

Human Nutrition: Using a Computer Program to Determine How Well You Eat.

Wayne L. Silver

Department of Biology
Wake Forest University
Winston-Salem, NC 27106
(910) 759-5920
silver@wfu.edu

The science of nutrition deals with the amounts of proteins, carbohydrates, fats, vitamins, and minerals as well as the total number of calories of food energy a human (or other animal) must consume to stay alive and healthy. Nutrition scientists have suggested that a specific minimum amount of each nutrient be eaten each day. These dietary standards are set up by the Food and Nutrition Board of the National Academy of Sciences-National Research Council and are called Recommended Dietary Allowances or RDA's. The recommended allowances are designed for the healthy population of the United States and are revised periodically in order to include new research findings. Different RDA's have been assigned to specific age and gender groups. The most recent revision of the RDA's was in 1989.

In this laboratory, students compare their nutritional intake with the RDA's. In addition students calculate their energy needs and determine whether their diet meets these needs. The laboratory exercise runs two weeks. In the first lab session, nutrition is discussed and students learn to use a computer program to analyze the nutrients in a sample diet. There are many such commercial software programs available for both the Macintosh and Windows platforms. We have chosen The Diet Balancer Program from Nutridata Software. During the week between the first and second laboratory students are asked to keep a food and exercise diary, i.e., a list of everything they eat and drink and any dedicated exercise they may get, for three consecutive days.

There are several pitfalls in keeping a food diary. One of the most difficult aspects of keeping a food diary is determining the amount that is eaten. Students will have to make educated guesses much of the time. Another problem is in recording foods that are combination dishes. The best way is to mentally take the food apart and record the individual components. For example if students had a peanut butter and jelly sandwich on whole wheat bread they would record how much peanut butter and how much jelly were on the two slices of bread.

The second week the students bring their food and exercise diaries to class, analyze their nutrient and calorie intake and compare them with the RDA's and calculated energy requirements. Students may also pool their data in different ways to look at how different groups may consume foods and take in different nutrients and calories. For example, students might compare males and females, athletes versus non-athletes, or underclassmen versus upperclassmen.