- Can interfere with control of HTN
- Ibuprofen and some other NSAIDs can interfere with desirable anti platelet effects of ASA
- Caution in patients with diminished cardiac reserve
- Avoid in patients with aspirin sensitive reactive airway disease

Green et al, Cochrane review 2002
Ofman et al, J Rheumatol 2002
Glucosamine and chondroitin are the most widely used dietary supplements, sales in 2004 approached $730 million. (Annual industry nutrition overview, 2005)

Rationale for use in OA:
- natural constituents of articular cartilage, important for repair and maintenance of cartilage.
INTRA-ARTICULAR STEROID INJECTION

- Can be helpful for pain relief

- Not long term therapy but can be repeated every 3 months
Local injection reactions

Pseudo septic arthritis / post injection flare (1.5-5%)

Systemic allergic reactions especially patients allergic to avian proteins, feathers or eggs

Can be repeated 3-6 months although long term efficacy date is unknown
INDICATIONS FOR JOINT REPLACEMENT

- Severe pain unresponsive to medical therapy
  Consistently awakening from sleep due to pain
  Cannot stand in one place for more than 20-30 mins

- Loss of function
  Cannot walk more than one block
  Had to move to single story house or apartment due to inability to climb stairs

- Joints
  Knee, hip, CMC, first MTP

Crawford et al, Ann Rheum Dis 1007
DIET AND ARTHRITIS

- Vegetables: *Broccoli, Brussel sprouts and cabbage*, kale and cauliflower. In a mice study found to reduce cartilage loss in joints due to compound *sulforaphane*
- Fatty fish: *Salmon, tuna, trout, mackerel*
- Garlic:
- Tumeric:
JAZAKALLAH