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Women's health depends on a lifetime of answers—one test at a time.

Women and Bone Disease

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Answers for life.

Women and Bone Disease

Osteoporosis is the most common type of bone disease.[1] Over 200 million people suffer from osteoporosis worldwide,[2] and 80% are women.[3] More than 8.9 million global fractures annually (approximately 1000 fractures per hour) can be attributed to osteoporosis.[4]

What Is Bone Disease?

Osteoporosis is a metabolic bone disease that is characterized by low bone mass and deterioration of bone tissue.[5] Bone metabolism is the constant process through which the body removes old bone and replaces it with new bone.

Osteoporosis occurs when the body either loses too much bone density, does not make enough, or when there is a combination of both factors. This results in increased fragility of the bone, leading to the risk of fractures, most commonly in the spine, wrist, and hip. The World Health Organization estimates that the lifetime risk for wrist, hip, or vertebral fractures occurring in people living in developed countries is very close to their risk for developing coronary heart disease.[6]

The Global Burden of Bone Disease in Women

- By 2050, the global cost of osteoporosis is expected to exceed $130 billion, and annual hip-fracture incidence is expected to increase to 6.3 million.[7]
- One-third of women over 50 years will suffer from an osteoporotic fracture.[4]
- The highest risks of hip fracture are currently found in Norway, Sweden, Iceland, Denmark, and the United States,[8] but by 2050 Asia is expected to account for almost one-half of all global fractures.[9]
- Osteoporosis accounts for more hospitalization days in women over 45 years than diabetes, myocardial infarction (heart attack), and breast cancer.[5]

Gender Differences

Women outnumber men in prevalence of osteoporosis and the incidence of fractures associated with the disease. By 2050, the worldwide incidence of hip fracture in men is projected to increase to over 1 million, but the incidence of hip fracture in women will be more than double that of men.[9] Women have a 40–50% risk of having a fracture during their lifetime, while men have a 13–22% risk.[10]

Risk Factors[11]

There are numerous modifiable and non-modifiable risk factors that increase the risk of developing osteoporosis.

Modifiable risk factors include:

- Calcium and vitamin D intake
- Physical activity
- Anorexia
- Low sex-hormone levels
- Smoking
- Alcohol
- Medicines

Non-modifiable risk factors include:

- Age
- Gender
- Body size
- Ethnicity
- Family history

Symptoms[1]

Osteoporosis typically does not present with any symptoms until a fracture occurs. Bone loss occurs gradually over a long period of time and does not cause pain.

Related Diseases and Conditions[12]

Other conditions can be harmful to bone health. Rickets and osteomalacia caused by insufficient vitamin D in children and adults can cause fractures and bone deformities. Kidney disease (renal osteodystrophy) can cause fractures. Paget's disease can cause bones to become deformed and weak. Genetic abnormalities (such as osteogenesis imperfecta) can cause abnormal bone growth susceptible to fractures. Endocrine disorders (such as overactive glands) can also lead to bone disease.

Siemens Solutions for Bone Disease Testing

	ADVIA Centaur® Systems	ADVIA® Chemistry Systems	Dimension® Systems	Dimension® EXL™ Systems	Dimension Vista® Systems	IMMULITE® Systems	Other Siemens Systems	Siemens Imaging Systems
Detection/Monitoring/Management								●
Intact PTH	●			●**		●		
Ferritin	●	●	●	●	●	●	●	
Osteocalcin						●*		
Pyrilinks-D						●		
TSH	●		●	●	●	●		
Vitamin D Total	●			●**				
Creatinine		●	●	●	●			
Alanine aminotransaminase		●	●	●	●			
Aspartate aminotransaminase		●	●	●	●			
Alkaline phosphatase		●	●	●	●			
Phosphorus		●	●	●	●			
Bilirubin		●	●	●	●			
Calcium		●	●	●	●			
Magnesium		●	●	●	●			
Iron		●	●	●	●			
Gamma-glutyltransferase		●	●	●	●			
Hemoglobin							●	
Leucocytes							●	
Erythrocytes							●	
Thrombocytes							●	
Hematocrit							●	

* Not available for sale in the U.S.
** Under development. Not available for sale

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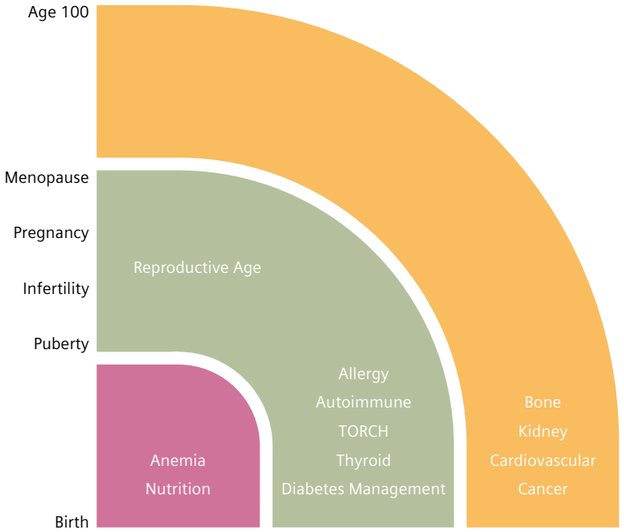
Caring for Women with Bone Disease

Reducing the burden of bone disease in women includes understanding risk factors, making rapid, accurate diagnoses when symptoms occur, implementing appropriate therapies, and monitoring treatment. Laboratory diagnostic testing plays an integral role in helping care for women throughout the continuum of bone disease and of life.

As an integrated diagnostics company, our comprehensive solutions, including multiple imaging modalities, follow the complete continuum of bone disease, including risk assessment and early prevention, diagnosis, therapy, and aftercare. In addition, our solutions in healthcare IT support the exchange of data for making informed decisions.

Women's Lifetime Health Continuum



Your results. Her lifetime.

Empowering you to advance the health and vitality of women throughout the continuum of life.