

Diabetes and Bone Health

Protecting Bone Health

Bone health is an important part of your general health. When the structure of bone becomes weaker and less dense there is an increased risk of breaking. This is osteoporosis. It can lead to a higher risk of a bone breaking from a minor incident (such as a bump, fall or trip). Early diagnosis and management of osteoporosis can help protect bone health and reduce the risk of breaking a bone.

Diabetes and Bone Health

Diabetes can be associated with poor bone quality. Both Type 1 and Type 2 Diabetes can be associated with poor bone health (and an increase in risk of fractures). However, bone density is impacted differently depending of the type of diabetes.

Type 1 Diabetes

Type 1 Diabetes is an autoimmune condition and occurs when the body does not produce insulin. It most commonly develops in childhood or adolescence (although it can also occur in adulthood). Typically, early onset of Type 1 Diabetes can impact 'peak bone mass' which is generally achieved between 20 and 30 years of age. The reduction in peak bone mass which can occur and the effect of the high blood sugar on the micro-architecture of bones, results in patients with Type 1 Diabetes having a significant increased risk (3-fold increase) of having hip fractures later in life.

Type 2 Diabetes

Type 2 Diabetes can be a complex condition and typically occurs due to the body's resistance to insulin and or insulin deficiency. Type 2 diabetes is often associated with increased body weight or obesity. While larger body weight can generally be associated with increased bone density (due to the extra stress placed on bones), there is increased risk of fracture in patients with Type 2 diabetes. This risk increases the longer the patient has diabetes.

The mechanisms of diabetes and their impact on bone health are not fully understood. However, research suggests an effect of higher blood glucose levels on general bone health including an impact on collagen. As well as the duration of diabetes and how well it is controlled, some diabetes-related complications such as nerve damage, hypoglycaemic episodes (hypos) and eye problems, can also increase the risk of falls and therefore fractures.

Other Common Risk Factors

Review other common risk factors for osteoporosis. If any risk factors apply to you – discuss these with your doctor.

Personal History	Medical Conditions	Medications
Previous fracture (from minor bump or fall)	Coeliac disease	Certain treatment for breast cancer
Family history of osteoporosis (parent/ sibling)	Overactive thyroid or parathyroid	Certain treatment for prostate cancer
Loss of height (3 cm or more)	Rheumatoid arthritis	Glucocorticoids (steroids)
Smoking/ excessive alcohol	Early menopause/Low testosterone	Anti-epilepsy treatment
Inadequate calcium, vitamin D or lack of exercise	Chronic kidney disease or liver disease	
Age 70 years and over		

Diabetes and Bone Health cont.

Calcium. Vitamin D. Exercise

Take simple steps to help support your bone health.

Focus On	Recommended
Calcium	<ul style="list-style-type: none"> • 1,000 mg per day from the diet • Increasing to 1,300 mg for women over 50 years and men over 70 years • If dietary intake is low a supplement may be required
Vitamin D	<ul style="list-style-type: none"> • Limited sun exposure – in summer a few minutes per day, in winter slightly longer • Avoid UV index above 3 • If vitamin D deficiency is confirmed by your doctor a supplement may be required
Exercise	<ul style="list-style-type: none"> • Specific mix of weight bearing, resistance training and balance exercises

For more information about diabetes please visit **Diabetes Australia** www.diabetesaustralia.com.au

For more information



Call our national toll-free number

1800 242 141



Visit our website

healthybonesaustralia.org.au



Talk to your doctor

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