

66. Dr Judith Steel

(1) Tell me about your background.

Well, I was born in Yorkshire, and brought up there. My father was Irish. He was one of ten children of a postman, and left school at thirteen, without ever taking any exams. My mother also came from a very working class background: her father had gone into the mills at the age of eleven. But they were keen on education. My mother had been quite well educated, my father had virtually no education at all, and they sent me to Bradford Grammar School, which was halfway between a private and a state school. It was grant-aided, in those days, so it did have fairly small fees, but a fairly mixed background of people there. And then, I decided I wanted to do medicine, inspired by a most wonderful biology teacher that we had at school, who taught us way beyond the A Level syllabus. And particularly, I was interested in the endocrine glands, which included diabetes and thyroid disease, and these things. And at that time, my interest was sparked. And I went to Edinburgh University to study medicine.

So, would it be true to say you were interested in diabetes from school?

Yes, I was. Not only was I interested in diabetes from school, but even in those days, I had planned to get married and have children. And I knew that all towns had diabetic clinics, and that it was largely an outpatient-based specialty, and I thought that would be very suitable for a married woman with children.

Tell me about your time at Edinburgh University.

My time in Edinburgh was a very happy one. I loved everything about University: the academic life, and the social life. And I was still interested to hear more about diabetes, and it just so happened that the best lecturer that I ever heard in my medical course was lecturing on diabetes. This was a man called Leslie Duncan, who died a couple of years ago. And he was a very unusual doctor, in that he had trained previously as a vet. And those were the days when consultants all wore dark grey or black suits with white ties... white shirts, sorry, and a handkerchief sticking out of their pocket. But he tended to wear an anorak, and was well-known for his rather unusual behaviour. But he gave the most wonderful lectures on diabetes. So much so, that I can still actually remember some of the things he said, all those years ago. He was quite ahead of his time - although I didn't realise it at the time - in that he gave a whole lecture on how patients should adjust their dose of insulin depending on their diet. And I thought that was a fascinating way to learn to look after yourself.

(2) Then, we were assigned to various wards in the hospital. We had a certain amount of choice, but largely we were sent to certain wards, and I was very disappointed that I wasn't sent to his ward. So, I asked him if it would be possible to come to the diabetic clinics, even though I was on another ward. At that time, there was a Tuesday evening clinic, and a Saturday morning clinic, and so he agreed that my husband and I could go along to those clinics. And again, these are things I will never forget. The

Saturday morning clinic had dogs coming to the clinic! He was a vet, and he - the dogs had diabetes, of course - and he adjusted their insulin, as well as patients' insulin. It's amazing how many years that went on, before the authorities put a stop to it. He also spoke in language, which would not be acceptable now, really, to many of his patients. For example, when people said - as they often did when they were told they had diabetes, and they would have to inject insulin, possibly for the rest of their life, unless a cure was found - and the usual response was "no, no no; not me. I couldn't possibly do that, I hate needles". And his reply would be "well, Madam, there are a few categories of people who can't inject: those with no hands, those who are completely mentally retarded. Which category would you say you come in to?" And he would then pull down his trousers, revealing purple underpants, and would stick the needle numerous times in himself, to show how easy and simple it was. Most of them really loved that approach. There was the occasional person who was a bit thrown by it, but 99% of people loved him. He took a great interest in them. Another thing, I always remember him saying, to those who were overweight: they would usually say "I think it's my glands, doctor". And he would say "the only glands that you have a problem with, Madam, are the salivary glands. Go down to Gibbs' dog shop and buy yourself a muzzle". That seems funny, even now. It wasn't many years after that they started wiring people's jaws, which was a rather similar approach! Anyway, he was a very entertaining, very caring, very flamboyant character, and that really confirmed my view that I was going to do diabetes.

How large a part of your training was learning about diabetes?

Well, we did do quite a lot of physiology. In those days, we had lectures. We did quite a lot of pathology, and so we did learn about diabetes in the first few years. And then, during the clinical course, I think we had about ten lectures on diabetes - an awful lot more than they have now. And although we didn't all get to the diabetic clinic, we did... most of us did see patients in the wards.

Anything more about what the clinics were like, in the years up until you finished your training, in 1965?

Well, I think, when I look back now, that we were very fortunate - we had a very good diabetic clinic. Edinburgh was the first place in Britain to get insulin, because someone who'd worked with Macleod and Best came back from Toronto with insulin, very early on, and set up a small clinic with just two rooms. But, by the time I was in Edinburgh, they had their own, what would now be called, diabetes centre. That goes back to the 1950s. And there were several consulting rooms, there was a dietitian's room, there were three chiropodists, there were rooms for examining eyes, there was an education room. And so - we didn't realise at the time, of course; we just thought that's what everybody did - but many years later, when some places were opening diabetes centres, I'm afraid I did rather feel, we'd had one all along.

You say there was an education room. Who did the education?

The education was done by both the doctors and the nurses.

