



VICTORIA
PAIN SPECIALISTS

Treating chronic pain as a chronic disease

A guide for general
practitioners treating
chronic pain

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Chronic pain by the numbers

Chronic pain is amongst us and is far more common than anticipated. It is wreaking havoc with our patients, their friends, and families and in their workplace.

No matter how you look at it, the numbers are staggering. Let's look at some statistics. [The Australian National Pain Strategy](#) says:

One in five Australians will suffer chronic pain in their lifetime.

This 20% does not include the minor aches and sprains of life; it is persistent/chronic pain, with potentially significant and long-term health effects. If you consider the prevalence of diabetes, which is 5% ([Australian Institute of Health and Welfare](#)), chronic pain, at 20%, is setting itself to be a key driver of suffering and disability now and in the future.

80% will miss out on treatment

Up to 80% of people with chronic pain are missing out on effective treatment that could improve their health and quality of life. This number says it all: we are not doing enough for our pain patients.

Chronic pain costs \$34 billion/year

Chronic pain is the nation's third most costly health problem, behind cardiovascular and musculoskeletal conditions.

Chronic pain costs our economy \$34 billion/year. Compare this to the total economic cost of cardiovascular disease, which is estimated to be \$90 billion/year (Heart Foundation Australia 2015 Budget Submission). Yes, \$34 billion/year is a smaller figure when compared to cardiovascular disease. However we are always hearing about cardiovascular disease and the effects but we generally never hear anything about chronic pain in the media and it is very rarely recognised as a health problem. This is why we say that chronic pain is 'the silent epidemic'; no one is talking about it.



People with chronic pain have multiple challenges

A person with chronic pain will face significant challenges:

- Chronic pain is not officially recognised as a disease or a public health issue.
- Chronic pain is misunderstood. Family, friends, employers, and even health professionals often don't believe the person is in pain or suffering.
- Many health professionals have received little or no training in how to diagnose or treat chronic pain.
- Patients may have to wait up to a year for an appointment at some pain clinics.
- Their productivity at work may be lowered, which can lead to unemployment or even more commonly, under productivity.
- They personally carry more than half the total economic cost.
- Sufferers are at increased risk of depression, anxiety, physical and emotional deconditioning, poor self-esteem, social isolation and relationship breakdown.

The challenges chronic pain sufferers deal with; also apply to cancer pain and acute pain sufferers, both of which also continue to be poorly managed by the health profession.



Where acute pain is generally considered a normal and protective sensation that alerts us to an injury; **chronic pain is an abnormal and maladaptive sensation** & and a response to tissue inflammation or neurological damage that has occurred in the past.

Chronic pain is of no biological value to the human body.

Causes of chronic pain

Pain can be considered chronic when the pain persists for more than one month following anticipated tissue healing or if pain continues for longer than three months.

Chronic pain is usually triggered by an acute injury, disease or process that the body has long since recovered from. Some of these initial triggers can include surgeries like spinal surgery, thoracotomy, mastectomy and herniorrhaphy, trauma, shingles, a back or spine injury, a joint problem, and even arthritis. In fact, anything that can affect nerves detrimentally can cause chronic neuronal changes and dysfunction, which can then lead to persistent sensory changes and pain.

An example of a disease that causes pain via directly affecting neurons, is diabetes, where prolonged exposure to high blood glucose levels cause diabetic neuropathies, which can then result in neuropathic pain. Another example of a surgery that can trigger pain is post spinal surgical neuropathic pain - previously called Failed Back Surgical Syndrome (FBSS), now called **Post Operative Persistent Syndrome (POPS)**.

Perpetuating factors

Chronic pain is usually maintained by factors other than the actual cause of the initial pain. Perpetuating factors include: genetic predisposition, gender (for many reasons females are more prone to developing pain than males), physiological stress, psychological stress, previous experiences, environmental factors and emotional states.

Where acute pain is generally considered a normal and protective sensation that alerts us to an injury; chronic pain is an abnormal and maladaptive sensation & a response to tissue inflammation or neurological damage that has occurred in the past. Chronic pain is of no biological value to the human body.

The downward spiral of chronic pain

Chronic pain has a number of long-term detrimental consequences that is termed “the downward spiral of pain”.

Movement triggers pain, and people with chronic pain think that they will damage something when they move, so they end up resting excessively. This is a maladaptive thought (“movement hurts and will make it worse!”) and a maladaptive behavior (“I must avoid those movements”).



