APM: Good evening and welcome once again. Welcome to the Academy of Physical Medicine live, if you hadn't already guessed, from Wembley Stadium and just to make the point, I'm wearing my England scarf. I don't want to beat this out of sight but I have to say, I'm not even a football fan and I'm quite taken over by the sheer atmosphere of this stadium. It's fantastic. I have to point out that we don't have a crowd of 70,000 people in the stadium watching us. We are probably the only people in the stadium at the moment other than security staff. But nonetheless, the atmosphere is electric in the studio here. I'm joined this evening by the man who was our very first guest on the Academy's evening CPD sessions, Barry Jacobs. He's a very, very well known osteopath. He's very well established in cardiovascular education, having lectured at one time two conventional medics in hospital. He's been a senior lecturer at the BSO and at the College of Osteopaths and Barry; it's a great treat and privilege to have you back with us.

BJ: Thank you very much. It's very nice to be here.

APM: Welcome to Wembley.

BJ: Hopefully, this time I'll be seen as well.

APM: So what's our goal this evening, Barry? We're going to talk about cardiovascular issues; I put on the heading for this. So as we discussed before, I mean it's my perception that osteopaths quite often neglect this aspect of clinical examination for all sorts of reasons. What's your perception?

BJ: I think like a lot of areas, cardiovascular examination is something that is considered a little bit frightening for a lot of osteopaths. I think —

APM: Because?

BJ: Because it seems to be…well, for two reasons, actually, because to some extent, it seems to be a bit obscure. It's a little bit sometimes technical and appears to be something that might perhaps not be immediately applicable in practice, in primary care. And secondly, probably because for the most part, it's associated with scary stuff that happens in hospitals and so effectively…and actually, for a 2A, if you like, if it's going to be managed, it'll be managed along conventional lines by the GP and nothing much to do with us.

APM: Aortic aneurysm, we're talking about.

BJ: I'm talking about absolutely anything. I'm talking about people but that's, funnily enough, you joke about that. In a hospital, when we're doing a lot of teachings to, say, for example, physiotherapists, the only thing people were ever interested in was an aortic aneurysm because they were worried about masqueraders, as they call it. The physios use the term masqueraders. If you're not familiar with that, it means something that's going to pretend to be something else. So effectively, they

come in with what looks like a mechanical low back pain and they end up having an aortic aneurysm and we're supposed to find it out. The big question was, "Never mind everything else. Just tell us how to diagnose an aortic aneurysm." And of course, that's not really what it's about at all. That is utterly missing the point.

APM: But it's important.

BJ: It's critical. But it is critical to actually understand that history comes first.

APM: So before we get on to that because I know that you want to talk a lot about that this evening, this is very important, are we frightened of finding the scary stuff or are we simply frightened of not being able to conduct an effective examination, do you think?

BJ: I think, Steven, it's a vicious circle because essentially, people know that the techniques are often complicated. They need to be undertaken in a subtle fashion and therefore, they need to be practiced and if they need to be practiced, they need to have the education to do it. So without the practice, you don't maintain your competence and if you don't maintain your competence therefore, you can't do it. So you end up not doing anything. This is one of the reasons why a lot of undergraduates won't invest in an ophthalmoscope, for example. It's expensive. When am I going to do it? Same old story. So you tend to see a lot of 5th year ophthalmoscopes on eBay.

APM: What about you in clinic? When do you do it?

BJ: Well, again, that depends on the circumstances. I will bang on a lot more moments about the relevance of taking appropriate cues from the history but there's probably not a day goes past where I won't think about doing something that's related to cardiovascular function.

APM: And maybe we'll talk a bit about this later on, we're not planning any courses in cardiovascular education other than, you know, what we're doing this evening but I, for one, would not be competent or not be confident to carry out an effective cardiovascular examination on a patient. Now I can listen and I can hear the sounds but would I recognize the oddities? Would I recognize the abnormalities? And therefore, as you said, vicious circle, I don't do it. So how do people overcome that? What are the courses? What do GPs do to overcome this because they must have similar sort of concerns?

BJ: I took my daughter to the orchestra where she plays on a Saturday morning last week and she's supposed to be moving up and she was filled with anxiety, inevitably because this particular orchestra is actually led by the head of the whole institution. And the same old story, same old story. Why don't you actually know how to use your bow properly? Why aren't you doing this properly? And

the same old answer, practice. So it would be like anything else. If you want to examine an ankle, if you want to examine a hip, if you want to look at someone bending, have a look at maybe 100 of them first. Patients are all variations on a theme. Everybody's idiosyncratic around, hopefully, a range of normal. If you just listen to 100 hearts, believe me, you'll get to know what normal is like and it's not necessarily about being able to diagnose definitively. The absolute last minute whether it's, you know, mid systolic or late systolic, whatever it is, it's about knowing that it's there and being able to say, "I heard this then and I think that should be explored." For the most part, people don't worry about the subtleties and even in hospitals, you know, they'll have much more sophisticated ways of diagnosing things. So essentially, trying to find out what's normal which is what osteopathy's really all about. It's understanding when normal has altered, not trying to define the pathology because the pathology's always going to be idiosyncratic.

APM: You talked about physiotherapists a minute ago. Do they get involved in cardiovascular examination —?

BJ: Yes, some of them do.

APM: Because some of those are our members, of course.

BJ: That's right and increasingly, physiotherapists have, over the last few years, been recruited as extended scope practitioners in hospitals. So one of my roles was to teach cardiology or at least, primary care cardiology, I should say, you know, real hands on stuff, basic level stuff to physios and they were then being recruited to work in A&E departments and as another tier of primary care diagnosis before the patient perhaps ended up with a consultant. So they want to be educated on this sort of thing but they wanted very, very much to know about this differential diagnosis and what to spot and again, one of the biggest voids probably is that…or the distinctions that…whereas osteopaths at least have a very broad medical education, history is everything. The physiotherapist actually wanted that and I think that's a very, very important point.

APM: So talk to us a bit about the history then. You said history's everything. I mean we say that about everything in osteopathy pretty much. So what's —

BJ: It is. Yes, history, history, history.

APM: What's so specific about history —?

BJ: Right. So effectively, osteopath's work by…and perhaps every other diagnosing clinician will work by wanting to try and understand or interpret or appreciate something that's said to them by a patient. Patient will say, "I have come in with X. I have got a pain in my groin," for example or, "I've got a pain in my head," or, "I've got a pain in my shoulder." Now as an osteopath and any other

practitioner, hopefully, you will say to yourself, "OK, that is a disorder of physiology. It's pathophysiology. It's pathology. It's misbehavior of the normal expected behavior of that structure, the normal function." So if the function is altered, it must also represent a behavioral change or sorry a structural change as well. In other words, we always say structure and function are interrelated but effectively, a symptom or a sign will present in a history and the patient will say to you, "This is what I've got and I need someone to sort it out," and you say, "Well, I'm going to actually try and understand what that is." Person has a symptom, you say, "Ah, I think that could be…" So it may not just be their low back. It may not just be their leg. It might be coming from somewhere else and if…as an osteopath, hopefully, you have the knowledge to appreciate that it may not just be a mechanical problem. You would then want to actually go ahead and actually pursue it and try and corroborate your hypothesis with a bit of examination. It doesn't always work but it's knowing what to look at next.

APM: There's a box on my case histories where I ask people, "Do you know your blood pressure? Have you been told of any heart disease?" Would you develop that further? I mean if they said, "I have a normal heart…blood pressure" and said, "No, I don't know about any heart disease," would you be happy with that?

BJ: Good question, I think. Unfortunately, hypertension is, for the most part, asymptomatic. So it's not as if…and this used to be a thing. People would say, "If a patient's hypertensive, they're going to be red faced and dangerous." You often don't know a person is hypertensive.

APM: What do you regard as hypertensive? What classifies as hypertensive?

BJ: Let's bring up this slideshow for the -

APM: You don't have to do that.

BJ: Forgive us folks; I'm just having a look here. I've been told not to slump. Now I can see where I am. OK, so these are latest figures for the British Hypertension Society. These are actually also endorsed by NICE and just make sure that I looked at their guidelines quite recently. So there is inevitably going to be some variation in that, depending upon who you talk to but on the whole, they're saying here optimal blood pressure, the old favorite, it used to be 120/80. Now it's below 120/80 and some people in the World Health Organization, at least used to say though I couldn't find any evidence of it recently that 110/70 was desirable, 110/70 but certainly below 120/80, we've got here. So a normal blood pressure, therefore, is going to be at least below 130/85. Again, I'm not so sure I'm happy with that and that depends on age and demeanor and the sort of other things that you do. So starting to get high above 130, something like that, over 85 and there's a cutoff at about 139 to 89, over 89, something like that. You can look up all the figures online if you go on the NICE guidelines for that sort of thing. I think we can show a reference later perhaps for that.

APM: I'll put the references up afterwards.

BJ: And that'll be there. It's well worth looking at and it's well worth keeping an eye on what these things are but, you know, just to say above 120/80 doesn't cut it anymore and it hasn't done for quite some time. This has been changing. These guidelines were published about 2011. I'm just looking to see if I can bring those back up again but they're well worth contemplating.

