chirosacademy

CLINICAL SCIENCE LEVEL 1

4 - Lower Back Pain and Neck Pain

Content

- The low back pain epidemic
- Spinal function affects brain function
- Chiropractic and low back pain
- The functional role of the neck
- Pain and the brain
- Chiropractic and neck pain
- Take home messages

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Low back pain is the leading cause of disability worldwide. It is usually caused by problems with how the spine is moving and functioning.

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The lumbar spine are the largest of all the vertebrae and bear the most weight in the spine as they support the upper body.

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- Weight bearing
- Movement

+

- Sedentary lifestyle
- Abdominal obesity
- Poor posture

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Spinal function affects brain function

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- The health of your spine can affect how your brain controls your body.
- Accurate information from the spine is important for precise and accurate movement.

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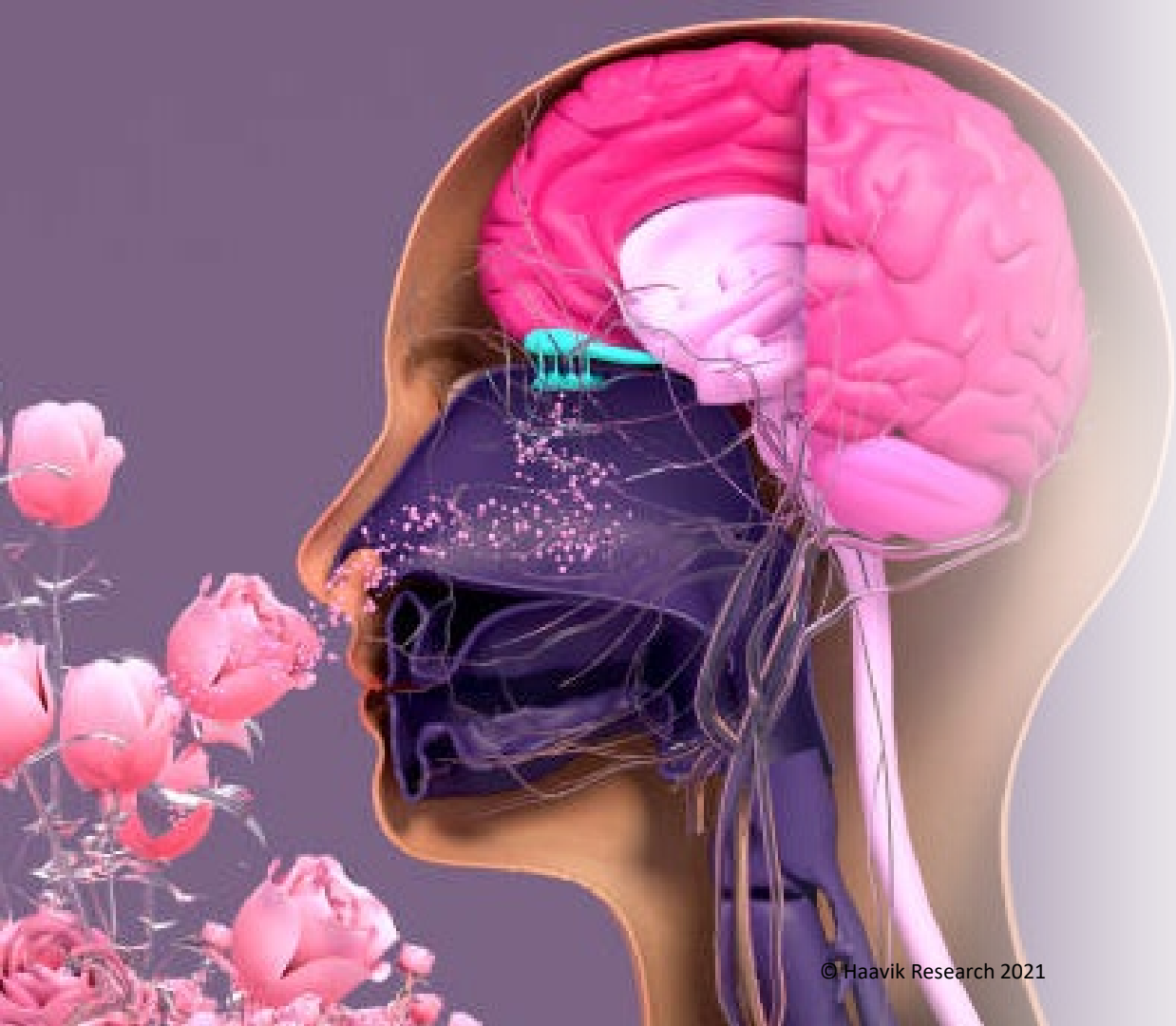

