TRANSCRIPT: Electrotherapy
Turned On Its Head

Steven Bruce
Good evening, welcome to the Academy. Great to have you with us as always. I am talking to Professor Tim Watson this evening. This is we don't remember if it's his fifth or sixth show with us. But the last one he did he said was going to be the last one he was doing because he I think he retired from the university three years ago, but he's still working at the universities still talking about his specialist subject, which is electrotherapy. And as you have seen the emails that are put out, we're going to be talking about various different modalities, we're going to be addressing your concerns about which therapies might be best for which particular conditions and any other concerns or worries about contraindications that you may have. And we're also going to be demonstrating some equipment this evening. We've called it turning electrotherapy on its head. I think that has something in common with a title of a book that's coming out soon by Professor Tim Watson. And he'll be explaining why we're turning it on its head. But it's fantastic. We've got you with us for the umpteenth time. I'm convinced it won't be the last but I'm hoping it won't be the last one. It's always a joy to talk to you. You became a physiotherapist back when the tendon hammer was high tech I think absolutely yeah. And you've been teaching electrotherapy since and you're still running the website electrotherapy. org
Tim Watson
website still running and it's still free and it's still open access until I run out of money it's there
Steven Bruce
As I've emphasised on these shows in the past one of the great things about having you on talking about electrotherapy is if you've got no particular axe to grind about it's everything you do is evidence based isn't accurate although we're going to be demonstrating a particular bit of kit you're not here to sell it nor to recommend it recommended tell us whether it's any good or if it's not and I'm sure you'll be able to tell other people what sort of things they should or shouldn't buy if there's evidence to suggest them

Tim Watson
absolutely but I'm really keen to point out that I don't enjoy people saying oh Tim endorses our product now he blinkin doesn't I don't I don't endorse I don't advocate I don't advertise so if there's pictures on the screen or if we're using a video kit, but I'm happy to work with a bit of kit we're going to be working with but I'm not trying to sublingually advertising as not my game at all never has been

Steven Bruce
well you people might argue we've covered everything in the latest the interferential and ultrasound and the shockwave and stuff wobble boards by vibration lens and things like that. But actually things have moved on there are new things which is being discovered with everyone work with joy termites have the basics to start reading dry. Right so what's going on with teams

Tim Watson
whether Tic Tac changes tend to be around for a long time since the late 1960s when melzack was coming off the paint guy it was part of the proof of the painting game so it's not new and the machines are not new attempts machine is attempt to machine is is

nothing radical. The bit I was interested in a couple of people have asked me through you about electronic systems and the way we've done it in the standard world is to use these kind of pre drilled silver DC five by five centimetre backup, you know standard sticking stuff. If you've got a patient with widespread pain and they got pain every season. Where would you put the electrodes? It's not a rhetorical question but where would you put the electrodes to effectively get 10s pain relief which will do all those joints at the Same time, and a few people haven't realised, which is why I'm pointing them out and again on lots of different ones. So it doesn't look like I'm advertising anybody, these Garmin electrodes are really for that kind of problem really very attractive. The advantage is that that as a garment is woven with is woven with a silver mesh, so that is the electrical conductor. And that will take the place of one electrode. So if I put that on my hand, and connected to my standard 10s machine, and I use one standard 10s electrode, stick it up. for argument's sake, when I turn the machine on, the whole of my hand is going to get to 10s. At the same time, if I've got multiple Mojo joint problems, or widespread pain in my hand, then that is a distinct bonus, it doesn't change the 10s it doesn't change its efficacy doesn't change it. So effectively, it's always evidence it's just a different way of making the application. And you can do that with stock electrodes. So somebody you've got exactly the same thing. You've just plugged your electrode lead onto the onto the sock, and that becomes an electrode someone with multiple pain in their foot and widespread pain in their foot. That's a real bonus. We've been doing some blood flow work and I've talked about this on the previous occasion. bloodflow work with electrical stimulation, and those colour socks and quite the other sneaky group one is sleeves which are pretty universal. You can get these on not to be grid. Yeah, he's right to be grip. It just happens to be silver conductive to be grid, so I could put bat on for example, up around my elbow. And if I have a patient with widespread elbow pain, or widespread knee pain, I'm not going to roll with trousers I probably will be unwell. But you know you can put that wherever it fits and you can get small ones on large ones. I could put that on another electrode. If it doesn't matter, you can go up on the shoulder it can go down on my hand, it doesn't matter. It genuinely doesn't matter. But I could put that sleeve on and that glove on. One one lead goes into there one lead goes into there. And for a patient with one of those really widespread pains from from their lower arm right down to their fingertips. I've got the whole blinking lot. You can use these over and over again you can wash them, you can have a tap, you can stick them in the washing machine take the lead off but you can stick them in the washing machine. And I've certainly got patients who use these and they've watched the middly we can eat a year later. They still use it. If you shop around ask Mrs. Google but if you shop around you probably get them as low as about 10 pound 12 pound I can play ball but if you're tight and I am if you're tying them up, buying expensive doesn't mean you get better treatment it just means you've wasted money. So why is the why I just buy it cheap.

Steven Bruce
I think it's worth knowing a lot of people watching I assume that you've seen the CBS

Tim Watson
show and

Steven Bruce
someone's mistake someone's mistake. Probably after this I probably go back and watch it. But I you know the thing that struck me when you first got news on the years ago when you first talk about tendons was saying that most things machines are equal but all but it's all

individual. So the 10s machines you buy which will preset programmes are going to be less effective overall than ones where you can fiddle with the controls.

Tim Watson
And I'm sure we'll get to the point about 10s is firstly that your classic 10 which is that high frequency Tingley buzzy sensation 10s which we would call normal tendons or conventional tendons. That kind of tense works when it's on. Once you turn the tense machine off, the carryover pain relief you get is pretty minimal. And when I recently tried acute low back pain, I didn't volunteer I just copped it. And it was outrageous and overdone. I now have more sympathy from my patients than I ever had. It was taken me 15 minutes on all fours to crawl to get to the horrible, I stopped my temperature you know, and I put it on absolutely full YG and I stuck it on for as many hours a day as my battery would last. All the time it was on I was getting good pain relief. Once I turned it off within a limited number of minutes, 10 minutes, 15 minutes, that pain relief is starting to ease off. So if you're on the low frequency, the low frequency works by stimulating the opioids and you get a carryover without both of the acute pain. You're more effective have a high frequency and that works while it's on and then you see these pieces of people saying all of the current nice guidelines on the court. Some reviews don't bother with 10s, but low back pain because the evidence doesn't support it. Well, the evidence they've included is patients who've got acute low back pain, they're being given 10s in the clinic for 20 minutes, twice a week. So therefore, you're giving them pain relief for 20 minutes, twice a week and the rest of the week, which is quite a lot of the week left over not getting impacted

Steven Bruce
after we spoke to you before. I mean, we immediately in my clinic invested in I don't know, half a dozen, a dozen 10s machine and we started over selling them or renting interfaces. So he absolutely that, you know, they can afford to buy one, if they get the settings right, they

Tim Watson
get the settings right, which I appreciate that is the focus of the question. The thing about the the 10s machine is that we know roughly what kind of stimulation frequency is going to be affected. So for the EQ pay, you want to offer around about 100 hertz 100 simulations a second, you might get your best pain relief at 90, I might get my best one at 115. Who knows, but he's around about 100. So the trick is to teach the patient where to put the electrodes, how high to turn this up. And it's got to be a strong tingling sensation. That's that sort of level, it doesn't matter whether you get that number one, or you get that number six, who cares is what it feels like. And then you're fiddling with the frequency dial. And if you think you get your pain, best pain relief at 90, you don't even need to look at the dime, just feel it. If it feels best to you in that position, then that's the position you use it and it will be different to my position. That's just a difference between your physiology and what to do.