APM: We did an interview with Malcolm Kendrick some time ago and he was very keen to point out that the danger of increasing blood pressure is not linear but actually, until you get to about 160 systolic, actually, the danger is relatively small and then it escalates exponentially. And he's quite into cardiology in depth, it's his particular passion along with poo-pooing the notion that statins are good for you under any circumstances but it does seem that the guidelines…whether they are promoted by people who want to sell anti-hypertensive drugs or not, I couldn't say but I mean they want to promote an idea that anything beyond 135, you're going to need to take some sort of drug.

BJ: I wouldn't have expressed it that way at this stage. It's not just a question of finding an elevated reading. And we can talk about the notion of home testing in just a moment but actually, effectively, the NICE guidelines again are very complicated now in the way that all…I should say detailed and very thorough in the way they actually wanted to go about diagnosis. For example, if a patient comes with an elevated pressure or what looks like it might be an elevated pressure, people wouldn't ring alarm bells unless it was very, very elevated and it's true to say that if it went over 160, 170, something like that then you've got a big concern. I'm just looking to see actually just to remind myself I want to see. So for example, we're saying a severe hypertension would be, you know, going over really 180, you might start to be worrying with a moderate hypertension about 160/100, something like that but if a person does come in with somewhere in between that range and you know it's elevated, inevitably, you're going to want to try and replicate those symptoms as much as…those findings as much as you possibly can. So it wouldn't just depend upon one reading. You'd have to do it multiple times. You'd also have to take into consideration the possibility that the person was white coating, which I did recently when I went to…for a health check. Not very far from here actually. I won't say the name of the pharmacy but I saw the person's badge said "health care assistant" and I immediately got my blood pressure up because I was actually trying to get my health care insurance premium down. So they were…and they were obviously inversely proportional. So I have my blood pressure taken, I got more and more enraged by being told my blood pressure was up and having it explained to me. So that was completely inappropriate anyway. I know that's to the side.

APM: Anyone who's ever tried to explain anything to Barry will know that that's not a good way to get on with Barry.

BJ: I'm better than I used to be. Anyway, so yeah, we clean the room up afterwards and everything but —

APM: Just going back to that —

BJ: So look, the thing has to be undertaken in a very routine basis and has to be replicated on a very routine basis and then, you know…there's a lot of other issues to consider, the person's lifestyle, their previous history, you know, the predisposition. There are complex graphs now that depict a person's risk, you know. It's not just a simple question of isolated, elevated blood pressure or circumstantial blood pressure. It really has to be factored in. So yes, you know, mathematically and physically, there is an exponential risk in elevating blood pressure on the inside of a vessel. There's a sort of formula that pitches against blood, you know…change in blood flow and that sort of thing. There are mathematical descriptions at least since the 19th century. The French are all very interested in this sort of thing but it's not just as simple as that.

APM: True.

BJ: You have to try and put in multiple factors and nobody ever looked at it like that and I don't think it's fair to imply that it's some sort of pharmaceutical conspiracy.

APM: No, OK. Given that you said hypertension is often asymptomatic, under what circumstances do you normally feel you ought to test the patient's blood pressure?

BJ: Which admittedly was your original question, Steven. If I feel that a person might have some sort of cardiovascular implication from the history then I'll probably go and check their blood pressure. Most —

APM: Well if a patient says, "Well, I was at the GP's the other day and they said it was fine," do you say, "OK, well, that's fine then," or would you say —

BJ: Well, it depends. Again, it depends. I don't want to be flippant but it depends on the circumstances, you know. If the eye's bulging, I'll probably do it but that point being that if they are regularly assessed and plenty of people are regularly assessing there own blood pressure at home now with electrical devices, I probably wouldn't bother. If a patient came to me off the street and said, "Well, actually, I have had," for example, you know, "A bit of chest pain. I have had a little bit of tiredness. I have had some persistent headache," you know, these are just examples but there might be all sorts of reasons why I would want to test the integrity of their circulation or at least the integrity of the pressure in their circulation and the relationship that it has to the heart because I'm probably thinking, "I wonder if these symptoms are being generated by change in their vascular bed." So again, I would want to think that for the most part, I was

actually reasoning why I want to do it rather than just doing it at random or screening, heaven forbid, which is a word you know I despise and revile.

APM: You've got a particular process. I think you and Lawrence Butler developed in your…a model for examination which goes through a number of stages.

BJ: Are you talking about the structure function reasoning process?

APM: Yes.

BJ: I'd like to show you that actually. That actually perfectly describes what I'm talking about. This is an algorithm that we developed probably in 1999, published actually and we've actually shown this ideology to a number of different population of medics. This has been shown from everywhere from practically every hospital we've taught at to the Royal Society of Medicine where it went down quite well actually. Very well there. Well, we think so. Some of it was heckling and the idea being here that the initial presenting trigger, if you like, will be that disturbance of function, the thing that we would call a symptom or sign. So the symptom or sign will be a pain or a change in sensation or whatever it might be and the next stage, we've got the arrow moving down that says then structure and that's the structure that you would implicate from that symptom, very, very simple. If a patient had, you know, a crushing pain in their chest, you know, being thematic here, obviously, one of the things you might think of other than a spear is…and it's the sternum hurting is actually their heart. If they had a pain in their groin, which always used to be the enraging example we gave in certain physio lectures because we could be absolutely damned anything, you can name any number of structures that might be. That might be the hip. For some people, it might be the SI. Some people, it might be an ovary. For some people, it might be renal. For some people, it could be the abdominal wall itself, it could be the artery. Then you go through a sort of process of internal reasoning, reflection, if you want to use a buzzword, to try and prioritize what those structures would be but if a person had said to you in their history, "Well, actually, I'm 71. I limp when I walk and I've got a pain in my groin," you're much more likely to think it's their hip than anything else probably. That would be probably one of your primary things. Again, it's all about context. So after you've implicated your list of structures and you've done your prioritization, you think, "Well, OK, who are they? What do they do? What's their life like?" That's the really broad osteopathic idea, putting the patient into the context of their idiosyncratic world. You would then say, "Right, what I better do is see if it is that." The person says, "I can't really see very well out of this eye," so you'd say, "Well, can you please see out of this eye for me?" and you get them to look at something and see if they can see. "Oh, you can't see. I think it's your eye." So effectively, that's all we ever do on a much more complex basis because of course, we're perpetually trying to contextualize it but essentially, you test your hypothesis by assessing the integrity or the ability of the thing that you've implicated to perform its function. And then after that, you say, "I don't know, really?" and you keep perpetually

change…you're constantly refining, refining, refining. We all know how frustrating it is when a person perhaps presented with supraspinatus one week and biceps the week after that, you know. You're going to perpetually know that every diagnosis is merely a hypothesis and management reserves the right to change his mind.

APM: But of course, what goes through your mind when a patient comes in and they say, "Well, I've got a back pain"? Well a back pain isn't what the Ladybird book of heart attacks would say is a classic sign of a heart disease—

BJ: No, absolutely no.

APM: --but it's a possible symptom for heart disease. Now, yes, you could prioritize this but actually, you don't want to miss it.

BJ: No and this is —

APM: And it should be further referral.

BJ: This is absolutely what the physios always used to say, "Look, all we care about is how do we not mess up and miss an aortic aneurysm?" and the truth is it's very difficult, you know. You've got to now determine what is absolutely reasonable in practice, you know. Would anybody else have been able to find that? Would've it been appropriate to say, "Yes, that was actually blaringly obvious"? So in response to what you said before about…your question about blood pressure and having a box for blood pressure, my approach usually is to try and ask as broader or as broader net as I possibly can and yet simultaneously making sure the patient knows I mean business. So I will usually say to them, "Look, have you had anything else recently? Have you been hospitalized? Have you been investigated for anything? Have you been treated for anything? Have you had anything else with anything?" and in case they still think I'm talking about the musculoskeletal system, I probably already have said automatically, you know, "bowels, waterworks, coughing, anything, is anything not right?" you know. I may not phrase it that way but those are…that's along the lines that sort of thing. I'd like to be absolutely clear to the patient, "Have you got anything else wrong with you?" So really, you've got two levels of that…of answer there for that question because either they're going to say stuff to you immediately on their presentation that says to you, "I wonder if that really is their back," or they say something to you that's really just their back and then you just have to take the general history anyway and therefore, you might come back and say, "Well, actually, I think I'll ask you a little bit more about that," but, you know, if you say to a patient, "Well, look, you have anything wrong?" and they say, "Well, as a matter of fact, I have had a little bit of something going on." People forget, as we all know as well. You're just about to do something else "Oh, I had cancer." "OK, thank you very much." "Where abouts?" "In Bournemouth". People can be awkward.

APM: We have actually had a question come in while you've been talking —

BJ: OK, go ahead.

APM: And this particular questioner hasn't named themselves but please feel free to tell us who you are because it does make it more personal. You talked about white coat syndrome. Is there a reasonable, maximum level to which blood pressure might rise as a result simply of white coat syndrome?

BJ: No.

APM: No.