- Sensory information comes from many sources in our body, including our muscles.
- The small muscles attached to the spine send information to the brain about the core of our body.

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- If the spine is not moving or functioning correctly this can distort the messages between the brain and body.
- This can lead to poor control and movement of the spine and further problems.

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Key messages

Low back pain is usually caused by changes in the way the spine is moving or functioning.

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Key messages

Chronic low back pain can occur after a minor injury or a change in the way the spine is moving, but then the brain learns to be in pain and gets stuck in a pain pattern.

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Key messages

Chiropractic care has been shown to have a neural plastic effect on the brain and particularly affects the prefrontal cortex, a part of the brain that is involved in the feeling of pain.

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Key messages

A study has shown that people who see a chiropractor regularly, versus only when they are experiencing low back pain, have more pain-free days.

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Key messages

Studies have been done on military personnel with low back pain and have found that those that saw a chiropractor had less back pain, increased lifting strength and increased back muscle endurance.

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Key messages

Another study on military personnel with low back pain compared chiropractic care to medical care and found decreased pain intensity, less disability and fewer medication use in the group that got adjusted.

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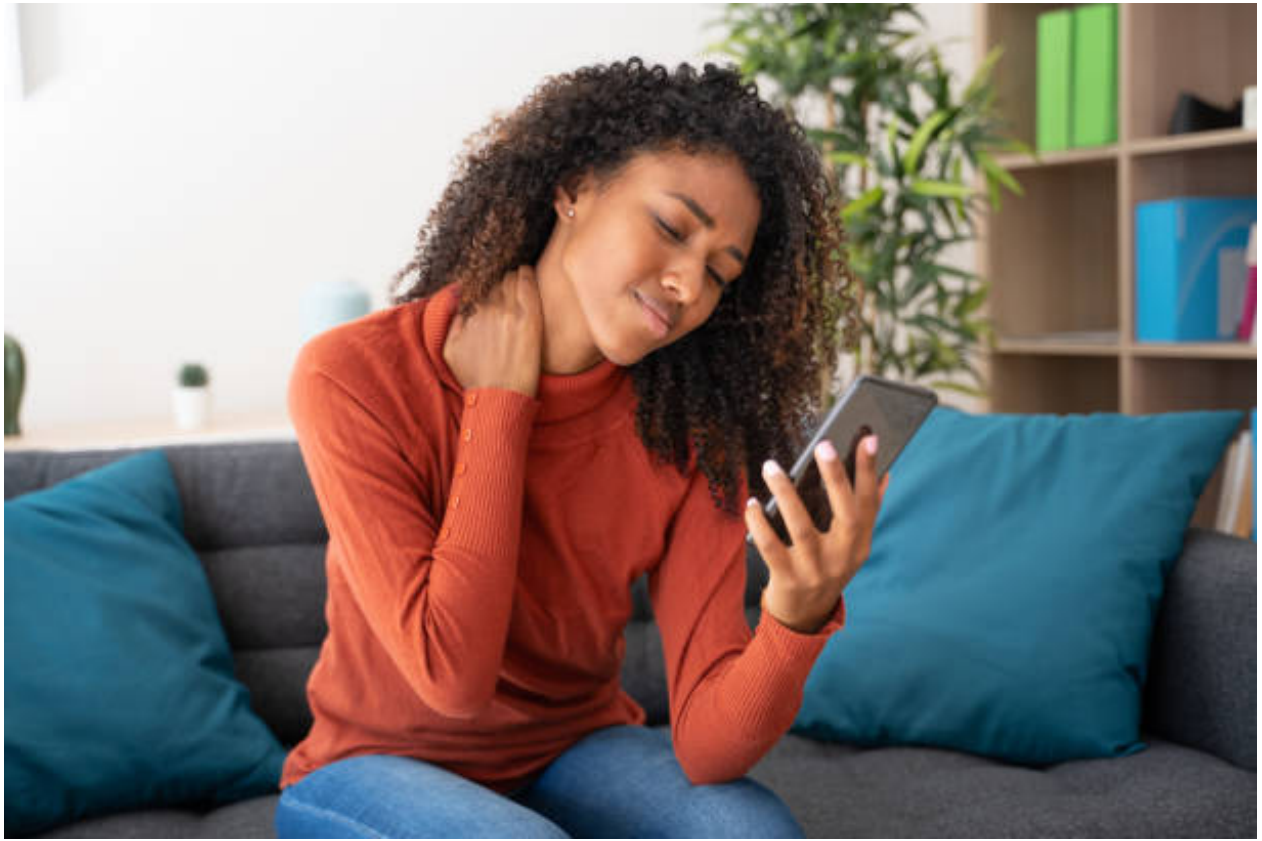

