How to Explain Pain?

Content

- The role of the brain in pain perception
- Pain is created in the brain
- Neural plasticity
- Chronic pain
- The sensory system
- Pain is our alarm system

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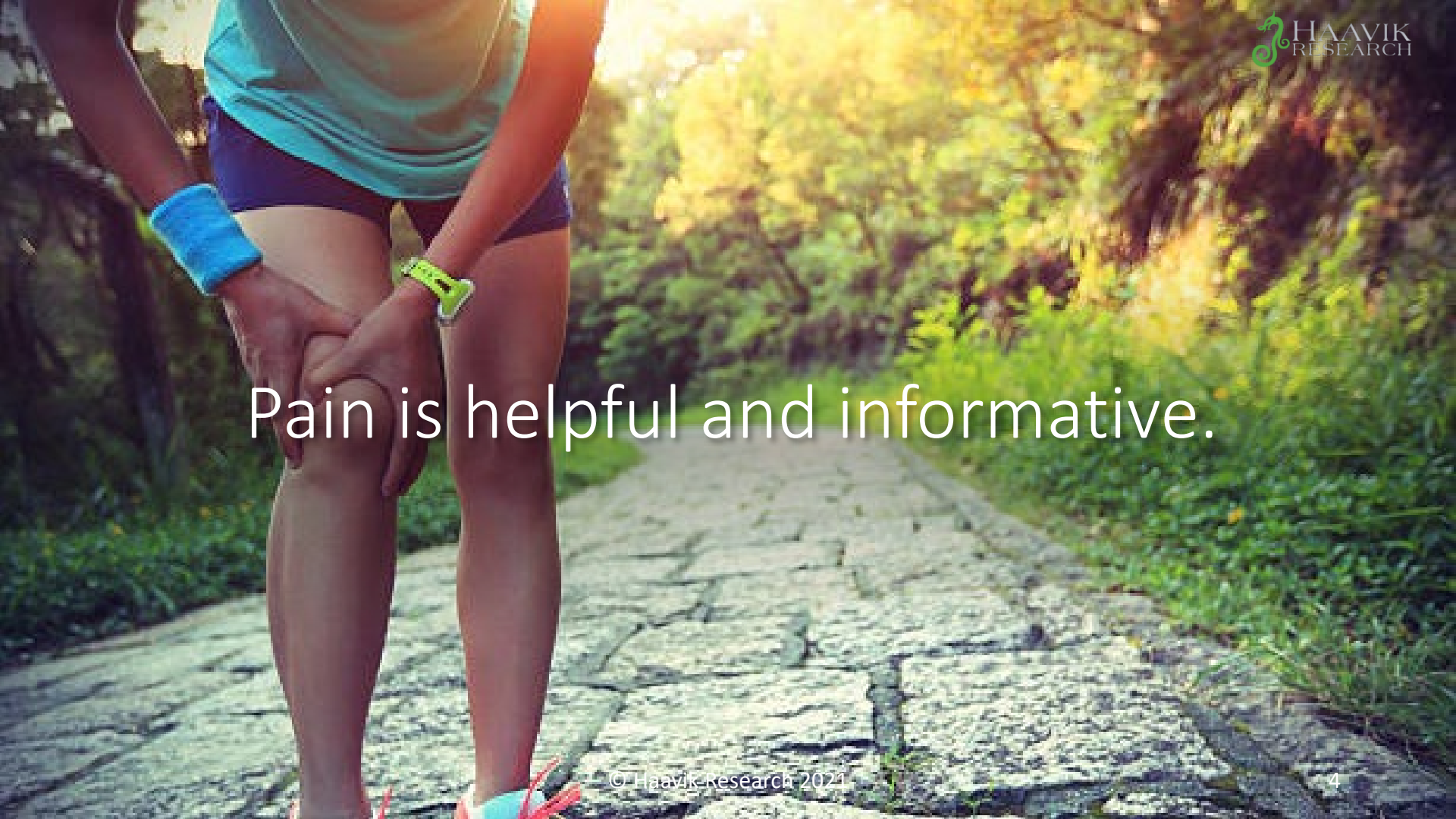
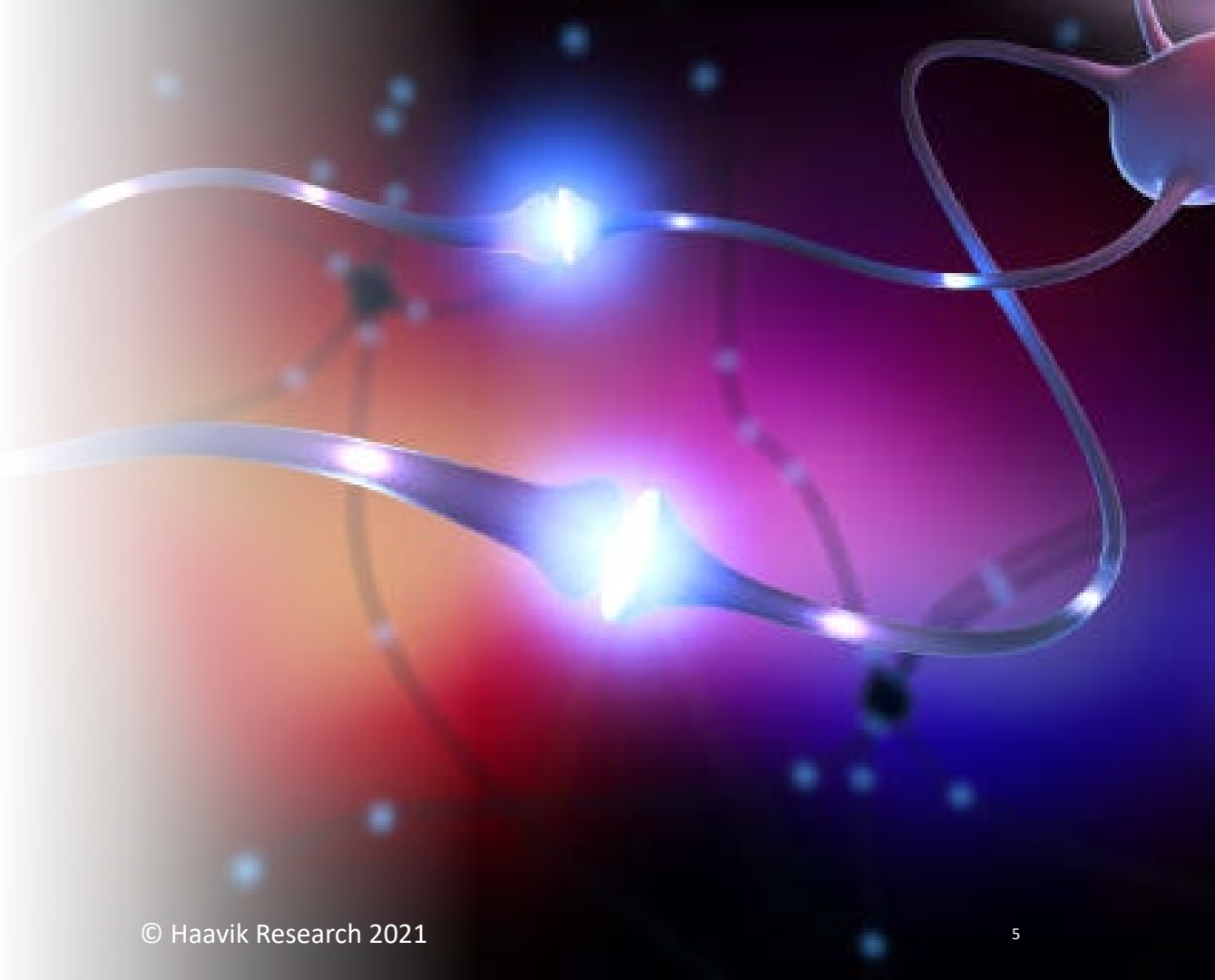
