

# THE SCIENCE OF VOLUMETRICS IN WEIGHT LOSS

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People begin weight loss diets with the greatest of intentions but usually hunger and boredom take over, leading to overeating and often a weight gain. No one wants to go through life hungry so it is important to introduce strategies that allow us get the adequate vitamins and nutrients well keeping us satisfied so we don't resort to over eating.

One of the ways to accomplish this is by using volumetrics – the science of satiety. Introduced by leading weight loss expert Barbara Rolls, Volumetrics uses the energy density of foods to plan meals that are both healthy and filling. It follows all of the recommendations of the major health organizations in America and Canada. The basic premise is to add more healthy volume to food without increasing calories by knowing the energy density of different foods.

Energy density is simply the concentration of calories in a given weight (serving size) of food. At 9 calories per gram, fat is the most energy-dense of all—more than twice as dense as carbohydrates or protein.

You can work out the energy density of any given food by dividing the number of calories by the number of grams. To use two of Dr. Rolls' examples, if a 28g serving of a reduced-fat cheese stick is worth 60 calories, its energy density would be 2.1 (60 divided by 28). A 33g serving of salsa worth 15 calories yields an energy density of less than 1 (15 divided by 33). The lower the number, the more of it you can consume without gaining weight.

Volumetrics puts food into 4 categories of density. The first is Very Low Energy Density which includes non-starchy fruits and vegetables, non-fat milk, and broth based soups. The second category is Low Energy Density foods which include starchy fruits and vegetables, grains, low fat meats and fish, beans and legumes.

The third category is Medium Energy Density foods such as meat, cheese, pizza, French fries, salad dressings and bread. The final category is High Energy Density which includes crackers, chocolate, cookies, nuts, and oils.

The Point is to add more of category 1 and 2 to your meals to add volume without adding a lot of calories. Fill up on low energy density foods and still have a taste of the higher energy dense foods, just in smaller quantities. Add category 2 to complete meals instead of having it as the main part of the meal. Categories 3 and 4 are used less frequently and with limited portion sizes.

Though, not all food choices should be based on energy density as some very nutritious foods have medium or high energy density (I.e. nuts, olive oil).....and some are just too delicious to give up (chocolate). The key is to have high energy dense foods as a little treat at the end of a meal or to complete a meal.

A food that is high in energy density has a large number of calories in a small amount of food. A food that has a low energy density has fewer calories for the same weight of food. Dr. Rolls says that this matters because we tend to eat roughly the same weight of food each day, regardless of the number of calories. If we can choose foods that offer

fewer calories for the same amount of food, we will be able to manage our weight more effectively without going hungry. The key is to add those low calorie foods in larger quantities so that you are not tempted to eat so much of the high calorie foods.

The plan is not just effective for weight loss. Its healthy principals can be used to gradually introduce a more plant based diet and reduce the amount of junk foods consumed by your family.

You don't have to go hungry to maintain or lose weight. By making healthy food choices that keep you satisfied you are more likely to make permanent lifestyle changes that keep you at a healthy weight.

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