Sri Kodali: So Roger, welcome to the second half of our podcast and it's going to be about you. It's going to be **all** about you.

Roger Barker: <laugh> oh dear. My wife would hate this. <laugh> thanks. I talk enough about myself as it is on a good day.

Sri Kodali: So you are a world famous consultant, neurologist, and an expert in Parkinson's disease, particularly in the stem cell research side of it. I'd like to go back to the beginning, the very beginning. Which school did you go to - how was school for you, what happened after school and how did you end up being the professor of stem cell neurology?

Roger Barker: I went to a school called Haberdashers' Aske's school in Elstree, which is in north London - HABS. And so it's got quite a long pedigree and it's part of a whole series of schools. And it's probably most famous because it's near Elstree studio. So they used to film all sorts of television series around our grounds. So the older Avengers, which most people wouldn't know, was filmed there. I went there and stayed for 10 years. I went at the age of eight and Mark Manford was in my year. So I've known Mark Manford longer than almost anybody else on this planet, apart from a few relatives. And there was another chap who I did my A' levels with called Dave Peterson. So when we finished at school, there were 13 of us doing our A' levels in one class, Mark Manford, myself and a chap called Dave Peterson who became a neurosurgeon.

So three out of the 13 ended up in neurology or neurosurgery, which is quite a percentage given how many people do that in this country. The school was great in the sense that it was very academic, probably the most academic competitive place I've ever been in my entire life, regardless of what happened to me after that, it was very much driven by either being extremely good at sport or very good academically. And I was regarded as neither. So I was sort of an also ran in all of these. And I always remember, you know, towards the end, I decided that I wanted to do medicine and I did medicine because most of my friends were doing medicine. So that seemed like the options to do for your A' levels. It seemed like quite a good thing to do. Because that's what they were doing.

That was about as far as the decision went. And then I did better in my A' levels than I thought. But nowadays, you know, those A' levels you wouldn't be able to apply for medicine with those. So an A and two Bs, but in those days, the people at our school who got straight A's you could probably count on one hand. And we used to get about 80 people to Cambridge every year. And I went to the careers teacher and I said, I would like to do medicine at Oxford, and I'll never forget it. He looked at me and he paused and he said, "well, I suppose somebody's got to do it". So I didn't feel particularly positively reinforced by that <laugh> but anyway, I had a go at it and I was very fortunate that I got into Oxford to do medicine, which I never expected to.

I remember being absolutely delighted by this. I thought I was the cleverest person in the world that I'd got there and I got this award to go there. And I remember phoning

up my grandmother and saying, you know, I've managed to get to Oxford to do medicine. She said, “Oh, that's marvellous, dear. I'm so pleased for you. I mean, do many people do that?” And you suddenly realise that actually, you know, for me, this was a big deal, but she had no idea what that meant. And also being very Oxford, I always remember it. I hadn't actually been offered a place, but I had been sent a reading list four days before I received a letter saying I'd got in. So I felt fairly confident once I got the reading list, what you need in your first year that I probably had got in.

And when I then went to Oxford to do medicine, one of the very first people I met was a chap called Patrick Maxwell, who is the Regis professor of physics now in Cambridge. So I've known him for a very long time. And Patrick was almost a complete opposite to me in the sense that I was amazed to get to Oxford, to do medicine and thought I was going to really struggle. And Patrick had come from Eton and he felt they were terribly fortunate to have him as one of their students. And we were at a college called Corpus, which is a very small college in Oxford. And there were only four of us doing medicine in each year. So there were four of us. So Patrick and I sort of paired up. And one of the things that worked very well to our advantage was that Patrick's incredibly clever, much cleverer than I am, but perhaps not as hard working as I can be.

Our main tutor in college played us off against each other. So they got the best out of us because you know, if I went to my tutor and said, well, I'm a bit struggling about, you know, resting membrane potential - I don't understand how that works. He’d say “oh no, that's fine. No, I mean, some people do find it hard. I mean, Patrick found it quite straightforward, but, but anyway, let me, let me explain it to you.” And that of course would then irritate you that he thought he could do it. So, I went there and then both of us went to St. Thomas' to do our clinical course, which I didn't particularly enjoy. Because the wonderful thing about Oxford was it was a great formative years for me because I didn't struggle as much as I thought, in fact I'd rather flourished there and people were very encouraging to let you do whatever you wanted and see whoever you wanted.

