

# Perspectives on the biopsychosocial model - part 3: Patient example - using the shopping basket approach and graded exposure.

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## Introduction

The aim of this final article in the series is to show how some of the issues discussed in the previous two parts can be made sense of, reasoned and used in the practical management of a patient with ongoing and quite disabling back pain. Readers are advised to review these two articles as well as the chapters by Paul Watson and Nicholas Kendal in *Topical Issues in Pain 2*, chapter 8 by Chris Main and Paul Watson in *Topical Issues in Pain volume 3* and Heather Muncey's chapter 7 in volume 4. The case histories and pain management chapters in the *Topical Issues in Pain* series (1-4) are also well worth reviewing.

Some of the details of the dialogue that I had with the patient are reproduced to illustrate the importance of the type of information gathered in the context of the biopsychosocial model. What should become clear is that patients' interpretations of what they have been told or have heard is often detrimental. This adds a particular caution to us as clinicians - to think before we speak and to consider the implications of some of our traditional diagnostic language (Hafner 2002). Certainly, much of the type of information illustrated is not emphasised in standard training approaches that for the most part are dominated by the primary goal of finding a structural cause to direct treatment towards.

There may be some issues in this case history that therapists could find contentious. The aim of the article is not to present a case and suggest that this is how it *must* be done, rather it is to present a few practical ideas that may be helpful in the management of simple acute or more complex and more chronic patients in the light of

the biopsychosocial model. Arguments can only be put briefly within the confines of an article like this.

## Lynn: Her history and the impact of her problem:

Lynn is a 40 year old farmers wife, she is overweight but normally reasonably active on the farm as well as doing the farm business paper/computer work and bringing up two children (11 and 13 years old).

Her problem started when she was 16 years old – there was no specific incident but it flared up the day after doing a lot of house painting. She rested in bed for 3 to 4 days and recovered, but recounted episodic problems ever since. During the early 1990's the problem got progressively worse and developed into sciatica.

Surgery was performed in 1996 – she told me she had a discectomy – and that the surgeon said her lower disc was 'shattered'. The operation cleared the pain in the left leg and it never returned. However, it left her with ongoing problems with the low back which she described as a continuous 'ache' and that she had come to accept as part of life. However, on top of this ongoing ache, she described recurrent flare-ups that last 2-3 days which occur every 2- 3 weeks. During the flare-up she is unable to do her normal work or run the household. She rests for most of the time and the flare up usually settles back to 'normal'. In the last 6-9 months the flare-ups were becoming a great deal worse and starting to last longer and longer. In between episodes her normal ache is almost 'double' its normal level. Her current episode had lasted for 3 weeks and was not getting better. Rest was just not working, and even modest activity was making it worse too – she was now desperate and had no idea what she should do. On her last visit to the Dr it was suggested

that she try physiotherapy in addition to the extra tablets she was given (Amitryptiline). She had just had an X-ray and was awaiting the results.

At this point I asked about other treatments, their effect and what she had been told by the various practitioners she had seen. - *'Over the years since the operation I've just coped with it, once I saw an osteopath who was weird, he made me stand up with my arms out in front of me with my eyes closed and did some other things, then told me I had unequal arms and legs and that it would take about 10 to 15 treatments to cure. I didn't go back, he was like a second hand car salesman. Then a few months ago I tried a chiropractor who first of all said that I had a pelvic alignment problem which she could easily fix. I had 5 or 6 treatments and was no better. She pulled my legs, twisted my back and pushed on it and on the last visit she looked at my mouth and said my face wasn't symmetrical! Then she said she wanted me to go back to a surgeon again as I had some sort of bone damage problem in my back. I also had a few sessions with a physio who gave me weird little exercises that hurt so I gave them up. I think she just wanted to give me a sermon and discharge me. She reckoned my back was unstable from the operation, which when I think about it makes me a bit anxious.'*

I then asked her what she understood was going on with her back.... *'I have this vision that ever since the operation when my discs were removed, two of my vertebrae are sitting on each other – bone on bone with no cartilage or protection, and that my whole body weight is concentrated on this area at the base of my back, and that it is about the size of a 50 pence coin. It's the bone on bone feeling – like two shin bones pushing together hard, that is what it feels like...'*

*'Has this had any effect on the way you move and load your back?' - 'Yes, I'm basically having to be constantly careful, any lifting or pushing like vacuuming makes the ache feel like a pressure and I often think that the bone is going to collapse and make things worse. I worry sometimes about being paralysed'*

*'What do you think has happened more recently to make things so much worse?' - 'Well, the Dr said that I have degenerative disc disease, the chiropractor said it was bone damage – I guess it's crumbled a great deal more for some reason. No one seems interested and it seems to be*

*because none of their damn treatments work. Its like its my fault. I'm starting to think that I should prepare for life as some kind of immovable blob.*

*'I'm now wondering what you're thinking about me and what you are expecting or hoping from me!' - 'Well, I've reached the stage of not knowing anymore – I'll try anything, my husband has a friend who had a very long term problem, apparently you saw him and he managed to get fitter and keep going with his work. That would do me, but I want to know if what I have can be fixed or whether I have to live with it. I want to get fitter but I can't because of the pain. Do I give up what I'm doing or do I carry on? What's the worst scenario?..'*