- Our technology heavy society is becoming a pain in the neck!

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The neck plays a key role in balance, posture and eye movement.

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- Neck dysfunction can disrupt the messages being sent between the brain and the body. This can affect posture, balance and movement.

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- Pain is created in the brain.
- Pain is important, it is the brain's way of preventing us from further injury.

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- The brain can create the feeling of pain even if it only senses potential tissue damage.
- Spinal dysfunction can distort the information being sent between the brain and body and may lead to feelings of pain.

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Neural plasticity

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Key messages

The brain uses sensory information from your muscles and joints arounds your spine to help control balance and posture.

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Key messages

A study looked at whether neck pain in older adults affected how the brain takes in sensory information and uses this to guide movement (sensorimotor function).

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Key messages

The study found that the older people with neck pain were worse at the sensorimotor function tests, such as control of eye movements and balance, than older people without neck pain.

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Key messages

The scientists thought that the altered information coming from the neck disturbed the brain's ability to make sense of other sensory information. This could disrupt balance and may lead to falls.

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Key messages

Chiropractic adjustments improved the ability of the older adults in this study to know where their ankle joint is, even with their eyes closed, and how fast they could take a step. Both of those aspects could be important in preventing falls.

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Take home messages

- Low back pain is the leading cause of disability worldwide. The lower spine has to support the weight of the upper body and carries the most load out of the whole spine. As well as flex, extend and side bend in large degrees so that we can move. This, combined with an increasingly sedentary lifestyle makes the low back vulnerable to dysfunction.

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Take home messages

- Low back pain is usually caused by changes in the way the spine is moving and functioning. This may have started as a minor injury but the brain learns to be in pain.

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Take home messages

- Research has shown that people with low back pain who get chiropractic care have less pain, disability, take fewer medications and have increased strength in their back muscles.

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Take home messages

- Messages from the muscles and joints of the cervical spine are sent to the brain to help control balance and posture.

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Take home messages

- Research studies have shown that older people with neck pain have decreased sensorimotor functions, such as joint position sense and reaction times, which can make them prone to falls.

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Take home messages

- Chiropractic care can improve the messages being sent from the neck to the brain, improve sensorimotor function and decrease neck pain.

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Thank You

DR. HEIDI HAAVIK

ENLIGHTENING THE WORLD ABOUT THE SCIENCE OF CHIROPRACTIC

HAAVIK RESEARCH

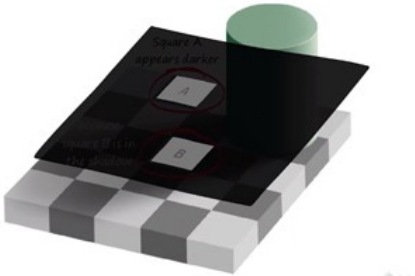
Introduction to Chiropractic Care

The introduction to chiropractic video series is the perfect way to gain an understanding of why chiropractic care may help you and your family.