BJ: On the whole, if you're expecting a systolic of 120, a person could easily then shoot up to 150, 160 easily. It can be quite frightening. Over that, I think I'd get a bit worried but usually, if it's slightly elevated, it is probably completely understandable but again, it's circumstantial, you know. You know that the person is nervous, just ask them and they'll say, "Well, I think I am." Very few people will say, "No, I'm absolutely fine. Thank you very much," you'll know that they're tense. Again, this is the problem. We so frequently want to try and reconcile the cardiovascular issues to isolation of a textbook and it's not like that. It's the same as anything else. These things just exist in the context of the patient's history and their demeanor is part of that. So you want to be able to talk to people and calm them down and have a word with them and then try again and do that. In fact, after I went to the…for my health care assessment at the chemist, names again shall be withheld; I went to the GP straight away. I had an appointment there and I said, "Just take that blood pressure," and he said, "All right then," and it was even higher. And so I said, "Hang on a second, this is ridiculous. I know I'm in a bit of a rage and this is madness but take it again." He said, "All right, I'll take it again." Then I got irritated because he was using an electronic device, which I don't trust very much. And so I said, "OK, it'll be better this time. It'll be better this time. Take it again." He said, "No, I'm not going to," because he could see that it was actually just me doing it. So I think you can be reasonable Obviously, if a person's —

APM: I'm actually getting a little worried Barry because we bring so much kit to these broadcasts, I didn't have room to include my defibrillator.

BJ: You might need it.

APM: I'm getting worried.

BJ: I think you might need it for the people behind the desk actually in a minute if this carries on but no, I mean obviously, if a person does white coat to the point where they go up to a ridiculously high level, I would worry about that anyway. If a person went up to about 180, whether they were white coating or not is really not

the point. I think if a person can habitually elevate their blood pressure like that, perhaps it does need investigation but that's just my opinion.

APM: I'm glad you mentioned your distrust of electrical devices.

BJ: Indeed.

APM: And I'd like to just bring in a question from Matthew Davis who's watching this evening who, and I will quote, says, "Barry, you old git, any comments on the virtues of a non-maintained mercury sphyg versus a 10-year-old clinically validated electrical one?" Well done for that, Matthew.

BJ: Thank you, Matt. I have very fond memories of Matthew actually and eating Chinese food in Leicester Square in the Man Fu Kung, possibly the finest and largest Chinese restaurant in Europe, no longer exists. Matt Davis will remember that Lawrence and I used to teach assessment of blood pressure using a bunch of mercurial sphygmomanometers and once in awhile, there'd be a little leakage and of course, at school, you know, you used to be able to play around with mercury, didn't you? Because it was great fun.

APM: It's very fun.

BJ: Tasted horrible. Now, once, Lawrence and I had a spillage in the carpet in the office in the old BSO at Suffolk Street, we were very responsible actually. Instead of trying to touch it and realize we had to do anything, we went and got a vacuum cleaner and immediately nebulized it only to inhale it and probably then resulting to disease later on down the line. So there are very strict rules now about what you can do with mercury. So I think everybody now realizes that mercury's…whilst it's probably very accurate in terms of what you're doing, blood pressure assessment itself is not very accurate anyway. So that's not really needed.

APM: That's presumably the human element in this, not the mercury or the —

BJ: On both sides, patient and practitioner. So it probably is irrelevant. So if you've got a mercurial sphyg, I'd probably stop using it and stick to aneroid.

APM: And this is 10 years old but hasn't been validated by anybody, this aneroid?

BJ: Well, the aneroid?

APM: Yeah, I think that's what Matthew said.

BJ: Yes, he probably did. I think that goes…oh, I thought that was…he was just being funny. No, of course, you've got to make sure that they are actually calibrated every so often.

APM: How often do you do that? Every so often?

BJ: I was going to say every so often. Thank you for putting me on the spot there but every year. I don't know. It's probably cheaper to buy a new one actually now. They're very inexpensive.

APM: Probably is though, yeah.

BJ: But you should really make sure that it's working. What I would do is test it against all the others, you know. We've got a few in the practice and we just make sure they're all lined up and that they're all, you know…the floor is sinking and we're all going for a low pressure environment.

APM: So electrical devices then. All my patients, every time they go to the chemist or the doctors, they stick their arm in a 'free to test' blood pressure machine. Is that worth them doing?

BJ: No. I think if it's…a large scale device is absolutely fine. It's probably expensive. It's checked on a regular basis, it is OK. I'm not entirely trustworthy but a lot of the smaller devices, I'm not very happy about and I don't trust them myself. Personally…and I know I'm not alone in this. I know that some…there are specialists, cardiologists who agree, I personally prefer aneroid myself. I just think there is less to go wrong but again, one must realize, you know, we were always taught that blood pressure not even worth recording to the nearest unit anyway. It's always worth rounding up to the nearest five. I don't know how people feel about that but I think there's a lot of wisdom in thinking about that. One of the devices though that interestingly is recommended is that device over there, Steven which we've got and I was…funny enough, this is actually…the technology, this WatchBP device is actually…and I think there may have even been a slide of it at one point. This is actually recommended by NICE for patient home use and one of the great virtues of this device, apart from its accuracy, is that it actually also detects atrial fibrillation. Now, that is a really big deal because it's the only device, to my knowledge, that actually can do that.

APM: And it comes with a CD as well.

BJ: The thing is I…yes, I realize that and patients are supposed to be able to feed the information into their PC and they're supposed to be able to transfer it to their GP and the GP's supposed to be able to look at it. So effectively, it is supposed to be very efficient online monitoring after a fashion but the point is, that's the one device that's actually recommended by NICE. Not just only because it's a good blood pressure device but it may detect previously undiagnosed atrial fibrillation, which is very important.

APM: Therefore, is it worth us having in the clinic to use as our blood pressure taking —

?

BJ: No, not necessarily. I think it's much…I'm not saying you shouldn't have it but I think if you are a clinician who's used to handling people which…as a palpating profession we are, you should be able to determine yourself if the person's got an irregularly irregular heart, that they're not in sinus rhythm and I think that's very, very important. Atrial fibrillation is actually, potentially, a very important condition to detect when you can and sometimes people will be aware that they're getting palpitations, you know. They will be aware of their own heartbeat and other times they won't and sometimes they'll ignore it and I'll tell you an interesting anecdote about that in a second but the…as I think everybody realizes, one of the real important reasons that it's critical to detect AF early on is because when the…as you all know, atrial fibrillation means that the atrium tends to start to breakdown in terms of its electrical behavior. It's no longer coherent and it just becomes like a…can be just like a fluttering bag eventually if it's actually in true fibrillation. What normally tends to happen is that it…disruption to normal conduction. Abnormal conduction means that you don't get contractions when you need them or different parts of the atrium start contracting independently. Every part of the myocardium, in principle, has the capacity to act as a point of electrical discharge. So instead of having a SA node taking over and dominating everything else like dominoes, lots of different nodes start firing off and that means that you may potentially get areas of the atrium, which are functionally akinetic. They're not moving terribly well. Now, if that happens, the propensity is for the atrial wall to form what are described as mural thrombi, so effectively, a thrombus on the wall and that's there then inevitably, something's going to break off and potentially be a stroke.

APM: We did discuss this before, I know and I'm really glad you brought it up because I remember reading many years ago that actually, we shouldn't worry too much about atrial fibrillation because the ventricles are filled 80% by gravity and 20% by contraction. So therefore, if it wiggles a bit, it doesn't matter but it's not the filling of the ventricles here that's the issue.

BJ: No.

APM: It's the potential consequence of the thrombi.

BJ: No, absolutely, in theory.

APM: And I may have only read halfway of whatever it was I had to read but I mean is that relatively new, the —

BJ: Yeah, I think so. I think there's been much more interest in it in the last few years, you know. AF, it depends really on how bad it is but predominantly now, there's quite a keen interest in making sure the patient's with AF are at least controlled in some way to make sure that, you know, they're not going to have a stroke. So

they're often…as you know, they're given some sort of blood thinner of some description that helps, either aspirin or something else —

APM: The key indicator is the irregularly irregular heartbeat.

BJ: Correct and if we remember that a…and this is one that we can all do very well on, a normal heart rate is supposed to be regularly regular, so sinus rhythm or just give you a nice predictable rhythm. You can, of course, then encounter…one can encounter something that's regularly irregular. So effectively, it's a predictable irregularity—

APM: There's a pattern.

BJ: --yeah, which is more likely to be a heart block or something like that. So, you know, every once in awhile, you get something you shouldn't but it's actually very predictable but as soon as you get something that's just completely unpredictable, that would qualify as being AF probably. But it would have to be confirmed by ECG but that's predominately talking about and it's important to have it investigated and you feel —

APM: If you come across —

BJ: Sorry, forgive me. I was going to say you'll detect that when you try and take the blood pressure because it's a damn nuisance.

APM: And have you come across that in clinic when it's not been detected before?

BJ: Loads of times.

APM: And straight off, that's a red flag, is it?

BJ: You can explain to your audience.

APM: If you joined us for the very first broadcast, you'll know Barry's opinion about the concept of red flags but it's an indicator that you might want to refer —

BJ: I think it is a clinically important issue to assess and —

APM: There's two sides of what we're discussing, is there? Let's pick up the stuff that's nasty but also, let's think about what we can do about it but we're not in the business of trying to fix AF through soft tissue or —

BJ: I'm not.

APM: No, right.

BJ: And I wouldn't recommend anyone else either.

APM: No, of course. So yeah.

BJ: A nice bit of carotid massage, you know. I don't think —

APM: Carotid. Now, I want to stop you on carotid because Emily Alexander of London has sent in a question, saying, "Have you ever come across a carotid dissection in practice and what warning signs led you to pursue that as a diagnosis?"