Steven Bruce
Is there a range outside which is never effective? Usually you mentioned 90, I mean,

Tim Watson
most most people with acute pain will get their optimum somewhere around 80 at the lower end up to about 120 130 at the other end. So if you imagine a range between about 80, up to about 130. That's the kind of range which most people will find effective for acute pain. For the chronic pains, we're coming down to the low frequency, five hertz, five stimulations

a second or less. And that works for the chronics because it is stimulating the opioid system, which we know clinically is more effective and more effective with a chronic, that does have a carryover. So I can do an hour's worth of 10s at low frequency. And I might get two hours worth of pain relief after I turn the machine off. But in the acute setting, we'll be going high frequency it only worked while it's on and my biggest beef about dessert and there's a lovely couple of studies have come out in the last few years from a group overing over in the state of Iowa. And they demonstrated over and over again with scientific be strong research. It works one is on and therefore doing it twice a week. And your last tennis treatment is on a Thursday. And your final assessment isn't the following Monday and it's no it didn't work but of course it didn't blink in work. The last 10 stim you had was four or five days ago. It only works on his own. But it but it does work. It does work. So it the things I'm talking about is not news, the 10s we were using 20 years ago All I'm saying is that there are a range of of application methods which make it easy for patients if a patient's got rheumatoid if the patient's got over a multiple array in the fingers, and it hurts and tendons is going to provide them with significant pain relief. And it's going to give them function that needs to get and get them quality of life. Why would that be a wrong thing to do? I would happily do that. All I'm suggesting is that is a lot of an easier way of achieving it. Then trying to work out where to stick to those to get you the payment if you want all five fingers on all five fingers and nothing happened.

Steven Bruce
Just without wishing to beat them they are assigned to just fine or you can go into lloydspharmacy when you move to new can buy 10s machines we got these programmes in there should people be wary of that.

Tim Watson
My personal amount I'm sure we're going to come into it when we look at the shock wave and play around with the machines later. Personally, I'm a control freak and I like to have control over what the machine is doing. Some of these have automatic programmes on the frustration is that if the automatic prayer says acute pain and you press the button and it decides what's best for you. If it destroys 100 pulses a second is good for you and actually your best claim relief is achieved 120 the automatic programme has just missed your best pain relief. So I'm I'm not saying they're wrong. I am where I met them. going on, I've got some idea what the buttons do. And I understand why from a patient's point of view going into Lloyds or going into boots, buying a machine off the shelf and taking it home and trying to set it up for the book is is not the easiest thing to do I get the patient to buy a machine, I would show them how to use the machine, and then they will get the max out of

Steven Bruce
it. And you've already made my humble opinion. We've already mentioned your website, there's a mass of information there on how to set up. And then of course, it will have all the references that we've had a question come in from somebody anonymously says can you use $10 neck, you can,

Tim Watson
it's advised that the the anterior neck is worth avoiding, really. So imagine, imagine there's a zone between your jaw line and your clavicle, just unless you're pretty darn sure you know what you're doing stay out of that. You can do babies nervously. But if you start stimulating the vagus nerve, and you don't intend to, clearly that will have some fairly unforeseen circumstances, but I have no problem lateral neck, posterior neck, no problem

at all. I will do anterior neck, but I'm doing it in the clinic under control. And I'm keeping my eye on what's going on Vegas notes in there we go. There's the first topic for next time. I think Vegas nerves daily is becoming very trendy. And people are using 10s like machines to stimulate the vagus nerve to try and have effects which are fairly Central. But but that's really at the moment that's desperately not a routine for that kind of thing that that's on its way in. Right?

Steven Bruce
Oh, somebody said they had a bit of a problem seeing what you're doing and stuff. And they were asking whether those gloves were for rheumatoid arthritis. They are what they look

Tim Watson
like. They do anything where you may not we use them in complex regional pain syndrome. We use them in rheumatoid we use them in osteoarthritis. We use them in patients with peripheral nerve lesions, where we tried to do sensory reeducation or stroke patients, where we're trying to do sensory reeducation and we want to stimulate a deliberately large area. So they're not just for rheumatoid they are for when you need an easy access to a large area of state. That's when I use

Steven Bruce
that particular Timmons machine there. Are you happy to mention what brand it is.

Tim Watson
But other than that one, I think they actually don't exist anymore. So yeah, I can mention it because it comes from a company called Shrewsbury medical biller, I'm pretty damn sure that don't exist. So I can mention it because it's not advertising. Because you can't vote. What should people look for? I would, I would look for a 10s machine, which gives you some control. And the two things that you desperately need control over some kind of button that controls how strong is the electric current you're delivering, and some kind of button switch or dial that controls the frequency, how many seconds you're delivering. And if you've got those two controls, you can make it work and that you can get a machine like that for 10 pounds.

Steven Bruce
Which is why it's so easy to go through the separations. Absolutely The

Tim Watson
only there are paying for it now who buy these 1000 at a time, and they give them to the patients for free because it's cheaper than one prescription.

Steven Bruce
By the way, Robbins asked whether you can get a nice leave, I presume they come in different sizes. But

Tim Watson
yeah, you can vary wherever I put me with the big sleeves, but that wouldn't be big enough for my end. But yes, you can get sleeve bigger than that. And if you wake it up, that would be a slightly bigger one of those will easily fit a knee. I've used it on patients with OCD. And we actually put the other electrode on their side, but it doesn't matter. It can go on they can't

we put a pad electrode on the front of their phone. And we put a big sleeve like that around their knee. And the patients thought it was great. Because it was easy. It was comfortable. It was reusable over and over again. And when you can use these several times, but they run out of steak. This is not going to run out of state because it's not sticky.

Steven Bruce
Forever. The when you put the electrode on, does it matter how far away it is I'm

Tim Watson
not touching doesn't matter.

Steven Bruce
Okay, so we're getting charged between sleep No,

Tim Watson
we just put a big we put a beam when we did the OLED work, we were putting a fairly large electrode on the front leg quads. And we were getting them to pull that up around their legs. As long as they're not touching. There's no sparks. If they touch, it's just that the current will go from the electrode straight to the sleep and what goes through patient. But you can have it there and there. You can have it down on the calf, because they want to put it under the some of their foot they can go off but they could

Steven Bruce
someone's going to ask me if there's any problem with DVT.

Tim Watson
DVT is not a contraindication to attend.

Steven Bruce
We're going to move away from 10 to the second but rheumatology patients are likely to have problems in both hands. So they're going to be wearing African makeup two gloves well on one electrode to each other.

Tim Watson
Yeah, that'll that'll be a fun thing. Do Don't, don't do this at home, folks. But if you were to put that electrode light bulb on that hand, and that glove on that hand, are not actually going to do it. But if I then gave you the tension machine and you plugged one end of the wire into each of those, the current is going to go from that hand through my chest to that hand. And I really wouldn't do that. If you want to do a bilateral treatment. Absolutely no problem. gloves, electrode and a pad, left hand side, one channel, lovely electrode at a pad. Other channel. The cone doesn't go through the chest. absolutely safe. Absolutely. But I wouldn't deliberately what I've done it just to see what happens send a current through my chest or falling from foot to foot. But I wouldn't do it to a patient only do it because I'm stupid, and I'll try things in the lab to see what happened.

Steven Bruce
Okay, well, that's good advice. For more questions about animals, what about dogs and

Tim Watson

horses? Yes, Sylvie? Yeah, I was doing a talk the other day to a group of animal therapists, animal therapists historically have not used 10s. Because the whole point about 10s is I've got to ask, you can't get the drop off size for me. I've got to ask you, as I turn this up, you've got to tell me when you can feel that tingling? You've got to tell me when that becomes strong. And if you're treating Dobby, how do you ask doping? Is that tingling? Is it very tingling? Is it strong, tingly? Or does that hurt doping carnality what you do with animals is same tension machine. Same setting, same electrodes, same words. As you turn this up. Normally, actually, when they start to feel the Paris easier, the tingling, you actually see a reaction if you're walking down or behaviour. If you keep turning that off, you get to the point where the muscle starts to twitching for circulates. You've then gone over the sensory threshold, you hit the motor threshold, if you then turn it down to let the circulation just disappears. You're at the right level. You don't need to ask who is opinion, you can actually do it by going up hit the motor level and then turn it down to we'll just below motor. That's the right level. And yes, you can use it and it's a discussion we were having was primarily in post op in equine and canine discussion that evening. And, and it works. If If Mike this goes in and he replacement, she gets pain relief. If doping goes in and has surgery. A lot of therapists and quacks think that the animal does not need pain relief. And if it was me, I'd rather have the pain relief. Thank you, my dog, I'd rather my dog have the pain relief.