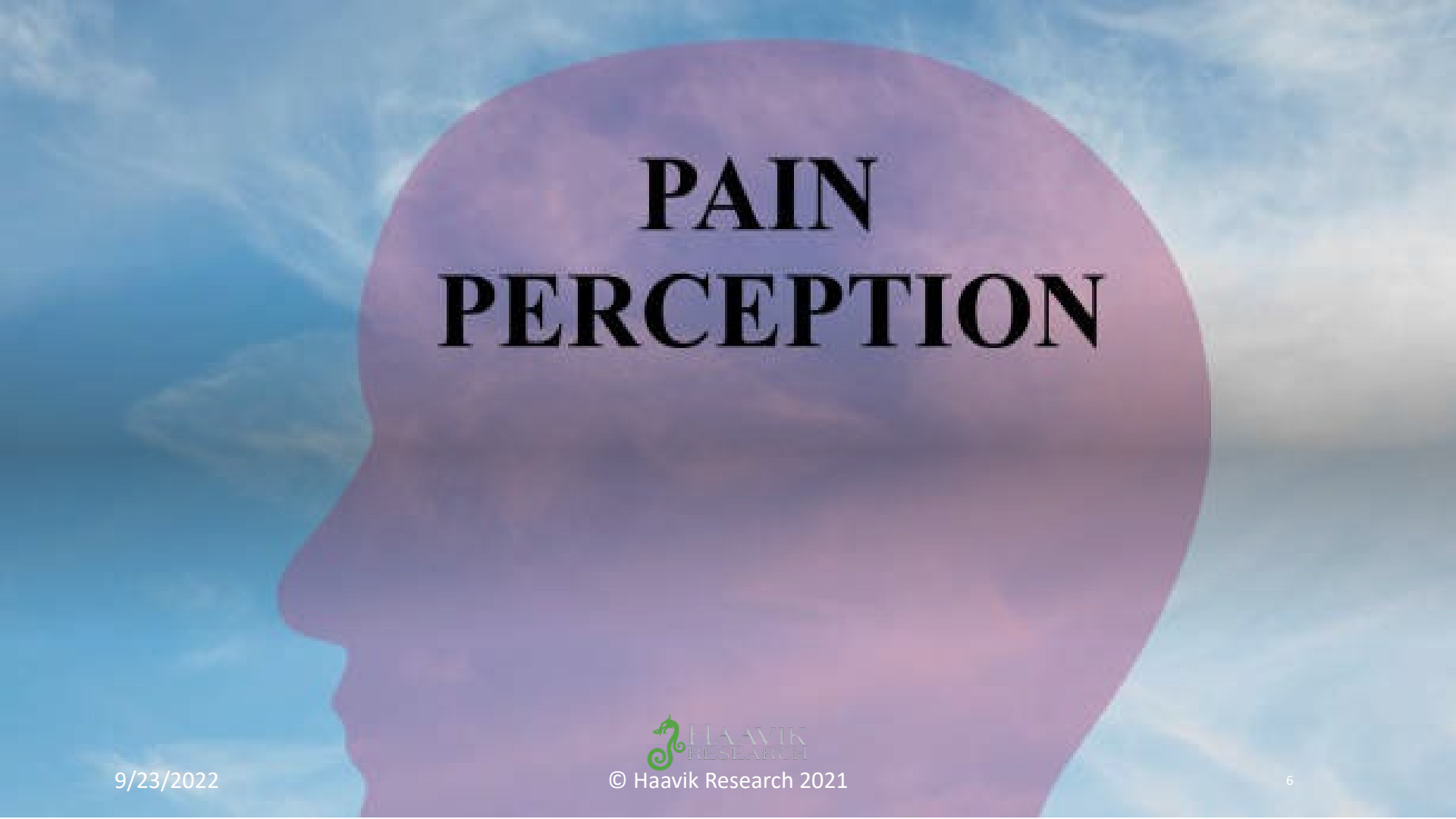
We are hardwired for survival and the brain is constantly sensing what is happening in our environment to check for danger.



