(1) I am very glad to talk to the diabetics of Australia - my fellow diabetics I should say, because I have been one myself for the last third of a century, thirty-three years. I'm looking forward to completing my fifty before I am bowled out. It was because diabetes took me up that I took up the study as my life work. This has been a great advantage to me in many ways because it brings more intimate knowledge, understanding, and sympathy, I hope, for my patients.

Perhaps it's best to start off by asking oneself what is the nature of this disease diabetes? It's quite easy to understand for the layman and I think I should go into a simple explanation. Of course most diabetics know what it's about, but there may be friends, relatives, and indeed some general public listening to this talk. The nature of diabetes is best understood by comparing the body to a machine, which indeed it is in many respects. An engine burns coal to give it heat and energy; the human body burns food - that is its fuel for the same purpose. Of course you don't see the smoke coming out of the human body, but it does all the same, through breathing out through the lungs. The chief food that we eat is... are called the carbohydrates – sugar itself and starchy foods, all of which are digested in the gut into sugar itself: glucose is the name we give it. When this sugar is absorbed in the normal person, it is burnt completely as fuel. The diabetic cannot burn this sugar. It circulates in the body in excess, increases the sugar content of the blood, the mouth and so on, makes the mouth sticky, makes the patient thirsty, he drinks a lot, he passes a lot of urine – and in this urine he loses the sugar which should have nourished a normal person. Besides therefore being thirsty, passing a lot of urine, he loses his food, gets tired, weary and loses weight, although not all diabetics, as we shall see, lose weight. Now, that's what's wrong: this excess of sugar produces the symptoms of the disease, poisons the patient, makes him weak and thin.

(2) And why does all this happen? Because although this disease diabetes was given its name two thousand years ago by the Greeks and indeed the symptoms were well described, we didn't know what the fundamental nature of the disease was until about thirty years ago. And now we know that the diabetic defect is due to the lack of the body's power to produce insulin. Insulin is a substance produced in that gland the pancreas, the sweetbread, at the back of the stomach, deep in the abdomen, and its function is to burn sugar, all carbohydrate foods. This bit of knowledge, obtained by research essentially on animals, has completely revolutionised diabetic treatment and the diabetic's life. This insulin can be used to prevent all the symptoms, to restore health, and make the individual normal. I'll come back to that in more detail when I talk of treatment. Now about the incidence of diabetes: who gets it, why do they get it? Well it's a disease that occurs all over the world, at all ages, although it is much rarer in children and the young than in the middle-aged. As regards countries, they all have it. Australia, the studies there have shown, seems to have a very high incidence of diabetes and here in this country it's put at two per cent of the population.

(3) Now back to the treatment: for this purpose we can divide diabetes into two groups – the mild and the severe. The mild are usually fat and middle-aged and though they've got lots of sugar, they're not seriously ill. They still produce some insulin from their own pancreas and the treatment is to restrict the carbohydrate food they eat so that their own insulin can deal with it and keep the patient well. The more severe types can produce no insulin of their own and it's got to be given to them daily, once a day, occasionally twice a day, and this insulin has to be administered by injection: that is the main drawback that many people feel about this treatment. The treatment consists in eating so much carbohydrate food and in taking so much injected insulin to use and burn it up. It should be remembered that this balance can be upset in two ways: if you don't have enough insulin or too much food, excessive sugar remains. If you don't have enough food and too much insulin, too much blood sugar can be burnt up and the patient can temporarily feel weak, tremulous and ill with that.

(4) Now, that's the best brief summary I can give you of the disease and its treatment.

I just want to mention one or two other things. Before insulin, diabetics died. Their life was not worth much. It was thought that the diabetic was a useless person – and this prejudice still remains. The handicap remains of not getting life insurance, of being handicapped in employment and all kinds of other ways. And in many countries the diabetics have founded themselves together into associations, associations of their own diabetic selves, to look after their own interests - diabetic associations all over the world. One is flourishing now in Sydney, another is starting in Victoria and so on, and this is of the utmost importance to the diabetic lay populace. They ought... I would like to see all of them join these associations and by their mutual support and help, improve their own conditions, improve their own treatment and remove the handicaps that they otherwise live under to a certain extent. That is a picture of the present position.

But what of the future? Can we learn the exact cause of this disease, can we be able to prevent it, can we cure it? All over the world in, I'm sure, thousands of laboratories, intense research work is going on in these points. And I think it is not too much to hope that in the next five or ten years, so great will be the new knowledge acquired, that if we cannot cure the disease, we may find a much better treatment, more simple, more helpful, and happier for the diabetic patient.