- (3) Yes, in those days, we kept our own records, which, again, was a little bit unusual. I think we had all the files of people's case notes in the clinic itself, and they were quite separate from the general hospital notes. We were supposed to get copies - and usually did - when patients were admitted to the wards, for any particular reason. Blood glucose monitoring, in those days, really hadn't started, although we did do blood sugars in the clinic. It was the days of urine testing. When I started, they were using tablets - Clinitest tablets - which you put five drops of urine, ten drops of water - it may have been the other way around - and then put a tablet in, which fizzed, and then you had to wait. And then you compared the colour on a chart to see how much sugar there was. I did do a little study, a bit later on, watching people do that, and it was quite amazing how many things you can do wrong doing that. I don't think, as doctors, we appreciated that the majority of people have absolutely no idea how to use a dropper. It was either drops of air or great squirts of fluid. Most people didn't know how to use a second hand to time it, either. It wasn't very good, but it was one up from the method they'd used a few years earlier. In the consultant's room, there were still splash marks on the wall from when they used to use Fehling's solution, and put the urine in the test-tube, and then boil it on a Bunsen burner. And now and again, it splashed out onto the wall. A few years later, the walls were painted, and that was no more.

And any memories of a diabetes ward, in the first half of the 1960s?

Yes, I did go up to the wards, quite a lot, and patients also came down from the wards. They were, what would now be considered, very old-fashioned Nightingale wards, which had, in some ways, quite a lot to be said for them. And we used to go up and see the patients there. The dietitians were very good at going up to the wards; although, I'm afraid I do remember the first time I ever saw a cockroach - a live cockroach, that was - it was on the back of a dietitian's white coat. There was a big problem, in the Royal, with the cockroaches. But we did some medication on the ward. But Dr Duncan always took the view that patients should look after their own diabetes, and they were always encouraged, in the ward, to give their own insulin, and judge the dose themselves, and to judge what they ate themselves. And that was... all the nurses knew that, so the nurses, if they thought the patient was wrong, they were allowed to ask a doctor, but otherwise, the patients did their own thing.

You say the Nightingale wards had something to be said for them.

Well, yes, because the nurses can see what's going on. It's much easier, in a way, to look down a ward and see what's happening. And quite a lot of patients like it. There's the assumption that everyone wants a private, single room, but actually, a lot of people like talking to other patients. They were single sex, in those days.

(4) What did you do after you finished your training?

Well, immediately after we finished our training, we went to Nigeria. The main reason for that was that my husband was interested in paediatrics, and a paediatrician from London had set up a wonderful hospital - it was a Methodist missionary hospital - in the middle of the bush, about fifty miles east of Ibaden. And they had a thousand under-fives a day, and they were all screened and treated by nurses, until a very small proportion came through to the one paediatrician. I did medicine: I had a leprosy clinic and a TB clinic. There wasn't a specific diabetic clinic, and diabetes didn't feature very much, because I think most of them probably died. We had a few people who were on tablets with diabetes, but it was the world of malaria and tetanus and rabies, and was absolutely fascinating. We then came back to Edinburgh to do our pre-registration year, which was tremendously hard work. We got the first ever married quarters in the Western General Hospital, in Edinburgh, which meant they put two beds into one room and the telephone rang twice as often. But it was very hard work. We used to think, wouldn't it be wonderful if you could only... only had to work between six in the morning and midnight, and could sleep after that. It was really absolutely exhausting, but fun as well; lots of camaraderie. And after that first year, I did get a, what was called, a senior house officer job, in those days - was the next step - and I did do that in endocrinology, which included diabetes. That was a very interesting time. And after that, I had my first baby. I wasn't off very long. I did have a six months' break, at that time, and then I wanted to work part-time. In those days, there were really no part-time posts. In general practice, they were mostly single-handed practices, and no question of part-time training, and in hospitals, there were no part-time jobs. So, I went back, actually, doing a locum for someone who was away, who had been starting up a diabetic clinic in the outpatient department at the Western General. And I built up that clinic, with advice from a consultant, and I learnt a great deal over that period. Then I had my second baby. A shorter time off then, only three months, and then I didn't have job. But I'd always wanted to work with Dr Duncan in the Infirmary, and Dr Basil Clarke, who also worked there. And I happened to meet Dr Clarke in Princes Street, and said I was looking for a job. And that night, Dr Duncan phoned up and said "oh, we'd love to have you. What I'll do, I will fix up with a drug firm that you get paid part-time by a drug firm. You'll have to do a little study on obesity, but that will only take one session, and you can do the other sessions in diabetes". And that's what I did. And that was a study of drugs that we don't use any more, for obesity. It was, in itself, quite interesting. And the rest of the time, I did diabetic clinics, and I loved it.

(5) I'd been there for several years, when - three years - and then I went to Kenya for a year. My husband had a travelling fellowship, and I got a job in the Kenyatta National Hospital in Nairobi, to work in diabetes.

What years were those?