The Beginners Guide to Chiropractic

In this first introductory video we explore what chiropractic is all about, and how it works, then we briefly explore the evidence informed effects of chiropractic care.

View video ›



How the Brain Perceives the World

Did you know that your brain and central nervous system are constantly changing? It's quite amazing – from one day to the next your brain is not the same.

View video ›

The Beginners Guide to Chiropractic

The Beginners Guide to Chiropractic

The word chiropractic derives from the Greek words "cheir", meaning hand, and "practikos" meaning skilled in or concerned with. The origin of the word chiropractic can be traced back to D.D. Palmer who coined it in 1895 when he founded chiropractic.

> Chiropractic care is really about total health and wellbeing

What does a Chiropractor do?

A chiropractor is a healthcare professional who specializes in the health and function of the spine and nervous system. Because of this focus on the spine, many people think chiropractors can only help with problems such as back pain, neck pain and headaches. They can often help with these issues but there is much more to chiropractic than just pain.

This is the first video in our animated series "Introduction to Chiropractic". In this video, we outline what a chiropractor does, then we briefly explore the effects of care. It is a perfect one to watch for anyone that is curious about chiropractic care, and how it can help their family.

Video References

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The Beginners Guide to Chiropractic

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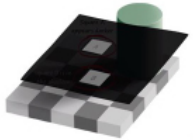


How the Brain Perceives the World

Did you know that your brain and central nervous system are constantly changing? It's quite amazing – from one day to the next your brain is not the same.

View video ›

Break the Pain Cycle

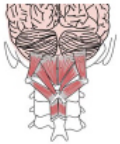
Did you know that pain is created in your brain to let you know that something is not ok within your body? Feeling pain is good because it is actually helpful and informative.

View video ›

Chiropractic Care and Migraines

Did you know that 1 in 6 people in the world experience migraines regularly? The World Health Organisation consider them to be the most debilitating of all neurological disorders.

View video ›



Chiropractic Affects your Brain

Your brain receives information about your body from the environment and your organs. Did you know that the muscles in your body are also sensory organs?

View video ›

What is that Pop?

If you have been adjusted before by a chiropractor you may have noticed a strange popping sound. Don't worry – it is just the formation of gas within a joint.

View video ›

Lower Back Pain

Scientists have worked out that at any one time, over 500,000,000 people around the world are suffering from low back pain and it is now the leading cause of disability worldwide.

View video ›

Growing Pains

We've all heard of growing pains right? But did you know that what we call growing pains aren't associated with growing? So they're not actually growing pains at all.

View video ›

Pain and the Immune System

Research studies have shown that the way you feel pain all depends on what's going on for you – and most importantly – what you think and feel about the situation.

View video ›

Chiropractic and Headaches

Headaches are a sign that something is not right. Your brain will create for you the sensation of pain if it thinks there is something wrong or if there is a potential problem.

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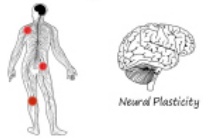

Pain is Created in Your Brain

Did you know that the scientists now know that the feeling of pain is something your brain decides that you should experience – if it believes that there is a problem?

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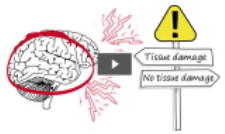

Chronic Pain

Chronic pain is the second-most common reason people see a doctor and miss work. More than one-third of people with chronic pain become disabled by their pain to some degree.

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Chiropractic Research

Research summary articles to read, download and print (members only) all backed by the latest scientific research studies.

Chronic Pain

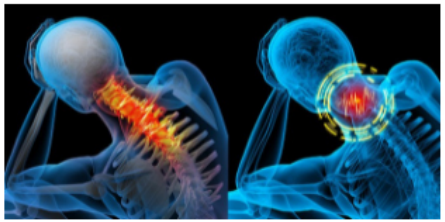
Chronic pain that has persisted for more than 3 months is no longer protective, nor informative. So, what is chronic pain and what can you do about it?

