



## Accurate Clinic

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4 Domain Guide

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## Accurate Education

### The 4-Domain Approach to Chronic Pain - 1st Step

The Experience of Pain is the result of two basic components - the tissue damage that is the source of pain and how the nervous system processes the pain signals originating from the damaged tissue and transmitted to the brain. The conditions that influence the severity of the pain experience can be divided into four domains: systemic inflammation, neuroinflammation, oxidative stress, and mitochondria dysfunction.

The impact of these four domains (sometimes referred to as the “4 Demons”) on the nervous system can result in peripheral and central sensitization, which in turn magnify the experience of pain and contribute to its worsening over time, including the transitioning of acute post-traumatic or post-operative pain to becoming chronic pain.

These 4 demons are responsible, not only for magnifying pain over time, but they are also major contributors to the risk of developing the diseases of aging, including diabetes, heart disease, stroke and neurodegenerative diseases such as Alzheimer’s. The 4-Domain (4-D) approach to management of chronic pain focuses not solely on the painful condition but on identifying how and to what magnitude the 4-Ds are contributing to an individual’s health and painful experience.

The assessment of the 4-Ds includes an evaluation of the individual’s signs and symptoms that extend beyond simply the pain, but symptoms that are manifested by the 4-Ds themselves. This is important in order to create a personalized domain profile that reflects the impact of the 4Ds, including the manifestations of peripheral and central sensitization. Once an individual’s domain profile is established, the treatment protocol engages the use of nutraceuticals, natural pharmaceutical grade compounds derived primarily from food and plant products that are safe and reasonably affordable.

The evidence of benefit that drives which nutraceuticals to be engaged is based largely on pre-clinical research, laboratory and animal studies with only limited research available from human studies. The argument for this 4-D approach is based on well-established evidence that those who maintain a healthy, anti-inflammatory diet (AID) experience less pain and less vulnerability to the diseases of aging than those who do not. When one investigates the nature of the compounds found in the AID and how these compounds achieve their healthful benefits, one learns that it is mostly through their impact on the four domains.

The impact of these agents on the 4-Ds is not limited to their impact on the damaged tissue associated with a painful condition, but also on the pain signal processing by the nervous system which is separate and largely independent from the pain condition. The research into the 4-Ds and their impact on both pain processing and pain conditions supports their likelihood of providing significant pain relief to those with chronic pain.

The 4-D approach to pain differs from conventional approaches to the treatment of chronic pain because it distinguishes the factors that contribute to an individual’s pain severity outside of simply the pain condition. Conventional research exploring the benefits of a treatment of a chronic pain condition typically does not stratify the individuals and their influences from the 4-Ds. Since each individual domain profile is unique and contributory to their pain severity, failing to take the 4-Ds into account can lead to misleading conclusions as to the potential benefit of a pain treatment.

This 4-D approach to chronic pain management represents a novel protocol for which there appears to be no previous research published specifically along these lines. This protocol has been described as “groundbreaking” by the AI tool I have worked closely with to develop it. For those who choose to proceed with the 4-D protocol, I thank and appreciate your confidence and support for our efforts.

# The 4-D Protocol

## First Step

To assess the impact of one's 4-Ds individual questionnaires will be provided to screen for symptoms related to these 4-Ds. There are no right or wrong answers to the questions so please be as accurate in your responses as you can, basing your responses on the overall last 2–3 months to avoid the influence of out of the ordinary circumstances impacting your answer.

Most of the laboratory studies that will be engaged to assess the 4D's have been routinely obtained annually by most of those in this clinic. However, as a result of recent research in this area, a few more routine blood tests will be ordered when feasible. Every effort is made to limit ordering bloodwork that will be covered by insurance, but please confirm with the laboratory before drawing your blood to be sure.

No patient will be expected to be burdened with significant out-of-pocket expenses for either the lab testing or the purchase of the nutraceuticals. Everyone is encouraged to not proceed with anything that is not affordable or desired by them.

Once the questionnaires have been completed and reviewed and the laboratory results obtained, the patient will be stratified based on the degree to which they are impacted by each of the 4-Ds. Based on the stratification, patients will be advised which nutraceuticals are recommended for them. Some nutraceuticals like vitamin D and omega-3's are covered by insurance and have already been initiated by most patients.

## First Tier of Nutraceuticals

The first tier of recommended nutraceuticals is a universal foundation of compounds that include those that have good evidence for beneficial synergy with the use of opioids. These benefits include reduced development of analgesic tolerance to opioids and the suppression of the evolution of opioid-induced hyperalgesia (OIH), a condition which also contributes to the reduced analgesic benefit of taking opioids.

- **Vitamin D3** - Dosing based on maintaining optimal blood levels
- **Omega-3 Fatty Acids** (EPA and DHA)
- **Magnesium** - (L-threonate or substitute form)
- **Melatonin** - 3-10 mg at bedtime (for pain, not sleep)
- **Vitamin B-Complex** - Enbrace HR or Enlyte (Rx) or alternative OTC products
- **PEA (Palmitoylethanolamide)** - 600-1800 mg/day
- **Synbiotics** - Diet-based or Supplement-based trilogy of prebiotics, probiotics and postbiotics

## The Next Tier

Based on one's response to the first tier of nutraceuticals, additional compounds may be advised in addition to, or to replace current nutraceuticals. In general, changes in nutraceuticals are considered every 3 to 4 months. Up to 20 different nutraceuticals have been investigated for inclusion in this protocol and may be recommended based on individual patient assessments.

## Also

- It is hoped that, on average, a 10-20% or more overall pain severity reduction is anticipated.
- Remember, the response to these nutraceuticals may require 3-4 months before becoming evident.
- As "Iceberg Drugs," these nutraceuticals provide benefits that may not be seen, but are still present.
- The comprehensive approach to the treatment of the 4-D's also includes engaging healthful lifestyles that include an anti-inflammatory diet, movement-based exercises and mindful practices such as deep relaxation techniques, meditation, music and last, but not least, pet therapy. Don't forget your dog! (or cat).
- In depth information regarding each of these nutraceutical is available by handout and can also be found on [www.AccurateClinic.com](http://www.AccurateClinic.com).
- See companion handout: "*Nutraceuticals - Dosing and Purchasing Guidelines*"
- Please discuss any concerns you may have regarding the protocol or any of the nutraceuticals with Dr. E or Staff.

***Your pain severity is real. There are reasons for it. And there are things we can do about it.***