Steven Bruce
So yeah, easy to ignore the federal animals are in the payment. Absolutely.

Tim Watson
Anyway, we could do 10,000 animals therapy all night. And that's probably not on the agenda.

Steven Bruce
But who knows. I mean, this is the great thing about these conversations and the fact that it's live and it follows the flow of everybody's questions is that whatever we start out with might be nothing like where we finished. And one of the questions I think Robin brought this one up as well as does the level of stimulation depending on the size of the electrode, you put a wide Pat over your knee and immediately when does it matter what size electrical you use the little

Tim Watson
you can do but if you if you're going to stimulate the knee and you're going to use like small electrodes, nonstick modules or trousers because that's like a for everybody concerned, that will be cool. Because the amount of current I've got to put into my knee just to get pain relief in my knee going through a small electrode means it's high, high current, small electrode uncomfortable. So certainly on things like the knee and the quads and whatever I'm using large electrodes purely because you will get the stimulation and you will not get the discomfort and therefore the patient compliance will go up. There's no point making it hurt. They've already got the paint you need to add to their pain, use big electrodes Okay, and that's the other advantage of the other Garmin electrodes the surface area is big. Therefore the discomfort is

Steven Bruce
excellent that's that's something new for the minute the recap because the recapture always by the moment, let's let's leave tendons for a moment. I suspect there's more questions. I can see loads of money coming in. All right. One of the things that's always

tickle everybody who watch the show is that I think the second maybe the first show that I did with you and I said to you, could you tell us about interferential? He said yes, it doesn't work. He said, and that was it. That's when we did interferential doesn't work.

Tim Watson
I kind of changed my mind. All my mind is sliding in a direction.

Steven Bruce
I see. That's a bad question, isn't it because what you said then was based on the evidence at that time? Yeah, we're not changing your mind on based on new lm

Tim Watson
new evidence. So there have been a number of papers that have come out over the last 10 years, probably a lot a lot in the last five years that are beginning to say that in two differential is worth considering. And I would put it into that bracket. And it's worth considering in the Moscow is gleeful world, there was a paper that came out. And there's the first one actually where they've compared different kinds of electrical steam for the same gay patient group. So though that was chronic, nonspecific low back pain, classic, low back pain stuff. And they they tend they get into Prudential, and they did a couple of others, we've reduced weight and wonderful and on, and they directly compared patients getting tinged with patients getting into the rental for the same problem under the same research protocol. And it's the only study I've ever seen where interferential beat 10th in terms of how much pain relief the patient got, and how much functional gain they achieved. I think and that is only one paper out of hundreds of papers. I think the advantage of a differential for more than musculoskeletal conditions, if it's got an advantage is that it's less irritating than tense. It's not as effective neurologically, neuro physiologically, it's not as effective Tim's width. But if your patient is not keen on the tingling sensation you get from a 10s machine. My before I gave up, I would try interferential as my next best option is not as irritating. And therefore patients will take it. And some patients who won't take teams will take a differential. And I think that's what it's reflecting. So that's one change. I think I would probably be a bit flippant when I said it doesn't work. But nevermind that that was years ago, I must be having a bad night. The other thing about interferential, which is getting interesting, we've got some research going on ourselves now is using interferential for a whole range of things that are not classic musculoskeletal, overactive bladder is one. incontinence problems. We've been using incontinence for years. I don't think that's particularly strong, but the one I've gotten interested in and we're doing some work for some kids. He's He's chronic constipation. And these are not kids who can't go to the loo today, but we'll be fine tomorrow, these kids don't go for three weeks at a time, right? So and particularly the some of that hyper mobile syndrome kids get this, which is the group we're working with. So they're going and they're five years old, they go in three weeks at a time between going to the loo and I'm going to put 95 point in on it. The medical options for those kids are pretty dire. Some heavyweight drugs, or surgery. Five years old, someone's cutting their colon around and giving them an ostomy because they can't poop. And that's part of the syndrome of hypermobile syndrome. somebody tried doing interferential through the belly, and it worked. And it's been tried there must be easy to transport. That's totally where they go in a minute. But there must be 20 papers on it. Now there's three systematic reviews, 20 papers, 25 papers, all of which say it works. Its sensory level interferential through the abdomen, we're not trying to make abdominal muscles good friend of ours, that crazy story. We're trying to achieve sensory level stimulation. And it appears to activate could be autonomic, but it appears to activate the the neurology of the gut. And actually,

what the kids do is they take the small where's it gone? They take a small portable, take them from the finger over the label. So people don't think I'm advertising that one either. Right? Do you take a small portable interferential machine 100 quid. You put four electrodes on two on the front, I decided to be under likers. And to either side of the spine pretty well obviously in between you put on the front when we're raising the blacks, as long as they cross over so the front left, crosses over to the back, right? Yep, so you've got a diagonal back way, diagonal that way. 20 minutes, sensory level into perennial 20 minutes once a day, and over 85% of them go back to a normal toilet having no surgery, no drugs. 80% 80 for over 85% 85% is the most conservative number I come up with in any of the trials we've done.

Steven Bruce
You're not giving the actual numbers here. But I mean that sounds there's got to be statistically significant white

Tim Watson
white. If you compare that to the placebo stimulation, the placebo statin you're getting 10% 15% benefit, real estate 85% plus benefit. And therefore, if my five year old, I'm not one but if my five year old, had that kind of constipation, and a 20 minute stimulation once a day. I'd be looking into the clinic, teaching the kids as the kids of the five year olds are doing this, they don't even need their parents to doing. They're sticking the electrodes on. They're turning the machine on. They're doing it once a day while they want Blue Peter or whatever they want with these days you and I used to walk blue breeder, they probably watch something's probably not Magic Roundabout on the visit, they're watching something or more, or they're watching the telly, they've got this thing going on. If that gets their bowel habit back to a normal regime, why would that not be an interesting thing to do? And we're doing it. We've also now just to throw extra into the equation. We said okay, well if it's, we've we've done that with interferential. And it works, which it does. And the systematic reviews supportive. Why don't we do it retains because that is a 10 pound machine is 100 pound machine, a super cheap, but there's 100 pound machine, and some parents can't afford 100 pound machine and they can afford a 10 pound machine. So we try and get pretend it works. So therefore, we're using 10s sensory level through the abdomen. And it's facilitating restoration of bowel habit, however, provides the output that they couldn't normally.

Steven Bruce
So I guess we could look this up either on your site or find the original papers. But presumably there are settings which are recommended for interferential for

Tim Watson
interferential. The classic setting, so it's 20 minutes once a day. That's your minimum. I mean, if you want to do half an hour in nothing nasty is going to happen 20 minutes, once a day, and you set the frequency the sweep between about 80 up to about 150 116 there your your classic I mean that's a fairly modern machine, that machine will do 10s it will do interferential it will do muscle steel. Again, it's not an advert I'll put a finger over the label, but it's just a multifunction cheapens juke stimulator. It's got an automatic setting on there that does at 150. So you find that setting your press the automatic setting setting button, you put your four electrodes on, and you tell the car about to me feel the tingle. Leave it tingling for 20 minutes, yeah, take it off. And because they drive that on kids with these chronic constipation problems, there are at least four studies where they're now doing now

adults with chronic constipation problems, some of them after chemotherapy, some of them after surgery, some of them for a whole variety of different reasons. And it, the results are earlier to them got as many studies but they're looking good. So it's not just that here's a key thing looks like if you've got adult income, then it's worth a try for whatever reason for whatever.

Steven Bruce
mobility. Yep, Silvia is saying that, I'm assuming I'm assuming she's referring to this. It's worked very well on a number of her patients who have gi system symptoms. Yep. Amanda says she's had interferential fear of therapy before she also uses it during careful manipulation, for example of the shoulder and has found great relief herself. Also, with many patients showing great progress with use. So

Tim Watson
absolutely, buddy. But like 10, you can use in differential and again, it was part of our earlier conversation in a previous life, you can use interferential to provide instantaneous pain relief, which then means as early in therapy, a number of people do it for the patient who's got the most acute, backwards and most acute shoulder, and you can't even touch him before they rebrand well. So put the interferential all the times on in the clinic, use that to take the sting out of their acute Oso acute pain, which then enables them to do the clever thing which they couldn't otherwise do. I don't have a problem with that. But you've got to be pretty darn cautious. Because you've taken away you've blocked that playing defence thing, which however you want to describe it physiologically is there. So if you if you've got acute low back pain, you're hobbling in, and you can't even climb on the plains. I stick in the differential retainers on you give me 1015 minutes of that a high power, that pain is gone away. I can now get you on the place. I can now do things and you won't yell because I've taken away our blocks. That means inflation. So you just have to have that cerebral caution about how far you push it because you couldn't have pushed it like that 10 minutes ago. But but that's a caveat. But yeah, absolutely. And that used to be frowned upon. And people who say oh, no, no, no, you mustn't do that. If you ever thinking therapists, you mean thinking practitioner. Why can't you do that rule that says you can't it's not a contraindication. He just got engaged brain.