BJ: I have seen patients who've had them but I haven't…and I have actually encountered patients who've had carotid bruit. Now, carotid bruit are not necessarily uncommon and I was going to say if you are interested in auscultating the carotid then it is also important to auscultate the heart as well at the same time because it might be that instead of a nice systolic noise that you're hearing, it may just be the radiation of a murmur. So an aortic stenosis will be heard as well…mitral regurgitation will be heard during systole. It could just be that you're hearing that radiating up into the carotid area, sometimes if they're very loud and loud isn't necessarily proportional to seriousness either but I've not, thank heavens, encountered…as far as I'm aware, encountered a dissection itself but I've certainly seen people to whom I've actually said that I think they should avoid having their necks manipulated. There are some classical indications of a person who's having a dissection or going through…or having effectively a stroke as a consequence of a dissection. Remember, it's not the dissection itself that causes the problem. It's the sequel to the dissection that's very important, you know, the thunderclap headache, depending on where it is or, you know…and change in vision and that sort of thing, very serious indicators. But again, you would ask a patient. You would want to know about that sort of thing. You would want to know if they're hypertensive. You'd want to know if there's a history of cardiovascular disease and one thing I would say to everybody is do ask about family history. It's very important and I don't know how often people do but when you first see a patient, I think that's quite a useful thing to know about.

APM: The nature of that questioning is going to be quite important, isn't it? Because it's very easy to be a generalist in you're questioning. So my questions are, "Is there any family history of serious illness such as heart disease, cancer or stroke?"

BJ: Diabetes.

APM: And I don't say diabetes, I ask…usually, when I ask people if they have diabetes or have been diagnosed, they'll say, "Oh, no but my mum," or, "My dad has,". OK, so tell us the significance then. Why are we asking about diabetes in this context?

BJ: Well, diabetes affects four main areas, as you know. One is it affects nerves both autonomic and in the periphery. It affects the kidney. It affects the eye and of

course, the last thing it does is it affects the heart. And so diabeticians and cardiologists are very interested in trying to keep people as slim as possible. So diabetes is essentially a microvascular disease in many senses but it has significant effect on heart disease but don't forget, it's also usually concomitant with or attendant with obesity. So these things are so tied up that you, you know…and diabetes, of course, now is at epidemic levels. So it's not the sort of thing you can afford to ignore. Everybody with diabetes has to have their heart checked.

APM: Partly again because they are sort of changing the parameters of what constitutes or diabetes or pre-diabetes, aren't they? In our pre-diabetic in a situation where long ago, they'd just ignore you.

BJ: Yes and I think that the American population, the tax-paying population spends $13.5 billion on non-traumatic amputations because of it.

APM: Gosh.

BJ: So, you know, it's a serious, serious problem. So I'd say that diabetes is a very important thing to —

APM: In terms of questions about heart disease in the family, sorry, we got distracted by diabetes there, is it sufficient, do you think, just to say, "Is there any history of heart disease or stroke in your family?" or would you be more specific? Would you —

BJ: No, I would certainly ask about that and anybody else. I don't know —

APM: Would you specify hypertension or…?

BJ: I think if you just asked about heart disease, it's sufficient. Maybe one should be a little bit more specific than that but I think I would say, "Any ischemic heart disease, any coronary disease, anything like that?" But the trouble is, a lot of the time, people don't know but if they're hyperlipidemic or there's a history of familial hyperlipidemia then they will probably know, you know. "I remember my parents having to take tablets for that sort of thing," or whatever, you know, if it's recent. So I think so.

APM: There's quite a lot of interest so far in the concept of blood pressure. One is and again, I don't know who asked this question but do you take blood pressure at every first consultation?

BJ: No, I don't. That would be screening. I think if, again, there was sufficient indication to make me wonder about the person's cardiovascular fitness then I would take blood pressure. I'd always like to have a reason. Remember, screening is a real diagnostic dead end because effectively, one should always strive to try

to explain why one's done what one's done at any time, you know. You hope you can. Sometimes I look at my notes and I like to think I know why I did what I did but for the most part, there should be a process that you can follow. You should be able to say—

APM: Every so often —

BJ: --"This is why I'm trying to pursue that." So you can think of a number of examples why you would just automatically take someone's blood pressure. Again, apart from the symptoms, you might take a blood pressure because they are frail, or elderly and you worry about their general health because of that, you know, more than you might do for a person who is, you know, 21 and fit and playing rugby.

APM: Every so often though, you have a diagnosis of something going on somewhere, don't you? Maybe you don't and you might want to say, "Well, let's just test a lot of systems and see if I can find something which gives me some clues." Do you ever do that?

BJ: Could you be a bit clearer, Steven, so —

APM: Well, I know. I'm deliberately being provocative, to be honest. I can remember one specific instance way back in college when somebody…one of the students said to one of the tutors there's something going on somewhere and that became an abbreviation for —

BJ: I remember that very well actually.

APM: it wasn't you but you know—

BJ: It wasn't me.

APM: In fact we discussed it in the last broadcast, didn't we?

BJ: Yes, I remember. There's something going on —

APM: But, you know, sometimes you don't know what's going on and is that then screening? Is that any useful thing to do?

BJ: The thing is, I…look, the NHS might say this. If you go to an initial checkup with the GP, they will…that'll be one of the things they do. They'll always take blood pressure. There's no argument against it but I like to know why I'm doing what I'm doing and if I think it's important to do it then I will, you know. You could argue that your analysis is a useful thing because once in awhile, you will pick up something serious. Blood tests do. There's been research undertaken in Switzerland where they MRI-ed large section of the population and found out all

sorts of stuff, you know, and whether it's relevant or not, we just don't know.

APM: Indeed.

BJ: But yes, if you want to take blood pressure, there's no reason not to but I like to think I've got a better reason for doing it. That's all.

APM: There's a bit of a follow-up to a previous question. It says, "Hello, Barry, thank God the days of being grilled by you are over." That's from Emily Alexander again.

BJ: That God it wasn't that again.

APM: What's the clinical importance of isolated systolic or isolated diastolic hypertension? Don't know who asked that question but they say thanks.

BJ: OK, right. I wish that question hadn't been asked because I probably…I'm not going to be able to answer it in the way that they want me to answer it. Usually, people used to say that isolated elevated systolic pressure wasn't particularly important and diastolic pressure was. It's an old fashioned idea. It goes back to Hattie Jacques and all the old Carry On films that probably half of the population have never seen but systolic pressure on its own can go up for a number of different reasons, particularly for atomic reasons if you have an adrenal tumor, pheochromocytoma, that sort of thing. It can, in theory, go up but for the most part, it can be stress related and if it's elevated for any period of time, that in itself can represent end organ damage. So elevated systolic pressure shouldn't be dismissed as unimportant. The diastolic pressure tends to lag behind somewhat, I would say and again, this is very controversial, what I'm saying but in the days of yor, the BSO, one of the things that used to upset everybody teaching the first years in the lecture gallery below was that…upstairs, Lawrence and I used to get undergraduates running up and down on chairs for about a minute, taking blood pressure before and afterwards. So they'd be running up and down, step, step, step, step, step like in the army and we would then take their blood pressure afterwards and almost invariable, in young people, systolic pressure would go up and diastolic would go down and that's what should happen, of course because if you elevate the systolic pressure, essentially, the pressure exerted on the vessel wall when the heart's in contraction, you want to try and accommodate it. So the diastolic pressure goes down so you keep everything nice and smooth but if you keep on smashing away, as I said, with that systolic pressure for a long period, eventually, diastolic pressure will rise and I would theorize it's a protective mechanism physiologically or pathophysiologically but for good homeostasis, you do want that sort of turn. So, you know, again, it depends on circumstances. It really does.

APM: Somebody finds it strange that you dismiss routine blood pressure checks as screening when hypertension is so often asymptomatic.

BJ: Well, I would say that if you thought the person was a candidate and you're aware of the history, of the risk factors, how much they drink, how fat they are, how little exercise they take then you would have a very good reason to be assessing people like that but the question is would you expect to find hypertension in a young, fit and healthy person and the probability's you wouldn't.

APM: So over here, you suggested that white coat syndrome may often go as high as 150 but did not mention the diastolic value change if indeed there is one. What's the relationship between diastolic-systolic values in terms of pathology and maybe you've just answered that. That was Tim who's asked that question. Sorry, I read it without —

BJ: That's all right. No, I think I can say what they…quote what they say in Prime Ministers question time and I refer my colleague to my previous answer.

APM: My earlier answer. How important clinically is labile hypertension versus constant hypertension?

BJ: I'm not sure I understand the terminology that's being used and if the person would like to give me a bit of details to what they mean, I'd be happy to speak on if I can.

APM: Please send through some more information on that one and I'm sure Barry will be happy to expound. Now, where were we going before we went to all those? We covered your analysis flow chart.

BJ: We've talked about that. We were talking possibly of…I think we can move on probably a little bit to the history.

APM: Very definitely, yeah.

BJ: I think and again, this is…I was going to tell you a story actually, recently about a patient of mine who's an early 50's, very fit man. He presented, as he's done in the past, with a couple of weeks of headache which I'm pretty sure was mechanical, had a really unpleasant neck which we know from previous scans and so on. So I was doing my best to be very careful and anybody that knows me will know I'm really quite a coward when it comes to intervention and I try to be very conservative and very delicate. So I wouldn't want to impugn the reputation of any colleagues in our profession but that's just my particular approach. So I thought what I'll do is I'll play it safe here. I'll try and move C-D area, try to do that, see if I can gap it with a little bit of a lift. So I did a little lift from behind, that sort of thing and I had him in that sort of position, the hands behind. Not clasped, over that, one over the other and like I have my hands over here. So I was just trying to stretch it a little bit and he said, "Oh, I'm going a bit peculiar I think." I said, "Hang on, I beg pardon?" He said, "No, I'm definitely going. I'm

going," and I had to lie him down and he was going into a faint and he said, "I think you were cutting off the blood supply to my brain there." Now, obviously, that was quite could've potentially been a bit alarming. The technique I was using, luckily, just can't possibly go anywhere near his carotid as far as I could tell. I don't think I was anyway but I said to him, "That's a very unusual thing to happen actually, very, very unusual. Are you sure everything's fine? You know, you're fit, you're well, you're blah, blah, blah, blah," and that was a circumstance of course in which I did definitely take his blood pressure and try to understand what was going on and he then said, "Well, as it happens, I have been experiencing a few palpitations. I get a bit of a discomfort here, right in the center of my chest up here, tap, tap, tapping away, tap, tapping like that and I'm aware of it and then I feel a bit faint." Now I was trying desperately to marry that up to what had just happened and I do remember that there's an old reflex called the diving reflex that people used to talk about where you were told to…if you had a sphyg to hand and a patient was suddenly becoming tachycardic like that, that you get them to perform a Valsalva, by blowing into a sphyg, you know, the old mercurial form, blow not suck of course and…or one of the really very, very obscure techniques was actually to put the thumb over the patient's eye. If I can just demonstrate here.

APM: You may.

BJ: So close the eye and literally just press the eye and autonomically, that's supposed to activate the same reduction. I've never had an opportunity, thanks heavens, to try it out but that's supposed also to reduce blood pressure. Carotid massage, of course, is another one.

APM: I've lost my contact now.

BJ: Carotid massage is, you know …my thumb can see a lot better. Carotid massage is another one but obviously, you wouldn't want to go feeling around there too much either to try and bring things down. And so it's feasible that any sort of autonomic stimulation in that area, you know…we know that the neck and head and so on are very richly innovated and. I suspect he had a vasovagal attack. So a vasovagal attack may be superimposed upon something else. Now obviously, that was an important finding.

APM: Have you treated him before?

BJ: Yeah.

APM: And similar techniques before and so —

BJ: But I hadn't seen him for a few months, maybe for a year and this had been happening subsequently and he have…whenever I don't see somebody for a while, as I'm sure everybody does, I always do my best to try and find out if

anything's changed. Have you been hospitalized? Have you had any test for anything? Have you been feeling well? Just a few seconds just to try and make sure they absolutely know you mean business and say, "Look, has anything else been happening?" And he forgot to say anything about that. So obviously, I failed in being direct or he just forgot about it but I said to him, "Look, we're going to have to get you referred," because he's either getting SVT, which is superventricular, tachy arrhythmia or he's getting some sort of circuit rhythm in his heart. There's just something kicking in every so often unpredictably or he might've had something called POTS, which is now called POTS, which you may have heard of. OK, so this is postural orthostatic tachycardic syndrome and this used to be called orthostatic hypertensive autonomia and this is the incapacity of people's autonomic processes to cope with changes in position. So as we know, when a person stands up, they dump half a litre of blood into the low extremities and hopefully, normally they can cope with it, you know. If it's very hot, obviously and you're wearing a bear skin and standing in front of the queen, you might faint unless you you're your venous calf pump working but it's the sort of thing that in a patient with POTS means that you don't cope and if anything, you get a paradoxical elevation of heart rate and they become very, very tachycardic. So you could take the blood pressure before and after standing up…sorry, beg your pardon, lying down then standing up and see if they can maintain their blood pressure. If the blood pressure drops and the heart rate goes shooting up, they probably got POTS or it's a good clue anyway. Maybe the vasovagal attack then set off something else. I don't know but he's been referred.

APM: Should we be worried about POTS?

BJ: No. It's not supposed to be, as far as I understand…and I did go to a cardiology meeting a few weeks ago so I was updated but it's a damn nuisance and very debilitating for people. So clinicians are seeking to address it but whether or not they're actually being very successful, I don't know. It's not very easily addressed at all.

APM: What could we do to help?

BJ: Again, at the moment, if science doesn't really have much of an answer as to what we can do, I'm not sure I'd want to interfere with it. We refer.

APM: You don't come across a particular patient type where you can offer advice of any sort, whether it's exercise —

BJ: I mean look, depending on who you read, you can always say to them, "Make sure you keep your blood volume up," you know. You can teach them calf pump exercises, all the normal thing and I'm afraid this is all old hat; I'm afraid, usual stuff. In certain patients who just suffer from ordinary hypotension, the fashion is to offer a little bit more salt in the meal now, believe it or not, you know. We thought we've gotten away with that but now it's about taking a bit more salt.

APM: I'm going to digress again into questions.

BJ: Feel free.

APM: Claire and I've got a very good idea which Claire this is, says, "Barry, did you have vasovagal faints when teaching me or were you just bored?"

BJ: I actually suffer from delayed fainting, as a matter of fact, another thing of which I'm proud. Twice when I've given blood, I've actually partially fainted. So it's sort of a semi masculine faint we can at least say which happened about an hour behind, an hour later and who knows why and I know other various esteemed…I won't say I'm esteemed, other people who are esteemed who suffer from the same thing. So I'm at least in good company but fun enough, my daughter was giving blood. This is the cellist. She was giving blood a few weeks ago and I think she had the same thing and there was something that I could help. Now, you've got to understand, this is all about treading on other people's toes because the blood service are fantastic and they were doing mobile…not transfusion, mobile blood donation and…but it was my daughter's first time. She was a bit anxious, 17, lying there, having her blood taken and she went to get up and she started to feel a bit faint. Now, you're in an environment where loads of other people are having their blood taken as well. There's no curtains up and you can see the whole thing going on and she was a bit worried about it. So I suspect she went a bit vasovagal and I'd been held up. I was supposed to be there and I've gone outside. I came back in and she was a bit grey and they were all a little bit worried about it and I said, "Oh, for heaven's sakes." So first of all, I sort of tried to be a little bit, you know, jaunt and say, "Now, come on, dear. Come on, pull yourself together," trying to get the autonomics up a little bit, you know. She just rolled her eyes because she's a teenager and then made her drink and loads and loads and loads of water and got her using her calf pump mechanism like this. The nurse said, "I think we're going to have to move her to a hospital." That put my blood pressure up a little bit and I said, "Why? What's happened?" He said, "Well, she hasn't recovered. Her blood pressure's really low." We've taken her blood pressure, it's really low. What question would you have asked at this stage? He said, "Her blood pressure hasn't come up." So the question would've been, to ask, "What was it before?" "I don't know. We didn't take it." Now I'd like to think an osteopath would've done but they didn't —

APM: You know, that question actually didn't occur to me because I assumed you were telling me that it hadn't come up from a known starting point but do you —

BJ: Well, as soon as she went faint, you'd have thought they'd have taken her blood pressure just to see because the recovery was so delayed. So personally I'd have though, you know, if someone starts to get a bit faint and they don't recover, it ought to be a matter of procedure that you take the blood pressure. Then if you're going to damn well send them to a hospital, understand what the graph is. It

might've been very low to begin with, you know. A 17-year-old young woman, it probably was quite low. Anyway, chucks a bit of fluid down the old throat and got her doing a bit of calf pump and she was fine after that. She's absolutely fine. "I'm taking my daughter out of here," I say.

APM: She pulled herself together, yes.

BJ: Fortunately. Father didn't.

APM: A couple of questions before you move on, before you carry on. A very teasing one here, someone has sent in this question. "A friend of mine faint if any pressure is applied around…" and it's left at that point there. I don't know what the rest of that question is. So I'd really love to hear it.

BJ: Is there a bin bag involved in this by any chance or citrus fruit?

APM: This one, from Matt again, "Barry, any thoughts on the usefulness and reliability of physically palpating for aortic aneurysm?"

BJ: Great question.

APM: I should say, "I once found a big one in a patient who had been 'treated' by her GP for CVS problems for 17 years. Sadly, she died shortly after palpating after surgery.

BJ: After it burst. That is absolutely a superb question; I have to say because this is —

APM: Good old Matt.

BJ: Was it Matt again?

APM: Yes.

BJ: Thanks, Matt. If you read the old literature, it used to say have a good feel around wider than 20 centimeters either side of the…or the pulsation, wider than 20 centimeters, it's a red flag and as Steven has quite rightly pointed out, I don't like red flags. I like things that indicate that you are thinking about what you're thinking and you know the relevance of something in the context of the patient's history and presentation. You really can't tell. You'll find very skinny people who have very, very palpable aortas all over the damn place. You can practically see their heads shaking and their feet moving with their pulse. It's a very, very hard thing to do. What I'll say is if you auscultate, get the patient to exhale and try and listen, see if you really can hear anything but more usefully, you know, if they do have persistent low back pain that you can't explain another way and you do think that they…the thing really is a little bit expansive and it doesn't matter whether it's up or sideways, whatever, you know, it's just not like that, you know. The

aorta's about that big, like your finger and it's right next to the vertebral column as well. So most of this impulse has actually been modified through any number of different tissues but if you think it's very volatile history, you know, obesity, alcohol, smoking, diabetes which causes vascular disease. All of those things, put it in context, that's the time to do it but if they have an unexplained backache then absolutely, definitely.