*'OK, I've noted all that and before we do anything treatment wise I want to try and answer all your questions, give you as much honest information as I can and then suggest what can be done – from your part as well as from my part..... I assume that you are quite willing to be involved in helping yourself if you can – rather than being totally reliant on me doing all the work?'*

*'I'm relieved to hear you say that to be honest, I'm fed up with tablets and I've had no benefit from people pushing and shoving me, I feel I want to try something for myself but I'm frightened of just stirring it all up or damaging something.'*

I explained that there are nearly always ways of working round pain and getting the body physically confident again, especially when the patient is willing to try, to experiment and to learn how to problem solve.

It seemed she had a major feeling of vulnerability in her back.

I then asked her about the recent X-rays – did she feel that the X-rays were important? - *'Well, yes I do, but the Dr only ordered them under pressure from me – every time I asked she said that they would just show the operation plus normal wear and tear for my age!'*

Her results were due in a few days and I asked her to bring the X-rays in with her on the next visit so we could actually see.

The 'conversation' continued and more information came out. Much information like this is only revealed in response to carefully worded questioning and listening:

- For the last 6 months she has had very poor nights due to the pain and is glad to get up at 5am every day. In fact she said that she dreads going to bed, and that for the previous two weeks she was getting two hours maximum sleep a night. She was simply unable to get comfortable. She mentioned that after the operation she had a new bed which helped, but not anymore. I asked her what it was about the nights that were a problem – *‘I just cannot get comfortable for more than a few minutes and I get mad with the pain, I clench my fists with frustration and I sometimes break out into a sweat with it’.*

On a scale of zero to 10 how would you rate it at night? ... *‘It’s probably about 5 or 6 sometimes 7 – its just annoying enough to give you a hard time all the time, if it would just go to about a 3 or 4 I’m sure I could sleep better....’*

- When she gets out of bed, she takes all the tablets (Amitriptyline – an antidepressant used for neurogenic pain; Robaxin, a muscle relaxant and Solpadol – an analgesic containing a mix of paracetamol and codeine). She then sits in a chair in the kitchen before the family get up and rocks back and forth for half an hour which seems to help and allows the pills time to take effect. She describes the mornings as ‘terrible’ and hates having to take tablets.
- Further enquiries about the tablets revealed that she didn’t understand what they all were or what they did. Her overall approach was to try not to take them and only take them when the pain got unbearable.
- Through the day she could manage to sit for up to 30 minutes bolt upright with a cushion in her back. Even then she feels restless and wriggles for most of the time.
- Pain is deep in the sacrum spreading laterally – it is a constant dull ache.
- A sharper pain stops free movement – for example, walking she feels stiff and if she tries to walk more it worsens.
- She says she is very wary of movement and making it worse.
- Her current pain management (apart from being so reliant on tablets) includes the use of: deep heat cream, she likes heat/hot bath but once out of bath tenses with cold even if the bath is red-hot and the bathroom very warm. A very hot

shower helps, she ‘hurts it with heat’.... She also likes pressure in the back. Overall, nothing is really effective for long and she feels that the pain has a mind of its own. She is particularly disturbed that she can no longer get anywhere with simple resting and taking it easy – whatever she does seems to aggravate matters.

- With activity she normally tends to keep going until the pain forces her to stop. At the present time however she is unable to do her normal work on the farm, including the paper work as she cannot sit comfortably to concentrate for more than 10 minutes. The pain is getting to her and she is finding it difficult to concentrate on anything for very long. She hasn’t worked normally now for nearly 2 months.
- She admits to being not good at relaxing, describing herself as ‘workaholic’ taking little time for herself and her own physical and mental well-being. She hates doing nothing, making the current intense pain problem a real test mentally (she admits being tearful quite often with frustration).
- Her family are very supportive and being very helpful with household chores etc. Here, I asked the simple question ‘Are they allowing you to do anything?’ She replied – *‘It seems like they are watching my every move all the time, the kids go ‘don’t do that mum, don’t move, we’ll do it, would you believe it! My husband has stopped me doing anything outside and he’s covering all the paperwork now!’.* I responded, ‘How do you feel about that?’ – *‘Its really nice that they care for me but deep down you feel useless and that gets you annoyed.’*
- She had been given confusing advice. .... *‘One minute they say exercise, then I go back worse and they say stop and rest if it hurts, I’m now getting ‘do what you can’ - I’m confused to be honest’*
- She is not doing any form of exercise. She said that she is happy to be on her feet for up to 15-20 minutes and that to walk for anything more than 10 minutes causes a significant increase in pain. Prior to 5-6 months ago she quite often used to walk for up to an hour. A great deal of her work involved packing and collecting broccoli and flowers from the fields with other farm workers.

## Illustration of reasoning using the 'Shopping basket' categories:

### Compartment 1: Biomedical reasoning

There is not a great deal to be gained from agonising over what might be 'wrong' here. Lynn is becoming progressively more disabled by ongoing back pain – there are almost bound to be some changes that can be found on standard X-rays and scans and on which a 'structural' diagnosis of some kind can be made.