And so I just went and did as much as I could and I loved neuroscience there. And then I went to medical school at St Thomas' and it was all about “what are the 23 causes of clubbing?” I don’t know. I mean, why'd you get clubbing? If I understand why you get clubbing, I can tell you what the causes are. You don't need to know that. And of course in medicine you don't actually need to know why things happen. If someone's breathless, you just need to know a list, but you do need to understand the principles of it. So I struggled a bit at a clinical school, but Patrick and I were great colleagues there. And also it was a very different course in those days. So for two and a half years you did nothing, and then you did everything in the last six months.

So, you know, if you'd been sitting on the south coast for two years, you'd probably been fine. And there were all sorts of apocryphal stories going around that some people had got better grades in their attachments when they hadn't turned up to people who, who had <laugh>. So, yeah, so that was my early days. So, you know, school was a very

competitive place, but I did all right there, Oxford was a great place for me because it just gave me the confidence. And also I just loved the invigorating environment and the people I met. Clinical school was a struggle. I mean, I nearly gave up after preclinical, if I'm honest, because having gone up to the look at the clinical school in Oxford, we had some talks and the guy was so pompous. I never forget him saying, you know, if you've done your preclinical in Oxford and you do your clinical in Oxford, you could be no finer doctor. And I just sort of thought that, I mean, that is just so pompous <laugh>. So I debated whether to give up and go and do research, but decided that I would like to carry on doing medicine. Because I like people and I thought, ultimately I'd like to treat people. I don't want to just treat, test tubes. And clinical school I struggled with. And then after that it was, I just loved it and still do.

Sri Kodali: What led you to neurology?

Roger Barker: So in neurology, I think the thing which really got me going on neurology was there was a great chap at Oxford called Tom Powell, TPS Powell - most people have never heard of him. But Tom Powell was a brilliant neuroanatomist from the late 20th century. Probably one of Britain's greatest neuroanatomists and so he described columns in the cortex in the late 1950s, he described most of the connections, the cortico striatal connections. So he was absolutely brilliant. And there were two things about him, which I loved. One was that he explained it - when you start your second year, I don't know if it's still the case, they teach you neuroanatomy and everyone says it's impossible. Well, Tom Powell gives a few lectures, you think "this is piece of cake". Can't understand what the problem is here. And then you open a book and think "this is impossible".

So his capacity to make it accessible, I found inspiring. And so I loved it. So that was first thing. Second thing was, I thought we don't do much in neurology. It seems to me, we have no idea what's going on - still don't - but you know, this is an area which is clearly going to be a therapeutic challenge for the future. This is what we can do, whereas cardiology, which I was quite interested with, well, if everything else fails, I just stick a new heart in, which isn't really the same. And the future of that lay in prevention. So I got very excited about how neuroscience could influence neurology and then he also, the other thing I loved about Tom Powell was that, uh, coming back to what I was saying earlier, I would drop him - there were no such things as emails - so I'd drop him a little note and say, I was interested in this and then I'd go and talk to him. So you'd go and sit in his office. And this is a man - brilliant chap. And I remember you sat in his office and on his wall, he'd have these box files and the box files would be papers and letters he'd had with people so you'd start with JZ Young. So these probably don't mean much to people nowadays, but you know, JZ Young was one of the great founding fathers of neurobiology, then it'd be Vernon B Mountcastle who described columns. Then you'd have David Hubel, Torsten Wiesel. So basically the entire top shelf for this was all these great, great scientists who had won Nobel prizes and such like that, that he personally knew and they had huge respect for, and you would just chat to him about things.

And he was always very interested just to talk about things. And that was hugely influential on me because I thought he was somebody who - he didn't have to talk to me at all. I mean, I'm an undergraduate medical student. I mean, what have I got to offer? But he was always very interested in my ideas. I had a whole thing about the basal gang being involved with pain and selective attention. He was always very happy to do that. So he, he inspired me. And then when I was at medical school, I really didn't….so I didn't really like medical school, but I loved the idea of neurology. So I started going to neurology meetings and one of the very first ones I went to was one of the big grand rounds they had in, in Thomas's, Kings and George and Guys.

