

Airing Pain Programme 90: Back Pain

David Rogers, physiotherapist and co-author of 'Back to Life', explains the biopsychosocial model and simple, effective ways to manage persistent back pain

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Back pain causes more disability than any other condition in the UK. It is the second most common cause of absence from work, resulting in the loss of four million working days per year. This comes at a heavy price not only for the NHS, the Department for Work and Pensions, and the UK economy – reported to be costing each £480 million, £5 billion and £9.6 billion a year respectively – but for the increasing number of us who will experience back pain at some point in our lives.

Over 40% of over 50s go on to develop back pain. With an ageing population, it's more important than ever that we know what we can do to prevent, reduce and manage this common but debilitating ailment.

Dr David Rogers is an Orthopaedic Physiotherapy Practitioner at the Royal Orthopaedic Hospital in Birmingham. In 2016 he co-authored the book 'Back to Life: How to unlock your pathway to recovery (when back pain persists)' with Dr Grahame Brown, in which readers can find clear, practical strategies for managing and relieving low back pain. David explains the ideas behind the book, the biopsychosocial model and why it's so important, while Paul tries some 7:11 breathing and relaxation techniques.

Paul Evans: This is *Airing Pain*, a programme brought to you by Pain Concern, the UK charity providing information and support for those of us living with pain and for health care professionals. I'm Paul Evans, and this is edition has been funded by a grant from the Schuh Trust.

David Rogers: Health professionals often find it difficult to grasp this concept, that your thinking style can influence your rate of recovery. I am a physiotherapist and I was trained in physical approaches, but I've found that by applying these psychological approaches, although I've had no formal training at undergraduate level, it's had a much bigger impact on helping people to recover than any physical factor that I have used.

Evans: According to statistics published by the charity Back Care, back pain costs the UK economy a staggering £37 million pounds a day, £480 million a year to the NHS, and £5 billion a year in disability benefits.

It's the second most common cause of absence from work with four million working days lost each year, and 40% of over 50s go on to develop persistent back pain.

In 2016, NICE – that's the National Institute for Health and care Excellence – updated it's guidance on the management of low back pain and sciatica. Under the heading for 'non-invasive treatments' there's advice on what not to offer, therapies that people may or not may not have found useful in the past. But noticeable is the inclusion of the guidance to 'consider psychological therapies', and that's what I want to concentrate on in this edition of *Airing Pain*.

David Rogers is co-author with Dr. Grahame Brown of 'Back to Life: How to unlock your pathway to recovery when back pain persists.' David is an extended scope physiotherapist, that is, he has and uses skills that go beyond the normal practice of physiotherapy including spending time in clinics and taking investigations, but also developing skills in psychological approaches to rehabilitation. He works within the NHS and I met him at Birmingham's Royal Orthopaedic Hospital where he established a functional restoration service for patients with back pain, combining both physical and those psychological treatments within an interdisciplinary team.

Rogers: I actually did a sports degree before I did physiotherapy, that's the area that I wanted to go into, sports physiotherapist.

Evans: What is interesting about sports rehabilitation is that you are dealing with people who use their bodies, their muscles, their limbs, to a very high level, presumably. And many of the people you see now, I would imagine, are at the opposite end of the scale.

Rogers: Yes, and my training taught me that they were probably at the opposite end of the scale because of physical factors related to deconditioning, but I soon found out that often people's poor performance relates as much to what they think about their pain, and what they do about it, rather than how deconditioned they have become.

For example if someone is told that bending is bad for you and they develop back pain, then they may avoid bending when they are encouraged to rehabilitate. And we know that avoidance is as much to do with fear, and beliefs about bending, than actually bending itself. So if we educate them that it's safe to bend, and safe to twist, safe to move and lift, then

often their confidence starts to develop. And confidence isn't a physical factor it's a psychological factor.

So it's not just about how many marks out of ten you give it, it's about how it makes you feel, what you believe about the pain, how you respond to it, what others tell you to do about the pain, how you prepare yourself for the pain, whether you avoid and if why you avoid it. So that isn't to do with the pain itself, it's to do with your attitudes and beliefs about pain. And we know from the evidence that those attitudes and beliefs are strong predictors of whether you make a recovery or not.

Evans: That's a long list for people to address when they come in to a doctor or a physio with back pain, where do you start with this?