That was 1971 to '72. And I had read a book, before I went - I'd gone to the

library. There was one book, written by a British doctor, on diabetes in the tropics. He'd worked in Uganda, and then moved to Jamaica, and it said that in Kenya, diabetes did not exist. But I knew it did, because Dr Duncan had many foreign visitors coming and working in his department for short periods, or even long periods of time, and one that he'd had in the past was a Dr Mngola, who'd been a junior doctor from Kenya. And he knew that he had gone back, and was now working in quite a large diabetic clinic in Nairobi. And so, he contacted Dr Mngola, and he was very happy to have me. I was actually paid, by the government of Kenya, as a houseman, although I was working, really, more as a consultant. But that was a fascinating place, and I learnt a great deal about lots of things, including diabetes. We had several hundred people coming to the clinic, and it was really quite difficult, in many, many ways. They used plastic syringes, but they used them until - they boiled them and reused them - and they used them until the nozzle was blocked with mud, because the water that they boiled them in was muddy water. And sometimes you couldn't see the markings, either. The insulin was a shambles. They had all different types of insulin, including Russian insulin. Some of the insulin vials were quite difficult to read - they were in foreign languages. And first of all, I thought "oh dear, there's, you know, such a problem about affording insulin". But then I realised, after a while, it wasn't quite like that, but the person buying the drugs was the cousin or brother of somebody in the government, and he didn't know anything about drugs. And the drug companies would bribe him to use their drugs. And so, sometimes they had long-acting insulin from somewhere, and sometimes they only had short-acting insulin. There was one occasion when they had no insulin at all. And there was nowhere to get insulin, except the hospital. There aren't any GPs. And that was a death sentence, really, because they were nearly all, what we now call Type 1 diabetes. And so, I knew that it was possible to get insulin in Nairobi, so I just lined up the whole clinic outside the pharmacy, and told the chief pharmacist they would just stay there until he found some insulin, which indeed he did.

- (6) There was an enormous amount of diabetes. A lot of them died, and my husband was busy diagnosing it in the children's clinic. Before that, it had just been put down to vomiting, which was so common, of course, from all the different bugs. But there was a lot. It was clear, from the records, if people didn't come for a while, they must have died. The Maasai, who are a very interesting tribe in Kenya - they're nomadic, and they live in mud huts - and their diet is basically drinking a mixture of blood and milk and cow's urine. And very difficult to treat them for many things. But the only Maasai that continued to come to the clinic were those who were in prison, and were brought up by the prison officers. And I fear all the rest died. It's certainly interesting, genetically, in that you'd think, if it was all due to genetics, the genes would have died out. But they certainly didn't. It was, I think, probably even commoner than it is here, although it's impossible, of course, to say that. When I first arrived in Kenya, on the ward, there was a young Kikuyu boy, who was sixteen. And

he had just developed diabetes. He'd been having a Kikuyu circumcision ceremony, where the men are not supposed to drink anything for forty eight hours after the ceremony. He had developed diabetes at that time, and they found him drinking water. So, he was thrown out of the village as not really a man, and would have died, only someone picked him up and brought him to the hospital. This young man was highly intelligent. He spoke English, Swahili, Kikuyu, Maasai and Kamba, which really covered all the main languages. And I paid him five pounds a month, which was a wealth to him. He was able to build a new house on that. He took us to his village, and to Maasai villages, and he acted as my interpreter, and educator, really. When I left, I tried to get money to support him to go on educating patients, because he was extremely good at it. But sadly, I never managed to do that.

(7) What did you do when you came back from Kenya?

When I came back from Kenya, I went straight back to the diabetic clinic in the Royal Infirmary, and decided I really was going to stay with diabetes, and I needed to broaden my experience a bit. So, I went to the renal unit and learnt about dialysis, and I went to the Children's Hospital and asked if it would be possible to sit in on the children's clinics. A lovely man, Professor Jim Farquhar, had a tremendously good diabetic clinic at Sick Kids. And he invited me to sit in, and then invited me to stay there and do a clinic once a week, with him, with a view, really, to getting to know the older children - the adolescents - so that when they transferred to the Royal Infirmary, I would know them. And I would have introduced them to the very slightly different methods of treating diabetes, which were applicable as they grew older. There had been a terrible event, which had caused a bit of aggravation between the two departments, in that there had been a particular child, who had a very bad social background, a lot of problems, who had several volumes of notes at the Children's Hospital, and whom they had spent hours and hours trying to educate, treat, improve, and so on. And she had gone across to the Royal Infirmary and been seen by a junior doctor, who'd written a letter back to Professor Farquhar saying "I've started to teach this patient about diabetes". He, naturally, was extremely annoyed about this. There were problems on both sides, in that he had taught the parents a great deal, and not necessarily taught the people themselves. There were more problems in the Royal, where we hadn't bothered about the parents, really. And it was clear that it was very important to have a link, and I was that link. I learnt a great deal from Jim Farquhar. But he also learnt a few things from me, because, the fact of numbers, really - he had about a hundred and twenty diabetic children coming to a clinic once a week, whereas in the Royal Infirmary, we had a thousand patients with diabetes, and we had a clinic every morning, including a Saturday and a Tuesday evening. And I remember distinctly that that was the days when the beef insulin caused, what we called, fat atrophy, which was hollows at the points of injection. And it seemed to be commoner in children than in adults. And I told him that the new insulin, the pork insulin, would fill in these hollows. Now, he didn't believe me, so he insisted that I put Plasticine in these hollows, and

then stuck them in water to see how much went over the edge, so I could get the volume of the hollow. And then, I was to do this sequentially, and see whether they really did fill up. Well, they so obviously filled up that that wasn't terribly necessary. And he agreed that, thank you very much, he had learnt a great deal. And after that, he started an association in Scotland, which was a society for the care of the young diabetic. It consisted of half of paediatricians, with an interest in diabetes, and half of adult physicians with an interest in young people with diabetes. We met at very attractive places in the middle of Scotland, often Pitlochry, but sometimes other places. And socially, it was a wonderful event; we met twice a year. It was also extremely educational. We did various studies; we had speakers up to talk to us; we spoke to each other. And it really did break down this barrier of, you know, paediatricians... adults saying "paediatricians really don't know much about diabetes", and paediatricians saying "adults have no idea about children". And it became "we", instead of "them and us". And that was a very successful society.