And I remember sitting in the background, they presented some case - can't remember the details of it. And it was David Marsden was chairing - the late David Marsden and he said, “let's have a discussion about this. Let's start with the registrars in the background. So, you Sir, what do you think of it?” And I said, well, I'm not a registrar, in fact I'm a first year clinical student, I just thought I'd come along to try and learn something.” He said, “Doesn't matter, you must have a view on this case, what do you think is going on?”. And so Tom Powell was a huge influence on me and David Marsden was the other one. So he was terrific. So David Marsden, I used to write to him all the time about various ideas I had and he would always write back.

And then when I met him, he would always chat to me about various ideas. And I wanted to be David Marsden, professionally. I mean, David Marsden was a professor at 32. He published a thousand papers. I mean he died in his late fifties and I didn't want that part of it, but you know, his professional career - he published a paper every 10 days, absolutely brilliant man, knew neuroscience, knew neurology. If he didn't know the answer he' say, “I don't know the answer, but we can work it out.” So it was undergraduate with Tom Powell that really got me interested in neuroscience. So I decided as a medical student, a clinical student, I would write a textbook on neurology and neuroscience. I thought that would be a good thing to do. That's when I would have the TV series I mentioned earlier that would go with that.

And then I started talking to David Marsden. So I was very keen on it. And then I nearly got put off it because when I did neurology for the first time, which was as an SHO at queen square, I couldn't believe that we spent our entire ward round working out what set of initials we attached to some patient. Because what was the point of that? And of course, six months of neurology, I realised that was the most exciting thing is what series of initials could I attach to a patient's condition? And there were some great people I met there. Andrew Lees was a huge influence on me because we did the apomorphine test, as an SHO we published that little paper on it and that was the study we did. And you know, this was in a day when there was no ethics and we just got some apomorphine, got some syringes, had a go at it.

So Andrew was a great one for this sort of, you know, doing whatever, whatever you want to do and supporting you at a point in your career when you were nobody really. And I think to me, that's been a huge…. I was hugely impressed by people who believed

in you and wanted to encourage you when you were really absolutely nobody to them. And also that's, you know, my big philosophy. Everyone's the same, you know, they just have different levels of experience and you should encourage everybody. So he was a great influence on me. And the only other thing I thought about doing was ITU because I did the Thomas' ITU job, which was terrific with Ron Bradley, which was an absolutely brilliant position, who just took everything down to first principles. And I just loved it. And that got me into serious trouble when I did ITU jobs after that. But that understanding of physiology to apply it to medicine, I loved. So there were lots of people, but neurology in particular, it was Tom Powell then David Marsden and then reinforced by people like Andrew Lees and Alastair Compston….was hugely supportive of me when I came to Cambridge when other people weren't so supportive of me.

Sri Kodali: So did you train in neurology in Cambridge?

Roger Barker: Yeah, I did, but it was a bit of a different system in those days. I came to Cambridge in '91 to do a PhD. What I hadn't really twigged was it just seemed to me, you just decided where you're going to do a PhD and went and did it and just applied for some money and they gave it to you. And of course in those days, that's how you did it. I mean, I read a two paragraph project proposal to the MRC and they looked at your CV and thought that's all right, you can have the money. But then at the end of that, there was a slight worry because I had to get the registrar job in Cambridge at the end of that in '94. And there was one job and there was someone in that. So the idea was that everyone had to move at the right time.

Nick Wood was my predecessor. He had to be out by April '94 to allow me to take that job, because if he didn't move and stayed in that job, there was no other job. So I would then have to apply for a registrar job in north London or somewhere else, but it seemed to work out. But then at the end of a year of that, Ian Wilkinson who was one of the senior consultants at Addenbrookes said, you've learned everything you're going to learn here. You need to go somewhere else now. So then I had to apply for a job at Queen Square, which again was a fairly standard path. But you had to wait until there was an opening and the person who was more senior than yourself had got it. So I did my registrar job a year and a bit in Cambridge.

Then I did a year and a half at Queen Square. And then I had to apply for another job and as their consultant told me "you need to do the lecturer job". That's what I needed to apply for. And I said, "but there is no advert for the lecturer job. And Neil Robertson is in that job". He said, "no, but that's the job for you, Roger", and I said, "yes, but it doesn't exist." <laugh> So then I got the senior registrar job at Norwich and Cambridge and then I got my fellowship. So, it was a very different system then. As a junior doctor, you were always applying for jobs. The moment you got a job, you applied for your next one. So, you know, I had my two house jobs and then I had to apply during my second house job to do my first SHO job at the Brompton.

The moment I started at the Brompton, I had to apply to do the next job. So you were only as good as the job you were in. There was no rotations in those days, so my training was there in Queens Square and Norwich, and it was a beautiful rotation as it turned out, even though you applied for all the jobs, as you will know, because Queen Square has all the recherche tertiary type cases. So middle cerebral artery stroke is an absolute novelty in Queens Square. They've never heard of it. Cambridge has a sort of lovely hybrid of specialised and standard neurology, and Norwich you see much more acute as it comes in off the street. So, so it was a great combination and people were very free to let you run your own show, because I was of the last generation that had done lots of medical training, been a medical registrar for two years.

And in the late eighties and nineties, you ran the show, you never saw the consultant. They never came in. And as I probably said before at Kingston, when I was on call, you did it all, so gastroscope, do varices, colonoscope, bronchoscope, liver biopsies, renal biopsies, central lines, pacing. So you could do everything as a medical register but the only thing you couldn't do was neurology, because we didn't have a CT scanner at all. So you couldn't scan anybody <laugh> but yeah, so that was training really.

Sri Kodali: And would you say your training in neurology was more experimental than it is now?

Roger Barker: So I didn’t think it was more experimental, I think there was much less evidence base for what you did so I certainly remember when I went for the senior registrar job at Norwich, one of the questions I was asked of what's evidence based medicine, which was the first time I'd ever heard of this in I think ‘96. And I was saved by Chris Allen who was on the interview panel, who said, “what on earth is that? We don't have evidence. We just do things don't we?” And so I think you were much more free to explore doing what you wanted to do. There were many less things to know about it seems to me. And so there were clearly masses of conditions we missed in the nineties, which, you know, nowadays are fairly standard cases.

So you were left much more on your own. So the advantage of my whole training was that within no time at all, you were entirely on your own. So Thomas's, ITU, I was the SHO running the 14 bed ITU. Ron Bradley didn't like anaesthetists, so they were only allowed to come in to intubate and then leave. So they weren't allowed to do anything. There was no registrar, there was no senior registrar. There was just Ron and you. And so at the weekend you would be there Friday to Monday, lunchtime, Friday morning to Monday lunchtime on your own running all of the patients, 14 incredibly sick patients. So, you know, it's a bit of sink or swim really. So you become very confident and experienced very early on and you are used to making decisions and living by those decisions.

And it relies on the fact you are sensible enough to know when you really are not sure what's going on, you will seek advice, but you'll also, if you're a bit unsure, you'll probably get on and do it. And that sort of spilled over. So then you go on to be a medical registrar where as I say, you are left to it, and then as you become a neurology

registrar, I just assumed it carries on the same. You know, the times I was on call as a neurology registrar for three years, I don't think I ever phoned the consultant once about a case. I mean, I may have phoned them a couple of times telling them their private patients have come in out of courtesy, but you know, seeking advice was not something you would do. And that's not because I was terribly arrogant, but you just felt that was my job to try and sort these things out and outpatients, you would do the same.

So you learn very quickly and you sort of progressed with your own experiences really. And it wasn't that you weren't supported. It's just, that's the way it operated in those days. The disadvantage of that is I think if you didn't have self-confidence, you could end up feeling, a bit lost - a bit anxious. And so I think, certainly in my day there were a lot of very good junior doctors who never made it through the system because they felt they couldn't cope with the stress of it.

And so you did some research in Cambridge. What, what was your research in?

I came to Cambridge to do my research in '91 – '94 because I wanted to work on brain repair and transplants to the brain. I came to Cambridge because I thought repairing the brain with cells and regenerative medicine was the future. So that's what I decided I wanted to do. I came to Cambridge specifically to do that. I didn't come to Cambridge to do neurology. And to be honest, I didn't even know who Alastair Compston was when I first went to see him. I had just come to Cambridge to do this research. That's why I went because there was nowhere else to do it really. And I remember then when I went in my training, I went and see David Marsden to get some advice on my career. He said, "what do you want to do?" And I said, "regenerative medicine, that's what I want to do."

