

The Big O's Osteoarthritis & Osteoporosis

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Objectives:

- **To identify and learn about Osteoarthritis & Osteoporosis**
- **To recognize and understand the symptoms older adults may face with these conditions**
- **To demonstrate compassion and sensitivity for those suffering with these conditions**
- **To identify and understand the cautions and contraindications of exercise for those suffering with these conditions**
- **To be able to select, design and modify exercises and stretches for those who have these conditions**

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- **The content in this handout is not to be reproduced in any form without consent of the author**
- **All information provided is written for general knowledge and educational purposes**
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- **This information given does not replace consultation with a qualified health care or fitness professional**

Arthritis

- means joint inflammation
- 406 joints in the body
- 292 of them are susceptible to arthritis
- 1 pound of weight is equal to 4 pounds of pressure in the knees, 6 pounds of pressure through the hips
- 2 common types of arthritis - **Rheumatoid**
- **Osteoarthritis**

Osteoarthritis

- affects larger joints – hips, knees, spine, ankles, hands
- joint deterioration – wearing away of the protective cartilage at the ends of bones
- progressive disease
- inflammation causes a synovial fluid build up & thickening which causes damaging cells – these cause more cartilage deterioration & bone growths, deformity

Symptoms

- pain
- tenderness
- stiffness - fluid in joints (swelling)
- loss of ROM
- loss of flexibility
- grating sensation when using joint
- bone spurs causing discomfort when moving

Causes of Osteoarthritis

- time – age
- excess weight
- heredity
- joint injury, trauma
- past surgery sites
- overuse
- occupation
- muscle imbalance

Medications & Other Interventions for Osteoarthritis

- supplements – Glucosamine, Chondroitin, MSM
- NSAIDS – anti-inflammatory drugs
- viscosupplementation, injections
- surgery
- acupuncture
- massage
- Topical creams – O24, Voltarin, Traumeel, Arnica
- ice ??? or heat???

Osteoarthritis & Exercise

The worse the joint is, the more important it is to strengthen the muscles around it.

However, it is crucial to find the right “dose” of sets, repetitions & weight to use, to not cause swelling and inflammation.

Use the Arthritis Rule of 2 hours – if you are still in too much pain after 2 hours, you did too much.

But if you do not move/exercise because of pain, the muscles will weaken and you will have a weaker joint.

Motion is Lotion

Work with Pain that is “comfortably uncomfortable”!

Exercises Suggestions for Osteoarthritis

- longer, gradual warm up
- use heat before exercise
- warm the joints – leg warmers, tights
- more support & cushioning in shoes
- avoid causing pain & swelling
- low impact
- avoid weight bearing on one joint for long periods
- build muscle strength around the joint for support
- stretch, but careful not to overstretch
- shorter periods of exercise
- cross train
- water activities
- Nordic pole walking
- use assistive devices

Wrist & Hand Arthritis

Cervical Neck Arthritis

- most mobile part of the spine
- we use our neck for ADLs most of the time
- the head weighs 10-12 pounds
- the pressure on the cervical spine increases with every inch of a forward lean of the head
lean of 15° = 27lbs lean of 30° = 40lbs
- **lean of 60° like texting, reading emails on your hand held device = 60lbs**

Osteoporosis

Osteopenia is the beginning stages of bone loss.

- loss of bone mineral density
- bones become thin & porous
- no symptoms in early stages (“The Silent Thief”)
- may have dull pain, progressing to radiating, sharp pain in later stages
- increased bone fragility & potential for fractures
- more common in females
- hip, spine, wrist & shoulder
- is more common than a heart attack, stroke, breast cancer combined
- may cause crush & compression fractures

Osteoporosis Risk Factors

- heredity
- parental hip fracture
- female
- thin framed body
- age
- medications – NSAIDS
- menstrual cycle issues
- low estrogen levels
- sedentary living
- BMI
- poor diet
- low calcium, vitamin D
- eating disorders
- smoking
- excessive alcohol intake
- medical issues such as rheumatoid arthritis, hysterectomy, thyroid, scoliosis
- femoral neck bone density