(8) Any more memories of the Hospital for Sick Children in this period, 1972 to '74?

Yes, the diabetic clinic was really very well run there. They had an excellent dietitian, they had social workers, and they had had a diabetes nurse specialist for quite a long time. She went and visited in people's homes - it was a full-time job - and was in the clinic as well. I didn't realise, at that time, that there were very few other places that did that. We also ran a home for difficult diabetic children, which was run by Barnardo's - which happened to be opposite my house, so I got quite involved with it - where we took children from all over Scotland, who were having particular problems with diabetes. Jim did tend to attract problems, because he was so good at dealing with them. And I do remember one day, when a mother brought a very difficult child to see him. She wasn't very happy with the management at the place where she was being looked after. And after the clinics, we always had a meeting, where we told him about the patients we'd seen, and we chatted about what might be done, and so on. The rest of us were sitting in the room, waiting for him to come, and he didn't come in, and he didn't come in. And then eventually he came in with his forehead bleeding. And this girl had thrown a chair at him - this difficult child - and he explained that, and he said "but that was great. She threw it at me and not at her mother"! And I often thought of that, when patients got a bit annoyed, you know, they would just... their vengeance at the whole scene, and perhaps it's best to take it out on the doctor than on the rest of the family.

What kinds of backgrounds did these difficult children come from?

Well, that was quite interesting. There was really two different groups. There was a group that came from the Highlands and Islands, who really were just ignorant, because, in those days, there was no diabetic clinic in Inverness, and they really didn't learn very much, and some of them ran into problems. And the other half were the Glasgow thugs, who were rather unmanageable; who, I'm afraid, did, sometimes, tend to be rather violent. But Jim coped with all

that. He had also spent a lot of time in Africa, and I think that's where he got the idea of using nurses more, as I had done in Africa, because they... you did use nurses a great deal. He was also very aware of the problems there, and we used to collect money and send it back to diabetic clinics, to buy fridges for the hospitals. Not for the patients: patients didn't have any electricity. They didn't have toilets, never mind having fridges to keep insulin. But I had done a little study in Kenya, showing that, actually, even in the heat of Kenya, which is sort of eighty, eighty five degrees, it does take about six months before insulin loses its potency. And that's relevant for people here, now. You really don't need to find fridges when you're going away to Spain for two weeks, or keep things in cool bags, because it takes quite a long time. And so, he was very interested in that, and had worked, himself, in Africa and many places, which I think had influenced him a great deal. I had founded the British Diabetic Association in Kenya, and, while I was there, they joined the International Diabetes Federation. You had to pay quite a lot to do that, actually. And we raised the money to do that. We also raised money for a fridge for the clinic, and Jim Farquhar was very sympathetic about that, and he also helped to raise some money. I'm sorry about the slip of the tongue: it should, of course, have said the Kenya Diabetic Association, but we did join it to the International one.

(9) What else did you do when you got back from Kenya?

Well, the other thing I did was have my third and last baby. And that really made me get involved in diabetes in pregnancy. I had always been interested in it, but the way things worked out - I was still working part-time, and indeed I always worked part time - and the pregnancy clinic was on a Wednesday morning, and I didn't normally go in on a Wednesday morning. But when I was pregnant myself, everybody was coming to me and saying "ooh, you're pregnant. Why don't you look after me? Tell me about pregnancy". And so, I changed my mornings, so that I would work on a Wednesday morning. And at the same time as that, while I was going to Sick Children's, I used to go to some of the lectures there. And Jim Farquhar, who'd been very interested in the infant of the diabetic mother - indeed, had done his MD thesis on that - gave a lecture on diabetes in pregnancy. And I will never forget that lecture, because he said "in the centres of excellence, of which Edinburgh is certainly not one, the perinatal mortality is falling dramatically". And I thought "oh dear". And so, at that time, there were... people were being seen in the clinic at the Royal Infirmary, who were then going across to the Simpson Maternity Memorial Pavilion, which was only five minutes' walk - it was in the same grounds - but the two didn't really meet very much. They saw a very kind, a very good obstetrician in the Simpson, but there was no liaison between the two departments. At that time, the obstetrician was retiring, and a new young obstetrician was given the job - a Dr John Parboosingh - of looking after the people with diabetes. He didn't know a great deal about it; nor did I. So, Jim Farquhar gave us all his books - one of which I've still kept, because I think it's rather precious - on the early days of diabetes in pregnancy. The other thing we did was we went back twenty years, through all the records of pregnancies in the Simpson, and it was disastrous. The