I want to repair brains. And that's what I want to be, a consultant in neurology." He said, "no, no. I mean, what, what are you actually going to do?" I said, "well, that's what I'm going to do." He said, "so you're going to be a movement disorder specialist." I said, "no, I'm going to do <laugh> restorative regenerative medicine, which will apply to movement disorders, but I'm not going to be a movement specialist. This is my own field that I think we can work on." So, that at one point led me to think about not doing neurology but doing rehab, because I thought this is where we could probably do it, but I just, it just wasn't for me.

Sri Kodali: Okay. So what was your PhD in Roger, specifically in regenerative medicine?

Roger Barker: It was on adrenal transplantation. There was this idea in the eighties that you could replace the lost dopamine cells in Parkinson's disease by using the adrenal medulla - because it produces catecholamines. And I was trying to show that some of the variable results related to how much cortical tissue there was…… and that didn't really get very far I wouldn't have said. And then I moved on to more fetal dopamine cells and repairing the brain with that and trying to understand. So one of the projects we did - James

Fawcett was the other person who did it and James is brilliant. So we did a whole series of experiments where we were showing that if you grow cells in three dimensions, they don't behave the same way as if you grow them in two dimensions.

Now everyone's too organised, but I mean, in the nineties we used to get little dialysis tubes, fill them up with cells, plug the ends with super glue and then put them in these rotating cultures. So they were 3d cultures - they weren't quite organoids, but they weren't vastly different and demonstrated that the behavior of cells was very different. So modelling systems was very important, to look at the results. And then we were very interested in extracellular matrix and how that stopped outbreak of fibres from transplant.

Sri Kodali: Do you still give part One B lectures for undergraduates?

Roger Barker: I shall never forget those. Because the first series of lectures I gave, I thought - this is what I'm going to do, I'm going to give a handout which has lots of gaps in it. And you fill in the gaps as I go through my talks – I thought this was absolutely brilliant. And you got about, you know, one out of 10 for your talk at the end of the term, because everyone just wanted the entire handout. So I used to do a few of those, but I don't do those anymore. I still do part two regenerative medicine lectures. I remember thinking it was a bit of a gamble and when I went to Queen Square, I remember feeling a bit vulnerable on this because you know, I'd be going up against people who'd done an MD or a PhD in PET imaging in epilepsy. And you sort of think “it's so much more obvious”, whereas they’d say “what have you done – I’d say “I've stuffed a few adrenal glands into the brains of rats and tried to look at dopamine cells and you know, so sort of think “so what?”….. So I always felt there was a slight worry that my research didn't fit into mainstream neurology. So how would it be seen to be relevant for my career, but you, but actually people were just sort of accepting the fact, you were a bit odd wanting to do what you did, but you seemed like a reasonable chap. You could do neurology and that would be fine.

Sri Kodali: How did you make those two streams work or run in parallel, they're so far apart from each other?

Roger Barker: I'd been very interested in Parkinson's disease - I'd been very interested in the basal ganglia. So, as an undergraduate, I was very interested in the role of the basal ganglia, their role in pain and selective attention. And that obviously then took me into the realm of Parkinson’s disease and Huntington’s disease. And then that took me into regenerative medicine, because that was the obvious places in which these types of approaches were being used. So it naturally led me into that area of clinical and basic research. But I was also very struck by David Marsden, you see, who was a master of everything. I always wanted to be somebody who could stand up in a science forum and people would respect you and stand up in a neurology forum - people would respect you. And I also didn't want to be too restrictive in what I did.

And I mean, the trouble is as I get older, you worry that you're slightly losing your touch with things and you can't remember. And you can't be the complete neurologist that you were when you were at your stage. So I used to love just knowing everything. I used to love knowing the entire brachial plexus. I used to love to know all the causes of progressive myoclonic epilepsy. And of course this was in the days before the internet. You couldn't just Google this, you had it, you had it or you didn't. And of course ultimately that's pointless, because all you need to do is say whether someone's got progressive myoclonic epilepsy and just Google it and see what they've got and work your way through the list. I always wanted to make sure that you could train properly in everything.