There are several important questions to consider – some now and some perhaps later on, depending on progress during management:

**1. Is there anything seriously wrong, are there any red flags for serious disease, serious injury, or nerve root involvement? In other words should her problem be 'medicalised'?**

It does not look like it, this scenario seems quite reasonable and is quite commonplace. There are three possible red flags of note so far:

*Firstly*, she has night pain. Note however that in the RCGP guidelines (see Waddell 1998 chapter 17) the phrase 'severe unremitting night-time pain' is used. Note how I expanded my enquiry above to check her night pain and its behaviour. A comment is that it is very difficult to get to sleep when you are worked up over something. Adrenaline keeps you awake and once it's around it takes a long time to settle away again. Lynn might benefit hugely from better sleep management and a better approach to the pain during the night (see below).

*Secondly*, she has marked pain on rising in the morning. A thought, though unlikely, is that there may be an inflammatory disorder like ankylosing spondylitis. What is important to clarify is the presence of 'marked morning stiffness' and a persistence of limitation of spinal movements in all directions. This may need clarification.

*Thirdly*, she has in part 'non-mechanical' pain (pain that is not influenced by movement or position). For this to be a serious consideration the guidelines require non-mechanical pain to be constant and progressive.

*All in all the problem looks like a typical downward progression towards chronic incapacity, chronic pain and associated high levels of distress rather than a condition that is amenable to medical/surgical approaches. The red flags, and the potential for something more serious should always*

*be kept in mind however. As therapists commonly dealing with similar problems we need to feel confident with what we are dealing with and to then pass on this confidence to the patient. Unfortunately, this is not at all easy and takes many years of careful clinical practice and observation. Knowing the 'red flags' very well is probably the most useful starting point.*

**2. Does medicine have anything of value to offer here? For example, is surgery an option? Would an epidural be of benefit?**

Repeat spinal operations for pain problems have a very poor record and are unwise. There are no indicators for spinal surgery so far anyway (see Waddell 1998 for further details). Epidural is a possible *part* of management – it should not be seen as a long term cure or a procedure to be performed in isolation from good rehabilitation. Better use of medication, discussion about the types of medicine and what they do and are for could be very beneficial. There may be an opportunity to decrease or even stop the use of medications if progress is favourable.

**3. Could referral to a specialist help? Or, could it make matters worse?**

Inappropriate referral of patients like Lynn are commonplace. It is very easy to pass the buck like the chiropractor did and hand the patient back to the Dr. with the implication that the problem is too far gone to be helped conservatively. We all do it. Inappropriate referral to specialists who are not interested and have no wish to get involved with patients like Lynn may be detrimental serving to merely add to the frustration. Referral may be of value when requests by the therapist are made for clarification for the possibility of something serious or unusual in a patient's presentation. In my letters to specialists I always write something like:

*'If there is nothing seriously wrong and nothing you can do to help please could you reassure the patient that their 'spine' is strong and that the most important thing the patient could do for their future is to get their spine strong, flexible and confident again with me ....'*

You need a good relationship with your consultants to be able to say things like this!! But its important

stuff and to me, a big part of their role – i.e. reassurance from the big white coat – can be far more powerful than anything I might manage.

#### 4. Was the x-ray necessary and is it worth having any more tests?

While the X-rays themselves are likely to be of no great value in a biomedical sense, patients like Lynn often find an X-ray and an open viewing and discussion of it incredibly useful. A vital component of the discussion is that the spine's 'normality' and strength is pointed out rather than over indulging in the importance of things like minor displacements, narrowing or osteophytes. Remember, an osteophyte is biological adaptation in action – the outgrowth of bone around a disc secures and further strengthens it – a much better way of explaining things than via the traditional 'pathology' (fear creating) based models we are taught.

Narrowing of the gap between vertebrae due to changes in disc structure and makeup is on the one hand a pathology -'spondylosis' yet on the other 'normal age related change'. The disc that is there is still a very tough structure.

Patients like Lynn are hardly going to feel happy doing spinal exercises if they feel that their spines are weak and may have something bad wrong with them and that may re-injure. Having an X-ray and an open-minded positive discussion of the findings can often be a significant moment in 'moving-on' to a confidence-building phase. It is good to point out that the changes on x-ray are all the more reason for getting the supporting back muscles stronger and fitter.

**A consideration of adaptive versus maladaptive pain** is well worth contemplating. In every patient with musculoskeletal pain, the simple question to ask is: *If this pain were to go completely, at this instant, could this patient perform normal movements and normal activities?* I believe that in the majority of musculoskeletal pain problems that physiotherapists throughout the world see in clinics and outpatient departments - the answer to this question is invariably 'yes'. It's my opinion (a daring one perhaps) that by far and away the majority of patients that I have seen in my career have far more pain than their tissues that hurt or refer the pain actually need – the majority of pains are therefore for the most part 'maladaptive' pains and the underlying biomechanics and

tissue strength are really more than adequate to begin progressive rehabilitation and restoration of normal function.