The boom-bust cycle of physical activity

This excessive rest leads to a boom-bust cycle of activity. They wait until the pain is reduced and then push themselves and are over-active until their pain flares and becomes so severe again that it forces them to stop and rest (prolonged rest). Once the pain is reduced they feel better and the cycle begins again. This is boom-busting!

The boom-bust cycle reinforces the link between activity and pain (“movement hurts and will make it worse!”) which then leads to fear-avoidance thinking and safety-behavior which has the potential to lead to a downward spiral of further inactivity and rest. This then leads to deconditioning and its consequences.

Deconditioning

Deconditioning is a complex process of physiological and psychological changes that follows a period of inactivity, bed rest or even just a generally sedentary lifestyle. It results in a decline in physical, functional, psychological, and even social aspects of life.

There are a number of consequences of deconditioning, which include: weakness, stiffness, fatigue, poor sleep, weight gain, frustration, anger, lack of confidence, depression, anxiety, isolation, poor relationships and inability to be productive at work.

It leads to suffering, changes in thought processes as well as changes in emotional and mental health. It causes a reduction in quality of life and level of function.

This is the downward spiral of chronic pain and its consequences.



The key to chronic pain management

Crucial to effective chronic pain management is early detection and diagnosis. Have a high index of suspicion. Think about it early. Diagnose it early. Manage it early.

Manage chronic pain as a chronic disease and not just a symptom of a disease yet to be diagnosed.



Evaluating someone in chronic pain

When performing a medical assessment of someone with chronic pain, assess the situation in two parts: the pain and the patient in pain.

Evaluate the pain & look for red flags

This is where the pain needs to be defined in greater detail. What is the nature of the pain? Is it nociceptive or is it neuropathic? Where is it located? Does it radiate? Is it a deep (visceral) pain or a superficial (somatic) pain? What are the aggravating factors? What are the relieving factors?

Red flags – in this initial assessment of the pain, it's important to exclude serious causes of pain like: fractures, mass lesions or malignancies, infection, neurological diseases like cauda equina syndrome, or even ischaemia and other organic pathology.

Red flags need to be urgently referred on and managed by specialists.

The trick in evaluating chronic pain is know when to stop seeking causes of the pain and start managing the pain as a chronic disease.

Evaluate the patient & look for orange & yellow flags

Once you have considered the pain, move onto evaluate the person in pain. This part is often overlooked or not considered in detail. By using the flag system, you will be able to detect issues that may be predictors of poor outcomes and these issues, or those that will require further specialist management e.g. by pain specialists or allied health pain multidisciplinary pain teams.

Orange flags – these include high levels of distress around the pain or Post Traumatic Stress Disorder (PTSD). These orange flags cases may need referral directly to a psychiatrist as they can be considered predictors of poor outcome and need more specialised care.

Yellow flags – these include psycho-behavioural issues that will best be addressed by pain management allied health teams. These flags include maladaptive cognitions (thoughts) around their pain e.g. “moving will make it worse”, maladaptive behaviours like avoiding certain movements and fear of moving. Poor coping strategies may include excessive resting or just hoping that the pain will go away by itself. These are passive approaches to managing pain, where as the best way of managing pain is using active approaches like graduated movement programs and stress reduction.

Refer patients with yellow flags to a pain allied health team; psychologists, physiotherapists and occupational therapists.



Pain catastrophisers tend to **ruminate** and think about their pain excessively. They **magnify** the situation & worry that something serious will happen. They also feel **helpless** about the situation that they are in.



What is catastrophising?

Pain catastrophizing is a set of negative thoughts & emotions that occur during actual or anticipated painful stimulations. Catastrophisers read situations negatively and could be considered to have a pessimistic outlook. They also have a poor ability to cope with their pain.

Pain catastrophisers tend to ruminate and think about their pain excessively. They magnify the situation & worry that something serious will happen. They also feel helpless about the situation that they are in.

It's important to detect catastrophisers because they can have worse outcomes. Pain catastrophising is consistently linked with:

- Severity of pain
- Disability
- Excessive opioid use
- Pain behaviours like fear-avoidance
- Depression and anxiety

The good news is that pain catastrophizing can be managed effectively by cognitive behavioural therapy (CBT) that focuses on reducing the 'fear' of pain and promoting acceptance of the pain. CBT for catastrophising focuses on verbal reassurance, education, graded activity and graded exposure.