So whilst I wanted to be like David Marsden and be a professor at 32, I realised I was 32 and I was still in my PhD. But if you wanted to train properly, you were going to have to do quite a few years of general neurology and you were going to have to do a few years in the lab. So I became a consultant in ' 99. I was 37, 38, by which time I'd done house jobs, two years SHOs one and a half years medical registrar, two and a half years of a neurology registrar full time. And I was now in my fellowship following my PhD. And you realised it was going to take you a time to get there. And the challenge has always been after that. What can you honestly bring to the table that makes you credible? And I think as I've got older, as I was saying, I've never been a movement disorder specialist, even though everyone thinks I'm a movement disorder specialist.

Because I do Parkinson's/Huntington's disease, I mean I know about Parkinson's/Huntington's disease but I'm not a Parkinson's/Huntington's disease specialist. So you send me a wacky movement, I can have a go at it, but that's not my field of expertise. And I feel as the years have gone by, I've become less of a general neurologist. And that's probably true of the field of general neurology, to be honest, I think it's become more and more specialised. When I was a registrar we didn't have all these antibody mediated diseases. So, you know, neuro immunology was MS. And people who had funny things that responded to steroids, and that was about it. Stroke. You had a stroke, bad luck, so you didn't need to have a huge amount of expertise in this. Whereas now, if I had a stroke or I had something that was immunologically wrong with my brain, I wouldn't want me to look after it. And I probably wouldn't want a general neurologist to look after it. So I've had to slightly change what I've done over the years and accept that you can't do what you aspire to do. And I can't be the complete neurologist anymore, but I can still just work in the areas that I enjoy. And the principles that you learned, you can still apply. Even if you're not quite up to speed. As you've discovered training, you have to try and apply some principles, even if you get them wrong.

Sri Kodali: Well, I think knowing your neuroanatomy and because there's so many specialists around these days, you can always sort of diagnose to a certain extent and send them to a specialist clinic.

Roger Barker: I think that's true. I think, you know, I was saying to the medical students this evening, I was teaching, I said, the fundamental thing, you only need to know medicine is, have they got a problem? That's all you need to know.

Sri Kodali: <laugh> yeah,

Roger Barker: Because once you know they've got a problem, you'll go searching until you find the answer. And I think the same is true of neurology. You know what you know, it's knowing what you don't know. So I think it's the arrogance of assuming that, because I don't know what this is or jumping to conclusions that's when you go wrong. Where you say, I don't quite know what this is, but I know somebody who does.

Sri Kodali: And so going back to your research career. You mentioned about the adrenal transplants, how has stem cell or regenerative medicine over the last 20 odd years that that's coming up to now that you've been involved in? How do you think that's evolved and where do you see it going in the future? You probably get asked this question constantly.

Roger Barker: Well no, sometimes people ask you about research. What should you do about research? And so one thing I always tell people with research is pick an area that you're passionate about, that you are interested in and stick at it. And during your time, there will be a point at which everybody thinks it's the most important subject in the world and you are flavour of the month. And there will be other times where people think is completely of historical interest only and I can't believe anyone's still working in that field. So if I look at brain repair and cell replacement, then when I started in the nineties, that's where it all was. So people were very excited about this. This was the future of neurology and Parkinson's disease and Huntington's disease as well. And then all the trials came out in the late nineties, early part of this century that showed that they didn't really work, caused side effects.

So when I came back into research in the late nineties, and then when I transitioned from that into my university lecturer post, it was dead. I mean, early part of this century, it was deemed to be a field that was completely pointless. People were excited by stem cells, but the idea of stem cells for regenerative medicine in the brain had slightly fallen by the wayside. And then, you know, the discovery of IPS cells in 2006/7, making embryonic stem cells, dopamine cells suddenly became much more exciting 10 years ago. And now it's currently very fashionable. In 10 years time, it won't be, it'll be gene editing, which was all the fashion in the nineties and comes in cycles. So it does change a lot.