For me, Lynn has maladaptive pain – Even without doing a physical examination, with all the information so far - I have no great fear of 'structure' (but always mindful to be proved wrong). The most productive stance to take is to view the tissues of her back, especially the supportive muscular system, as being grossly deconditioned, having a long way to go to reach a modest standard of fitness (see Muncey 2002a). 'Reconditioning' is likely to take time and require quite a lot of hard work over quite a long period. The idea is not to label the patient as having 'maladaptive' or 'unhelpful' pain and then put them through exercises that highly stress and strain – this is simply not compatible with the concept of 'graded exposure'.

Maladaptive pain means maladaptive pain mechanisms.

#### Compartment 2: Psychosocial barriers to recovery

Recall the ABCDEF and W categories which neatly compartmentalise the 'yellow flags', i.e. the unhelpful psychosocial features of the patient presentation that may present barriers to normal recovery of function. These are more than issues to be acknowledged, they need to be dealt with as part of an 'in parallel' management approach geared to improving the potential outcome.

##### A – Attitudes and Beliefs:

- The finding that she has stopped working, is doing far less round the house and is starting to be avoidant suggests that she likely to be fearful of moving, fearful of pain and fearful of doing further 'damage'. She certainly admits to being tense with normal movements. 'Fear-avoidance' is a major consideration in the generation of pain related disability (see section 2 in Topical Issues in Pain 1; also, Vlaeyen and Linton 2000). A great many patients believe that movement or activity will further damage them or cause a great deal more pain. However, in combination with sound information and reassurance, when they are given a safe environment and time to build up confidence again patients find that they actually can perform the activity or exercise. As we will see, these issues are particularly relevant to Lynn.
- Her attitude and belief about her pain is erring towards – 'its becoming uncontrollable', 'its bad damage' – messages that have not really been

helped by what she has understood from her Dr, the Surgeon and the other therapists.

- However, on the positive side, she is not 'passive' – she is looking for 'active' help that she can be involved in, rather than seeking a cure and taking no responsibility.

#### **B- Behaviours:**

- She has significantly decreased her activity levels and stopped work for quite some time. Although not continually resting, when she is active she is doing very little. In essence, as per the yellow flag guide, she has 'reduced activity levels and is withdrawing from activities of daily living'. She has basically reached a stage where she is losing the fight to cope with the problem and starting to 'give up'. Doing nothing, being unoccupied also allows more time and attention to be given to pain which may provide an unhelpful neurobiological medium for pain learning and pain memory.
- When she does do physical activity she tends to push until she is unable to cope – she is not 'pacing' activities or rest at all well.
- Sleep pattern is very poor.
- She is becoming reliant on medication but not taking it in a way that is likely to be most effective.

#### **C – Compensation and financial issues**

- Lynn's inability to do her normal farm and paperwork tasks was putting pressure on her husband to work harder. Result – feelings of guilt, frustration and anxiety. Negative mood states like these are not at all helpful to recovery behaviour or recovery physiology (Main and Spanswick 2000, Gifford 2002).

#### **D – Diagnosis and treatment issues.**

- She has had no helpful advice as to how to keep going and maintain some level of function.
- Just note what she has been told about her back – crumbling, bone problem, unstable, degenerate – and then think what this might mean to her in terms of using her back normally, normal activity, normal movement or exercises! The plethora of diagnostic labels she has been given are excellent examples of how disability can be created iatrogenically (by clinicians)!

#### **E - Emotions**

- The problem is starting to get to her, she is losing her fight and struggling to cope. She is frustrated and distressed, and probably, if it goes on much longer, she could move towards feeling depressed. Low mood associated with this sort of ongoing pain is reasonable but unhelpful. The sooner she starts to get back some form of control, achieve a few goals and make some improvements the better. Achieving physical gains by establishing exercise baselines and targets and reaching them is an effective way of helping low mood states associated with pain and incapacity (see Main and Spanswick 2000 for fuller discussion).

#### **F – Family**

- She has a supportive family which is helpful. However, it seems that they may be being a little overprotective and taking over – adding to negative emotional feelings. Hopefully they will be supportive in her efforts to regain control and fitness. With some patients it is well worth talking to family members and helping them understand the nature of the problem and the recovery strategy. For example families can be hugely helpful with pacing of activities and encouraging efforts made. A balance can be difficult to achieve however (refs: see Toby Newton Johns chapter in Topical Issues in Pain 2 – 'When helping does not help: responding to pain behaviours')

#### **W – work**

- She clearly likes being busy and being involved in the running of the house and farm. The sooner she can be involved again and building up her input the better. There are no apparent obstacles to a graded return to work.

Overall, there are a quite a few yellow flags, but they are all quite amenable to input by a physiotherapist.

#### **Compartment 3: Disability/functional limitations**

No 'reasoning' as such is necessary here. It is quite straight forward to see that:

- She has not done any significant exercise for quite some time
- She is unlikely to be moving her spine normally
- She is not bending/lifting.

- She cannot walk for more than 10 minutes
- She cannot sit for more than 20 minutes
- She cannot stay on her feet for more than 20 minutes
- She is having difficulty resting and sleeping.

