

BONE HEALTH AND BONE DISORDERS

OSTEOPOROSIS SUMMARY

- Bone disorder - caused by low bone density and deterioration of bone
- It weakens bone – makes it prone to fracture – e.g. caused by impact in a contact sport
- Effects bones in the hip/spine/wrist joints
- It generally affects older people and women
- Its caused by:
 - An inactive childhood
 - Having a serious injury leading to a sedate lifestyle
- How to reduce the chances of developing osteoporosis:
 - During childhood having a balanced diet and taking part in physical activity
 - Doing high impact activities, strength training and weight-bearing activities

GROWTH PLATE INJURIES SUMMARY

- Growth plate – area between the epiphysis and the diaphysis in long bones in children and adolescents
- Easy area to cause injury – weak area
- Growth plate fractures are caused by:
 - Force travelling through bone in impact activities e.g. rugby/hockey
 - Repetition of skills e.g. tennis player constantly trying to perfect volley

JOINT HEALTH AND JOINT DISORDERS

OSTEOSARTHRITIS SUMMARY

- Degenerative disease – loss of articular cartilage at the end of long bones in a joint
- Causes pain, swelling, reduced motion and flexibility
- Friction between bones – bone spurs forming
- Osteoarthritis is caused by:
 - Being overweight which increases mechanical strain on the joint
 - Injuries to joints when you are younger leads to osteoarthritis in later life
 - Impact to joints whilst taking part in impact or contact sports can lead to osteoarthritis
- Physical activity can reduce the chances of developing osteoarthritis:
 - Exercise increases aerobic capacity/manages weight/reduces body fat reducing mechanical strain on the joint
 - It increases the strength of the muscles around the joint increasing joint mobility

JOINT STABILITY SUMMARY

- A stable joint – compressed and stretched without injury
- Deeper joints with a larger surface area of connecting bone are the most stable type of joint e.g. Ball and socket – weight pushes the head of the femur into the acetabulum
- The more ligaments a joint has the more stable it is
- Muscle tone – keeps the tendons around joints tight e.g. rotator cuff in shoulder
- Physical activity:
 - Strengthens the joint
 - Without regular exercise ligaments shorten and become less elastic – prone to injury
 - Without exercise synovial fluid will not be released into a joint
 - Impact sports can cause ligament damage and dislocation of stable joints e.g. the shoulder joint is shallow – it could dislocate

BONE HEALTH AND BONE DISORDERS QUIZ

1. What is osteoporosis?
2. What is osteoporosis caused by?
3. What is the growth plate?
4. What causes growth plate fractures?

JOINT HEALTH AND JOINT DISORDERS ACTIVITIES

1. What is osteoarthritis?
2. What causes osteoarthritis?
3. What strengthens joints?