APM: I'm not quite sure I know how to phrase this question but how long do you think is a typical cause for a dissecting aorta or a bursting —

BJ: Don't know. I don't think you can tell that. You really can't know. A few years ago, I was…this is one of your "there's got to be something going on somewhere" scenarios. I'd like to try and reconcile it to a reasonable conclusion but effectively, I saw a patient who…he was in his mid 60's, an immensely bright and capable man and he had neck and shoulder pain which I wasn't entirely sure I could understand and I thought…I wasn't sure but I thought there was a fullness around his clavicular fossa which I think turned out not to be particularly relevant and I actually sent him for a chest x-ray. So I thought, "Let's have a look and see what's going on in his chest." I thought it might be the lung. I wasn't sure but low and behold, up came an aortic aneurysm up in the arch of the aorta and that didn't end well at all. Clinically, it didn't end well and he was fine, you know. I don't even know if his symptoms were even reconcilable to that. You just don't know. People can be walking around with these things for a long time but to say dissecting, you know, if people have aneurysms that are left for ages, whether they're dissecting, they actually migrate through into the wall and produce a false aneurysm is a whole different story and then some people do have them. They have them after road traffic accidents, for example. A leaflet can form in the aorta after a rear impact because the lap part of the belt restrains the torso, which then moves forward in a shearing movement on the low extremities and actually puts that shearing force through the aorta. That's, you know, the thing and then how many —

APM: Even with the cross strap in place.

BJ: Yeah because of the speed. It can happen.

APM: Because you were sadly unable to answer that last question, our questioner has actually expanded a little and says that the friend faints if pressure is applied around her CVJ. Massages are sure to make her black out.

BJ: There you go.

APM: What could be the mechanism —?

BJ: Well, that's the vasovagal thing I was talking to you about. Again, I refer my colleague to my previous answer. I think that's an autonomic vasovagal

mechanism.

APM: This is an interesting one. Do you know any tricks to help with recovery after a vast vagal faint? Myself and my boys suffer from it and it takes a good 2 or 3 days to normalize afterwards. What's a —

BJ: Two or three days.

APM: What's a vast vagal —

BJ: I'm not sure that I'm familiar with the term vast used in a technical context. If it is, I'd like to know particularly what that means.

APM: Please, send some more information in because I think that interests a lot of people.

BJ: But it sounds to me like the person is actually going into a degree of…they probably feel very hypoglycemic afterwards and they've had an autonomic reaction as well. So probably, I'd say…I'm afraid it's going to be very, very rudimentary but the usual thing. Number one, lots and lots of fluids, make sure that you do take a bit of sugar to boost the system or eat properly and exercise, actually. Gentle routine cardiovascular exercise, go on a cross-trainer, that sort of thing. That actually might be the best advice of all as long as it's very, very cautious. If you're not used to doing it then don't but if it's the sort of thing that you think you can take on safely, I would say some cardiovascular activity, something like that.

APM: I think it might just be…and this makes perfect sense now that we may be the victim of autocorrect here. It may not have been vast. It might be a vasovagal faint.

BJ: I thought it could be, you know, maybe a mariner's term of vast.

APM: Possibly. So a vasovagal faint, OK. Do you want to go do some more on history taking here or shall we —

BJ: No, I think…well, look, all I was going to say…because I think the time's moving on and I think we should probably do a little bit of practical stuff in a second.

APM: I think our patient's freezing, to be quite honest with you. The air conditioning in here —

BJ: I suspect so. Well, I hope his blood pressure would've dropped a little bit then.

APM: So tell us what we're —

BJ: Well, I was going to say in terms of history, try to, you know…not try to. I think we all strive to try to be as aware of things as we possibly can in terms of their novelties. So if a patient…perfect example, happened to us about 18 months ago, patient in his 60's, rides a bike everywhere, all over the country, very fit, actibr guy but he does have bronchial asthma and he often comes to the practice complaining of mid back pain or a bit of low back pain, neck pain and he said, "Yeah, I've got a bit of a neck ache at the moment. It's really bizarre. I had it treated recently by an osteopath and it hasn't really helped." And I said, "OK, so why is it bizarre?" He said, "Well, I don't normally get that sort of thing." He said, "But I tell you what though," he said, "When I took my puffer, the neck pain went away." And now that is obviously very odd but I had to assume that the…and it is very, very unusual but I had to assume that the bronchodilator effect also affected maybe his coronary vessels. I mean it was a wild bit of fathoming, really I think though but I thought, "I'm not very happy about that." And overtly, he was fine. Blood pressure was fine actually but I sent him to the hospital. Now, that really was a serious blue light up scenario and he already had…apparently, they thought —

APM: You believe in blue lights and not red flags.

BJ: I like blue lights. They go fast. The red flag's just waving around and don't do much but red flags stop blue lights as well but I was thinking that, you know, he needed to be seen quickly and he'd already had an infarct. He had ECG evidence of two different infarcts in different places, which you can't see on an ECG, and they kept him in for three days.

APM: So the mechanism then of the bronchodilation in —

BJ: Presumably, gave him a temporary dilation of the coronary circulation. I hope that's not too controversial but I was assuming that that's what had happened actually or else, it would just take…or it may have just taken off…taking the strain off. The trouble is the coronary dilation is actually quite complex and you do have more than just simple, straightforward sympathetic innovation. And so I may have got that wrong but I think that's what had happened and I wasn't very happy about that but it was the fact that it was such a cause and effect relationship, I had to do something about it. So that's the sort of thing.

APM: What is it you're going to go to demonstrate for —?

BJ: Well, since we're talking so much about hypertension and blood pressure, I thought I'd just refresh everybody's memories in terms of the technique that I tend to use and turn to favor and maybe dispel a myth or two.

APM: Good.

BJ: We'll have a look at that. Then I think what would be useful, which follows on

very nicely from our aortic scenario, is to talk perhaps a little bit about a nice objective mechanism for assessing circulation in the low extremities. So in cases of patients where you think they may be claudicant in terms of patients where you think they may have an aortic obstruction or aorticillac tree, again, historical and I will just relate a very quick anecdote before we get going here. The very venerated lecturer from the BSO, he used to illustrate a wonderful cultural distinction between the French and the British because if the French, apparently, were complaining of aortic iliac problems, they might say, "I cannot make love," you know, because obviously, they have erectile dysfunction as a consequence of the…oxygen not really reaching the parts that matter but in Britain, apparently, the priority is very different. People's emphasis are very different and they would say, "I've got a pain in my arse."

APM: We're not going to go through the mechanism of that.

BJ: It's the same mechanism.

APM: Let us turn to Barry with our patient, Nick and see what's going on.

BJ: So the preferred mechanism or technique that I was always taught and I think works very, very well is to actually, as much as possible, have the patient in supine position like this and then to elevate the arm. So the cuff and the brachial artery are roughly the same height as the heart. One of the issues is of course; we're raising the extremity. You can actually, in effect, lower the blood pressure in that arm temporarily and it's actually one of the ways of actually flushing out certain effects of aortic valve disease. However, I like that because you've got your hands free. So you've actually got…you can fiddle around with your equipment when the, you know…you realized you haven't shut the valve or something has gone horribly wrong. I won't patronize people too much by talking about getting the cuff on the right way around. I'm not even to worried about having having extra large cuffs for people who are particularly obese. I think once in awhile, you can't make it but if you can get the Velcro in contact, usually it's sufficient. Remember, blood pressure is a relatively inaccurate technique. It's a very inaccurate device. So I try to round up to the nearest five and I wouldn't worry about the niceties too much. OK, the next thing —

APM: Is rounding up to the nearest five something that general medicine would expect as being —

BJ: I think so. Again, I'm probably likely to be contradicted on that but I would. Nurses don't like to do it but often in…I think you can get away with it. I don't think there's problem. Again, I'm sure plenty of people would not be happy and with the advent of the new electronic devices, it's impossible because now, everything's nearly done electronically. So you don't get the option but I think there's no point in not doing it myself. Right, next big issue that everybody gets very upset about, I am going to palpate before I auscultate and I think this is very,

very important for everybody who remembers the existence of the silent gap. Remember, there are phases, the…you may remember the Korotkoff sounds and Korotkoff sounds are actually the noises made by the varying changes in the hemodynamics of the vessel as you're squashing it and then unsquashing it and your blood flow through. Effectively, it is feasible that the blood…you could be going into a silent gap between the first and second phase when you're actually pumping up. So effectively, the sound disappears before you get to the true systolic level. However, although the sound disappears, the palpatory evidence doesn't. So always palpate before you auscultate, at least on the way up. And I'm going to use my thumb to do it. The brachial artery's ideal. As you know, it's medial to the tendon, the biceps tendon here. It's fantastic. You can get a great measure not just of the rate but of the character of the pulse as well and I think therefore, as a palpating profession, you should have no hesitation about using the thumb at all. A lot of people are often told, "Don't use your thumb. It's got a pulse in it," and my flippant response to that is, "So does every damn other digit." So if you're going to use a thumb, it's going to be the easiest one because it opposes. And if you can't tell the difference between, you know, your pulse in your thumb and theirs then you're in trouble or the patient is. So I'm going to use my thumb. I'm going to pretend for this so I can keep on talking but I would…my old boss in the hospital used to actually stick one ear in and one ear out so they could tell people off all the time and, you know, I'll pump up until I've obliterated the thing. There, see, I left the valve open.

