REPORT

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DESCENDING PAIN: NEW DISCOVERY TO CONTROL SEVERE, CHRONIC PAIN

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The control of severe, chronic pain in medical practice today is almost exclusively based on "ascending pain" and "neuropathic pain." Ascending pain is the pain signal that goes from the pain site (i.e., joint, arachnoid, muscle) to the brain. Neuropathic pain is the pain that results when there is damage or blockage of electrical transmission in a nerve or the glial cell matrix in the brain. In recent years accumulated research has discovered that when chronic pain centralizes, it creates a third type of pain called "descending." This is a critical issue for persons with adhesive arachnoiditis and other diseases that cause severe, chronic pain, because descending pain requires different medications than those used for ascending and neuropathic pain.

WHAT IS DESCENDING PAIN? A person with constnat pain will produce excess bioelectricity (i.e., central sensitization or centralized pain) in the glial cell matrix of the brain. This bioelectricity travels down the spinal cord and vegas nerve to not only produce pain but also over-stimulate the cardiovascular system. Descending pain is controlled by the noradrenergic receptor. The neurotransmitter to this receptor is called noradrenalin or norepinephrine.

HOW DOES ONE KNOW IF DESCENDING PAIN IS PRESENT? Descending pain will be present in persons who have constant, unremitting pain. Here are the symptoms:

Pulse rate elevates - Periodic hot flashes - Cold hands/feet - Excess sweating
Allodynia (Pain upon light touch)

MISGUIDED OVER-RELIANCE ON OPIOIDS AND NEUROPATHIC AGENTS: The unawareness of descending pain is one reason why dosages of opioids and neuropathic agents may be over-prescribed. For example, physicians may simply raise the opioid or gabapentin dosage over toxic levels if they are not aware of descending pain. What's more, the increase in dosage may be ineffective. This applies to opioids in implanted pumps. Countless persons have been treated with an opioid implanted device with the erroneous belief that no medication, except intrathecal opioids, are needed. Pain patients soon learn that their pain is poorly controlled by opioids alone. Opioids and neuropathic agents (i.e., gabapentin, diazepam) have little effect on descending pain. It must be treated separately.

THREE TYPES OF PAIN: The person with chronic or intractable pain perceives only one pain, but the pain that is felt or perceived is actually composed of three different types of pain.

1. Ascending: bioelectricity transmitted from the site of injury or disease up the spinal cord to the brain.
2. Neuropathic: accumulation of bioelectricity due to damage or dysfunction of neuronal tissue in brain, spinal cord, or peripheral nerves.
3. Descending: bioelectricty transmitted from thebrain down the spinal ocrd and vagus nerve.

RECEPTOR ACTIVATION: Pain treatment and relief is based on a medicinal that activates or stimulates a specific receptor (think "action point) that is present in nerve cells (i.e., brain or spinal cord) or nerves (i.e., leg, arm). Ascending pain must activate the endorphin or opioid receptor. Neuropathic pain control depends on activation of a receptor called gamma amino

butyric acid (GABA). Descending pain control must activate the norepinephrine (noradrenalin) receptor. To achieve good control of severe, chronic or intractable pain, all three of these receptors must be simultaneously activated. Chronic, severe pain is commonly undertreated, because all three receptors are not simultansously activated.

MEDICINALS FOR DESCENDING PAIN: Three medication classes are used to treat descending pain. Medical practitioners and patients have choices and can experiment and decide on medications that bring the most comfort.

THREE MEDICATION CLASSES		
Bioelectric Blockers	Receptor Activator (noradrenergic)	Precursor (Amino Acids) of Noradrenaline
Tizanidine, propanolol, clonidine, tapentadol (Nucynta®)	Prescription: Modafanil (Provigil®), methylphenidate (Ritalin®), dextroamphetamine, Ampphetamine Salts (Adderall®), phentermine, lisdexamfetamine Vynanse®) Non-prescription: lion's mane mushroom extract, St. John's wort, rhodiola, mucuna, whole adrenal gland	Phenylalanine; 1000 to 2000 mg a day Tyrosine; 1000 to 2000 mg a day

KEY STUDIES: Chronic pain, inflammation, and autoimmunity, when not controlled, will deplete a number of neurotransmitters and hormones. In this case, noradenalin (norepinephrine) will often be depleted. Supplements of either amino acid (phenylalanine or tyrosine) and daily protein intake may help reduce both background and flare pains. The precursors, phenylalanine and/or tyrosine need not be taken every day, but they are highly recommended on at least two days a week. They can and should be taken with a bioelectric blocker or receptor activator.

MISCONCEPTION: Noradrenergic receptor activators do not raise pulse rate or blood presure in a constant pain patient like they do in a normal person. They may actually lower blood pressure and pulse rate. Reason: chronic pain, inflammaiton, and autoimmunity deplete noradrenalin.

SPECIAL MEDICATIONS: One medication, tapentadol (Nucynta®) is both an opioid and norandrenergic blocker. Highly recommended.

SUMMARY: Descending pain is a new discovery that must be recognized and controlled to achieve relief from severe, chronic pain. A sole reliance on opioid and neuropathic agents may often provide inadequate pain relief.

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