Rogers: It's really helpful to listen to comments that patients might make to you, and they might be off the cuff comments that aren't linked to any question you've asked them. So for example fear, a good way to identify is that a patient will say to you I'm worried that if I lift that box I will damage my back. Now that's a fear avoidance belief.

Evans: But that's what pain is all about isn't it, pain is to stop you doing that because you will damage your back. If I come to you and you tell me I've got to go and do some 'lifting therapy' if you like, the first thing I will say to you is that I've got a bad back.

Rogers: Pain is a very useful danger alert system, it tells us when our body is in danger and tells us that we need to do something about it. There's two key things that happen when we experience pain, we have a thought of what does this mean, and another thought of what should I do about it. Often with pain, certainly with back pain, people are given unhelpful guidance and advice, that they should rest, take it easy, wait till the pains gone away, go and have a scan, and often this can delay recovery cause people are left in limbo. Because the question of what does this mean isn't correctly answered.

If people with back pain don't have any signs of serious disease, and there are some simple questions we can ask to indicate whether there have any serious disease, if they haven't got any serious disease it give us as clinicians a green light to tell them to get going and get moving, and that it's safe to do that. So that second question of what should I do about it, if people haven't got any red flag signs, then movement, activity, addressing fears about pain, getting going in a graded manner, building activity up gradually, will usually result in recovery.

Evans: You mentioned acute pain and persistent pain, now just tell me what's the difference?

Rogers: Acute pain is pain that is usually associated with tissue damage, so in the first instance of an injury, where you break your leg, or you tear a muscle in your calf, the pain is a very useful indicator of tissue damage, it tells us to rest and area. And normally over a period of a few days or weeks, or a short number of months acute pain will subside, so the danger signals calm down as the body heals itself. So acute pain is a good indicator of tissue damage, if we break our leg or tear our calf muscle the pain will tell us that we need to protect an area whilst it heals and as it heals the pain will subside.

When pain becomes persistent it has much less to do with damage to the tissues and more to do with this idea that the nervous system itself becomes sensitised, so the tissues heal but the system that's responsible to transporting pain messages, or danger messages, from your tissues to your brain become over sensitive. So although tissues healing has occurred, the pain persists because of the transport system. And what happens is danger messages from the painful area continue to persist, and it sets up a cascade of events that means the nervous system remains sensitised.

Evans: So the nervous system is creating the pain signals when the cause of the pain isn't necessarily there?

Rogers: Correct, the nervous system will send danger messages into our spinal cord and up to our brain and our brain has to interpret whether the incoming information is dangerous or not. If we tell people that their bulging discs or their stiffness in their spine is due to something serious and they need to protect it, then the danger messages keep being interpreted as danger messages in their brain.

It's our role as clinicians to reassure people that incoming messages from the nervous system aren't dangerous, reassure them that it's safe to get moving, explain to them that common findings on MRI scans like disc bulges and disc degeneration are just as common in people without back pain. So that helps to start to reduce the danger messages that people are often given about pain. And our common understanding of the nervous system now tells us that if we can diminish the danger messages that people receive, the threatening messages people receive about pain, which are often unfounded it can calm

down the nervous system, calm down the pain experience, and allow people to gain some sort of functional recovery.

Evans: So it's drugs?

Rogers: The evidence around medication is being questioned currently. We know that medication can be really helpful as a way to get your going and get you moving when pain presents, and when pain persists for a short period of time, but current understanding of the role of medication is being challenged in research currently and the programmes that we have run within our hospital, we have a doctor that works on the programme who helps people to reduce their reliance on medication and learn new skills that they can use in place of the medication. And we have seen significant improvements in patients who have taken less analgesia. So our thinking around the use of medication for persistent back pain is changing, and we try and encourage patients to use a minimum of medication and a maximum amount of self management approaches to promote recovery.

The aim of our back pain approach now is to try and help to prevent chronicity, we're aware that there are hundreds of thousands of people in the UK currently who have chronic back pain, and the principles that we use can help that group of patients. But there is also a group of patients who are at risk of chronicity and we recognise that some of the psychological factors that I discussed earlier such as fear, confidence, beliefs about pain, if we address those then we can prevent the development of chronicity, and when I say chronicity that means that the back pain becomes overwhelming in terms of not being able to function, it can affect people's ability to work. Our understanding now is that we do believe that we can help to prevent this by using a combined physical and psychological approach.

So in terms of the psychological issues that are mentioned in the back pain guidelines, applying some simple psychological techniques, and this isn't deep seated psychiatry, this is just addressing people's logical beliefs about pain, that we recognise culturally that pain is a sign of damage and we need to protect the area of the body that hurts until we recover. But it's helping people to understand that that's useful in the short term, but in the medium to long term we need to tackle persistent back pain differently. So it's no longer helpful to protect the area, it's much more helpful to move the area, to stretch it, to get people to do breathing exercises to calm muscle tension down. And that is a way of addressing a psychological fear of movement and is a good way of demonstrating where all the psychology recommendations come from in relation to back pain.

Evans: Ok, I've been going through your book 'back to life' co-authored with Dr. Grahame Brown, now there are things in here that if I didn't know this was about backs I would just think this was a book about pain management, there's some fantastic things. I've just been doing in your waiting room visualisation exercises, even things like breathing effectively. Well I breathe because if I didn't breathe I'd die, so what is there new to say about breathing.

Rogers: So we recognise that when pain persists often, and it goes back to this concept of threat, so we know that if people are given threatening messages about their back it switches on their bodies sympathetic nervous system, that's your fight and flight response. It helped us greatly with our ancestors when they were trying to escape from wild animals, it prepared us for danger, it increased muscle tension, it dilated our pupils, it got us ready for action. Often when pain persists this system is in overdrive, but we have a counter system, a para-sympathetic nervous system, that can calm muscle tension down, and we activate this system when we do relaxation exercises. So all of that tight muscle tension, the cramping that we feel when we're in persistent pain, the tightness that we feel, is often due to an over sensitised nervous system, that's being driven by this fight or flight response. The relaxation response does the opposite of that, we call it our rest and digest response. It can calm muscle tension, it can make us feel much more relaxed, and it can ease tightness and stiffness.

We encourage our patients to activate a breathing method called 7:11 breathing and that can help to calm the system. The idea of 7:11 breathing is that your out-breath is longer than your in-breath. So we encourage people to find a nice relaxed position to begin with, maybe lie on the floor or sit on a comfortable chair, and take a long slow breath in up to the count of seven and then a longer breath out to the count of 11 and to repeat this cycle for five to ten minutes.

Evans: Hang on a minute, I can't get up to seven so I better slow down my breathing, yeah?

Rogers: And then you breathe out, but your out breath is longer than your in breath. 7:11 is just a label if like, for encouraging people to use breathing control. If you struggle to use 7:11 you could use five and seven. The concept is that your out breath is longer than your in breath and like any skill, you need to practice it to become better at it. But a lot of our patients that use the 7:11 method find that, particular on troublesome days where they are having a flare up in pain, it can be a really quick way to try and calm muscle tension and allow them to get moving. Because often when you have a flare up or a bad day with pain the last thing you want to do is get moving because it hurts so much. So spending five or ten

minutes doing some 7:11 breathing can help to calm the nervous system and then allow you to move more freely.

Evans: Well the first thing I notice when I'm doing it, and I'm trying to do it while you're talking as well, is that my shoulders drop. If I have had tension in my shoulders, things seem to be falling downwards.

Rogers: Exactly, and that's a very good way of describing how the approach works. We do carry a lot of tension in our shoulders and in our neck, and people often say to us that the 7:11 breathing method can immediately calm that tension down. Just through some simple techniques, people may notice that they, if they're doing it lying down that they start sinking into the bed. They often find when they're doing it that if they have racing thoughts, that it helps to calm those racing thoughts and they can think more clearly. Because one of the other problems people have when they have a flare up in pain, is that they often fear the worst, they think the worst, they have racing thoughts such as I'm never going to get over this, how can I ever respond to this, nothing will ever be the same.

Evans: They call that catastrophising don't they?

Rogers: They do call it catastrophising, and it's recognised as an important factor in predicting how long a flare up will last. Now I was told a few years ago that there's this evidence that catastrophising was linked to delayed response when people have a flare up, and I found that rather odd, how can what you think influence how quickly you recover from back pain?

But I soon noticed and recognised in my patients that those that were thinking the worst, that had a catastrophic response, that often ended up in A&E, or were calling the doctor out in the early hours of the morning often took longer to respond to a flare up than people that actually saw it as a normal part of who they were, that had a active action plan to recover, that often thought I'll get over this, I just need to apply a few principals over the next few hours and I'll recover. And I started to recognise that this concept of catastrophising was very important in peoples recovery, and again using the 7:11 breathing and encouraging people to reframe their thoughts when they get an episode of back pain, they often find they recover much quicker and get back to life quicker.