APM: For demonstration purposes.

BJ: For demonstration purposes, exclusively. And we'll pump up a little bit. I'll pretend we're getting there and I am…I've obliterated about 110. Frankly, I left my glasses over there so I can't really see but I'm pretending I can and whilst I've just let it down again, I should've really kept it there and noted the point at which I actually obliterated it by palpation, stuck my steth on, making sure, of course, it's wired into the right bit, having a listen and in theory, I should then be able to, once I've pumped it up and obliterated by palpation, drop the pressure and actually hear it coming back in on auscultation. So I've two almost for the price of one there, for one pump and then as I let it out, I'm just waiting for the sound to disappear. We don't go full modulation anymore or diminution. We just go for disappearance and it's gone. That is the technique I prefer. What I would draw everyone's attention to actually that's particularly interesting is that if you do think you're getting a patient who's got unusually high readings or peculiar readings, it is very, very often worth testing on the other side. This is really pretty important. Nowadays, there's quite a lot of information about how important that is and NICE have actually reconciled themselves to this as well which I'm really pleased about because you get huge variation between arms —

APM: But what's the significance of the difference? I mean or what is a significant difference? What does it mean?

BJ: Well, if there is a very broad, diverse…very wide diversity, it would imply that there may indeed be a problem with their vessels. They may betray underlying vascular disease, very important. It varies. I would refer people to the NICE literature on this and have a good look and we're supplying some references on this as well but…so there's been increasing interest in this but if people do have a wide and a 20 millimeter difference then it's something that's worth pursuing and looking at. It shouldn't be ignored.

APM: And just as reassurance, those are —

BJ: That's systolically, by the way.

APM: And just as reassurance, those references will go up on the website after we finish even though we're not showing them on the screen or anything like that. And before you move on, very quickly, typical schoolboy era, schoolgirl era in taking blood pressure, you mentioned having —

BJ: Well, I think I mentioned most of them. One is putting the…OK, number one, putting this on backwards. This is always a great one. So the thing then unfolds as you're talking about their golf. The second one probably is actually palpating on the wrong side. People like to use the radial pulse. I would try to stick to the brachial if you can, much better. The third one is actually having the stethoscope…I'm embarrassed to even say this because most practitioners know about this but having the stethoscope in the wrong way. If you watch early episodes of Casualty which I don't confess to doing but I once in awhile saw one, the doctors would often put the stethoscope in that way around and of course, your meatus goes in that direction, so have it facing forwards, another embarrassing one. In fact, one of my patients once was a director on that program and I drew his attention to the error and they always say in medicine there one thing worse than being wrong and that's being right. So I really didn't do myself any favors there. I certainly didn't get a mention in the credit.

APM: But patient always supine or would you…sitting or —

BJ: I would always do it with a patient supine. The guidelines say you can do it supine or sitting. People always think that somehow, you have to be on the left side to be on the same side of the heart, all that nonsense, you know. Traditionally, you're taught to examine from the right anyway and the right is perfectly good. It doesn't matter but as long as you're aware that there can be big differences between upper extremities. Last errror, making sure that's round the right way so you can hear the damn thing.

APM: But you'll pretty soon know not hearing these when you put on the arm, won't you?

BJ: Well, that's what I'm saying. I probably, you know…going through the schoolboy

era is probably a little bit patronizing I should think.

APM: And if you suspect that the pressure you're getting is due to white coat syndrome, presumably, you're going to do it again later, do you often see a change or —

BJ: Very often because remember, as osteopaths, we've often got more time with a patient than the GP does, you know. GP might have only 10 or 15 minutes or something. We've often got 20 minutes, half an hour or longer and, you know, the patient gets used to the situation. You can calm people down. You can say, "Well, let's have a go at it again, see what happens." Always worth double-checking, always worth trying.

APM: Sorry, I interrupted your flow.

BJ: I know. Anyway, just trying to remember what I was going to say. So can we move down now, look at the lower extremities? Is that all right? OK, so I thought now, I would show you an adaptive…can I just put this over here, Steven? Is that all right if I just give you stethoscope?

APM: Yes, of course. Sorry.

BJ: Thank you. So I thought that I would actually demonstrate the ABPI. This is the ankle to brachial pressure index and this is absolutely superb, this test. Now, I happen to know that our model has excellent pulses and I compliment you on them. Wonderful. So that makes it easy. Now if we do suspect that a patient has a circulatory explanation for their lower extremity symptoms, if you think that they are claudicant, often you know that your history will tell you that they say, "Because it happens and I get this pain in the cold and it's alleviated when I get warmer," or, "It happens because I'm exerting myself. I'm walking uphill," etcetera, etcetera, etcetera. You might, for example, think that it's a claudicant phenomenon, if you're worried about their…OK But if you're worried about, again, their aortic iliac circulation, it might be important to consider that the blood flow has been ligated and affecting their legs. Either way you may have all sorts of reasons for considering the hypothesis pertinent to their circulation in the low extremities and of course, you know how to take pulses, you know how to check for circulatory change, you know how to look at all the usual things but the ABPI is particularly useful because what it does is it compares the blood flow in the arm to the blood flow in the leg and it does it…obviously, rendering evidence that you can then write down and actually put in a letter. So it's material that you can actually convey to somebody. So in this particular case, we've already taken the patient's systolic pressure. So it's only a systolic reading. There's no auscultation involved. No stethoscope. It's purely on palpation and for argument's sake, we've got a nice blood pressure of 110 in the arm and what I should be expecting, interestingly enough, is a blood pressure that's a little bit higher in the leg. So you divide the pressure of the leg by the pressure in the arm and it should come out at about, you know, 1.1, 1.2, something like that and all you have to do is take the

cuff…and I think people at this stage worry about somehow causing a bleed or something like that. This is a test that's used a great deal. Adverse effects I don't think are very probable. The pressure doesn't need to be much. Try to remember then their standard blood pressure. So we're only looking to abolish their systolic pressure. We're not looking to try to squash things out of existence. Secondly, we're pretty much low down, almost really over the ankle. So we're not really worried about the…we don't have to worry about squashing the calf. Now, all I need to now do is palpate a pulse somewhere in the foot. So I've got a few choices there. At the moment, I've got a very nice, strong pulse behind the medial malleolus here. I could've gone for dorsalis pedis if I'd wanted, second or third met head, that sort of thing and I'm going to pump up again, remembering to close the valve, of course. Lovely, OK. So we got about 125, 130, something like that there. Again, I would imagine. And that sum will come up absolutely satisfactory. Now, allegedly, if the pressure is such that you get a percentage…for example below 90%, so if the leg is 90% of the arm, in other words, it's gone the other way around then we might have an issue and in fact, at that level, going below those sort of numbers and even lower, there's even, again, a wider implication for the patient's coronary health as well. So in other words, it may predict a coronary illness.

APM: How precise are you going to be about the issue that that indicates, 90% of…where is that issue going to manifest itself typically?

BJ: Where is it going to manifest itself?

APM: Yeah, in which bit of the circulatory system?

BJ: Well, this is specific to that, the circulation of his leg. This is going to be anything below the aorta, you know.

APM: But you're not —

BJ: Well, I can't necessarily say where it happens. I can't say specifically it was in that part, you know, in the reflex, circulation, etcetera.

APM: Is there a statistical sort of bias towards any particular area? Do you know?

BJ: Yeah. I mean it's going to be probably in his femoral artery, probably, but it could be anywhere. It could be much lower down but I wouldn't go that far. I'm sure there are people who can correct me. Thank you very much.

APM: Thank you for that —

BJ: That's all right but it's critical and as a matter of fact, I had that happen in a patient a couple of years ago, 45, familial history of hyperlipidemia, hypercholesterolemia and heavy smoker. In fact, he came in and he put his

cigarettes on the reception desk. A lovely, lovely fella and he'd been getting a bit of lower extremities pain, almost classical claudication but for a person in his 40's, that's particularly suspicious. I can't remember the exact figures but he had a very aberrant ABPI. I referred him but it was so low, I was really worried about his heart as well and again, remember you asked me just now about where statistically you're most likely to have the obstruction, you must remember, again, it's all to do with turbulence and where the…blood vessels going around the corners and so on are the most dangerous areas and typically, his was, you know, and the top of the femoral artery and he had an occlusion there and I did send him to a vascular surgeon, actually but six months later, he had an MI, a heart attack. Luckily, he survived. He had a coronary obstruction but he was fine. So thank heavens he was OK but it just shows you, it can happen and distinguishing that sort of thing in practice is really, again, about history. It's about the way he presented and described his symptoms. The worst part was he had a genuine low back pain of mechanical origin as well. I think he strained a disc.

APM: It's always annoying, isn't it, when you get multiple problems occurring at the same time.

BJ: It's me, me, me with patients, isn't it?

APM: It is, isn't it? Yeah. There's some questions coming in about stuff we talked about earlier on. If someone's diagnosed with POTS, does that mean they lose their driving license as well?