perinatal mortality - that is still births plus deaths in the first ten days of life - was running at about 35%, which is dreadful. So, we went through the notes to see if any of these deaths had been avoidable. And there were many things that could have been avoided. There were people going into ketoacidosis, because their diabetes wasn't very good; there were junior obstetricians dealing with deliveries; there were a lot of problems. And we made a list of the things that we thought we could improve. And it was also clear that one of the things that really needed to be improving was control of diabetes. And so, we started to control the diabetes, but, at the same time, it had become clear in other centres, particularly, that as their perinatal mortality was coming down, one of the problems that was left was the very high incidence of congenital malformations. We also had a high incidence of congenital malformations, but we were having lots of other deaths for other reasons as well. And we thought, really, it looks as if we've got to control diabetes before pregnancy, because a baby is all formed in the first few weeks of pregnancy. By the time somebody would normally come to an antenatal clinic, at six to eight weeks, then you can see the foetal heart beating, the baby is really almost fully formed. And it was clear to us that, if we were to do anything about that - and it seemed logical to do that - we would need to get them really well controlled before they got pregnant. And in 1974, we began to talk about a pre-pregnancy clinic, and it was really up and running quite well by 1976. I think it was probably the first pre-pregnancy clinic that was started anywhere. We had... it wasn't just to improve control. It was to improve the diet; to look for complications, and treat them if necessary; to see what drugs somebody was on, if they were appropriate; to check their thyroid function; and to talk about any gynaecological problems, clearly, that they'd had in the past. So, there were many things that we did at that clinic, in addition to improving control. But the main thrust was to improve diabetes control.

- (10) Then, of course, I realised you even need to go back before a pre-pregnancy clinic, and needed to deal with the problem of contraception, because it's most important to have planned pregnancies. So, then I went and did my diploma in family planning, and, for a while, I did a family planning clinic one evening a week, just so that I would be able to advise my patients with diabetes. And, as the years went by in the Simpson, it was a most rewarding thing to do - that I've ever done - because, not only did the number of deaths and the number of congenital malformations fall, but the babies were just like normal, healthy babies. Not all of them, of course; there were still a few problems. But the vast majority did extremely well. We were eventually able to show that we could reduce the congenital malformation rate from around 10% down to a very low level, which was only slightly above that of the general population, by improving control in early pregnancy. Lots of other things contributed to the improvement, of course: better obstetric care; all the ultrasounds, and so on, that you can now do in obstetrics, so that many of the... if there were any abnormalities, and they were very severe, the babies weren't always born. There are a few abnormalities which are a 100% fatal, and it was tragic in the days when

these sort of babies had to become fully mature and be born. And another major factor in the improvement, of course, has been the improvement in baby care. Special care baby units have become better and better at keeping premature babies, and babies with problems, alive and well. And so, although we haven't found the cure for diabetes, and there hasn't really been anything except general improvements, and improving control of diabetes by methods which we've known for a long time, it just shows that, if you do that and you work hard at it, then it's very worthwhile. And it did always seem to me that if you could change babies from looking hugely big and fat, and having breathing problems and abnormalities - all the different things that used to happen to them - if you could change those into babies that were perfectly normal and healthy, then you could probably stop the complications of diabetes as well, which was much more long-term. And, over the years, it has, of course, been shown that that's the case.

- (11) Were there any changes at the Edinburgh Royal Infirmary during this period?

Yes. Well, when I came back from Kenya, in '74, I actually got a proper job, as a half-time registrar. They were just beginning to produce these jobs, at that time. And then, eventually, I became a half-time senior registrar, which meant eight years, because it would normally be four years. But that suited me fine. And so, at least, then, I had part-time permanent employment, which hadn't been possible before. Changes in the Infirmary itself: well, of course, there were... blood glucose monitoring became widely available. Dr Duncan had done that way back in the 1960s, because there were sticks called Dextrostix, which showed if the blood sugar was very low. And he had used those in patients with problems with hypos; again, I think, very ahead of his time. Before anything was published about blood glucose monitoring, I saw Leslie teaching people to do that. By the time I came back, blood glucose monitoring was becoming more common, and, of course, that was a tremendous advance, helping us with everybody, particularly including the pregnant patients, to look after their diabetes really well. The insulins kept changing, and there became more of them. Right at the very beginning, of course, when you prescribed insulin, you just got insulin. Sometimes it was Boots, sometimes it was Allen & Hanburys, sometimes it was Wellcome. But as time went on, more companies became involved: Novo and Nordisk, which eventually joined together, and then there was Wellcome still, and then Ely Lilly came in. And, of course, right at the end of my time, Aventis came in. And so, the insulins had got more varied. Not really very different. People wouldn't like it, to say in the old days, it was very similar to the way it is now: but in the old days, we used an insulin called PZI - Protamine Zinc Insulin - which was a long-acting insulin. And then we gave soluble insulin before breakfast, and again before the evening meal. Very occasionally, we also gave it before lunch, which, in some ways, was like the basal bolus method that we use today. And so, we were able to adjust insulins and get really good control, from the seventies, with blood glucose monitoring. And non insulin-dependent

diabetes, as we called it then - Type 2 diabetes, as we call it now - was already becoming a bit commoner. And Dr Duncan had always used Metformin. He always maintained that it was only Fenformin that caused lactic acidosis, and Metformin was fine. And so, I was brought up with, right from the early days, using Metformin. We continued to use it all the time that I was working in the clinic. Another thing that I realised later, that Dr Duncan was ahead of his time in doing - or maybe there were other people that didn't publish it either - but he had a system called the surgical diabetic system, where one of the registrars would, a week at a time, would go round all the surgical wards and the obstetric unit and the eye pavilion, and make sure that the diabetics were being looked after properly. From the 1950s, Dr Duncan had used insulin in a drip - intravenous - to control diabetes over the time of surgery, and over the time of delivery. That was described quite a few years later, but we were all brought up used to doing that.