I think one of the things which is slightly undervalued, which I always tell people is very important is, if you can truly bridge the science and the clinic, that is a great thing to do, because you can have a conversation….One of the things I love about my job is I can talk to some of the greatest scientists in the world. And they're interested in what you say. So yesterday, I was talking to somebody about development and fetal tissue and they're

absolutely brilliant. I mean, they have techniques and technologies and will ask questions which I couldn't even dream of doing, but I feel terribly privileged that I can help in some way. And they actually have some respect for me. And similarly, I like the idea that I can still hold my own in neurology, but I can also tell them how we're going to translate that into the clinic and the challenges that that will present and then how we can better do that. So I think it's great if you can bring those two together, accepting what you're not going to be.

I'd love to be a brilliant general neurologist, like in our part of the world, people like John Thorpe for example, but I don't do enough of it and that's not what I can do because I can't do everything. So you just have to accept what you can do and enjoy what you do, and try and do the best you can in that area and always be learning. So that was the other thing, David Marsden, I always remember used to do this thing called book round where he would pick a topic and you would just start talking about this. And I just loved the fact that here was a man who was absolute top of British neurology. So always learning is very important and keeping alive to that. That's why I think trainees and younger people are terrific because they're always challenging you - assuming they don't hold you in too much respect, which is a very bad thing to do - whatever you've done there's always something new you can learn. I used to love that about medical students. You'd suddenly be asked the question and think, yeah, what does happen to the red blood cell at the bottom of the Loop of Henle? I mean it's something seriously wrong because the osmotic gradient there is so high. I have no idea what the red blood cell looks like down there, but that is quite an interesting question to think about. So, you know, there are lots of things which, which, I think you've got to keep your mind open to these things

Sri Kodali And from the outside, from your perspective, how do you see training now?

Roger Barker: I think the strength of training now is it's much more structured, so you could end up - had I any experience with MS. Yes. I used to do a clinic for somebody. And what did you learn in that? Well, I learned that the consultant never turned up for the clinic and I had to just wing it. So there was much less structure to it. So I think the structure of it's better, I think people are much more caring, so people are much more interested. And that's not to say that I experienced anything other than a very supportive environment, but I was probably fortunate in that and it wasn't part of the system. So some people could end up feeling slightly unloved and neglected and slightly dumped upon at the time. So I think people are much more supported.

The training's much more structured. So I think those are the positive things. I think it's much harder nowadays, because there's so much more to do. And there's so much more to learn I think. And I think trying to keep the team spirit's quite hard. So one of the things I used to love as a medical registrar was when I was on call for the whole weekend, from a Friday to Monday, it was way too long really, but that's the way it was and that's what you accepted. But I was on with my SHO and my houseman and my consultant and we did that weekend together and we did it every three or four

weekends. And so you were a team. One would cover that - you'd do that - I'll do that - together we'll solve this. And I think now it's more, “who am I on with this weekend?”

Sri Kodali: Well, that's lovely. I know them, but I won't be on with them the next weekend. I think you slightly lose that teamwork, which I felt was much more built into the system. Because it was smaller. And I think people end up coming out the other end with slightly less experience. And also, you know, the fault of the old system was you were just left your own, as I was saying. So you just had to make decisions and get on and do things which meant of course, when you became consultant, although you were initially a bit frightened, because your name was at the top of the piece of paper in the days when we had names, I mean you were used to making all those decisions. Whereas now I think people are a little less prepared for that really. So I think there've been improvements.

Roger Barker: I think the thing which always amuses me is you often end up going back to where we began. So when we started in the eighties, you did general medicine as a junior, general medicine as a registrar, you did some research and then you did general neurology training with a bit of specialist training thrown in <laugh> They say 30 years later we've invented this pretty new system, which looked remarkably similar to the system that we trained in really. And I couldn't see what was wrong with our system. I thought learning general medicine was actually quite good and people would say, well, what value was there, Roger, in you spending every Wednesday for a year at Kingston hospital doing colonoscopies and bronchoscopies? And you think, probably none. Because I wouldn't do any of it now, but it makes you a much more complete doctor.

And it means when something goes wrong with a patient, you won't panic because you have been there. You might not know what the latest treatment is and you certainly wouldn't want me to do any of those procedures on you now, but you sort of know you've been there and you have a feel for it. And I think that makes you more confident and it's more relaxing to be around those people, which you sort of feel, I think they know what's going on and they don't panic. And the one thing you never want to do in medicine is panic.

Sri Kodali Following on from that - what would your best advice be to young trainees like myself?