The brain may even block pain signals if the feeling of pain would be detrimental to our survival.

The brain is essential in keeping us healthy and functioning.





Key messages

The brain decides if you should feel pain if there is tissue damage or even a potential threat of tissue damage.

Key messages

Pain is usually helpful and informative, but in some situations the pain can spread to areas where there is no tissue damage. The brain can learn to be in pain; this is an example of neural plasticity.

Key messages

Chiropractic adjustments can change brain function; the area of the brain that can change is the pre-frontal cortex. This part of the brain plays a large role in pain control.

Key messages

Chiropractic adjustments can help turn down or shut off the feelings of pain. A chiropractor may not always adjust the area where you feel pain in your spine, but will adjust the areas that are not moving properly.

Key messages

Chiropractic adjustments improve the function of your spine and the communication between your brain and body so your brain can more accurately sense what is happening in your body.

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- Our brain is constantly taking in information from our internal and external environment.
- The brain creates new connections, strengthens connections or prunes off connections based on the information it receives.

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Adaptive neural plasticity - changes in our brain that are beneficial.

- Maladaptive plasticity- changes in the brain that are harmful and no longer beneficial for the person.

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Chiropractic adjustments allow the brain to more accurately sense what is happening in the spine and body and create neural plastic changes[1,3,4]

Key messages

Pain is normal and usually helpful and informative, but chronic pain is pain that is no longer protective or informative.

Key messages

Pain is created in the brain and you can retrain your brain out of chronic pain.

Key messages

Staying active is an important thing you can do to retrain your brain, but if you can’t do some movements due to the pain, even imagining movements is beneficial for the brain.

Key messages

Keeping your spine moving and healthy is also very important to help reduce chronic pain; this can be with yoga or with chiropractic adjustments.

Key messages

Chiropractic care helps your brain to more accurately know what is happening in your body and may help your brain to switch off the feelings of pain when they are no longer needed.

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The sensory system is essential for life.

Key messages

There are millions of tiny sensors all around the body that each play a different ‘tune’, that is give different sensory information. If the brain receives messages from these sensors in a particular pattern the brain may decide for you to feel pain to alert you to danger.

Key messages

The pre-frontal cortex is an area of your brain that acts like the conductor of an orchestra and plays a big role in pain perception. It is known to be affected by spinal function and show changes following chiropractic adjustments.

Key messages

Nerve cells talk to each other through connections called synapses; if the pain tune is playing then this can affect many different systems in your body through these connections. The brain can learn to be in pain if we pay a lot of attention to this pain tune.

Key messages

The alert and danger system (sympathetic nervous system) and the calm and healing system (parasympathetic nervous system) play big roles in pain. The alert and danger system is activated when we feel pain and adrenaline is pumped around our body to make sure we can run away if we need to. If you are in chronic pain this can mean you are in a constant state of high adrenaline and alertness.

Key messages

The alert and danger system also keeps our large muscle groups primed for action and switches off the smaller muscle groups, such as those attached to our spine. This can mean over time those big muscles get stiff and tired[28] and the small muscles stop sending important signals to the brain about our spinal movement and function.

Key messages

Chiropractic care can help with pain as it activates the small muscles attached to the spine, turns down the pain tune in the brain and impacts the pre-frontal cortex, changing the pain music in the brain.

Take home messages

- Our brain is constantly assessing sensory input from our body and the world around us to look out for signs of threat or danger. Pain is a signal the brain creates to alert us of problems and is helpful and informative.

Take home messages

- Pain is created in the brain. The brain may create the feeling of pain even if it only thinks there is a potential threat of tissue damage.

Take home messages

- Sensory messages from the body can create a pain ‘tune’ in the brain. Sometimes the brain can get stuck on this ’tune’ and learn to be in pain. This can create chronic pain.

Take home messages

- Neural plasticity is changes or adaptation in the brain based on information from our internal and external environment. Chiropractic adjustments have a neural plastic effect on the brain.

Take home messages

- Pain is our alarm system and will activate the alert and danger (sympathetic) part of our nervous system. Chronic pain can cause people to be stuck in this alert and danger system and cause further problems in the brain and body.

Take home messages

- You can help to retrain your brain out of chronic pain by keeping active, eating well and keeping your spine healthy through chiropractic care.

Take home messages

- Chiropractic adjustments are known to decrease pain; this is thought to be because they switch off or turn down the feeling of pain in the brain.

Share the message!

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