(12) You were a senior registrar from 1975 to 1983. Do you have any more memories from that period?

Well, I did become involved with the Diabetic Association - the British Diabetic Association. At that time, I was on the Medical Advisory Committee, and later the Research Committee. And I got involved, through them, with the diabetes children's camps. We used to go as a family, which was quite fun. My husband had been a Scout leader, so he was - and he's also a doctor - so he was really very useful, as well. And I would go as the doctor. My own children came, and enjoyed it very much. They did grow up slightly steeped in diabetes, but I do remember one time when a patient phoned. My son was quite young, and he answered the phone. The patient said "could I speak to Dr Steel?", and he said "no, you certainly can't. She's making my tea", and put the phone down. But they joined in the camps; even wanted to do injections, because that's what everybody did, and you got points for your team for injecting in different places, at that time. So, they joined in everything, and had great fun. They were exhausting. We had excellent programmes of doing different things every half hour, because children - young children - can't concentrate for longer than that. And we took them on outings. It was sort of rather scary, with a bus load of forty children with diabetes, and you'd get held up in a traffic jam, and think that they were all going to go hypo before lunch. We did, of course, have snacks and things with us. But, living with children with diabetes, and dealing particularly with the hypos, is a very good learning experience that I would recommend to anybody dealing with diabetes at all. And the meals: we had lists of carbohydrate exchanges, and so it was a very good way of learning what was in everything. Those, of course, went out later, but have recently come back again. And it was just fun. We did a few camps in Britain, and then my husband had a few months in Vancouver. We couldn't really afford to go to Vancouver, so I wrote to the Canadian Diabetes Association to see if there was any chance of us doing a camp in Canada. They were very enthusiastic. I think the way their health service works, they found it quite difficult to get doctors. And we went and did one on Victoria Island, which was wonderful.

My children learnt to water ski and canoe and sail. The diets, in Canada, were incredibly difficult to follow. They not only had carbohydrate exchanges, they had eight different exchange lists: meat exchanges and fat exchange. I remember peanut butter was one meat, one fat. And you really need to have a degree in mathematics to work it all out. It was very restrictive and difficult. I did feel that our system of carbohydrate exchanges worked rather better than that. But, those were the days when children - you could watch them fiddling their blood sugar results, and, earlier on, their urine results. But they were adorable, on the whole. I think the children learnt a lot. They had great fun; they learnt about diabetes, and they mixed with other children with it, and realised that they weren't the only one; and they were away from their parents. I think there were many reasons why those camps were excellent.

(13) What did you do after 1983?

Well, I became an associate specialist, which is a sub-consultant grade, which suited me fine, because it was a permanent appointment, and I was able to do it part-time. I did get treated as a consultant, in many ways, really, but that didn't matter. We went on and did a few different things, in the clinic in the Royal Infirmary. We start... in 1983, we started what we called the NIDDM clinic, that stood for non insulin-dependent diabetes mellitus, but that's now Type 2 diabetes. And we had, in our education room, we got all the patients, who'd been recently diagnosed, to come along, and a doctor gave a talk with slides about diabetes, and a nurse gave a chat about monitoring, a chiroprapist gave a chat, the dietitian gave a chat. And that, I think, was quite a useful thing. The other thing we did, which was very interesting, was we started a liaison with an excellent liaison psychiatrist. I had become, at that time, very interested in eating disorders, because we had a series of young ladies with anorexia nervosa. And although the numbers with severe anorexia were rather small, I realised that, from talking to them, that reducing insulin to lose weight was quite a common thing in young women, and that young women were terrified of putting on weight. There were quite a few things about diabetes, which really made them rather more prone to eating disorders. And, at that stage, I got involved with a liaison psychiatrist, who already knew quite a lot about eating disorders in other people. And we did a few studies, which we published. But we had meetings, every two weeks, at lunchtime; Friday lunchtime, we had a meeting with him. And that was a very useful meeting, because the junior members, any of the doctors or nurses in the department, would present cases to him of a variety of problems. These included people with psychiatric illness, but most of them were people with problems in relation to their diabetes. And he decided on a few that he would take on and treat. He advised us how to treat many of the others. A few, he said, that we were better not to try and do anything with at all; we might make them worse. But that was very useful in learning from him, how to manage some difficult patients. And it was good for me. I was already quite interested in psychiatry, and had a few depressed patients. And it was just good to have him hold my hand, a bit, and say "yes, you know, you're treating them the right way". So, in many ways - as he always pointed out to us - we were

in a better position to do it than he was, because we knew the patients and they trusted us, and many patients don't like going to psychiatrists. But his input was really very important. He also came along to what we then started, which was the adolescent clinic. We had a meet... an adolescent clinic in the evening, where we had an educational programme, and then we had general discussion, then we saw the patients individually. That, really, was very successful, at the time, and he was involved in that. The other thing, I got involved with, was training the ambulance staff to recognise and treat hypoglycaemia. There had been quite a lot of admissions to the hospital, which could have been avoided. I'd already been taught by Dr Duncan, many, many years ago, to use Glucagon, and most of our patients' relatives did have Glucagon, which I think is still one of the most underused useful drugs there is. And we arranged that the ambulance staff would be able to do blood sugar levels, and they would then treat with Lucozade, if possible. If the patient couldn't take the Lucozade, they would give Glucagon. And we were able to reduce the number of admissions to Accident and Emergency enormously, by doing that. It was a bit of a political issue, trying to get the ambulance authorities to agree to everything, but it worked very well.

