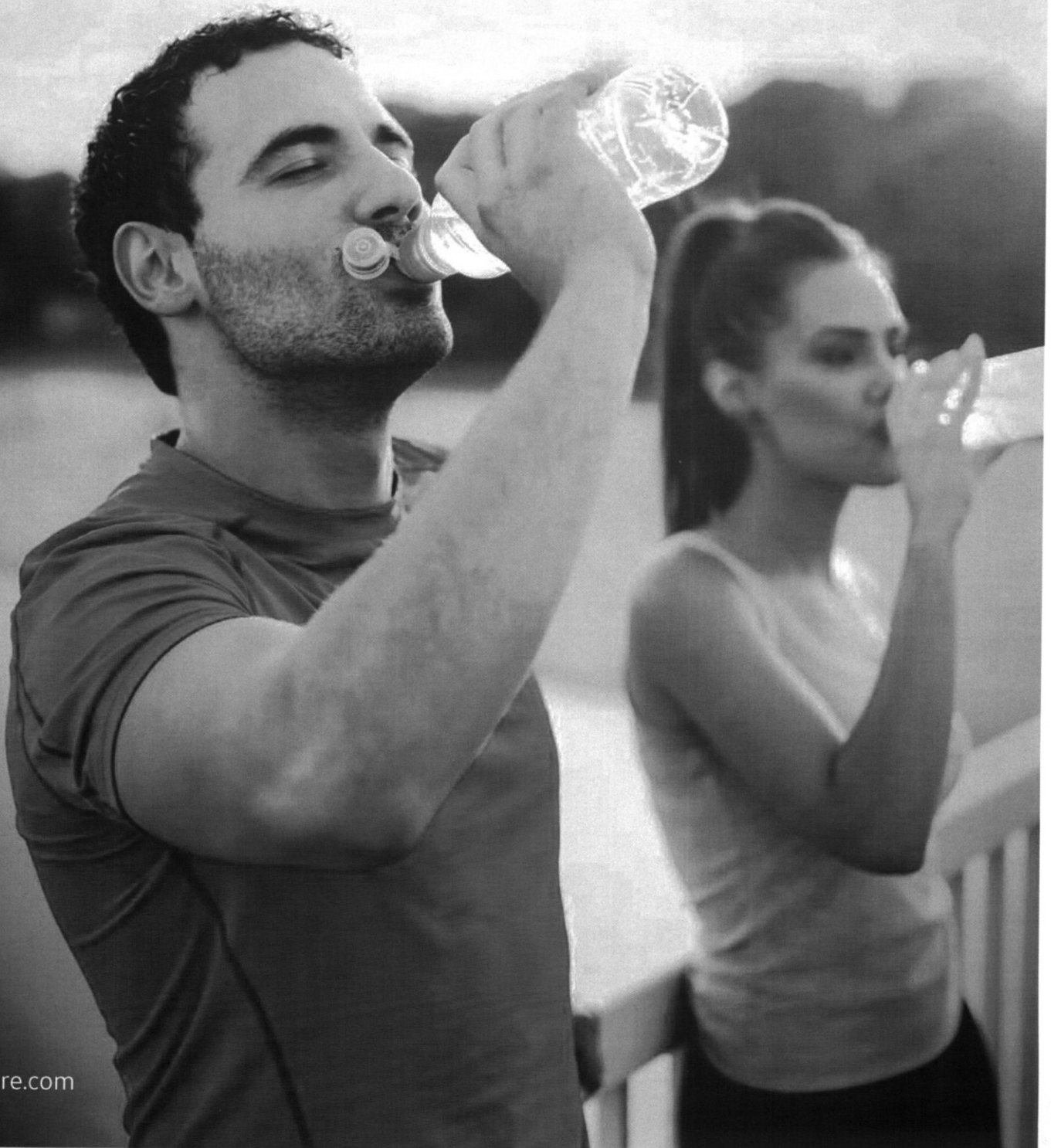


Body Composition Analysis using DXA Technology from GE Healthcare



Fat matters... where matters more.