Steven Bruce
I guess if we want to see the country indications, we'd find them on

Tim Watson
our website study in jamendo. And I didn't have to bring a copy of the textbook rock Because in the textbook, we just rewritten the textbook and there's a new edition of the textbook. And myself and as Niels Bohr when we were editing the book, we we spent two years, just on the contraindications, we went through every contra indication for every modality and we said, Is it really a contraindication? Or is that just an old wives tale? Would you call that an old wives tale? Is it something sexist? But yeah, I mean, it's just one of those stories, the you can't do ultrasound to a patient who's diabetic because it lowers their blood sugar? Well, that about on a little over Tommy rock. So we tried to cut through what's real was the World Cup used to be called electrotherapy, evidence based practice early, it's now called electro visible modalities, evidence based practice, because that reflects the change in terminology. So it came out last year. Anyway, so the chapter in there is a chapter which lists all the contraindications, puts them in a table and explains why and

where we got evidence. I have no problem putting contraindications on the list where we got evidence, it is based on uploadable tables from 1957. Then let's, let's compare.

Steven Bruce
Got a question for you here from Mel, who says, What's your understanding of the use of electrode therapies with patients that have pacemakers and defects fitted for so you can get internal defibrillator? defibrillators? I should say? She's asking because she's spoken to three cardiologists to all given different answers. Don't use you can use it as long as it's 12 inches away from you can use ultrasound which of course, yeah, so what's the answer? The

Tim Watson
The issue is that the the energy you're delivering from your electrotherapy device, whether that's 10s, ultrasounds, laser, or Shockwave has got the potential to make the pacemaker, the auto defect, whatever the implanted thing is, you've got the potential to make it go wrong. If somebody's got a pacemaker, and he is controlling the placing of their heart, and you put a 10s machine on firing 100 times a second, and the pacemaker tries to fall into line and fire 100 times a second, it can die. Pretty inconvenient. So we call it a country and I call that a contract negotiation. Yeah. If it kills the patient, I think there's a reasonable contraindication however, and there was always going to be a however, or but wasn't there. Not all pacemakers go wrong when you tense them. Not all. pacemaker, all automatic defects. Some of them some of the modern ones are remarkably resistant to all that stuff that we're putting in. But if you're if you're tensing

Steven Bruce
if you've got an electrode here and a silver, yeah. How is that gonna affect a pacemaker up here?

Tim Watson
Okay, I'll turn it around the other way. If you put an ECG electrode on your left ankle, and an ECG electrode on your right ankle, can you pick up an ECG? Yes, yeah. So your heart is generating a millivolt and it's reaching your ankle? How come sticking 50 volts into the arm is not going to reach the heart then? It could. So therefore, because back to where it was, some pacemakers are okay. They're resilient, and some not when a patient notified. And most therapists practitioners wouldn't know why them. So the the general rule of thumb and n is absolutely on the conservative side for a very good reason is that if the patient's got an implanted electronic device, so a pacemaker defibrillator, a deep brain stimulator, anything inside with a battery, the rule of thumb would say, don't use any kind of electrical stick. If you want to do it, I've done it, I do it in the clinic. But I will take the patient down to the cardiology unit, we will do the 10s on them. And we will see whether the Thames makes their pacemaker go wrong. If nothing happens, and everything's tickety boo, send them over the tension ship. But I'm not going to send them home with the 10th machine unless I know it's a safe thing to do. If it goes wrong at the cardiology clinic, they can put it right in everybody's second or two. If they're doing it at home and they ring you up saying Well, I'm dying, I put in 10s machine or a pacemaker and stop. What should I do? You can't

Steven Bruce
say this is probably stating the bleeding obvious as they say, but ultrasound is not an electrode therapy is it so presumably that's his secret as you're doing it right on top of the base.

Tim Watson
Unless you're going directly over the pacemaker, your ultrasound is fine, your laser is fine. Because you're not electrically you're not putting in every current interpretation. The only other one we say no, is shortwave radio frequency work. So shortwave pulse your wave microwave anything which is radio frequency, can set a pacemaker off and again, rule of thumb would be if the patient's got a pacemaker Don't use electrical stay, don't use radio frequency. You might be over conservative, but the patient will stay alive. Yeah.

Steven Bruce
Which is that is a good it's a reasonable

Tim Watson
outcome.

Steven Bruce
So I think that's a fairly definitive answer about whether one should use electric therapy with pacemakers and internal defibrillators Samsung's website was it's electrotherapy.org. And as a mistake, it is indeed and we will send out a link to that from I'll send out a link to that tomorrow when I send out my email. Gail has said I've been rattling through the time this evening when we get off the chairs. Daniel says I've currently got some work with a physio company doing online triage two days a week. And she has to review some key reports. And if they're doing a treatment that's not evidence based, but I have to reject them. But they're seeing electrotherapy which is pretty broad topic I suppose, is non evidence based. How can she overcome this, especially since you were a department head where she initially trained in physio before doing osteopathy degree,

Tim Watson
there you go. The the idea that it's not evidence base is fallacy. I'm sad, I keep a database to the left therapy research. And that database currently I'm working on this morning that currently sits at about 202 150,000 papers. I mean, I probably on average, I probably add 1000 papers a week to that database.

Steven Bruce
That will vary in quality. Some of

Tim Watson
them are rubbish. Some of them say this treatment is not effective. But I collected all the the evidence in that database says if you use the appropriate modality at the appropriate dose, it is clinically effective. I got into a debate on Twitter. I feed the Twitter feed every day, I'll put a new research paper out every day and I put a new review out every day. I like got into some debate and people said oh, I put an ultrasound paper out. They say well, ultrasound is not evidence. I said well, it is evidence. And they say well, your evidence says you've got to do this three times a week. And I'm not prepared to do that. I said, that is not the same thing as lacking evidence. It is evidence and if you do it three times a week, and this particular condition we were talking about it is clinically effective. The fact that that particular therapist didn't want to or wasn't prepared to do the ultrasound three times a week is a different issue. I'm not saying that's the only answer. But there is an evidence base and I genuinely would not be sitting here or anybody else's couch, trying to advocate clinical application of of a system of therapy that was ineffective. It was overused in the past, I think

we the pendulums now swung so far the other way it resolved we went to therapy Yoga is just a manufacturer is trying to make money at some point and it will be retired for the 15th time. At some point the pendulum will come back to this there is evidence, don't use it for that do use it for that use ultrasound for that problem, we use 10s for that problem. The evidence is there, I believe there's

Steven Bruce
a book coming out, which covers that sort of thing, which

Tim Watson
I know when I was trying to do a book and conditions tell me this is the book they want, which is I wanted to call it if you can kill me for this one. They want I wanted to call it electrotherapy is about face. The publisher apparently finds that objectionable, but that's what I want to call it the wrong way round. I mean, I guess that is why we call value. This is the title of the title. And instead of saying this is ultrasound, this is interferential. This is a laser This is Shockwave. We're saying Okay, you've got a patient with chronic low back pain. You've got a patient with acute Achilles tendinopathy, you've got a patient with a medium nerve lesion, which is recovering, you've got a patient as an amputee with phantom limb pain. What are your electro options? And how would we rank them? So if you've got the acute super spy latest was the first machine if you're gonna put any machine out of the cupboard, what's the first machine you pull out? based on the evidence? So it's the same evidence. All I'm doing is literally turning

Steven Bruce
it asked about it very helpful. It's the way we should be looking at treatment rather than say, well, I've gotten them for so much. And I just use it Yeah, whatever.