- (14) After that, I became involved in some of the politics, perhaps you might call it, of pregnancy. I was involved in the St Vincent Declaration report. I used to go to London on the British one, and then I became the Chairwoman of the SIGN, which was really the Scottish equivalent, which produced guidelines, in the same way that NICE in England now does, for various problems. And I was chairwoman of the pregnancy group; again, quite an interesting experience. The other thing I did, during that time, was go to Charles Fox's counselling courses in Northampton. I went, first of all, to learn, and then I went to help run it the following year. That was very useful, and that introduced me to what I've been doing since I retired, which is teaching medical students some communication skills.

Can you tell me more about the counselling?

Well, it was run by Dr Fox and an extremely good psychologist. And he taught us, first of all chatting to us, about the important ways of approaching people, and of listening to them, which were general counselling skills for anyone who's doing counselling, but this particular course was all people related to diabetes and an interest in diabetes. I remember him telling us there are about fifteen different levels of raising the eyebrows! But certainly, things like non-verbal communication and empathy, and these sort of things, are so important. I had thought I was quite good at it, but I learnt; I certainly learnt a lot from it. And then we were divided into groups, and somebody was the client, and somebody was the counsellor, and somebody else was the observer; groups of three. And we had to practice these different skills we'd been taught. We were taught one or two at first, and then a few more, and during the interview we had to practice these. And it was videoed, and then we would play back the video. Some people did find it really rather intimidating. We weren't brought up in the days when people stood up and talked, and people were videoed, so it was a little bit scary

at first. But it did make me realise how important it was, and how much you can learn. A lot of how doctors approach patients is how they are, and there's a lot that you can't teach, but it made me realise that there is quite a lot you can teach, and I think many people should do such courses.

Can you give an example or two of the kinds of things that doctors might be likely to do wrong, in approaching patients with diabetes?

I think many people don't put patients at ease at the beginning. They don't really give the patient chance to talk. They come in and say "now, you've got diabetes. You're going to have to give insulin injections for the rest of your life, and the nurse will show you how to do it, and the dietitian will tell you about your diet". They don't start off by saying something like "what does diabetes mean to you?", because, of course, those of us, who are working, realise that many people, it just means, well, you don't have to eat so much sugar, and that's all there is to it. To other people, it might be that their father had his leg amputated and went blind, and are absolutely terrified. And so, it's extremely important to let the patient tell you what it all means to them, and what they feel about it. You do get some really awful doctors, who say things like, you know, "do as I say or you'll go blind". Not many of them would actually go to a counselling course, unfortunately.

(15) You were a part-time associate specialist from 1983 to 1993. What did you do next?

Well, at that point, my husband got a new job as a professor at the University in St Andrews, and it was too far to commute back to Edinburgh to work. And so, I started working in the Victoria Hospital in Kirkcaldy, with Dr Ian Campbell, who I already knew, because he had trained in our department in the Royal. He's a delightful, extremely able doctor, who runs the diabetic clinic there. And I became a part-time associate specialist, working with him.

What differences did you find in Kirkcaldy?

Well, people used to be quite rude to me, and say "what's it like working in the sticks?", and "what's it like going to a non-teaching hospital?" My reply always was "well, there's actually more teaching in the non-teaching hospital than there was in the teaching hospital"; which is true, because we had students from St Andrews, from Dundee, and from Edinburgh, coming to Kirkcaldy. In many ways, it was a better hospital, in that there were fewer consultants, and they knew all the patients themselves. It was a very happy, smaller place, which is always easier to work from. It was harder work, in that the pressure of seeing large numbers of patients with fewer doctors meant that you really had to work quite long hours to cover things properly. I did manage to get a clinic running for special problems. I did eventually persuade the authority that, sometimes, spending a long time with a patient, you can save time in the future, and do things that you can't do if you're just whipping through a clinic. So, I was able to do that. There was a very good pregnancy set-up already there, in Kirkcaldy. My only regret was that the numbers were inevitably smaller. But they already

had a very good link with the maternity hospital. They didn't have a formal pre-pregnancy clinic, when I first went there. There was some pre-pregnancy counselling done, but not in a terribly organised way, and so I did set up a pre-pregnancy clinic again. And we started an adolescent clinic, which was interesting to do. There was a wonderful diabetes nurse specialist lady there, who was very much a mother figure, and looked after everybody, and I learnt quite a bit from her. While I was there, we achieved the goal, that they'd had for many years, of having a diabetes unit. One of the wards, that was actually in the hospital grounds, had originally been a scarlet fever ward, was converted partly with Health Service money, partly with money that Dr Campbell raised. And we had a most wonderful diabetes centre, with lots of consulting rooms, education rooms, we had ophthalmologists there, chiropodists, dietitians. That was really better than any department I've ever seen anywhere else.

(16) What was your involvement in the treatment of complications?

