Chapter One

What is diabetes?

The human body derives its energy from the food which it eats. Basically, there are three general food stuffs: carbohydrates, proteins and fats.

In the intestinal tract starches and sugars (carbohydrates) are broken down and converted to a simple sugar – glucose. Proteins are broken down to their structural elements – amino acids. Fats are split into fatty acids. In the cells of the body, glucose, amino acids and fatty acids are again broken down to carbon dioxide, water, nitrogen and minerals, and by this process energy is released. We use this released energy for heating our bodies, for building other complex chemical structures, for muscle action, and in fact for all the necessary functions of life. It is mainly the glucose and the fatty acids which we use for energy; the protein breakdown products, known as amino acids, are used as ‘building blocks’ (Figure 1). Only in starvation and uncontrolled diabetes are proteins broken down for energy. The whole range of chemical reactions is carefully co-ordinated to provide a smoothly functioning body and this is an enormously complex process.

Therefore, glucose is the basis of all carbohydrates and is found in ‘starchy’ foods, such as wheat, potatoes, and rice. Generally, these foods, which have a high carbohydrate content, are the cheap and filling foods, and are therefore the staple food of most populations. Glucose is also present to some extent in fruit, together with another slightly different sugar known as fructose. However, we find glucose in its most concentrated form (sucrose) in refined sugar. This is the sort of
So you have diabetes!

Figure 1