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Rational Biological Source of Pain Found in the Skin of Patients with Fibromyalgia

Fibromyalgia, a painful condition affecting approximately 10 million people in the U.S, is not imaginary after all, as some doctors have believed. A discovery, published in *Pain Medicine Journal*, clearly demonstrates that fibromyalgia may have a rational biological basis located in the skin. Fibromyalgia is a severely debilitating affliction characterized by widespread deep tissue pain, tenderness in the hands and feet, fatigue, sleep disorders, and cognitive decline. However, routine testing has been largely unable to detect a biological basis for fibromyalgia, and standard diagnosis is based upon subjective patient pain ratings, further raising questions about the true nature of the disease. For many years, the disorder was believed to be psychosomatic and often attributed to patients' imagination or even faking illness. