



## **Bone Health**

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It is important to note that the information below is not applicable to cancer directly affecting the bones. Where cancer directly affects the bones the advice about weight bearing exercise is very different so please consult your team for individualised exercise advice. Before you start a new exercise program please consult your medical team to ensure this is appropriate for you.

This information is general information and is more focused on breast and prostate cancer.

#### **5 reasons why bones are amazing!**

They provide structure for the body

The provide protection for our organs

They act as a storage facility for minerals and other important substances

They enable us to move

They produce blood cells within the bone marrow

### **Your bones are alive!**

Bone is constantly remodelling. It is always being removed and replaced by new bone. It does this so as it can adapt and respond to the demands put on it.

For instance, tennis players tend to have increased bone density on their dominant forearm compared to their non- dominant forearm. By the same token it is known that when astronauts spend a significant amount of time in space there is very little loading through the bones. Due to this their bones lose significant amounts of density.

These are 2 quite extreme examples but what is important to note is that, generally, in order for our bones to be as strong as they can be, they need to be challenged.

### **But why is working on my bone density a good thing?**

Generally, the higher the bone density the stronger the bones so the less likely they are to break. To test how dense your bones are you are usually sent for a DEXA scan. This measures bone density usually from the hip, spine and sometimes your forearm. The reason these body sites are chosen is because these are the sites that are most likely to break due to osteoporosis.

### **What is osteoporosis?**

Osteoporosis is a condition whereby the bones lose density and so their strength is reduced which can make them more likely to break. This is generally diagnosed from a DEXA scan.

### **Why is bone density important in cancer?**

Some types of cancer treatments can have a negative effect on bones. Some of these include surgery to remove ovaries or testes, hormone therapies for breast or prostate cancer and sometimes chemotherapy. This is due to the effects they can have on hormones.

All these prescribed treatments are very essential and effective and it is very important to follow your oncologist's advice. However, it is worth noting how bones are affected because then we know we can do something to help. We will focus on hormone therapies here.

We know that testosterone has protective effects on bone density. Generally, when hormone therapy is used as a treatment for prostate cancer it reduces testosterone levels. This can lead to reductions in bone density.

For women, oestrogen has a protective effect on bone density. Hormone therapies can work in different ways but aromatase inhibitors and Goserelin (Zoladex) can reduce oestrogen production. This can lead to reduced bone density. As Tamoxifen works differently it is reported that it can actually help to preserve bone strength in post-menopausal women. In pre-menopausal women it may cause a small amount of bone loss but it is not thought to significantly increase risk of fracture.

The great news is that bone health can still be influenced in a positive way by diet and exercise. Medication can also be very useful. However, this is not covered here and, as always, it is important to speak to your oncology team about this.

For our bones the type of exercise is really important. Weight bearing and muscle strengthening exercise is best. Weight bearing is where you are bearing weight through your body- like walking, jogging or dancing. Muscle strengthening is anything that challenges your muscles- weight lifting, heavy duty gardening etc.

Variety of movement is also important! It is the spice of life after all. This means that you can mix it up a bit. If you are out for a jog, maybe can you do some sideways running or change up your pace as you go. Perhaps it is possible to add in some uphill and downhill.

If walking is your thing then maybe you can pick up the pace for short distances or you can add in some direction changes. It is always important to start small and very gradually build up your activity. I know I am biased however I think paying a visit to a physio can be really useful in order to get some individualised guidance. This is especially important if you already have a diagnosis of osteoporosis. Other things that would be important to consider would be the presence of lymphoedema or any other medical conditions.

I know a lot of people reading this already take part in regular parkruns under normal circumstances. However, for those people that may not be as able to take part in such demanding forms of exercise there are still many gains to be made by simply being more active. It is recommended that if you have osteoporosis and you have some balance problems or a history of fractures, it would be good to first prioritise improving your balance and posture rather than diving straight into doing lots of impact weight bearing exercise. In this instance I would again recommend seeing a physiotherapist for advice and guidance.

Diet is also a very important topic to be addressed when talking about bone density. I am definitely not an expert in this field and would always recommend seeing a registered dietitian for individualised advice.



#### **References:**

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