Evans: You talk about goals and dreams, now a dream is me wanting to run a 100 metres in half a second. That is not a goal, that's a dream. So how do you stop my dreams influencing my life?

Rogers: Goals are very helpful because they can be very tangible, we often encourage people to link goals to things that make them tick. At the start of our programmes we encourage people to think about goals that are meaningful to them, not meaningful to others around them. So we ask patients to think about what's brought you here, what is it that you want to get better in terms of quality of life, to help yourself to recover. It may be that they want to walk round the local park, it may be that they want to go back to playing badminton, it may be that they want to be able to go out dancing again. Those goals are very helpful and they're very tangible, they're very achievable.

Dreams are often a little bit more abstract. So a dream might be something that an athlete has, they may dream that they want to win an Olympic gold medal. There are things that they can do that are within their control that are related to goals, i.e. they can train harder, they can get their bodies stronger, they can influence a lot of factors around their own individual performance that will give them the best chance to get that Olympic medal. But there are things that may get in their way that prevent them from gaining that Olympic gold medal. An athlete may be a cyclist who crashes in their Olympic final and they don't achieve their dream, but they've got themselves ready to win that medal, but because of other factors external to them they haven't been able to achieve their dream.

Evans: They talk about SMART don't they, what's that?

Rogers: So SMART is quite a commonly used system for helping people to set goals. SMART stands for Specific, Measurable, Achievable, Rewarding and Time orientated. So a specific goal might be I would like to be able to walk to the top of Mount Snowden. Measurable: you may say you want to be able to do it within three hours. Achievable would be that you can do it, that you have the capacity to do it, that you have the physical ability to do it. Rewarding: you may hate climbing up mountains so it wouldn't be a useful goal for you, so if you *do* like climbing up mountains and feel good at the top it would be rewarding. And Time orientated would be to say I'm going to achieve this in three months' time.

By using that recipe it really helps to pin people down to an activity that is related to their health related quality of life, that they can achieve within a set amount of time and when

they've achieved it, look back and say I did it. It's a very effective way of helping people to recover from all sorts of health problems.

Evans: And the achievable bit, I should imagine, is the bit that distinguishes a goal from a dream. A dream is something that you can't necessarily achieve?

Rogers: Correct, there are other factors within a dream that may make it difficult to achieve, you may still be able to do it, but there are other factors that may prevent you from achieving it. So within back pain, it may be that someone has a particular job that they haven't been able to do for a while, it may be that that job involves a significant amount of activity that they have lost their conditioning to be able to do. They may be able to do that job alongside some other tasks, but they may not be able to physically get back to doing that job in its entirety.

So sometimes people have to learn that they need to do things differently to achieve their goals, and change how they do activity. Within pain we see lots of people who, they don't avoid activity, they have a tendency to overdo it they push themselves too hard, and when pain strikes their function becomes significantly worse, and it's often because they've been pushing themselves too hard for too long and their body gives up on them.

Evans: They call that boom and bust.

Rogers: They call that boom and bust, and it can be just as much a problem as people who avoid activity due to back pain. So what we have to encourage those people to do is to recognise their tendency to overdo it all the time, and look at different ways in which they can manage their activity during the day so that they are having a measured approach to activity, rather than overdoing it all the time.

Often when people suffer with recurrent flare-ups in pain it's because they don't learn that overdoing it all the time results in another episode of pain. Now when you think about that, what we have to do is encourage people to change their behaviour, and of course behaviour change is a psychological approach. I know I keep going back to psychological approaches, but they have such a wide variety of use within back pain.

I have seen lots and lots of people who have done manual jobs in their career, and when they were younger they could function at a very high level for a long period of time without any problem. When they reach 40 or 50 they often find that it's much more difficult to work at that pace. They should still be able to do their job, but they may have to do it differently.

They may have to kind of think smarter about how they do their job: so instead of getting everything done in the shortest period of time, they may just do things slightly slower, so they're still productive, but they're not going into a boom and bust pattern. Often as we get older, the body does become a bit stiffer, activities that we could do as a 21 year old become more difficult, but it doesn't mean that we have to give up on them we just have to do them differently, learn ways to do them differently. And maybe spend a little bit more time stretching and doing breathing exercises and really planning our day, rather than going gung ho into it and wondering why at three o'clock we're flat on our back unable to do anything.