Tim Watson
That's fine. I nearly finished that book about four years ago, five years ago, and then I put it on the shelf and I was gonna write the last couple of chapters and it hasn't been written Of course in that five years. The evidence changes I've now got a rewrite every chapter I shouldn't have published it should not recommend I don't blink in though when I retire and I've got time and in between daytime Telly and walking the dog. Maybe I'll come I don't know. It should be it should come out. To say we shouldn't need because people tell me they want it. But then

Steven Bruce
no. Which means it ought to sell.

Tim Watson
I I'll give it away for free. I don't care. I'm stupid. And I was at what I'm asking.

Steven Bruce
Well, we'll come back, we'll come back to the combat movement, we'll look at the condition, as to conditions have been said to you, and you can tell us which of the machines you pull out of the cupboard. I love the idea of ranking that the Guardian will have the headline that's ranked with an exclamation.

Tim Watson

But anyway, and then there'll be the times league table and the Guardian league table of the rankings.

Steven Bruce
Let's go to Shockwave can we do better, which means you get to play with the electrotherapy of the the PowerPoint display has

Tim Watson
historically avoided putting slides up now. When we when we were talking about Shockwave, before, I was focusing on using it pretended opposite. Because of all the evidence we got and there's a big volume up probably got 11,000 papers on shortwave, they're not lacking evidence. tendinopathy applications clearly rule the roost and have done for the last 10 1215 years. What do I think is really interesting, and maybe we'll come back to it at some point in the future, is that there are a number of you what I would call emerging applications. People are saying, hang on, if it's not blinking good with tendinopathy? Why don't we try it with some other chronic things that don't like getting better? And I've put a few that invite people

Steven Bruce
to send me messages very shortly. So we can't we can't read the slides or whatever. Yeah, don't worry about it, we will send you copies of

Tim Watson
PDF and you can send them out. Or Yeah, all I've done is I've picked on someone about a couple of slides just to go through quickly before we before we have mo of clinical intervention where shock wave is already being used with somebody experimental something clinical, and it is showing benefit and I put them on there because it shows something about the range. So from from delayed and non Union as well that's probably fairly predictable, isn't it because it delayed them and non union is just a bone version of a tendinopathy. It should be getting better with the United.

Steven Bruce
So there's a distinctive sort of reluctance I mentioned to inflict shock on the fracture

Tim Watson
against things. But actually it works Yeah, and mechanically loading a fracture, which is a delayed union works we've been doing that with manual therapy with exercise with loading.

Steven Bruce
And it works because of low frequency ultrasound fractures as well,

Tim Watson
very precisely in the middle of writing that book as well. But yeah, stunningly well, stress fractures, a vascular necrosis femoral head, it works and you can therefore have an influence. And I think the current number is about 65, between 65 and 70% of the people with a vascular necrosis of the femoral head, who gets Shockwave as a conservative treatment before the man with a knife and the drill get in there to chop your femoral head off and put you a bit of metal in there. Somewhere around the 65% mark are not getting into surgery because they don't need it. That's pretty impressive stuff. Chronic things are widely known because it was widely known everybody's using it but the evidence is out there and

that's not because I only got 123 is not because when we got four studies, they just before studies I put on the on the screen. Now there's loads of famous officers I'm not saying shock wave is the best treatment for venous ulcer. In fact, there's all things I do and laser would probably be my treatment of choice but it's another chronic problem was just a responding and therefore you're provoking it like you're provoking the fracture like you're provoking blood flow in the femoral head. Complex regional pain syndrome only loads of work on our way everybody but everybody myself included in research is always he was everyone's got it because everyone's got it. Absolutely. They blinkin easy to recruit to go to a clinical trial or something. We run it we just did a trial not too long ago on our way you need on radio frequency and heat and our we need and we had no problem recruiting patients because they don't get any treatment. They love it anyway. Oh Wally, and we can go this route spinal fusion actually, that was only one decent study on that. I'm not sure if I just had a spinal fusion surgery. I go through the spasticity, one, I think is fascinating. And if we were still sitting doing these chaps in 234 years time, I think using Shockwave on spasticity by then will have come normal. They've done it in kids with those studies on cerebral palsy. They've done it on adults with hypertonicity spasticity, post stroke. They use it because of Shockwave that if we ever get there, we'll we'll demonstrate in just a moment. They're doing it on the muscle, they're getting a reduction in spasticity there. And then to do that with an ice pack, it's cheaper. But what they're finding so the in the in the specificity of the CP kids Three weeks later, the specificity is still not back to where it was three months later, is back to work for 20 minutes, not three weeks, not for three months. So it looks like you can have any effect on the motor spasticity type of responses, it looks like those effects will last for weeks verging ins a month, short to medium term. I use it on legs. Because if you've got a patient who's who's had a CVA and had a stroke, you've got a patient, immediate child with cerebral palsy, and spasticity is causing them functional issues, serious functional issues, and you can reduce that spasticity without a Botox job without neurosurgery. And the effective your treatment lasts for weeks and stroke months, that's got to be worth looking at, which is why so many people are looking at, and we have to go through carpal tunnel trigger point. So I don't want to set a light on because that's probably not the Forte for your particular audience. But it's worth it but but people are using it for some of you I got some other ones on me. Last slide. We do tibial stress syndrome dental. Well, when we get when we get to the machine in just a moment, just imagine when I'm treating whoever I'm treating, imagine doing that in your golf. If I've got dental problems, I don't think I'm going to put my hand up and go for the shockwave. But there are people researching it because it looks like an option. chronic low back pain. predictably, your videos are not that long,

Steven Bruce
waiting for you to get down to this one. Which ones are the rectum

Tim Watson
these other muscle contractions now we know

Steven Bruce
where you're going to stick the shockwave Danny, Nick knows. I'm no volunteering for that drug.

Tim Watson
So that's what we're going to demo we're going to demonstrate. There are actually more papers on using Shockwave for erectile dysfunction than almost all the other ones on those

lists I've put up so far. And have the the urology guys are now saying it is probably going to become the standard conservative treatment. Beyond pharma. The standard conservative treatment for erectile dysfunction is delivered at low dose. But the idea of putting that machine we're about to play with down in economics and pulling the trigger fills most people with dread and love myself included I try nearly everything.

Steven Bruce
Just thinking this is gonna take over from viagara it's a very different sort of sex story, I

Tim Watson
probably probably Viper is easier to get older. Anyway, my point is actually the level. My point is that the the the idea of Shockwave is only good for tendinopathy as what has been said for the last 1012 years. The evidence emerging says it has a role to play in a range of other critical conditions, some of which I put up on the screen. And some of those, I won't go back to them, some of those will turn out to be good and valid. And we'll run with them. And some of those will drop off the radar because it will turn out to be not as good as we first thought. But they are gentlemen I wouldn't put them on the screen if I didn't have belief in the research. Some of those are looking very attractive and things like the specificity poststroke specificity in kids with cerebral palsy. Did they do me a non union stress fractures and vascular and crutches that fast beginning to look really quite attractive. And it's a shortwave machine is the kind of machine that that people are having in their clinics and therefore it opens up a range of therapy options.

Steven Bruce
I think we'll get a rib look to the golf now. We've got this slide over here. We don't do advertising, but we would be it would be remiss of us not to mention the people who provided the machine absolutely this evening, which is Phoenix healthcare. I'll provide links to those and I'll talk some more about them in a minute because I spoke with a lovely lady Pauline, I think it was in Phoenix and I'll tell you what she told me later on. What are you gonna do with this Shockwave machine? Well in this state of missing

Tim Watson
Well, this is a spanking new machine he said he says what I consider to be a standard therapy clinic machine.

Steven Bruce
You're gonna look at it I'm gonna

Tim Watson
machining and can't I? That's

Steven Bruce
right, so come across to meet max. Matt is our model for the evening. Physical Trainer, Personal Trainer things now what? Find your water puddles? Nothing is good? Nothing? No anyway, we're here to see if you can change that.

Tim Watson
Right? Okay, well, I'll, I'll see what I can do. If you want me to claim that I'm assuming you have a pacemaker, okay, when you haven't had a stroke recently, I'm triggered to have, right? If you have another stroke, that's, that's getting, put yourself on the bed right now on

your front with your feet down that engine. And we'll pretend you got something wrong with you.

