Aging Process
Muscles, Ligaments, Tendons, Cartilage & Bones
Worksheet

Name: _______________________________  Date: ______________________
Name of Trainer: ________________________________
Name of Company Developing Material: Clinical Update (NZ) Ltd

Segment 1 – Muscles
List the 3 types of muscles
1. Heart
2. Smooth
3. Skeletal

There are 4 functions of muscles, what are they?
1. Excitability
2. Contractibility
3. Extensibility
4. Elasticity

What are the 4 roles of muscles
1. Movement
2. Posture
3. Stabilising Joints
4. Generating heat

What age does muscle mass start to reduce 30 years
From age 40 how much muscle mass can you expect to lose per year 0.5-2%
What happens to the muscle fibres? They diminish or reduce
Why does this happen? Routine replacement cannot keep up with destruction
Muscles are hard to build and easy to lose
Why do people slow down with age? Muscles don’t respond as well
What makes this process worse? Sedentary Lifestyle or sitting around a lot
What can you do to help build up muscle mass? Exercise

Segment 2 Ligaments
Ligaments connect Bone to Bone
What are ligaments made up of? Connective tissue

What are the two things that ligaments do?
1. Strengthen the joint
2. Limit joint movement

List 2 things that happen to ligaments with age
1. Become less elastic
2. Become less flexible or flexibility reduced

How does this affect a person? Makes it harder to get up and down and move quickly

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Segment 3 Tendons
Tendons connect Muscle to Bone

Tendons are parallel bundles of collagen that attach muscles to bone. Tendons are inelastic but flexible and work by concentrating the pull of muscle on a small section of bone.

What are the 2 things that happen to tendons with age
1. Water content diminishes or reduces
2. Lose flexibility

What are the results of the tendon changes and give two examples.
1. Hand grip decreased
2. Fine motors skill more difficult

What is a common tendon problem? Tendon over use or Tendonitis or Tendonopathy

List 3 things that happen with this condition?
1. Pain on movement
2. Tenderness over the tendon
3. Swelling over the tendon

List 2 things that help maintain strong tendons?
1. Keep mobile
2. Gentle exercise

Segment 4 – Cartilage
What are the 3 components of cartilage?
1. Protein
2. Collagen
3. Sugar

List the 3 types of cartilage and give an example of where you would find each type
1. Hyaline
2. Elastic
3. Fibrocartilage

What does cartilage do to joints? Cushion joints
What happens when cartilage breaks down? Bone rubs on bone
What is a common condition that this leads too? Osteoarthritis

List the 3 things required to keep cartilage healthy?
1. Exercise
2. Water
3. Diet

Segment 5 – Bones
As a person ages, bone lose Mineral content in particular calcium
This makes the bones more fragile and makes older people more at risk of fractures

From age 35 years on, what percentage of bone loss occurs 1-2%
What percentage of bone loss occurs in women before and after menopause? 4-5%
What causes women to have a greater percentage of bone loss over this period? Loss of oestrogen

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What is the condition that occurs through bone loss more commonly in women? **Osteoporosis**

How much height does a person lose per decade? **½” or 1.5 cm**

What is lipping of the bone? **Overgrowth of bone**

Where does this occur? **On any joint**

List 3 things you can do to keep your bones strong and healthy?
1. **Resistance exercise – lifting gentle weights**
2. **Diet high in calcium**
3. **Avoid alcohol and smoking**