BJ: I don't know actually is it similar to epilepsy? I think if it afflicts them that badly and they continue to have attacks, I can't see how they can continue but I don't know what the criteria are for actually deciding that. I think it will have to be if they just…if it's just, you know…the same with seizures, again, if it happens too frequently. People with seizures obviously have to go through a certain period of time, as you know, without having had one and then they're allowed to have it back again but if they can't actually be, you know… if the thing can't be treated.

APM: Well, I suppose fortunately, it's not for us to make that diagnosis, is it?

BJ: It's not…no.

APM: If it's a problem, we send them off to someone else and they can make the —

BJ: That'll be a very specialist diagnosis, you know. There are mechanisms by which this sort of thing is usually supposed to be diagnosed. Tilt tables, for example, they have them at Queen Square, you know, the neurological hospital up in London and, you know, there used to be a very eminent professor up there. Professor Mathias used to put people on tilt tables and see what was happening so he could induce either their vertigo or their POTS or whatever and see what would happen and I think it needs very specialized assessment to do that but that's

an interesting question actually.

APM: Another one has come in from someone called Jay, is, "GPs seem to be putting a lot of people in anti-hypertensive medication recently. Do you think they're too keen to do that or are they right to be cautious or —"

BJ: I don't think anyone knows. I don't think the evidence is in yet. We can't say at the moment we have to do stuff like that because, you know, NICE is actually very, very strict about that and of course, morbidity costs money. So there's a huge amount of effort going into actually detecting hypertension and an attempt to try to diminish heart disease and the link is very high. Stroke, particularly, actually. So it's very important but again, it's enormously and almost intimately tied in with diabetes now. So this is why there's this big drive. I think that's one of the reasons I suspect that the sugar tax actually got pushed through because there, you know…whether the evidence is for it or not now because, you know, people are really worried about obesity and they are notably reversing type two diabetes with diet. So I don't think there's a conspiracy and I don't think that people are trigger-happy. I think there are some very stringent guidelines and I urge everybody to just glance through them and have a look, you know. They're on the web. You can see them and you'll see that nobody does it lightheartedly. Sorry, no pun intended.

APM: Well, I do feel sorry for GPs. As you said, they get a very short time with their patients.

BJ: Very difficult.

APM: They are strictly governed by NICE guidelines and actually, in some cases, they've got a strict protocol to follow and if you tick these boxes, you are going to be advised to take statins, anti-hypertensives or whatever else and they don't have much leeway, it seems to me. I mean obviously, they do. They have their own clinical judgment, which they can apply but they got to be careful.

BJ: I think they do. I think GPs are very ardent to be seen to be doing the right thing but remember, since the inception of NICE, they are increasingly needing to be seen, to be transparent in terms of the decisions they make and the evidence that actually supports them and I would like us to be the same. There's every reason to talk about the importance of judgment. As we said at the beginning today, you know, patients are idiosyncratic and so are we and, you know, you never absolutely understand completely what's going on, A, because we don't have the knowledge, you know, in the universe to understand everything, B, we can't know everything about the patient, C, they can't know everything about themselves and —

APM: and half the time they don't tell us anyway.

BJ: Precisely so.

APM: It comes out later in the case history —

BJ: So, you know, judgment's very important and I dare say any GP will tell you the same thing and they'll say, "Look, you know, in the end, sometimes you do need to make a judgment call. Am I interpreting the information right?" Remember, the data's there, the evidence is there but simultaneously, it requires interpretation in terms of the idiosyncrasy represented by the patient in front of you. You have to know, "Is that really what I'm looking at?"

APM: I'm very pleased that I've chosen to take away from what you said this evening that the role of auscultation is less than I was led to believe when I was a student and actually, it's not a reliable way of diagnosing. What about ophthalmology…ophthalmoscopy, sorry?

BJ: Ophthalmoscopy, I find ophthalmoscopy very useful, personally. If you've got a decent ophthalmoscope, you do need to practice like with everything else but it's the one place where you can actually visualize the vasculature. I don't necessarily think you can see as much as you'd like to be able to see. In fact, a very good friend of me is an ophthalmic surgeon and he refers to this as a guessing stick, which is thanks, a lot Alan but I find it very useful. I would say though that I'm more inclined to use it for other ideas, you know. If I'm worried about the integrity of a person's cranial vault or if I'm worried about their, you know, intracranial pressure or if I'm trying to explain why, you know, certain symptoms might occur in terms of, you know, degenerative neural disease, again, it's like everything else. Practice the cello. See as many eyes as you can. Look in as many eyes as you can. Just do it and see what's normal. When something abnormal comes up, heaven forbid, believe me, you'll know.

APM: Well, I suppose actually, it's quite nice when something does, if you can say, "Well, I recognize that and I did something useful for this patient."

BJ: But it's different, yeah. These things will come flying out at you if you listen enough but, you know, to some extent, we've become so, now, dependent upon high technology, you know. You know you can always send somebody for an investigation. You can send somebody to the GP; they'll get sent for an ECG, they'll have 24-hour monitoring or whatever. You can do all those of things. So people are really not inclined to trust their judgment anymore. Years ago, yes, it was important for somebody to come up with something to tell the patient but now, you can be very certain about what you're going to do next which is, "I'm going to send you off and they're going to look after you," and a lot of these specialist units now have become very, very passionate about what they do. Even in recent years, you know, there are different departments, depending upon whether you've got one particular type of condition or another, you know, whether it's going to be an atypical heart rate or something else. So, you know,

you can send…you can be reliant upon the fact that you can send people into the right hands quite easily actually and the NHS works in a way that actually accelerates these referrals very quickly a lot of the time.

APM: So in terms of what we can do about cardiovascular health, you've talked about a lot of things where there's a need to refer. There's the opportunity for further investigations and so on. Other than standard education on stop eating so much and do a bit of exercise —

BJ: Some exercise.

APM: I mean how to go about improving cardiovascular health and —

BJ: Well, I'm probably not one to talk because I recently got told off because yet another one of my patients was upset by having the weight thing broached, you know, and —

APM: It's difficult, isn't it? I mean, you know, here we are. We're required to talk about communicating with patients. So this is a good opportunity to do that just. How the hell do you bring it up?

BJ: Well, apparently, the latest thing is…this is me, you know, slap on the hand and I can understand it actually. In fact, COET where I do some teaching and I think where you graduated, to be honest—

APM: I studied, yeah.

BJ: --they used to use blankets a lot to cover up people and, obviously, promote their dignity and I used to say, "Blasted keyhole, osteopathy, we were told to have them, you know, as undressed as possible and standing there," and of course, that's all old hat now and the idea is to try and preserve dignity and try to keep them feeling as much in control as possible and always offer a blanket but if you're going to talk about size, if you're going to talk about obesity, it's probably now recommended that you actually do it once the clothes are back on. So do that as opposed to my…another friend of mine, GP in the NHS. I asked him the very same question and he said…he looked at me like I was utterly mad and he said, you know, "Dignity? What are you talking about? The patient comes in, I say, 'You're fat,' next."

APM: He can probably afford to get away with that. We charge our patients —

BJ: I think he can. He's looking forward to retirement.

APM: What advice do you give your obese patients? I mean it's very simplistic to say, "Well, go do some exercises, stop eating —"

BJ: Well, there's a brilliant test that they can do for themselves now and is actually done very well in some international studies both in America and in mainland Europe as well.

APM: You said you weren't going to get the tape measure out.

BJ: It's one of these. I think this was purchased from Woolworths probably in 1988 but nice, flexible tape measure and I realize I can and that is to allow people to compare their hip to waist measurement and in principle, if memory serves, for men, it's not supposed to be any higher than 90%. So your waist is supposed to be 90% or less of your hips, if you're a woman it's 80% and the interesting thing is…and the only reason I know this is because my wife who is in television shopping actually was involved with a very successful product which is designed to make people who are larger than they would like look a lot slimmer and they realize that when normal trouser sizes are…often, they go up through the ranks of size. So you start off at an eight and go all the way up to whatever, you know, go up to 16, 18, that sort of thing. They always reduce the two parts proportionally. So everything goes up or down. So the person ends up looking bigger and bigger and in fact what they realized was the hips don't change that much but the waist does. So you can achieve a much more shapely outcome by having a narrower waist and shaping at that to accommodate it. So I would say to people, "Look," you know…explain the test to them, you know, hip to waist, see if you can do it. Of course, they might own a scale but it's a great one. People love the idea that they can see something and see what they are changing.

APM: Our final question. Apparently, we've got lots of people from Sweden watching tonight which I think they've been attracted by the Wembley aspect of all of this. The last question —

BJ: I own a very nice collection of dala horses, Sweden. I'm very proud of them. I've had them since childhood but Stockholm is a bit expensive.

APM: This question is that…the person asking the question says their patients have been told once they're on anti-hypertensive medication, they can never come off. Is that true?

BJ: No. I'd say in The Mail, it's probably true but if a person was actually able to make significant changes to their lifestyle, habit, I think there are GPs who will experiment with trying to change things and drop them and moderate them. I really do. So I don't think anything's…I don't think things are set in stone and they shouldn't be.

APM: Thank you, Barry. You thought we wouldn't last the 90 minutes. It's been a game of two halves Bazza, but thank you for coming in this evening.

BJ: You're very welcome, Steve.