Steven Bruce
The machine we just saw on the screen.

Tim Watson
Okay, so this is the kind of machine and again, I'm genuinely neither advertising endorsing or promoting, but I wouldn't use the machine if I didn't trust it to be good as quickly, what is the kind of machine learning? And when we're coming up with with ways of treating things with Shockwave, whichever it is all for this, I'm going to go pretend it obviously, because that's a classic. There's three basic ways of working out what to do, you can either copy what somebody has done in their public reserve. So you get the Wang eight hour paper from 2017, who did Shockwave for Achilles tendinopathy. And you simply get your machine to copy what their machine good, no problem. You can on all these machines. We've got it on the slide, but we've left the slides behind. They've all got automatic protocols. So you press the button that says clinical protocol will put on the screen in the moment, please ignore ever look at it. Say for example, calcific tendonitis of the shoulder acute, oh my god, that sounds good. And it tells you, it tells you what to do. And it pre sets the machine to do what it thinks you should do. If that was based on the evidence on I'm trusting, because I've checked that on this machine, actually, it's pretty damn close. Some machines are way off the edge, because this is something he says do 2000 shocks and do it at this kind of strength. Yeah. So and that's fine. I don't have a problem with that. But on some of the machines, the decisions they make for you are dire. The alternative is, and I'm trying to be pragmatic here, machine work, because I'm sitting around the wrong way. The alternative is the setting yourself. And I've said before, I'm a control freak, and that's what I'd like to do. And rather than rehearsing a particular dose, you can genuinely we've got research evidence to support this, take a pragmatic application approach or let's pretend the map was meant to get out. Okay, let's pretend Matt has got an Achilles, Achilles tendinopathy. Let's go Let's go meet tendon. So he's refusing surgery insertional or other, the end musculotendinous junction will be saved. Well, we're going to go meet him again. And Firstly, I'm finding the most problematic behaviours and killings or controlling, when you sit in a very nice bucket chair while I did this, I'll be standing down there, but then we seem to be excellent, which is no good. So you bite our patient, you're finding what you believe to be the most problematic area, some people are doing it ultrasound, some people are doing lots of clever techniques me, I'm just going through the calculation. And I'm intending to deliver y Shockwave to the lateral the post area and the medial aspect of that bit of the tendon that seems to be causing the problem I'm getting with this machine I'm using it for about medical use and Joe are not actually going to use very much, I'm using some gel on there because it genuinely hits the energy into the tissue much more efficiently. And on these machines, you can get a rubber wise silicon e collar thing. That's the applicator, that's where the shockwave is going to come from. If you put that onto the gel, the gel gets down the inside of there, knackered by a new one. makary poked by a new one, put a cap over there, the energy goes through that straight through problem. And I don't know the the treatment head

Steven Bruce
you can get different sized treatments, decide which one's a drug for that. And

Tim Watson

for me, that's that's the 15 millimetre applicator. That's that will be my standard certainly for something like this. If you put the same amount of Shockwave through another if you can see that anyone can close up on that and no idea where the camera is. If you put the same amount of energy through a tiny little drink on the head like that, yeah, that's why putting all your tents or a small electrode in looking uncomfortable. So therefore, I'd reserve that for the pointer to the camera. I'm going to say sorry. I've reserved that to the patients who've never heard of please like your chocolate so that's a wicked that's a wicked Africa to pay If you get larger after going to be doing big, multiple problems on our boards or something, but that's actually sad. So I flipped the chip around, right, so I think that's the most problematic bit of his Achilles. I'm setting this machine because we know from the research that we need at least 1500 shocks in a treatment session 50 this week 15 102,000. All right, the machine defaults to 10 Whoa, that means it's going to deliver 10 of those per second. It doesn't matter what you do with a 10 or 6.1 15 per second. The slower you go, the longer your treatment takes. I don't think there's any evidence to say that it changes the outcome is comfort and if the patient says they don't like that, I'll fiddle around with the frequency to see if I can find the vessel one but it doesn't change the treatment. And what I'm going to do here is I'm going to start with a fairly low amount of energy teach controlled by a flick switch down there when I put the foot on the foot switch. So it is uncomfortable maketo is you can feel it is not slothful, but it's not supposed to hurt okay? So isn't damaged him even if as a damaged tendon, because I'm starting with a low amount of energy. So I started delivering that and I, I hope they can still hear is when this is going on. We're gonna talk over it, Leslie. And then I'm going to turn that up, because he hasn't a screen. And I'm going to keep turning it up until he says that is my point of discomfort that's gone from a sensation that's now hurting that I've gone too far. Yeah, come back. So I don't need to remove noise a number. I'm pragmatically choosing where is it going by palpation I'm turning the energy levels up and it's never going to be a bit stronger back. Alright. It hurts. Tell me more. Yeah, he was a real patient with a real ridicule. He said we're probably at some point, maybe there. He would say no, no, no, no, that's too much. just back off just what we did with the 10s. So you don't need the machines automatic dose gets honking what appears to days to be the most problematic zone, you turn the machine up as far as you can before discomfort, and you will apply your 1500 2000 shocks in the treatment session. And then when they come back next time you repeat the process, if the most tendency is now somewhere different, treat it wherever it is treated, that sounds and it's not my style. That sounds really loose and really non scientific but when they're trying to in clinical trials it blinking works

Steven Bruce
through autism strikes me about this. I'm actually thinking of I'm glad we're not doing dental stuff that's gonna look really weird. I'm already corded other panels on this electric is this device the stimulator is is similar to some ultrasound stimulators, and you're going to talk about ultrasound, which is I know a completely different therapy. You're very precise about having to keep it at right angles eschewed. And you wouldn't

Tim Watson
notice I'm I'm literally sliding that around you can do 800 shots here. 800 shots here that goes up to two but in most radios, 24 has too many. Okay, do 600 606 over 600 a phone, but you but it's perfectly okay. It's effective if you slide it around. So people say oh, you mustn't move the head must be at 19 no more than 91 degrees. It works. And and if I wasn't supported by research, I would not sit here and say it. So yes, it sounds lacs. But it is clinically effective. And therefore, it means you can be pretty effective, clinically effective in

an easy way. Just like using the gloves on the 10s machine. You've made the application which has got evidence clinically easy to apply. Now, a machine like this has got a manual override, you can tell it to do anything you wanted to. So if I want to change that from 10 pulses a second, I want to go down to five pulses per second. The strength of the policy is the same but I'm now only delivering by the second

Steven Bruce
critical difference. Listening sounds brutal in Macau. Because it actually

Tim Watson
is very exciting I'm there inside there smacking lap metal employee which is one of those and as the ball bearing smacks the back of that it sends a shock wave into the tissue it's not sophisticated it is a coach because it's pretty and is computer control but the act as a treatment isn't not branded recent This is provocative mockery effective remark apparently, if I if I was in it, and bullying machines, I would not say in this particular one, I would seriously consider a shockwave as a piece of cake I would like especially if the kind of patients I saw had chronic musculoskeletal problems, especially tendinopathy. I've picked on Achilles tendinopathy. Let's imagine on a regular stop. professionalise the job is going to come around the eyes and say we could do. Let's say you've got a lateral head of gastro, and let's say that was torn really quite some time ago. And you've got one of those really grotty lumps of fibrous tissue in there. Absolutely no problem. I'll just say, Joe, I'm going to move up now. You probably guess back if you can feel Joe could work with IKEA golf will go up next. And let's go walk let's go 20 times a second. And my cousin only goes up to 6516. Is that, right? Turn the energy level down a bit. Start with a low energy level. Pretty provocative. It's supposed to be provocative. It's not subtle. We don't want subtle, subtle doesn't work. We try and soften. We're trying to get the tissue of good smacking. And we provoking it into a reaction. Was that okay, Matt? Yeah, that's what I was testing on the juice frog. So let's turn the juice up a bit, and dry again. I'll give it a bit longer. Does that smell right? Yes. Okay, that's good. All right, well, he's gonna learn to say stop in a minute, I'm going to turn up a bit higher now. So now I keep turning until he gets to the point where he says, that's just one field. And then I come back down a level, and I'm delivering 2000, shocks, ovaries, five rows, maximum head, gasp rocks, it's not going to cure the problem. It's going to provoke you into reacting, which is exactly what I do. Once I've got it reacting, I can use all the other global therapies to do reactions. So I deserve off the bed because I need to get to the soul of it. I've got to sit down and I want to stand up and I can't. I saw the cameras. As far as make a bit of gel. And let's assume that and now I've got a plantar fasciitis and let's assume on him, his worst bit is where that plantar fascia goes onto the, onto the plantar aspect of the campanian. gel with Misha. They'll be good, right? So that's his most tender bit. All right, let's come down. Because six days, we hit on that. So let's come down to 10. Because that's fairly comfortable. And let's take the energy level down because the sole of the foot is not a nice place to go. Depends on the mouth, but it's not necessarily nice. So we head for the most tender area. Where

Steven Bruce
did you guys always do the mouth first?