All these need addressing urgently.

Some measures will be made during the physical examination.

#### **Compartment 4: Physical impairments**

Information for this compartment is gleaned from the physical examination.

#### **Compartment 5: General physical fitness**

This is clearly low and likely a good deal lower than her normal level of fitness. Attending to compartment '3' will make a start here.

#### **Compartment 6: Specific physical fitness**

The physical examination may reveal some areas to focus on here.

#### **Compartment 7: Pain**

Her level and persistence of pain is clearly highly distressing, especially at night and first thing in the mornings. Help with better pain management via such means as activity pacing, relaxation and better use of medication is a priority. There may be a place for using TENS.

With some patients the material in the various shopping basket compartments can be discussed at this point, even before the physical examination.... In the following, note the emphasis on the positive aspects -

'When I assess patients with problems like yours I gather up all the information they provide into a shopping basket – the information provides a guide to what needs to be addressed to improve the situation. In your case I see that we already have the following, feel free to correct me or add anything else to the list:

- Help with sleeping/nights if possible. Learning some relaxation techniques may be helpful and we might spend some time looking at your sleeping posture too. It may help a great deal if we review the way your taking the medication, for example the amitryptiline if taken in the way prescribed could help here a lot.
- Better management of pain. Again a closer look at your medication – what it does and the best

ways of using it might be a good start. I want you to understand what you are taking and why and feel positive and comfortable about it all. Better timing and management of your rest and activity may help a good deal too.

- I need to help you understand a bit more about your back and what is good for it and how to better manage some of the things that seem to provoke it. I think there are a few things that could make you feel a bit more confident about it and your future. Hopefully we can discuss this next time when you have your x-ray.
- We need to get you going again physically and get you to achieve a few physical goals – hopefully to begin a process that restores your physical confidence. The key here is that if there is a problem with anything done we problem solve it and see if we can come up with a better solution.

..... and so on. I usually finish with something like – 'does all this sound reasonable?' – and invite any comments.

#### **Physical examination:**

Already with the history taking and the discussion so far the rehabilitation process has begun. The ideal is that even this far, the patient is starting to feel that someone is listening and understands and that what is being offered requires their own involvement and input combined with self empowerment and wise, open-minded, non-dogmatic advice and guidance from the therapist. I often say to the patient that getting better requires 'BO' – not body-odour, but 'Belief and Optimism'! With the add on that if I suggest something to try and she isn't keen or cannot see the point then she must say so.

When Lynn walked in she stooped forward, she looked grey, tired and very unhappy. She sat slumped with a frowned expression and rarely remained still for long. After taking the history and listening to her story I explained that I would like to see how she was managing with movement – I explained that I wanted to see what she was comfortably able to do but also to find out what she was not keen on doing. I reassured her that it was up to her what she did and that I was not going to force her to do anything she did not want to do. 'Ask any question you like at any time'... 'Feel comfortable to say 'no' .... are the sorts of things I often say at this stage.

I now examine movement in a significantly different way from how I was originally taught in physiotherapy school

and again later in manual therapy training. There the focus was on intricate details of pain and pain behaviour during movements as well as on minor nuances of symmetry and movement biomechanics, rather than on a consideration of freedom of movement, movement confidence/fear/anxiety, willingness or not to move. It's good to consider all aspects and components of movement. In the type of physical examination adopted here pain response to movement is not ignored, but its importance is somewhat downgraded. Pain talk, the use of terms like where's your pain, what's happening to the pain, how is the pain now, are only used very occasionally. Habitual 'pain talk' took me a very long time to unlearn, but being able to analyse movement in terms of pain response can sometimes be valuable too. The problems of 'over-focusing' on pain were discussed in part 1 of this series.

I have a whiteboard in my treatment room which has the following written up in one corner. When I am examining movements in a great many patients I direct their attention to it:

**The movement/activity shown – how do you feel about doing it?**

- **Happy?**
- **Confident?**
- **Not sure?**
- **A bit anxious?**
- **Not keen at all**
- **No way!**

What is being examined is the patients fear/confidence about movement. It is also starting a process of handing control to the patient which is very unusual in standard Dr/Therapist consultations. Here the patient is immediately 'allowed' to be a part of a decision making process which often instantly makes them feel less frightened, leading to the demonstration of far better movement quality. The examination also becomes part of the rehabilitation process.

The process usually involves a demonstration of a movement and then asks the patient to choose a response from the list. I did this with Lynn, first up showing her bending – I simply stood in front of her and slowly and smoothly bent forward and back up again – 'How do you feel about trying bending?' Where the examination goes depends on the response –

Lynn said -

*'Not keen at all...'*

With this response or the 'No way' response another starting position for the same movement is demonstrated. For lumbar flexion I usually demonstrate flexion while sitting – and if I perceive that the patient might be anxious I put my hands on my knees to control movement while I go forward. 'What about doing this?' Lynn responded – *'Not sure'*. This immediately tells me that Lynn is still fearful, - even the most acute back pain patients are usually willing here.

