THE BODY’S FUELS

There are three basic fuels, or “substrates” the body uses to produce energy. These substrates are found in varying amounts in all foods. Because an individual requires varying amounts of each substrate in the diet, monitoring what goes into the body is important.

Carbohydrates  Carbohydrates are the body’s main source of fuel. Good sources of carbohydrate include fruits, vegetables, breads, cereals, rice and other grains, and pasta. In order to meet the body’s fuel preferences, approximately 55-65% of an average person’s diet should be in the form of carbohydrate. There are four (4) calories per gram of carbohydrate. Thus, if a food item has 20 grams of carbohydrate, the food contains 80 calories of carbohydrate (20 grams x 4 calories per gram).

Fat  Most Americans consume too much fat. Furthermore, researchers find that individuals from other countries where the typical diet is low in fat may eventually become “Americanized,” gradually adding fat into their diets, upon moving to and residing in the United States. Fat is found in convenience foods typically found in “fast food” restaurants, margarine/butter, oil, mayonnaise, potato chips, etc. While the body does need some fat for stored energy, organ protection and other functions, a healthy diet typically consists of 25-30% of fat. Many physicians and dieters recommend diets much lower in fat for those at risk for cardiovascular disease. There are nine (9) calories in one gram of fat. Thus, if a food item has 5 grams of fat, it contains 45 calories worth of fat (5 grams x 9 calories per gram).

Protein  Found in meat, dairy products, beans, and various vegetables, protein is required for tissue rebuilding and repair, among other functions. While protein is important, the body does not use the substrate as its predominant fuel source. Subsequently, only 10-15% of an individual’s daily calorie intake needs to be in the form of protein. Furthermore, since the body will excrete excess protein—and water will follow this excreted protein—large amounts of protein consumption over extended periods of time can lead to problems related to water loss and kidney overexertion. Excess protein not excreted by the body can also be converted to and stored as fat. There are approximately four (4) calories in one gram of protein. Thus, if a food item has 10 grams of protein, the food contains 40 calories of protein (10 grams x 4 calories per gram).