Roger Barker: I think never close your mind to anything. I think the biggest struggle, the biggest change I would say, which is partly answering your last question, was that when I started research was absolutely something you did. You couldn't get into neurology unless you did research. In fact, you know, you only became a neurology registrar once you had a PhD. So if you applied before then, very unlikely to get here and everyone did research. And so when I first became a consultant, a sort of academic, I used to have quite a lot of people want to come and see me to do research. Whereas nowadays it's very rare that people get in touch and I don't think it's because… our research hasn't gone anywhere. I think that's just true of academic neurology. I think it's great discipline to do. And I would encourage everybody to think that it's something they should be doing.

They might not want to pursue it as a career. So it's not as though you need to do it in order to get on with your…"I want to be an academic neurologist" because most people won't, but it's a great discipline. And I think people are a bit closed minded about it. They want to get to be a consultant quickly. They don't want to do all this research, but I think there's been a slight loss of balance in it. So I encourage everybody to do some research because you don't know how you'll respond to it. It was one of my very early fellows who didn't really want to do research. And he's now professor of neurology in tons of research and he would never have done that I think, if he hadn't come and done a few years of research, he loved it. So I think I encourage people to be open-minded about things, to dip into things which might not necessarily…you think are what you want to do. None of these are consigning you to a career that you feel you have to follow and don't rush.

I mean, I wanted to be a professor at 32. Well, I was a professor at whatever it was, 52 or much older, but I was a consultant. If I'd been a consultant at 32, great - I'd have been a consultant for 35 years. You know, I was a consultant at 38. I'd be a consultant for 29 years, that's a seriously long time. And it's much better to take your time and get there and feel to be more complete and have done everything you wanted to do. And I think there's too much pressure on people to differentiate earlier on or to decide what they're going to do, pursue established paths. And I think also just be open minded and challenge people. So if you don't understand something, say "I don't understand it. Why is that?" And you know, if they're good people around, they'll say. "now you mentioned it I have no idea why I say that." So I think trainings is good. So the young trainees, I think keep enthusiastic, you know, keep looking around. And also I think the other thing you learn is you see people who you want to be like and you also see people, you definitely don't want to be like, <laugh> so learning as you go along the characteristics that you would like to adopt into your own practice, knowing the type of person you are. So there was a very nice neurologist/endocrinologist I worked for in my very first job at Thomas' and she knew every single one of her patients. And I just thought it's wonderful that this person knows their patients so well. So don't lose your enthusiasm. Don't lose your personality, keep open minded and make sure you're properly trained and do everything. Don't rush that would be my advice.

Sri Kodali I think me and Rachael, both of us wanted to ask you this question, where do you generate your enthusiasm from - you are always bursting full of energy?

Roger Barker Well, I don't know is the honest answer. I mean, I've just always been very interested in lots of things. I always love knowing things and learning things. And so the downside of that is I don't like forgetting things, find that quite hard, especially someone get you can't retain all this. I suppose I really enjoyed learning and knowing things. And if you stand back and think what a privileged position you have to help people….I find that terribly flattering and the things that I find terribly touching are still to this day, people dropping you little emails or something to say, my husband passed away with his Parkinson's disease or Hungtinton's disease. I just want to say, thank you very much for everything you've done over the years to help us. And you sort of think, well, I haven't

done very well have I, because they're dead. But the fact that they are so grateful for that, I think keeping a perspective on who you are, what you bring and that what you're trying to do is very important.

I've been very blessed with a family that regard me as somebody that needs putting down the whole time. I think you need to be very grounded in what you do and just realise how privileged you are. And I'm just naturally a very enthusiastic person I think. I mean, when we did a bit of on call, you'll always ask me a question. <laugh> I don't know the answer. I might make something up, but it just keeps me thinking and what I find always extraordinary - people ask me things and I'll give an answer and then think…and I make it sound as though I'm very confident about the answer. And then I will think, I wonder if that's true? So then I will go and look it up or I spend quite a bit of time researching to see whether I've actually remembered it correctly. And if I've got it wrong, I then have to tell you that I've got it wrong.

Sri Kodali: Well, Roger, I have to say it's always delightful to work with you and likewise, this evening's been absolutely delightful. Thank you so much for agreeing to do this interview with me and Rachael, it's been great fun.