Blue flags & black flags include issues related to the workplace e.g. patients are not enjoying their work or the work is manual labour that may trigger and worsen their pain experience. Pain occupational therapists are trained to assess and deal with these work related issues.

Predictors of good outcomes from pain management

Remember not all features that you detect may be predictors of poor outcomes. Predictors of good outcomes from future chronic pain treatments include coping by gently increasing their activities, pacing their movements, understanding their pain, being motivated, proactive and having a supportive family.

The key is early diagnosis of chronic pain & multimodal multidisciplinary treatment.



Medications & their limitations in chronic pain

Most chronic pain is considered neuropathic in nature; hence medications used should be focused on treating this neuropathic pain. Use an updated evidence based neuropathic pain treatment algorithm; such as [The Lancet Neurology \(2015\)](#).

Set patient expectations before you prescribe medications

Educate patients that there may be a gradual time to pain reduction i.e. pain reduction may not be immediate like over-the-counter pain medications that works in 30 minutes or so. Pain reduction may take weeks or even months before being effective.

Inform patients about side effects that could be self-limiting.

If they know the side effects will reduce over time, they will persevere with the medications and be more likely to gain benefits from these medications. Of course if side effects are severe, then the doses should be reduced or even stopped. Educate patients on dose reducing if side effects persist and/or dose escalation if they are tolerating. See patients often when you start medications so you can titrate these medications as high as can be tolerated.

The effects of antineuropathic medications are dose related and the effective dose needs to be found by dose titration. You may need to approach the maximum doses if they are tolerating the medications.

Educate patients on maximum doses

Educate patients on maximum medication doses, as these may need to be attained before good pain reduction is experienced.

Pregabalin

Standard dosing of 75mg BD can sometimes be too much and cause significant side effects, which will then preclude effective use of this medication. Consider starting at lower doses like 25mg or 50mg BD and slowly titrating upwards. Side effects can occur in 10% of patients and the more common ones include fatigue, dizziness, cognitive dysfunction and weight gain. Idiosyncratic or peculiar reactions can sometimes occur. When discontinuation of Pregabalin is planned, it's best to wean because withdrawal features can sometimes occur. This withdrawal syndrome can appear like an alcohol withdrawal syndrome, which is thought to be related to its effects on the GABA receptor.

[Here is a good update on pregabalin.](#)



Most chronic pain is considered neuropathic in nature; hence medications used should be focused on treating this neuropathic pain.



Gabapentin

This very useful antineuropathic medication could be recommended if pregabalin is not tolerated or doesn't prove to be effective.

Start at 100mg TDS and titrate upwards. Your end points are either effective pain reduction or side effects. The current maximum recommended dose is 1200mg TDS. Gabapentin taken with meals can increase the absorption & effectiveness. It has a better side effect profile than pregabalin but needs more attention paid to dosing and finding the correct dose. Elderly patients seem to tolerate gabapentin better than pregabalin, and it does not generally cause the weight gain that pregabalin can do.

Duloxetine

Serotonin-Noradrenaline reuptake inhibitors (SNRIs) are very useful in chronic pain and are considered first line anti-neuropathic agents. A commonly used one is duloxetine. The analgesic effect is generally dose dependent & high doses may be required. The maximum dose of duloxetine is 120mg/day. This is generally better tolerated than the older tricyclic anti-neuropathic agents like amitriptyline.

Amitriptyline

Amitriptyline may not be as good an anti-neuropathic agent as we had previously thought. It can still be considered if pain interferes with sleep or your patients are not getting restful sleep. Warn your patients of side effects like drowsiness, dizziness, dry mouth, blurred vision, constipation, weight gain, or trouble with urination. Start low and go slow e.g. 10mg nocte. Doses as high as 120mg may be required.

Nortriptyline

Nortriptyline has a slightly better side effect profile than amitriptyline. Side effects can still occur but are generally milder. Use it if amitriptyline is useful but giving patients side effects. Use at the same dosing as amitriptyline.

Tramadol

Tramadol is considered a second line anti-neuropathic agent so consider it and use it. Warn your patients of nausea & drowsiness, which can happen around 10% of the time. The maximum dose is 400mg/day.

Should I be concerned about serotonin syndrome with pain medications?