Options now are either to have a go at the movement or try another starting position, for example lifting a leg, grabbing a knee and flexing the thigh to the hip (in sitting)... or going to crook lying perhaps and 'grabbing a knee'. I decided to ask Lynn to try it -

I remarked, 'Have a little go, just go at the pace you want to, as far as you feel you want to and stop when you like, 'explore' it a bit and see how it goes.' ( I often use the word 'explore' during this type of physical examination). Lynn tried the movement and after a few gentle repetitions found that she could bend quite far. Clearly, in this position and with the quite functional movement, as in most people – the back/hip flex well. Most of us when we sit are in, more or less, full flexion.

Already a process by which movement can be achieved is starting to be revealed to Lynn. I respond with something like: 'OK, this is really good (positive reinforcement!), what I want you to start to appreciate now, and as we look at one or two other movements is that it is still possible for your back to enjoy a bit of movement if we can find a good position to do the movement in, can you see that your back bends quite well sitting, but is very poor when you stand?' If the patient asks why that might be all you need to do is talk about different loading and the greater forces that go through the back in standing ... and that as the back gets a bit fitter so it will begin to build up a better tolerance to bending from standing. Lynn then made the comment ....

*'I'm still a little worried because I've been told so often to bend from my knees and keep my back straight and that bending is bad and dangerous for backs. I've often found that sometimes I do bend OK but then later I really suffer...'*

There are two things here,

1. The notion that bending is bad needs to be hugely challenged. For the patient we can only try and make the point that bending is a normal movement - just like bending the wrist or elbow.

I try to make the point that if you have supporting muscles in good condition they will protect the joint – and mention the abdominals and back muscles and that their fitness will improve as we progress. Learning to lift sensibly and good posture and ergonomics are clearly one part of management at an appropriate time – (for Lynn this has to be a little later on).

2. That movements that are free and easy during examination yet appear to stir the problem up later is very common (tell the patient). The key here when setting early 'baseline' levels for a movement/activity/exercise, is for the patient and therapist together to set the level of exercise, the amount of movement, the number of repetitions etc etc. - at a level that the patient finds they can cope with and to then build from there (See Harper 2002; Muncey 2002a; Shorland 1998, 1998a). It is very often worth explaining to the patient that part of the process they will be going through is a 'desensitising' process – so that at first the new exercises and movements may create soreness or a bit of a flare up, but that with time so the tissues slowly get fitter, more resilient and desensitise, the reactivity gets less and numbers and effort can be gradually increased.

Lynn's limited physical examination continued, I looked at and explored extension and rotation in a similar way, I also looked at and timed her walking (50 foot walk) and timed her sit to stand (for the full battery of physical performance tests recommended for back pain see Symmonds et al 1998; Symmonds 2002). Other tests were also performed – see following summary.

The physical examination findings can be summarised and placed in Compartment 3, 4 and 6 of the shopping basket:

#### **Compartment 3: – Disability/functional limitations**

In addition to the functional difficulties noted earlier from the history taking part of assessment two measures of function, or physical performance were made:

1. 50 foot walk test – here Lynn was asked to walk as fast as she felt comfortably able along a 25 foot corridor and back while I timed her. It took her 32 seconds. For comparison I can walk it at an easy pace in around 10 seconds – Lynn was very slow, very unbalanced and often paused.

2. Sit to stand – the time taken to do five repetitions is recorded. This took her 42 seconds, again, very slow.

#### **Compartment 4: – physical impairments.**

As outlined in part 2 of this series of articles, I consider physical impairments to relate to the findings of the physical examination. Only a limited examination was performed or necessary for the approach adopted here. More detailed analysis may be appropriate later on.

Findings were:

- All movements were difficult to perform in the standard way – she was able to comfortably perform: Gentle crook lying 'rotation' to about half range; crook lying extension (pelvic rock) to just lift off the couch. Active straight leg raising (yes active!) was about 40 degrees on both sides; simple 'active-style' slump revealed confident knee extension and neck flexion. Combining the two and exploring slowly produced a sharp increase in back ache/pain.
- Her reflexes were normal and there was no sensory loss. I did not examine specific muscle strength as I did not feel that it could be examined adequately (in terms of conduction impairment) due to the level of distress/pain.
- I didn't dwell on examining her hips or knees in any detail. However, I did get her to flex her leg, 'grab a knee' while lying and she performed this quite well – demonstrating a reasonable hip and knee flexion.
- I did not do a palpation examination. One consideration with patients like Lynn is that the more one finds the worse the situation can feel to the patient. On the other hand the last thing you want the patient to think is that they haven't had an adequate examination. It is therefore valuable to ask them when discussing the situation and plan at the end... I did with Lynn – I said... 'That's all that I have time to look at today, is there anything in particular that you feel you would like me to have a real good look at next time – I'm saying this because I see patients over and over again who have come from their Dr or even a Specialist and say – 'they didn't even examine me' or ' they just prodded me about a bit for 15 seconds and then that was it!' ... anything?... *'Well the last physio homed in on this dent I have in my back, I remember her going 'ah-ha' and frowning, she said a big word for it*

*and then said I really had to get my stomach strong! I've sort of worried about it ever since, I told the Dr but she just said her back had a dent in and she's fine...'*

The point here is that it's so important to ask, find out and then deal with issues like this. Again, the patient who is fearful or who is not reassured is unlikely to be able to move on and progress with physical reactivation approaches. Believing and being told your back is weak, diseased or abnormal in some way creates an understandable barrier to recovery of physical confidence.

