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Accurate Education

The 4-Domain Approach to Chronic Pain

INTRODUCTION

CONVENTIONAL AND ALTERNATIVE APPROACHES TO PAIN MANAGEMENT

The common approach to managing pain generally focuses on the condition causing the pain. Conventional pain management attempts to modify painful tissues through surgical techniques, prescription medications and physical therapy interventions to improve the pain condition in order to lessen pain. Complementary and Alternative Medicine (CAM) follows the same approach, but embraces natural products based on foods and plants.

THE PAIN EXPERIENCE: PAIN CONDITION vs PAIN PROCESSING

The severity of the pain experience is not just determined by the degree of damage to tissues—it's also determined by how the nervous system processes pain signals. Pain signals start with a pain receptor detecting tissue damage at the point of injury, when it then send signals to the spinal cord where they interact with other nerves. Signals are then sent to the brain where they interact with different parts of the brain and afterwards signals are sent back down the spinal cord again. At each of these levels, pain signaling can be modified to increase or decrease the severity of the pain experience, termed "**pain processing.**"

WHAT MAKES THE 4-DOMAIN (4-D) APPROACH DIFFERENT

The 4-D approach to pain management focuses not just on impacting a pain condition, it also emphasizes the need to impact pain processing as well. The 4-D approach is founded on the principles of the anti-inflammatory diet (AID) which has been accepted as a proven means of improving pain and general health, including reducing the risk of heart disease, Type 2 diabetes, Alzheimers, digestive disorders, fatty liver and improving depression and mood disorders. Upon evaluation of AID foods, specific compounds are found that are associated with the benefits provided by the AID. Research has identified how these compounds impact four pathologic biologic conditions (domains) that impact both general health as well as pain conditions and pain processing.

The **4-Domain Approach** assesses how each of these 4 Domains impact both tissue damage to modify pain conditions, but also how they impact pain processing to contribute to pain severity. By determining which of these domains are most active in *an individual,* one can select nutrition-based natural supplements (nutraceuticals) that target each specific domain. Identifying which of the Domains are most active in an individual (their Domain Profile) requires a complex assessment of the individual's signs and symptoms through the use of questionnaires, bloodwork, lifestyles, medical history, medications and nutraceuticals use.

THE 4 DOMAINS *(we refer to them as the "4 Demons")*

1. SYSTEMIC INFLAMMATION

Body-wide, low-grade inflammation that can make pain more severe.

Signs suggesting systemic inflammation:

- Excessive weight (BMI>25;, especially belly fat)
- Diabetes, high blood pressure or high cholesterol, chronic lung disease
- Conditions such as fatty liver, osteoarthritis and Rheumatoid Arthritis
- Diet high in processed foods

2. NEURO-INFLAMMATION

Inflammation that affects your nervous system, brain and spinal cord and can amplify pain processing.

Signs suggesting neuro-inflammation:

- "Brain fog" (difficulty concentrating, memory problems)
- Sensitivity to light, sound, or smells
- Fatigue that doesn't improve with rest
- Mood changes (anxiety, depression)
- Pain out of proportion to any injury

3. OXIDATIVE STRESS

Cellular damage from "free radicals" overwhelming your body's antioxidant defenses

Signs suggesting Oxidative Stress:

- Currently *or* formerly smoking tobacco or cannabis, effects that may persist for years
- Diet low in colorful fruits and vegetables
- Excess weight (BMI >25) - even when not obese
- Chronic inflammatory conditions
- High stress or poor sleep

4. MITOCHONDRIAL DYSFUNCTION

Your cells' "power plants" (mitochondria) aren't producing enough energy to function properly.

Signs suggesting Mitochondrial Dysfunction:

- Severe, persistent fatigue or fatigue worsening after activity ("crashing")
- Slow recovery from any exertion
- Lack of exercise or exercise intolerance
- Muscle weakness or pain
- Regular use of THC products can increase mitochondrial dysfunction in the brain, liver and muscle

PERIPHERAL and/or CENTRAL SENSITIZATION - CONSEQUENCES OF THE 4 DEMONS

Nerves in the extremities, brain and spinal cord have become overly sensitive and increase pain severity

Signs that one may have Peripheral and/or Central Sensitization

- Burning, tingling, or "electric" pain
- Multiple symptoms: fatigue, sleep problems, brain fog
- Widespread pain (multiple body areas)
- Increased sensitivity to pain, even light touch that shouldn’t be painful (allodynia)
- Conditions like peripheral neuropathy

IMPACT ON GENERAL HEALTH

While the 4-Domain approach to the management of pain focuses on reducing the severity of the pain experience, it should be emphasized that the 4-D protocols impact not just one’s pain experience and pain conditions but their general health as well. Since the 4-D protocols are based on the anti-inflammatory diet. (AID), the benefits gained by following the AID should likely be gained with the 4-D protocols as well. These potential benefits include reduced risk of heart attack, stroke, Type-2 diabetes and Alzheimers, improved depression and mood, better sleep and increased energy as well as an improved sense of well-being.

The 4-D Nutraceuticals:

- Because they are natural and derived from food and/or human metabolism, the 4-D nutraceuticals are very safe and unlikely to cause any significant side effects.
- As “Iceberg Drugs,” these nutraceuticals provide benefits that may not be seen, but are still present.
- The 4-D nutraceuticals are available over-the-counter (OTC) and reasonably affordable. See companion handout: “*Nutraceuticals* - Dosing and Purchasing Guidelines”
- Many nutraceuticals in the 4-D protocols treat multiple domains.
- Nutraceuticals work gradually—many take 4-12 weeks to achieve full benefit.
- Since the protocols are derived from *your* current medical management and *your* unique profiles of the 4 Domains, pain processing *and* pain conditions to select specific nutraceuticals accordingly, benefits are more likely to be achieved than conventionally selecting them solely based on your pain conditions alone.
- A 10-20% reduction of pain severity or more is expected.

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