Serotonin syndrome is always a consideration when medicating patients with multiple medications that have serotonergic properties. These include tramadol, tricyclics, SNRIs and now tapentadol. High doses and combinations of these medications should be done with caution & each case should be considered on its own merits. It is probably reasonable to use two of these medications in combination provided patients have been educated on the risks, what to look out for and to seek help if there are any issues.

Generally taking serotonergic pain medications is safe and serotonin syndrome usually occurs where one of the drugs is an SSRI or a monoamine oxidase inhibitor & not generally with pain medications.

When in doubt use caution or don't do it at all.

[Update yourself on Serotonin syndrome here.](#)



When should I use tapentadol?

Tapentadol is a centrally acting analgesic with a dual mechanism of action of mu-receptor agonism and norepinephrine reuptake inhibition. Tapentadol is a slow-release preparation that has been shown to be effective in inflammatory, somatic, and neuropathic pain conditions like low back pain, chronic osteoarthritis and diabetic neuropathy. It looks promising as a medication for chronic pain treatment but remember it is considered a strong opioid, although it appears that tapentadol is safer than strong opioids like morphine, oxycodone or fentanyl. Dosing is 50mg – 200mg BD to a maximum of 400mg/day.

Opioids: principles of safe opioid prescribing & opioid risk stratification.

Aim to avoid using opioids in chronic pain. Opioids are generally not effective in chronic pain. They have significant risks and should be used with caution. If you must use opioids for chronic pain, practice safe opioid prescribing and always do so following adequate opioid risk stratification.

[Watch a lecture on safe opioid prescribing here.](#)

The Faculty of Pain Medicine of the Australian and New Zealand College of Anaesthetists (FFPMANZCA) have made it clear that opioid pharmacotherapy cannot be considered to be a core component of the management of chronic non-cancer pain.

[Read their full recommendations here.](#)



A good pain management treatment approach comprises a medical approach using medications and **interventional pain procedures** combined with an allied health multidisciplinary approach.



Advances in chronic pain management

We have only discussed the use of medication in pain management but medication is only a part of an effective pain treatment approach.

A good pain management treatment approach comprises a medical approach using medications and interventional pain procedures combined with an allied health multidisciplinary approach.

Manage the pain **and** manage the person!

- **The pain** is managed using combinations of medications and interventional therapies, whether diagnostic and/or therapeutic.
- **The person in pain** is then managed by a team of allied health professionals that use an active management paradigm to empower and motivate patients while getting them to convert from a passive lifestyle to an active lifestyle of self-management.

Interventional pain medicine

Interventional pain medicine uses the principles of a tiered approach to the diagnosis and therapeutic treatment of chronic pain. This tiered approach includes:

Blocks use medications

Blocking nociception is performed with medications like local anaesthetics (usually for diagnostic purposes), steroids and others medications like clonidine that are applied directly to neuronal tissue. An example of a diagnostic block is medial branch blocks to assess for facet joint pain and if the pain is reduced significantly patients are appropriate for [radiofrequency neurotomy](#).

Radiofrequency uses heat

[Radiofrequency](#) uses current applied directly to the nerve(s) via specialized needles, that generate high temperature thermal burns (radiofrequency neurotomy at 90°C), which denature nerves. Radiofrequency can also be applied at low temperatures (pulsed radiofrequency at 42°C), which causes altered nerve function without the nerve destruction of radiofrequency neurotomy.

Radiofrequency is a common therapy used for chronic pain. It can treat spinal facet joint pain, sacroiliac joint pain, radicular nerve pain and even some facial pain and headache syndromes like occipital neuralgia and trigeminal neuralgias.

Neurostimulation uses current

[Neurostimulation](#) is the therapeutic activation of parts of the nervous system using microelectrodes connected to an implantable pulse generator (IPG).