### **Compartment 6: – Physical fitness - local**

There is much more that could be tested in relation to joints and muscles of the lower limb as well as general willingness to move the upper limbs and upper spine. Improving movements in segments well away from the pain areas and the areas of 'fear' is often an excellent starting strategy for patients like Lynn.

### **Graded exposure.**

'Graded exposure' is a method of treatment used by psychologists when dealing with phobias. If you have some kind of phobia one effective way to overcome your fear, or at least learn to cope with it better, is to gradually be exposed to the it until you conquer it and feel more comfortable.

A different and quite novel perspective on a great many of the patients that physiotherapists see is that a major component of their disability/lack of function relates to fear and avoidance of **movement**, so called 'kinesiophobia' and fear and avoidance of **pain**. The work of Johan Vlaeyen and Steven Linton is well worth reviewing (see Vlaeyen and Linton 2000), but also see the section on fear and avoidance beliefs and behaviour in Topical Issues in Pain 1. Fear of pain/movement applies to acute pain states just as much as it does to chronic pain.

Fundamental to success are the following:

- Importantly, the individual has to want to overcome their fear
- They must realise that *they* have to make an effort and put in time
- They have to feel in control at all times
- They have to be involved in deciding on the level and timing of exposure and understand that the exposure has to gradually progress as confidence is gained and fear subsides

- Patients who fear movement and pain need to feel comfortable with the idea that exercise and getting fitter is going to help their spine rather than make it worse

Going gradually to restore range, activity confidence, strength .... Whether the problem is acute or chronic represents wise action for me. My opinion is that just as you don't suddenly stop limping with an acutely twisted ankle if you want to keep going, you shouldn't demand that an acutely shifted back stands upright and maintains it (see proposed arguments in Gifford 2002). Gradual restoration of normal function facilitates a return of confidence, while overdoing it, feeling worse from new postures or exercises tends to facilitate further fear and loss of confidence.

Graded exposure approach to patients like Lynn initially requires giving some information about their problem and what the possibilities are for it. Most of Lynn's second appointment was taken up discussing the nature of her back problem, its potential for improved flexibility and strength and the need for a general increase in her level of fitness – always emphasising slow beginnings, gradual programmes and the setting of easy and achievable goals. It was fortuitous that Lynn could bring the X-ray pictures and the report. It showed obvious narrowing of the L5-S1 disc space but the rest of the spine was quite normal looking. I spent 5 to 10 minutes showing her an articulated spine and then referring to the x-rays so she could understand what they were showing. Usefully, I have an x-ray of my own spine, taken when I was 30, which shows my 'narrowing' – L5 is nearly sitting on S1 posteriorly! Yet I have good flexibility, can lift anything you like and only get moderate back discomfort after standing lecturing all day long – and I'm nearly 50! I am fortunate not to have pain, Lynn is unfortunate. What we are trying to teach the patient is that on the one hand, abnormalities and changes in the spine are commonplace, if not normal, and that they need not prevent normal movement and activities, and on the other that better fitness and confidence are a very helpful and well established way of improving matters.

Lynn made typical comments and asked many typical questions. The following is one that many of us find a great deal of difficulty with:

*'This all sounds great, but I'm worried that any exercises and activity I do will just further damage my back and I'll*

*end up ten times worse. Another thing is that all this is not fixing my back, how can a back exercise if it's not normal?'*

My reply was: 'I hope that you can see from our discussion about your X-rays that the changes that can be seen don't mean that the spine is weak or cannot perform movements. All spines, no matter how degenerated, arthritic, full of wear and tear etc. have a potential and an upper limit – just like anyone does who starts training. That limit is usually a lot more than we think. It is important to realise that all the muscles, bones, ligaments and tendons in the back respond to exercise and activity by actually getting stronger, even those with wear and tear. If you exercise a muscle – it strengthens and so in turn the tendons, joints, ligaments and bones follow along. On the other hand, with lack of use, the spine and all these tissues get weaker. The usual scenario is that when people improve their fitness even a modest amount, they feel a lot better, more confident and they get fewer and less severe flare-ups. The only real way to find out however, is to try. The key is going at a pace you feel comfortable with.....'

'As far as fixing your back is concerned, have you any ideas about what Drs and specialists do for back pain and wear and tear – what have you heard?'

*'I see what you mean, the back operation I had was to remove a disc – this is different. I guess you can't have joint replacements for the back like you can for a hip or a knee...'*

Lynn soon reached the stage where she understood where I was coming from and my messages. I also spent some time explaining to her that some pains were out of all proportion to what was needed – the concept of maladaptive pain and the notion that hurt does not equate with harm.

