

I have a client with backache....

Introduction:

Brief overview of:

1. anatomy of the spine
2. spinal curves
3. function of the spine
4. anatomy of the vertebrae
5. intervertebral disc
6. spinal cord and nerve roots

What goes wrong?

Low back pain may arise from structural problems caused by:

Acute injury

Repetitive stress

Ageing and arthritis

Habitual bad posture

Hereditary conditions

Obesity

Disk Herniation:

This is by far the most common lumbar spine pathology.

Definitions of disk herniation:

1a) Disk Protrusion:

An asymmetric extension of disk tissue beyond the vertebral body margin, usually into the spinal canal or neural foramen, which may cause symptoms

1b) Disk Extrusion:

A larger extension of disk material than a protrusion and is usually responsible for symptoms

1c) Free Disk Fragment:

A portion of the extruded disk breaks free and is loose in the spinal canal and will most likely cause symptoms

Result of disc herniation: possible local and/or referred pain

Disk Degeneration:

With aging and degeneration, the intervertebral disks lose hydration and become flattened.

The vertebral bodies respond to degenerative changes in the adjacent intervertebral disks by the formation of **osteophytes**.

Osteophytes are the circumferential bony spurs that occur on the upper and lower margins of the vertebral bodies.

Spinal stenosis is narrowing of the central spinal canal, or the neural foramen or the lateral recess by soft tissue or osseous structures (osteophytes) that impinge on the nerves and may result in symptoms. The cause of spinal stenosis is usually due to degenerative changes. It can also be congenital.

Spondylolysis

Spondylolysis is an osseous defect (fracture) of the pars interarticularis, which connects the lamina and the inferior facet joints. These bony abnormalities probably are the result of repetitive trauma causing stress fractures of the weakened pars.

Spondylolisthesis

The vertebral body with the pars defect may slip forward on the vertebral body below (spondylolisthesis) to variable extents, and can cause stenosis (narrowing) of the central canal and the neural foraminal canal, with resulting pressure on the nerves.

Hyperextension will facilitate the anterior sliding of the vertebra with the pars defect and aggravate the stenosis and nerve impingement.

Laminectomy is the removal of the lamina – the back part of the vertebra which covers the spinal canal. Also known as decompression surgery

Generalized Low Back Pain:

Four out of five people in the USA will experience low back pain at least once in their lives

It is the most common reason to visit the doctor and to miss work.

Generalized low back pain encompasses non-specific pain and stiffness in the lumbo-sacral area due to muscle strains, poor posture, emotional stress and weak musculature amongst others.

Typically this client wakes up with a sore lower back which improves after walking and moving around.

It may be due protective muscle spasm as a result of the structural conditions we have just reviewed.

There may be NO specific cause

A prospective client contacts you with back issues:

It is important to determine the scope of practice.
As a Pilates instructor you are not qualified to diagnose any condition or to prescribe treatment.

Begin by asking the following questions:

1. Has the pain been investigated medically?
2. Were diagnostic procedures performed and has the client received a diagnosis?
3. Has the client received physical therapy and/or had surgery?
4. What else have they tried in the past and how did these alternatives work?
5. Has the client received permission from the medical practitioner to exercise?
6. What is the level of pain currently?
7. What movements cause pain?
8. Which movements, if any, bring relief?
9. Have they done Pilates before?
10. What is their overall fitness and activity level currently?

With this knowledge you can make an informed decision of whether you are capable or if you need to refer out.

Starting off right with a client who has CLBP:

- It is important to proceed with extreme caution and win the trust of the client.
- Good communication with the client is essential.
- Emotional factors are known to exacerbate low back pain
- Make no promises

Check the posture for exaggerated or flattened spinal curves and scoliosis

Note their overall energy, movement and posture

In your first session use the **fundamental exercises** as an observation tool.

Some good choices of fundamentals include:

Breathing

Imprinting

Clock work

Iso-abs

Rib-cage arms

Head nods

Knee folds

Knee spreads

Judging from the above, use the information to stay in a pain-free range.

Adhering to the **introductory order**, decide which exercises you are going to leave in, take out or modify

Generally:

- Avoid exercising in a **seated position**
- Avoid rotation
- Avoid movement that causes pain
- Keep the student breathing. Watch their faces for pain or tension
- Err on the side of caution
- Watch for altered movement patterns

Remember.....every back situation is unique

Practical session: we will look at some introductory exercises on the mat and the reformer to show what we are looking for and how to use building blocks and props

Homework for the client:

The burden is to a great degree on the client

Progression:

- Follow up with the client at the beginning of the next session to see how they did after the last session
- The absence of pain and discomfort following a session will be the guiding principle
- Pain that lingers after 48 hours indicates protective muscle spasm
- Use the signs of readiness to progress
- Proceed cautiously

This is only a brief overview.

Please pursue further education if this subject interests you.

Bibliography:

- 1) Musculoskeletal MRI
Kaplan, Helms, Dussault, Anderson and Major
- 2) Differential Diagnosis in Physical Therapy
Goodman and Snyder
- 3) Atlas of Human Anatomy
Frank H Netter MD
- 4) PPS Manual

5) www.mayoclinic/health/back