Evans: And with an ageing working population that's going to be increasingly important.

Rogers: It is and I think that's a very interesting question because we do recognise that there are a group of people who have a manual job, they may have never had any significant academic qualifications, all they've ever done is manual work and they rely on their body to do their job. When they get to 50 or 55 they're finding more difficulty. And some people in that group will develop what we call frailty, they become deconditioned, and muscles we know start to become a bit weaker as you get older.

So that group of people, who have always done a manual job, can often be quite challenged by being able to continue working due to the changes in their body and nervous system. So in the future we have to think about how we help those older workers because often they have to retire early, they often struggle to function and have a good quality of life outside of work. And I think it's a very interesting area of research to look at, as to how do we help those older patients who are still trying to function, but struggling, what strategies can we put in. Should be looking at helping older workers to do different types of work to what they would be doing when they were younger, and looking at exercise and relaxation strategies that can help them to continue functioning in the long term.

Evans: But we should be doing that now and not wait?

Rogers: We should be doing that now, and I think that is again another interesting question. Some of the responsibility is the responsibility of each individual, we know that exercise and activity can help to maintain the health of the musculoskeletal system. So encouraging people to adopt healthy behaviours through their life, to eat well, not to drink too much, not to smoke, to look after their weight, to exercise regularly. We know these things can help musculoskeletal health in the long term.

But it's also the responsibility of employers to look at ways in which people can work differently as they get older, and it's also the responsibility of society as a whole to try and encourage exercise based approaches and encouraging people to keep physically active as they get older.

Evans: That's physiotherapist Dave Rogers, and you can read a review of his and Dr. Grahame Brown's book 'Back to Life' in the Spring 2017 edition, that's number 69, of Pain Matters, that's the sister publication to these **Airing Pain** programmes. All details are on Pain Concern's website which is www.painconcern.org.uk. And you can download transcripts and all editions of **Airing Pain** from there too.

As always I'll just remind you that whilst we in Pain Concern believe the information and opinions on Airing Pain are accurate and sound based on the best judgements available, you should always consult your health professional on any matter relating to your health and wellbeing. He or she is the only person who knows you, your circumstances and therefore the appropriate action to take on your behalf.

Now we've concentrated solely on the psychological approach to rehabilitation, but many people with back pain will still push for an MRI scan or X-Ray to diagnose the extent of the problem. David Rogers to finish this edition of Airing Pain.

Rogers: There is a general preconception in society that an X-Ray or an MRI scan will tell us what is wrong with our back. We live in a modern medical world where there are lots of investigations and procedures that can tell us exact diagnosis for all sorts of problems, but unfortunately despite numerous papers, research papers, with back pain MRI scans and X-Rays can't tell us what's wrong. Interestingly studies have been done on groups of people who've had X-Rays and MRI scans and they've compared that group to a group that hasn't had X-Rays and MRI scans with back pain, and the people that haven't had X-Rays and MRI scans with back pain have actually had better outcomes. So the evidence is telling us that investigations such as X-Rays and MRI scans in people with common, simple low back pain, where there is no serious pathology, actually make people worse, prevent their recovery more than a group who don't have investigations.

The explanation that we give to people as to why pain persists is much more to do with explaining how the nervous system changes from the tissues in the periphery, in the region of the back, how the nervous system becomes sensitised, the messages to the brain from that area become sensitised and wind the system up. This is very new information for a lot of people and sometimes difficult to take on board, but if people ask us why pain persists and

what's causing the pain it's usually down to the nervous system. But it's quite a new area of practice and it takes a bit of time for people to accept that, compared to a structural cause to pain such as I've slipped my disc, I've got disc degeneration. We know things like slipped discs and disc degeneration are common in people who don't have back pain, so that explanation, which was the explanation I used many years ago hasn't stood up to science. What is standing up to science is this idea that when pain persists it's the nervous system that's become sensitised. Relaxation, exercise, understanding your pain, reducing the threat associated with pain are all things that can calm that nervous system down and promote recovery.

Getting this new message across to the general public is a very important aspect of how we can help people to recover from back pain and my opinion is that there aren't enough people doing it at the moment despite strong evidence that this is the best way to approach back pain.

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