

## **Part 1 of non-surgical treatments for subacute and chronic lower back pain: a focus on pharmacological (medication) treatments**

*Disclaimer: This document should not be used or interpreted as official medical information or advice. Instead, the content should be viewed as an additional resource to review in-person with a care provider. Use of this document does not constitute a physician-patient relationship; please consult your own care provider/physician for any medical issues that you may be having. Moreover, the accuracy of the content contained within this document cannot be guaranteed.*

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### ***The usual preamble:***

Please speak with me or another clinician prior to making any medication additions or other changes, including those involving over the counter products. You may also ask the pharmacist if there are interactions with your medications or medical conditions; if the product is of very low risk (e.g., vitamin B12), then the pharmacist should feel comfortable explaining as such. Otherwise, the pharmacist will may defer the questions to a physician.

Again, the following is *only a general guide and framework* for supporting fruitful discussions with a care provider. Some of these treatments may be unsafe in certain conditions or in combination with certain medications. Of course, surgical and other non-pharmacological treatment modalities are an essential part of the total management approach, but this document does not cover that part of management.

**With the above caveats in mind, here is a step-wise framework for the pharmacological (medication) parts of the overall management of back pain that is subacute (i.e., more than 4 weeks) or chronic (i.e., more than 12 weeks).** As one would expect, a given step would be applicable if the preceding/above step(s)/options were inadequate. In many cases, if medications initiated in previous steps provided some noticeable benefit, then those helpful medications may be continued (if safe) in subsequent steps.

### **STEP 1: Acetaminophen, NSAIDs, B vitamins, and Vitamin C**

*Reminder: always discuss these options with your pharmacist and doctor before acting on any information within this document.*

- **Acetaminophen (Tylenol)\*** can be taken in combination with an **NSAID**.

- **NSAID examples:**

- Ibuprofen (Advil)** 400 to 600 mg four times daily as needed (always with food)

- Naproxen** 250 to 500 mg twice daily as needed (always with food)

NSAID doses should be decreased as tolerated.

*Stop an NSAID and see doctor immediately if blood pressure becomes high; stomach pain develops; black or bloody stool is noticed; or if any other concerning changes arise as explained by the pharmacist and prescribing physician.*

- **Vitamin C** dosing for chronic pain: 1000 mg two times a day.

**B Vitamins for chronic pain:**

- **Vitamin B12** 1000 mcg once daily
- **Vitamin B1 (Thiamine)** 50 mg to 100 mg once daily
- **Vitamin B6 (Pyridoxine)** 50 mg to 100 mg once daily

*\*Acetaminophen (Tylenol) has very weak evidence for most causes of back pain, and there is even evidence of no benefit beyond placebo in most studies involving osteoarthritis specifically. That said, it is usually a very safe medication to try (for most patients), so it is often worth trying in case it provides even a minimal marginal benefit to the overall treatment regime.*

**STEP 2: Gabapentin, Duloxetine, and/or tramadol**

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- **Duloxetine** has the best evidence in of the these three medications in many (if not most) cases of chronic back pain (depending on the causes and other factors).

For most patients, the initial dose (for chronic pain) is 30 mg once daily for 1 to 2 weeks, then increase to 60 mg once daily as tolerated; the maximum dose: 60 mg/day

- **Tramadol** (dosing is highly variable)

- **Duloxetine + Tramadol (combination):**

Duloxetine may be combined with tramadol in some situations with very close monitoring (for serotonin syndrome among other complications)

- **Gabapentin** has varying levels of evidence depending on the cause of back pain (e.g., there seems to be more evidence to support its use with spinal stenosis as compared to a herniated disc).

Generally speaking, the initial dose is 100 to 300 mg 1 to 3 times daily; then increase as tolerated and needed to a target dose range of 300 mg to 600 mg a day 1 to 3 times a day (in some select cases, the dosing may be increased by a doctor further towards the maximum dose of 1.2 g 3 times daily).

**STEP 3: the addition of cyclobenzaprine**

(or a different **skeletal muscle relaxant** depending on the situation)

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- **Cyclobenzaprine** and **other skeletal muscle relaxants** have many side effects, so they must be used with extreme caution as advised by your pharmacist and doctor. The dosing is also highly variable.

## **STEP 4: Consideration of opioids, and new therapies with encouraging emerging (albeit preliminary) data**

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The addition of an opioid medication would usually be a last option in the event an unacceptable level of pain persists despite all other options.

- Examples of opioid medications include **morphine, hydromorphone, oxycodone, etc.**

There is very weak/limited evidence for the effectiveness of opioids in subacute/chronic back pain. On the other hand, there is overwhelming evidence for the significant risks of using opioids, including dangerous sedation; potentially lethal drug interactions; dependency/addiction; severe constipation; and many other adverse consequences.

These consequences even include a seemingly paradoxical worsening of chronic back pain (and pain in general) via processes such as central sensitization. This process makes your pain pathways more sensitive, so that you have more pain even with no change in the dose of opioid or severity of the underlying pathology/disease that was responsible for the original pain for which the opioid was initiated. Central sensitization is more common with longer periods of opioid use.

- **New therapies on the horizon** with encouraging pre-liminary evidence:

The medical literature continues to rapidly expand as many studies are being done for treatments of chronic back pain. As such, any specific content within this document category would not remain up to date for a long enough time to make it worth listing here. Instead, this part of the document simply serves as a **reminder to explore new studies and novel treatments** as needed in our discussions.

### **Cauda Equina Syndrome (a reminder):**

*Some content taken from following PDF patient handout: [www.ouh.nhs.uk/patient-guide/leaflets/files/10127Pcaudaequina.pdf](http://www.ouh.nhs.uk/patient-guide/leaflets/files/10127Pcaudaequina.pdf)*

Anyone with lower back pain should be immediately taken to an ER/hospital if any of the following changes occur:

- Numbness in your groin and genital area (often starting with a vague but noticeable change in sensation when wiping after using the toilet)
- Significant changes to your bowel and bladder functions/habits (e.g., you lose some control of bowel or bladder functions, presenting as incontinence/"leakage" and/or the inability to properly urinate such that your bladder becomes overfilled and distended)
- Changes to your walking pattern or other changes to leg function
- Increasing numbness or weakness of one or both legs and/or feet; if left untreated, this may even progress to complete paralysis (not being able to move)

The above changes/symptoms could represent the rare complication of Cauda Equina Syndrome, which can rapidly lead to permanent disability/paralysis if there is a delay in treatment.