Looking beyond the bathroom scale

Accurate measurement of body composition provides valuable information for assessing, monitoring and treating a variety of diseases and disorders.

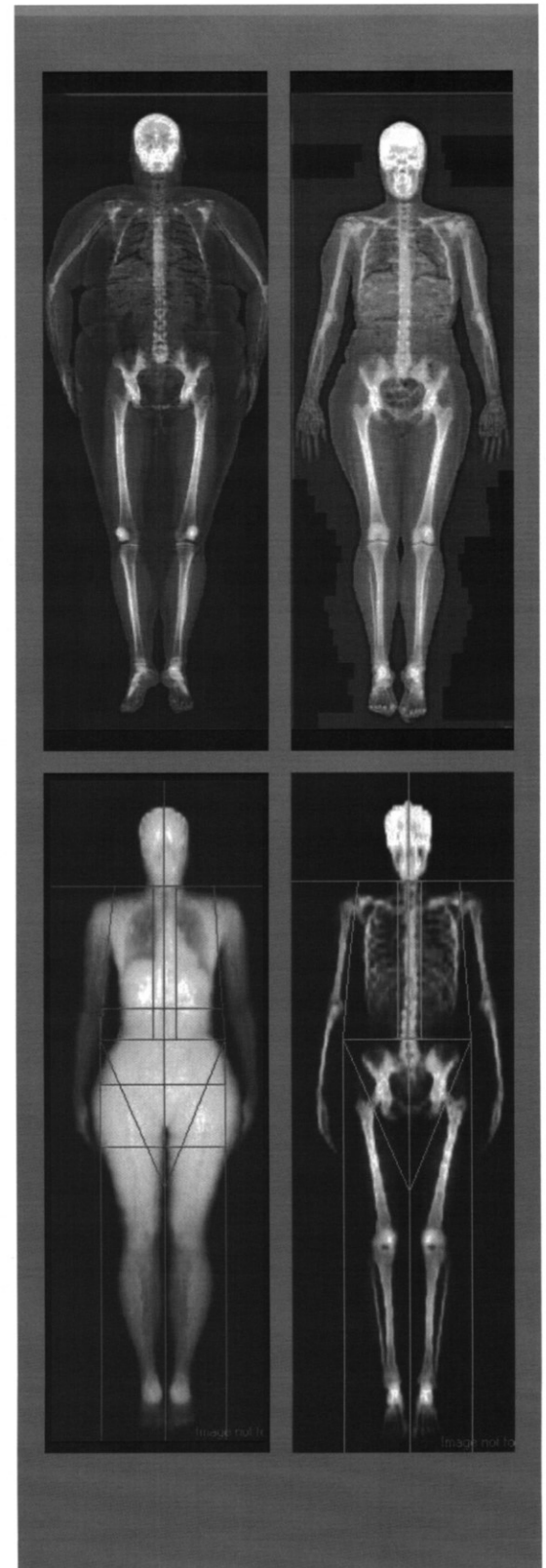
Most people are used to stepping on a scale before every visit to a doctor's examining room. But monitoring patients' weight – while helpful – is at best a crude and imprecise way to assess their health. Today's body composition measurement tools provide far more complete and precise information that can help support diagnoses and guide treatment. They can even help athletes make decisions on the training regimens they use to achieve the best performance.

Body composition measurement with dual-energy X-ray absorptiometry (DXA) can look beyond weight and the traditional body mass index (BMI) to determine body fat distribution – an important risk factor in a variety of serious diseases. More broadly speaking, information from DXA exams can prove valuable in conditions, such as:

- Obesity
- Anorexia nervosa
- Cystic fibrosis
- Wasting syndrome (caused by HIV/Aids)
- Chronic renal failure

In all these cases, body composition measurement contributes to a thorough patient evaluation and helps physicians monitor the effects of therapy, diet or exercise.

Body composition scans with DXA provide precise and accurate data on bone and tissue composition, including bone mineral density (BMD), lean tissue mass, and fat tissue mass. They provide both total body data and regional results (trunk, arms, legs, pelvis and android/gynoid regions). The measurements are fast and non invasive.