The following management components were seen as important:

- Better pain management via better pacing of activity/rest (see Brooks, Shorland, Harper and Muncey references)
- Better pain management via education about medication and better use of medication
- Sleep and relaxation management as part of pain management
- Possible use of movement/stretching for pain management

- Fitness and restoration of confidence programme
- Possible physical 'impairment' related programme at a later date –e.g. for more specific findings – joint ranges, muscle weaknesses etc.
- Flare-up and set-back advice and management

There is only space here for a brief résumé of her exercise and activity programme and progress. Readers will find a great deal of useful further information on pain management, pacing, exercise prescription and flare-up management in the Topical Issues in Pain series as well as in Main and Spanswick's book on Pain management. Doing too much too quickly is not a good strategy here.

A first stage with her was to take a few simple exercises and an activity and teach the basic principles of baseline setting, progressions, problem solving and goal setting. Once proficient further activities and exercises could be added.

I often start with the simple statement, something like: 'backs and their muscles and joints like movement, stretch and strength.... Its easiest to start with movement and stretching and then begin strength a little later, but really one cannot be done without affecting the others...'. We went through some of the easy movements from the examination and she chose:

- Sitting flexion with hands on knees
- Legs side to side in crook lying
- Pelvic rocking
- Active straight leg raising

We also discussed her performance with the walk and sit to stand test in relation to normal activity and came up with the problem that she was very stiff and very fearful with it. We did some practice and soon Lynn found that from an easy height she was able to do sit to stand in a much more relaxed way (we focused on easy breathing to start with). So, she also included:

- Sit to stand practice with relaxation.

#### **Baseline and goal setting:**

She decided to try between 5 and 10 repetitions of each exercise three times a day as her first trial on the first day. She experimented over four days and found that she was actually comfortable with 5 repetitions 3 times a day as her first baseline and that she would increase by two repetitions per week for the first three weeks. The big focus was on quality – relaxation, smoothness and feeling good with the exercises rather than on pushing and doing 'numbers'. After the exercises she used diaphragmatic breathing and focused breathing for 5 minutes for further

relaxation training. She also used this technique at night to help her calm down. In this way she was starting to identify when she was getting wound up, adopting a positive coping strategy (see Main and Watson 2002) and as the result of any successes, gaining a degree of control and improving self efficacy.

After 6 weeks she reported feeling more relaxed and more confident. She was still having broken nights but the sleep she was getting was deeper and better quality. She had had a 3 day lapse, but using the tablets well, pacing her activity and rest/activity cycles (all principles taught) she was able to cope and get through it herself... At 6 weeks she said...

*'I now understand where you are coming from – I must say when I started this, I thought the exercises were pathetic and that doing 5 sit to stands was just stupid, but when I started to really concentrate on what I was doing I realised that I wasn't helping myself – I was tense, I was frowning and cross! The key has been mastering the relaxation with the movement. It's also been key to the sleep thing – I wake up now and rather than be annoyed I look at the clock and go 'great, an hour and a half of good sleep!'*

On re-examination of her sit to stand and walk times she had halved the time easily. She was pleased to see her progress. The quality and range of her general movements was improving nicely too.

*'I've improved my confidence. Having got through the flare-up OK I now feel less fearful of moving in a more relaxed way...if it does get worse then I can cope ...'*

We changed some of the exercises – *'I want to get my stomach toned up...'* We went through a graded examination of her sit-up, sit-back capability. She started her programme with doing very gentle lean backs on a chair put sideways and her feet under a settee. She then progressed to doing this on the floor - in effect what I would call a 'sit-back' – and only going half way back before coming back up. She progressed back to going to her elbows before coming back up again and finally to the floor and a full sit-back to sit-up. This took her 6 weeks to manage fully. By 6 months she was amazingly doing 50 full sit-ups.

Many other activities and exercises were broken down, a baseline found and then gradually built up. The emphasis

here is always on the starting position and exercise that the patient finds the easiest, not that which the therapist believes should be the easiest. For example, some patients prefer to start bending or extension standing rather than lying down.

The outcome should be obvious, here was a lady who was becoming progressively more disabled and distressed by her back pain and the gradual loss of her physical freedom. By learning and trying a few simple principles of pacing, exercise progression, relaxation and rehabilitation combined with some sensible and meaningful 'positive' information she was able to understand her problem from a more productive perspective and be guided back to better fitness and much better management of her problem. The whole process took about 5 months and 7 treatments, 4 of which were in the first 3 weeks. One year later she reported having lapsed with her exercises for 2 months and after about 6 weeks her problem had gone back to some of its old ways. Nicely, she had managed to get herself going again and was currently on track. She still reported having pain from time to time but when regularly doing her exercises she said that her general level of discomfort was usually very low and quite comfortable. She made the comment that living, pacing and exercising with a bad back, while hugely beneficial in that it allowed her to be normal, was sometimes tedious hard work!

## References

Note: As readers may notice this list is very biased to the 'Topical Issues in Pain series' and not more widely and formerly referenced as per a standard journal article. Even so, readers wishing to delve further will find ample source material here with plenty of further referencing within the chapters. I would also recommend that Waddell's 'Back pain revolution' and Main and Spanswick's 'Pain management' books should be seen as essential reading too.

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