Prevention of Osteoporosis

- good diet
- supplements – calcium, vitamin D, magnesium
- healthy lifestyle
- lifting, pushing, pulling loads type of exercises
- weight bearing & impact exercises
- reduce smoking & alcohol
- reduce carbonated drinks
- reduce medications if possible

Exercise Contraindications for Osteoporosis

- No Flexion of the Spine**
- No Hyperextension of the Spine**
- No Lateral Flexion**
- No Twisting**
- Never Combine Flexion with Twisting**

Exercise Suggestions for Osteoporosis

- closed chain exercises - weight bearing
- work against gravity – standing
- impact exercises if possible
- avoid quick, jerking movements
- NO abdominal crunches
- high load training if possible – check for tolerance
- balance training with a focus on prevention of falls
- supportive footwear
- squat, lunge, plie, isometric squats, dead lifts
- core strength to help support the spine

Check Points

- posture, posture, posture
- move slowly through the exercise
- avoid/modify standing to floor to standing activities
- monitor breathing through exercise
- avoid abduction of hip joint - too much stress on femoral head on supporting side
- avoid overhead shoulder press
- maintain neutral spine
- protect/brace the spine

Weight Bearing Exercises

- load must be significant and should be applied to the axial skeleton, not just the appendicular skeleton
- need high-load/low repetitions - 1-10 reps at 85-100% of your one repetition maximum
- on both legs before single leg work
- walking on heels forwards & backwards
- walk purposefully heel to toe
- heel tapping/heel drops - “Wolf’s Law” - bones respond to stress

Avoid

- front raises - taking a weighted load in front of & away from the body
- overhead presses - takes the body into forward flexion & puts more stress on the spine
- jogging, jumping - puts more stress on the lower extremities & lumbar spine
- don’t hold a weight behind head/neck/shoulders - too much downward stress on spine

Thank You!

Upcoming Workshops

- all held at the **canfitpro** Academy

Falls Prevention & Balance Training Sat., Oct. 21st, 9:00am to 12:00pm
2 CECs

Chair Fitness Sat., Oct. 21st, 1:00pm to 4:00pm
2CECs

Common Medical Conditions & Exercise Prescription for the Older Adult
Fri., Nov. 10th, 1:00pm to 8:00pm
4CECs

References

Arthritis Foundation

<http://www.arthritis.org/about-arthritis/types/osteoarthritis/what-is-osteoarthritis.php>

Mayo Clinic

<http://www.mayoclinic.org/diseases-conditions/osteoporosis/diagnosis-treatment/treatment/txc-20207886>

Osteoporosis Canada

<http://www.osteoporosis.ca>

The Basics of Osteoarthritis

<http://www.webmd.com/osteoarthritis/guide/osteoarthritis-basics#1>

What are the Facts about Treating Osteoarthritis

<http://www.everydayhealth.com/specialists/arthritis/kitridou/ga/facts-about-treating-osteoarthritis/index.aspx>

About Osteoarthritis

<http://aboutjoints.com/patientinfo/topics/osteoarthritis/Osteoarthritis2.html>

Arthritis: Causes, Types & Treatments

<http://www.medicalnewstoday.com/articles/7621.php>

The Arthritis Society

<https://arthritis.ca/understand-arthritis/arthritis-facts-figures>

Osteoporosis

<http://www.mayoclinic.org/diseases-conditions/osteoporosis/symptoms-causes/dxc-20207860>

Osteoporosis: Symptoms & Types

http://www.webmd.com/osteoporosis/guide/osteoporosis_symptoms_types

Osteoporosis: Causes, Symptoms, Treatments

http://www.emedicinehealth.com/osteoporosis/page3_em.htm