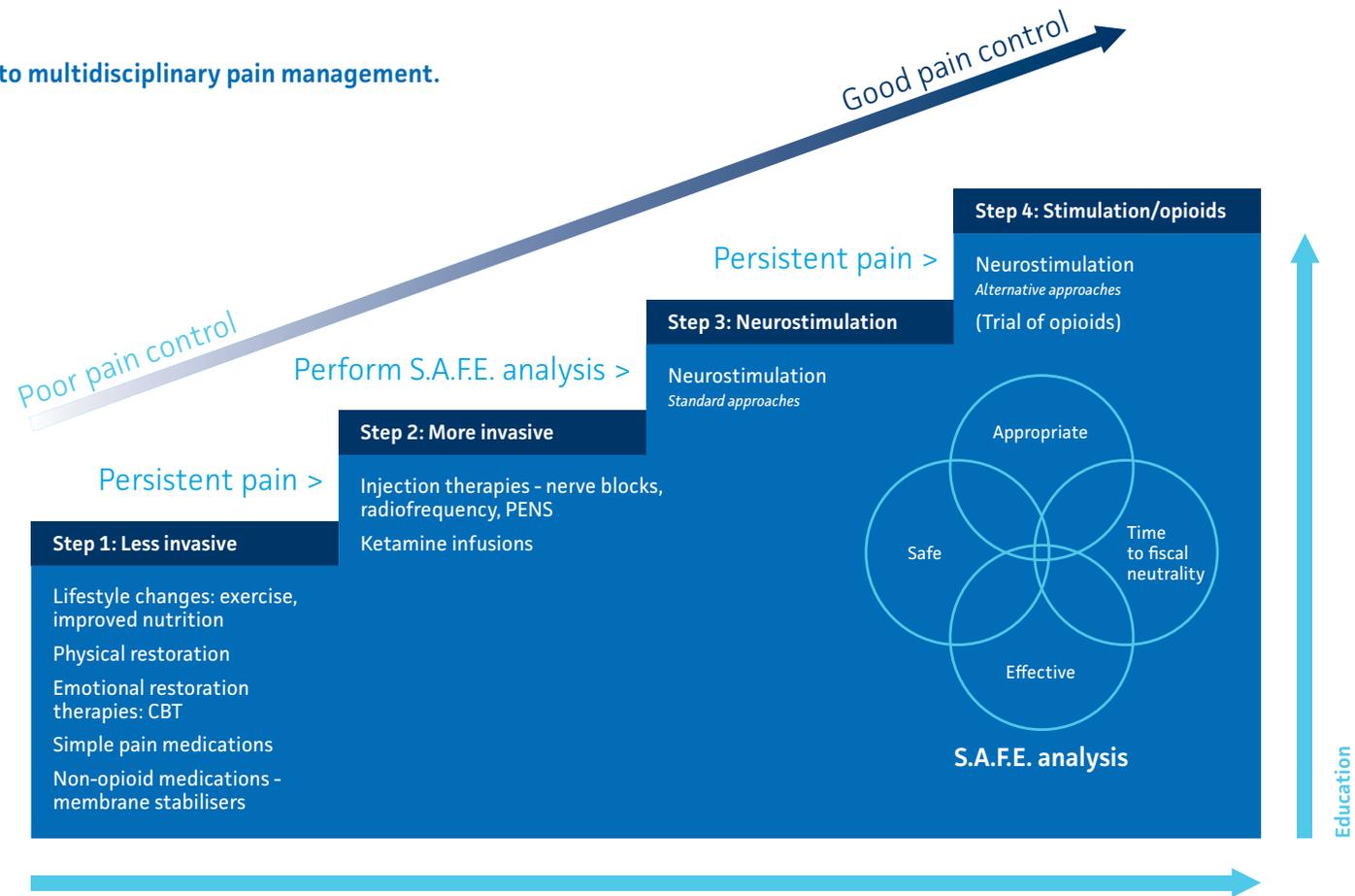
Neurostimulators can be applied to any part of the nervous system to manage pain, including the spinal cord stimulation, dorsal root ganglion (DRG) or peripheral nerve stimulation.

Neurostimulation is already widely used in medicine e.g. the cochlear implant for sensorineural hearing loss and deep brain stimulation (DBS) for movement disorders.



As we climb the pain treatment ladder the treatments get more effective & long lasting but at higher risks.

A typical tiered approach to multidisciplinary pain management.



Throughout and concomitant with other therapies like rehabilitation therapies, psychological therapies, physical therapies e.g. exercise, isometric exercises, movement therapies, desensitisation etc.

Adapted from, Poree L. et al. Spinal Cord Stimulation as Treatment for Complex Regional Pain Syndrome Should Be Considered Earlier Than Last Resort Therapy. Neuromodulation 2013; 16:125-41



Moving away from the biochemicals treatments (medications) of chronic pain to the bioelectrical era (neurostimulation)

As we climb the therapeutic ladder, the pain treatments become more invasive but also become more effective.