Tim Watson
Yeah. I'm gonna use my pinky. Right? So we're going to go either low energy level, and we're going to keep he got his own copy, which I'm assuming it is because he hasn't shouted, I take the energy level up. I take the energy level up. And I repeat that at some

point, he was a real patient with plantar fasciitis. He would say, Tim, thank you very much. That's one step beyond. I come back down. Let's work on that. Now, that's actually pretty straightforward. Isn't treatment plan is not complicated. And you can use the automatic dose until the machine if you wanted, you can copy the dose that somebody else has written about in the blogs and blogs, a towel 1997 paper for plantar fasciitis, PhD research and their roles are probably removed, but you probably can use that pragmatic approach and from what I can see, clinically, you will be effective. It's difficult to research but it is clinically effective.

Steven Bruce
Tim we got 1000 questions over there.

Tim Watson
Your ability to livestream and take whatever is

Steven Bruce
on the cameras and we're moving away. 20 something to clear up on that job.

Tim Watson
Offer jail everywhere, including myself. Right, thank you. Right where we go, we're gonna go back to the chairs. Use my handkerchief don't blow your nose off. A lot of timber covered in white. So

Steven Bruce
I haven't looked at the questions here, but someone's gonna say, How often do you have to do that for it to be effective,

Tim Watson
actually, to be effective with Shockwave, the average is between three and five sessions, once a week. So you come see me today that comes to see me today. And I'm going to do that, let's say Ruby's Achilles tendinopathy. I give him his 2000 shocks today. And then in a week's time, I repeat that, and I repeat that, and I probably by the time I get to the third session, I'm expecting a response. If I get to five sessions, and I haven't got a response, either I'm doing something wrong. Or he's a non responder, there's actually not many people who fail to respond to that. But there are non responders as a role with manual therapy, exercise therapy, and every other therapy once a week, and people who are working in acute sports medicine as an outlet, I do it twice a day. But I can't see that certainly no evidence, I can't see why doing it twice a day is a clever thing to do is provocative as opposed to be provocative. You don't need to provoke it twice a day to get a clinical response. Most of the patients we're seeing and certainly all the ones I would use it on, I'm using it on primarily on chronic conditions. There are people doing it on acute lesions and some of those slides we're looking at acute lesions the majority of Shockwave which is clinically evident is in the chronic, persistent resistant therapy world.

Steven Bruce
I know you said going back to the gym we're not advertising any particular machine to move off

Tim Watson
that because you've been keeping up Okay, so

Steven Bruce
people are asking if you recommend the machine and other machines that you wouldn't recommend wouldn't recommend but can we before we get down on this particular machine we ended up at RAF which is from in RAF

Tim Watson
in every home I'm in Phoenix at the company in this country you set it in rapid and company have been around for 70 or 80 years based in Holland. Is that an Amazonian Yeah, they're a good company their products are good, they're reliable, they don't fall apart and then you can buy a you can buy a shockwave from Alibaba I get adverts every day from Alibaba because they know I've got an interest in the field and they'll tell me that their machines are FDA controlled and marked and see marker they're not they just put badges on without the controls. And they're only about 25 paints and I

Steven Bruce
This one's three and a half grand.

Tim Watson
Yeah so for for something that in Shockwave terms I mean, two years ago they were up at 20,000 Yeah, so they've come from 20,000 down to this one's certainly under $5,000 for something I think I can't remember they've come from 20,000 odd down to 5000 odd 4000 default because the volume is going up therefore the price per unit goes down I'd rather spend before Kay on that and get a machine which is reliable and is not going to fall apart on me and it's got some longevity to it then 25 petals on the Alibaba one would you have to send back to China to get service because nobody over here will service it and falls apart before you even got to have this packaging.

Steven Bruce
So I'm going to disappoint you now because before this show knowing we were looking at this machine I called Phoenix healthcare and I asked them okay look people are interested in these machines what can you do to make this more interesting for them? And for me lovely lady who runs this company a family company based somewhere in the Midlands I suspect not in Nottingham she said they cannot not the price down because it's they selling it effectively cost because they're trying to keep pace with the Chinese cheaper versions of in the country. However if you're interested in them Phoenix healthcare or Cote UK, they come highly recommended.

Tim Watson
I wouldn't Yeah, they are a nice company, I would not have called them up to get that machine to do the demo with him had I not been comfortable with it. That's not endorsement or advertising. But but the logic says I wouldn't put a Mickey Mouse machine there which was no good I

Steven Bruce
actually my own to make we're looking to invest in in shockwave therapy but now that we're about to move the clinic and we're definitely looking at this model too.

Tim Watson

And they do again without physical okay on there and so I said we have the automatic programme, so on. There are a range of automatic programmes from epicondylitis. To tendinitis over shoulder to calcific tendonitis the shoulder and when you press one of those, it automatically sets the machine to what he thinks. The company thinks the evidence says is the right dose. I'm not saying them Well, I'm saying I'm a control freak and I want to do it my way, but the option is that six mil head, six mil head that's wicked. If I had if were the tennis elbow, and you were going to do that to me, with a six mil head that nationalised with that evil mama wiki wiki

Steven Bruce
we've got to deal with some questions and we simply we're going to talk about turning like the therapy on its head as well let me let me do some questions first. ones on laser. Scott wanted to know which machines in Austria This is never going to the standard treatment for fractures apparently. Oh, he's an interesting one. Have you got any recommendations for young lads knocked down by a car I asked Amanda, last week of July posts through posts through FEMA and currently an external case fixation of the lower leg surgeon now says until January, still limited weight bearing an immense psychological impact.

Tim Watson
My my treatment for a patient in that condition would be to use leipers, low intensity pulsed ultrasound, which is the strongest evidence modality we've got to stimulate healing in fractures, whether they're fresh factors, delayed unions or non unions at the moment, the leipers ultrasound application tops the list, there's a whole section on the website about it purely because I get asked every week about this. It stimulates healing in the fracture, but it is not the ultrasound out of your bog standard ultrasound machine in the clinic, you've got to do it every day is 20 minutes every day. And you basically are the by rent lease loan, a special little ultrasound machine that does this. But not sure because it's not cheap. But it takes an average of 40% of the time to get the fracture mended to have either fractured teeth, and then there's a machine x out there that increased the rate of which my fracture mended no loss of quality, but a reduction in the time it takes by an average of 40% would I want you to use that machine on my fracture is not blinking good. And if I was in a position to either pay lease, loan and rent or pay you to do it for me, I would either that's unfair, that should not be down to how much longer is the patient got that's the reality of life. There are clinics in the NHS that deliberate. They are few and far between. and they are few and far between not because it fails to work, but because it costs money to treat these things, and money in the NHS among good friends. As we all know.