Clinical obesity

Obesity is linked to many debilitating and life-threatening disorders. Body mass index gives a simple anthropometric measurement of obesity, but data shows that the regional distribution of excess body fat is an important independent risk factor.¹

Those at greatest risk are now thought to be those with central obesity – high levels of upper body (abdominal) fat.²

- Worldwide obesity has more than doubled since 1980
- More than 1.9 billion adults, 18 years and older, are overweight. Of these, over 600 million are obese¹³



Important clues for managing eating disorders

Assessment of body composition is important in evaluating and managing severe eating disorders such as anorexia. It is well known that women with anorexia nervosa more easily develop osteoporosis.⁵

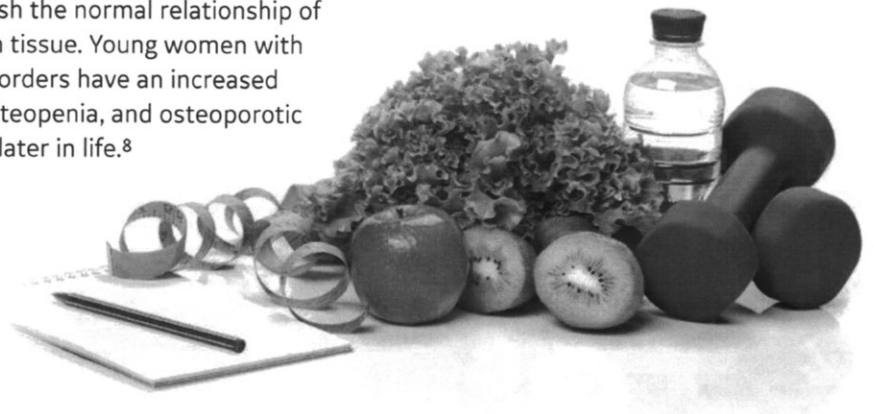
Patients with anorexia lose a substantial amount of lean tissue, accounting for from 15% to 45% of the loss of total body mass. Much of this loss in lean tissue is muscle. Physicians treating anorexia use body composition with DXA to:

- evaluate disease severity by setting target values of lean and fat
- monitor changes in both lean and fat compartments
- measure the effectiveness of nutritional interventions.⁷

As one study found, "A key advantage of DXA is that changes in bone mineral density, fat and lean mass can be monitored. Weight scale measures general weight change, but without specific differentiation of changes in fat and lean mass for the total body or in various regions of interest."⁸

Nutritional therapies must not only increase fat tissue, but must also re-establish the normal relationship of fat to lean tissue. Young women with eating disorders have an increased risk for osteopenia, and osteoporotic fractures later in life.⁸

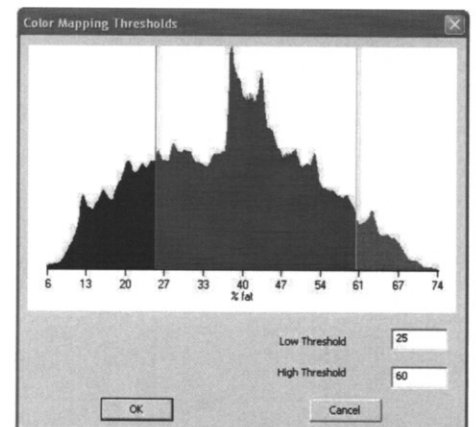
Studies show that change in whole body lean-tissue mass correlates strongly with change in body weight after hemodialysis. Renal failure also affects the skeletal constitution: Patients with renal dysfunctions are at significantly higher risk of primary and secondary osteoporosis.⁹



AIDS/HIV

Wasting syndrome, defined as weight less than 90% of ideal body weight, is a devastating disease and a consequence of HIV infections.¹⁰ Accurate determination of body composition with DXA has value in assessing the extent of gender-

specific muscle wasting and fat loss. The information can be used to monitor the effects of pharmacological and nutritional programs aimed at preventing or treating wasting syndrome of AIDS/HIV.¹⁰



User-adjustable %fat threshold: To visualize high % fat regions.