A neurostimulation trial is likely to be positive in about 70% or more of the patients selected who have refractory neuropathic pain. These are good statistics when compared to medications, which can help less than 50% of patients. The even newer forms of neurostimulation like high frequency stimulation are even proving to be effective for axial back pain.

How do you know when your patients should be referred to a pain specialist for consideration of neurostimulation?

Neurostimulation may be considered in patients with chronic, refractory pain where standard pain treatments have failed and when there is no indication for surgical intervention to treat the underlying condition.

A trial of neurostimulation is where the electrodes are implanted percutaneously via needles and then connected to an external implantable pulse generator (battery) taped to the skin temporarily. This system is activated for about two weeks to determine its effectiveness and if the pain is responsive to neurostimulation. If the pain is reduced by more than 50% during the trial, an implant of a neurostimulator could be considered at a later date.

Conditions likely to respond well to neurostimulation

- Failed back surgical syndrome or now called Post Operative Persistent Syndrome (POPS)
- Complex regional pain syndrome (CRPS)
- Neuropathic pain secondary to peripheral nerve damage
- Refractory angina pectoris, where no further cardiac interventions are considered

Conditions that may respond to neurostimulation

- Pain associated with peripheral vascular disease, where no further surgery is considered
- Brachial plexopathy: traumatic (partial, not avulsion), post irradiation
- Pain following surgery e.g. intercostal neuralgia after thoracotomy
- Other peripheral neuropathic pain syndromes, such as those following trauma
- Axial back pain following spinal surgery

More reading about neurostimulation [here](#) including other indications and risks.

Neurostimulation is not risk free but generally the risks are considered mild

Common risks and include lead migration, infection, pain over the battery site and sometimes, losing its effects over time. Neurostimulators can be removed (explanted) if needed.



Even if the pain can be effectively reduced using medications and advanced interventional techniques, the **person in pain** needs to be appropriately assessed and managed too. This involves an **allied health team approach**.

Towards a team approach

Even if the pain can be effectively reduced using medications and advanced interventional techniques, the person in pain needs to be appropriately assessed and managed too. This involves an allied health team approach.

This is where a dedicated team comes into play. The key is focusing on each patient to define issues and barriers and then work on these issues to promote recovery and control.

Some problems with pain patients with the solutions

Some of the problems

Deconditioning
Fear-avoidance
Kinesiophobia (fear of movement)
Sedentary lifestyle
Excessive rest

Maladaptive behaviours
Maladaptive cognitions or beliefs
Anxiety / depression

Poor coping strategies
Pain catastrophising
Low self confidence

Fear of re-injury
Poor work satisfaction
Work related stress
Not working

Over solicitous (attentive) spouse

Some of the solutions

Goal setting
↓ Deconditioning
↓ Fear-avoidance
↓ Boom-bust activities
Desensitisation & reactivating the body
Pacing & activity management
Resume appropriate exercise & activity levels
Self management
Dealing with pain flare ups
Education at all steps

Cognitive restructuring
Behavioural modification

Psychological therapy focusing on:

- ↑ Self confidence
- ↓ catastrophising
- Stress reduction
- Anxiety & mood issues
- Sleep hygiene

Occupational therapist focuses on:

- ↓ Functional impairment
- ↑ Postures
- Improve home space & biomechanics
- Address vocational issues
- Simulated job environment
- ↓ Sick days & return to work

Family therapy:

- Dealing with interpersonal relationships



Why should we treat chronic pain as a chronic disease?

A chronic disease is a long-lasting condition that can have persistent effects and can be controlled but not cured. Chronic pain can, and does behave in the same way as a chronic disease and hence should be managed the same way.

The key in chronic pain management is to use the correct medical treatments to reduce the pain, whether they be medications and/or interventional pain procedures, but at the same time paying attention to and focusing on the person who is in pain using your allied health team.





VICTORIA
PAIN SPECIALISTS

Victoria Pain Specialists

Victoria Pain Specialists is a pain management clinic staffed by qualified pain specialist physicians who manage chronic pain using a spectrum of medical care that includes medications and cutting edge pain interventional procedures that are combined with a multidisciplinary team and lifestyle approach delivered by allied health pain experts like physiotherapists, occupational therapists and psychologists.

Because pain is a personal experience and complex we believe that patients shouldn't manage pain alone and that they should be empowered to play an active role in their own pain management.

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