Steven Bruce
Alex wants to know if you have a specific qualification Do you Shockwave that you receive a pure practitioner if you identify the tissues causing symptoms Yeah, that's what you think

Tim Watson
you need to be in terms of reassurance you need to be able to demonstrate that you are competent. So the physio who trained more than a couple of years ago probably haven't done the shockwave as part of their training neither of the osteopathic heroes, the sports therapists or anybody else so it's a new modality in that sense. And therefore you can't have to have a special qualification but if your challenge you've got to be able to demonstrate you understand what he eats you understand how it works you understand how to make your clinical decisions about it the same as you would do if you hadn't trained

in laser and now want to use laser where you hadn't trained with muscle today when you want to go with muscle fit is not unique to Shockwave

Steven Bruce
with this show cameras training

Tim Watson
no freight not not not with me doing a poetry demonstration like that and avoiding all the difficult questions but you're gonna get one out in a minute, but yeah, um, no, but

Steven Bruce
I do remember when I was talking to Pauline, I said okay, well what if someone buys these machines? What do you get with it? And they give you the training with it. They give you the full file? Yep, absolutely. And I think the training is done with somebody professor from Hereford is from home, for instance. I

Tim Watson
appreciate Yeah, he does. So I used them. And I used to do these training courses morning, noon and night I used to do for ultrasound, the tables for muscle stable for laser. And that's the bit I'm supposed to have retired on because I'm always travelling around. I love doing these things. But I was I was lecturing three weekends out of it before on top of work in a week I was burning out. So when I retired, that's the thing I stopped doing. I'm back doing it a bit now. But nobody else has taken over. So at the moment, the downside is that nearly all the training you get whether you're looking for laser training, ultrasound, 10s, or anything else is actually provided by the companies. I was doing it independent of the companies, the companies clearly are providing training because there's a need for it, that they've got to be delivering it with all due respect to the companies. They got to be doing it with an objective in mind selling stuff. I wasn't selling by not selling I don't sell therefore I wasn't running the course to make a income from Selling machines, therefore I told you like it was, maybe I should just go back and instead of sitting in a luxury studio with you, maybe I should go back and run some ultrasound courses or something.

Steven Bruce
Luxury studio I'm not so focused on one slide if you wouldn't mind we've got so little time Now I know that a couple of things I particularly want to do. We're not going to run through this this is the contraindications for Shockwave read is the absolute contraindications only one there's only one only one that's for impaired cognition and communication, which is a contravariance retreat. Yeah.

Tim Watson
So because I'm asking Matt as he was lying on the bed, I'm asking him what he feels I'm asking him to respond. If he can't respond, how can I safely deliver the treatment there are other things which are probably not a smart thing to do. So the the blooms are what we would call a local country integration DBT off the top, I'm not going to go through the whole world is pretty damn obvious not to do that. In the immediate vicinity of a DVT someone's got a super spine itis and you want to Shockwave it and they happen to have a DVT it is not a contra indication at all. You mustn't do that they got a DVT via Shockwave ain't going to reach their DVT time

Steven Bruce

The reason I wanted to bring this up is because we've had a question I think it's from Matt No, no, yeah, just Matt reminded my application on a different map. Under the hidden face it says only use focus not radio and he's asked what's the difference?

Tim Watson
Well then we actually what we did cover this last time I wasn't you're trying to do the whole programme on shock waves tonight I was just trying to do some application stuff. Focus Shockwave comm one guy the only applicator when it comes out in the applicator and focus Shockwave as the name implies, gets more concentrated to a point in their tissue. What we would do everything there is sometimes called radial Shockwave and the energy spreads out like ultrasound spreads out and laser spreads out from the applicator. Most people in therapy are using have used radial Shockwave the spreading out one for some strange reason and it's really weird that the focus is potentially the more risky because your energy is coming to a concentrating point. But there is a study out there that says I try radio shock wave on the head on the face and produce some pretty unwanted effects in terms of patient going dizzy, getting flashing lights in their eyes facial pain afterwards, which didn't go away very well. It only happened with the radio is completely weird. And I cannot explain why. But because that is there and it's published. We're saying if I'm treating the head of the face and I wouldn't go out of the way to do if I were you if you're treating male advice don't use radio because it can we know it can produce some unwanted event

Steven Bruce
and can a single machine do both

Tim Watson
there are machines out there where you've changed basically you change the gun so that a handheld piece I was holding the default to think you change that and the same engine will either deliver focused or radio but effectively you're buying two pounds pieces and if you will future proofing that you might consider a unit which gave you the option of flipping one gun to another so therefore even if you only bought one at this stage, you've got the option in the future should it turn out to be the best thing since sliced bread at the moment radio is what we want radio radio is what I would use in the clinic at the moment.

Steven Bruce
Okay, so now we've got five minutes to go back and we just flick on to the last slide there which itself is great. Don't worry you will have one reason I would

Tim Watson
like them available at a time where we can pass a worse slide actually that's a terrible slide as you get that from

Steven Bruce
your pigtails right so conditions then you're going to rank these things just you know it's about pelvic pain during the show so what's your what's your ranking of electric for

Tim Watson
musculoskeletal or or going

Steven Bruce

no he hasn't said I'm presuming pelvic pain syndrome so muscular so it's good let's go sleep.

Tim Watson
If you wanted straightforward plain and simple pain relief, I'd go tense. If you actually wanting to deal with the underlying problem, which goes nobody really understands. I probably use pole shortwave or one of the radio frequencies we're trying out at the moment works really well. But it's but it's a shortwave like but it it gets to the root version. So I feel I'm going to get to the root of the problem. It tends will work there's no doubt that tends to work, but it will simply reduce the amount of pain that that patient feels it doesn't cure the underlying problem. And that's the problem. That's the problem we test.

Steven Bruce
Okay. This one one easy one Sherry says Achilles tendonitis, which we've kind of given a min ago, there's a lump on the Achilles who's trying acupuncture interferential and Uncle Sam plus the usual exercises and soft tissue work, and the patient is impatient.

Tim Watson
Right? Well guess what? I'm gonna say that that's true. Wave one, if you've got access to shortwave, the odds of stuff of shortwave working are better than the odds of those other things you try. I would use it in conjunction with the massage the exercise of the stretching, I'm not usually in isolation. But of all the thing you could do with one of those lumpy Achilles, Shockwave is probably going to top the ranking. But of course not everybody's got access to it. I appreciate that. But that's why we're talking about it.

Steven Bruce
Robin has come up with a question actually, based on some of the things we were discussing. Is there any danger of irritating with damaging the common peroneal nerve? If you're a bit clumsy?

Tim Watson
Yep. You could damage the common very little nerve by putting a plaster on badly. So it's pretty easy to damage that a patient man who's got a damaged bone from whilst the technician and got it wrong? Yes, you can, I wouldn't deliberately go out of my way to deliver a shockwave therapy, if that's what he's asking about. She's always gonna, directly over a superficial nerve like that is asking for trouble. And there was if I did go back and slide with me slides still works. regenerating nerves gets a precaution, it says is not the country integration is not an absolute No, no, but just be careful. And that would actually go for a number of other reasons as well, but certainly on the shockwave, can you damage the coal? Apparently, we'll get

Steven Bruce
right, we're three minutes from the end of the show. So this is audio Sonic machines low and high intensity, high interest on the interest on therapy, such as novaform, any

Tim Watson
thoughts? And lots of thoughts, they'll probably get taken to court if I express them out loud. Interesting, but lacking evidence that probably keep me out in court and gets the point across. I wouldn't junk them. I wouldn't say they're a waste of time, because I've got nothing to prove that they are a waste of time.

Steven Bruce
What's the theory behind what the theory is,

Tim Watson
it's a sound wave, just like ultrasound. Classically, we using it around one megahertz, a million or 3 million cycles per second. People drop that frequency down to a few 1000. And it still works. So if you come down, instead of going above your hearing range come down below your hearing room. So technically, it's infrasound. With f infrasound. below your hearing range, it could just do the same kind of thing. I have no problem with the concept. I have no problem with the theory. I have no problem with the fact that there are machines around Have I ever seen any published evidence of a clinical trial that says he worked or he worked better or not as well as I might have missed it, but I don't see it when I've got eight 910 1000 papers and ultrasound. I've never seen one

Steven Bruce
on it. I don't know who asked the question was a perfect opportunity for them to do some research.

Tim Watson
You guys can do the research. Tell me the answer. And I'll sit him down. So next time I'm doing another one.

Steven Bruce
We'll be back next year. I'm sure we I can't believe that you haven't enjoyed this show. You haven't learned something when it's evening show. We always do when Tim is is my guest. Tim, thanks so much. This is Professor Tim Watson. He is still the UK is leading authority. And he probably wouldn't admit to that, but certainly might be the leading authority on electrotherapy - probably one of the world's leading authorities on electrotherapy.
He hasn't retired yet and we'll get him back on his show in the future. Tim, thank you so much for coming to see us. fifth or sixth time or whatever it is. Yeah.