Well, I was involved, as anyone looking after people with diabetes is involved in the management of complications, of course. But the one I was, perhaps, most interested in, was the prevention of blindness. We had, in Edinburgh, had set up a group for people who were blind from diabetes, which was quite a social group; which we went on outings and had discussions and meetings, which had been quite useful. I mean, I'd lived through the days when... before the laser treatment for diabetic eye disease. In my very early days, I saw many people go blind. I saw a woman who actually lost her sight completely during pregnancy. There was absolutely nothing you could do about it. And then I lived through the times when they removed people's pituitaries, which was actually quite effective, but had terrible complications otherwise. And then, laser treatment had become available, many years before I moved to the Victoria Hospital. The interesting thing, at the Victoria Hospital, was that we actually had an ophthalmologist, sometimes two, in the diabetic clinic. And that was tremendous, because you could literally take somebody by the hand, who maybe hadn't come to the clinic for a long time and had bad retinopathy, and introduce them to the ophthalmologist, who would be able to start the treatment straight away. That link was a very useful link. And it led to doing a little study with the ophthalmologist, there, and the eye specialist nurse, looking at blindness in Fife, and looking at the case notes of everybody who was partially sighted or blind, and seeing if there had been anything that was preventable. And there were very... is a very good system, both in Edinburgh, for - ever since was a student, really - of looking at eyes every year; every patient had their eyes looked at every year. And in Kirkcaldy, that system had been going for a long time, as well. And when we went through the records: really, the answer was that, with Type 1 diabetes, people don't go blind any more, unless they don't attend a clinic, or don't come for their treatment. There were one or two people who had missed the boat, a bit, by moving around the country to different places; there were a few with serious mental disorders, who had not come for appointments; and there were a few, sadly, a few people who just didn't like coming to clinics. And really, the blindness is now very, very rare, in parts of the country, I think,

where there is a good screening and a good treatment programme, which is a happy message to be able to tell people who've just developed diabetes - that, in the old days, many people went blind, but now, if you come to the clinic, it's largely preventable. Type 2 diabetes isn't quite the same, in that some people may have quite advanced eye disease when they present, or even present blind - there are a few like that. That's more difficult to deal with. But even so, of course, screening and treatment is extremely valuable.

(17) Any more memories from the period when you were working at Kirkcaldy?

Well, I did get involved with the British Diabetic Association's exchange programme, in 1996. It was decided, by the European Diabetes Association, that countries in the East would be twinned with countries in the West. And Britain was twinned with Bulgaria. And I went on two delegations, to Bulgaria. That was a very different, sort of, interesting experience. I, myself, am disabled from a spinal cord tumour, which I developed many years ago, now. And I arrived, ahead of the other group, in a wheelchair. I saw the sign saying British Diabetic Association, so I pointed at that, and the man took one look at me, and said "no, you're in the wrong place". The inference being, you know, we don't have disabled doctors. And people were amazed that - I walk with a stick - that I was actually able to be a doctor at all. And that was interesting, because what really followed from that was that disability of all sorts, in Bulgaria, tends to be hidden, and that children with diabetes were hidden. They were taken away to schools where they lived, in the countryside, and were considered to be totally separate, which was very, very sad. And I think the most useful thing we did, in those talks, were we had discussions - we gave a talk, they gave a talk - and there were patients in the meeting. And that was very strange to them, that patients should be involved in their own management, and patients should learn more about it. So, I enjoyed that. Met some interesting people. In particular, I met a midwife. There had been a system of bringing people from there to Britain, but I realised, through quite a lot of my experience abroad, that there are pitfalls in that, in that sometimes people come for the wrong reasons - they come for a holiday - and sometimes officials send people they know, rather than people that would be useful. So, I decided to select my own person, and I selected Elka Dimitrova, who was an amazing young lady. She listened to my pregnancy lecture, and then came and asked, with a whole list written down of questions; all very sensible questions. And took us to her maternity hospital, where she worked in Sofia, which was really extremely primitive. They didn't even... They had sort of horrible rags, which were nappies for the babies, which were hanging up. My nurse, I took, was horrified - there was mould in the steriliser. And really realised that, in many ways, they weren't very advanced. But there were some things that were quite advanced, and this nurse was very good at talking to patients, and explaining to them about diabetes. And she came over and stayed with us for two months. And she came to the clinics, she also went out with midwives - district midwives - and went to a few other centres as well. And that was interesting, and another useful experience.



(18) As you reflect on forty years of treating people with diabetes, would you say that their care has got better and better?

Yes, of course it's got better and better. But there are some things, though, when you've been in the business as long as that, you feel that they keep rediscovering the wheel, you know. Many of the studies, which I used to be asked to review for journals, I've found had been written twenty, thirty years before, already. I was quite upset when they stopped carbohydrate exchanges. I was accused of being old-fashioned, and, not being a dietitian, didn't understand about diet. As a woman, I've always taken great interest in diet - I think it's extremely important - and I was absolutely delighted when they reinstated the carbohydrate exchanges. Having said that, of course... of course everything has got better. There have been... blood glucose monitoring was a massive advance, haemoglobin A1 measurement was a massive advance. Different improvements in monitoring, improvements in syringes, all these sorts of things are great advances. I consider it's been a great privilege, working in diabetes. I've met people from every background, every social class. I have had the pleasure of knowing people for many years. I've watched my children grow up - my children with diabetes grow up - and have their babies, and looked after them. The most rewarding thing of all, of course, has been to see these wonderful, healthy babies.