Read more »

Pain is in the Brain

Sometimes pain persists long after tissue damage has actually healed. When pain persists for more than three months we call this chronic pain.

Read more »



Neck Pain

Up to half the world's population suffers from neck pain at some stage. For some, one big problem is that it just keeps coming back, or becomes chronic.

Read more »

UNDERSTANDING PAIN

Dr. Kelly Holt
BSc, BSc(Chiro), PGDipHSc, PhD

Dr. Heidi Haavik
BSc(Physiol), BSc(Chiro) PhD

Experiencing pain is normal. Everyone experiences pain now and then.[1] Pain is supposed to be protective to make you stop doing things that may be dangerous.[2] But chronic pain that has persisted for more than 3 m hs is no longer protective, nor tive.[3] So, what is chronic pain and ut it if you suffer from it?

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PAIN IS CREATED IN THE BRAIN

Dr. Kelly Holt
BSc, BSc(Chiro), PGDipHSc, PhD

Dr. Heidi Haavik
BSc(Physiol), BSc(Chiro) PhD

Did you know that scientists now know the feeling of pain is something your brain decides you should experience if it believes there is some tissue damage in your body?[1] In fact, your brain can decide that you should feel pain even if it only thinks there is a potential threat of tissue damage!!![2-5]

It may seem strange, but it's totally up to your brain to decide whether you should feel pain or not. Your brain may decide you should experience pain even if you have no actual tissue damage yet,[6] or your brain may not create the feeling of pain for you when tissue damage has actually occurred![7,8]

heals the problem.[1] This pain is helpful and informative.[1] If we listen to our body these pain experiences can be a good thing.

But for some people, pain can persist even after the initial injury that caused it healed.[9-11,12] And for some people, the pain areas that are not injured at become non-

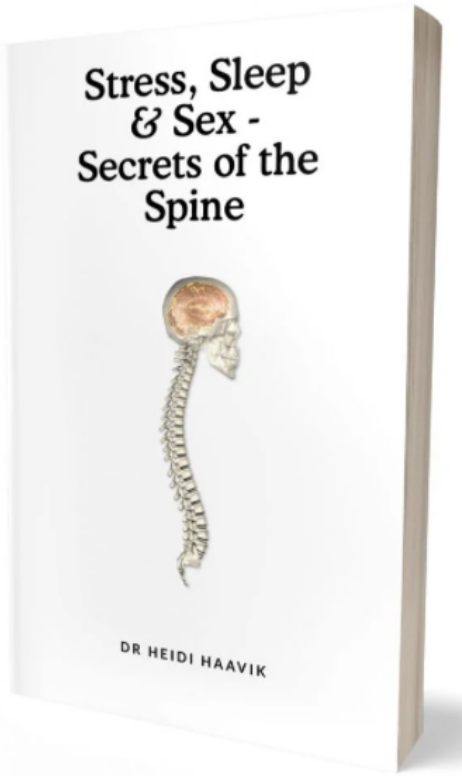
NECK PAIN AND FALLS RISK

Dr. Kelly Holt
BSc, BSc(Chiro), PGDipHSc, PhD

Dr. Heidi Haavik
BSc(Physiol), BSc(Chiro) PhD

Neck pain is very common throughout the world.[1] Up to half of all people around the world suffer from neck pain at some stage each year.[2-5] For some people, one big problem with neck pain is that it just keeps coming back, or becomes chronic, and may even increase their risk of suffering from a fall.[2,4,6,7]

Scientists know that your brain uses sensory information from your muscles and joints around your spine to help control your balance and posture and to make sure you're moving properly.[1,2] When your brain takes sensory information and uses it to help guide movements and control muscles we call this sensorimotor function.[8] One particular study looked at whether neck pain has an impact on proper sensorimotor function in older people.[7] In this study, the researchers ran a whole lot of tests of sensorimotor function, like how well the study participants controlled the movement of their eyes and how good their balance was, and they took into account their age and other conditions that they suffered from.[7]



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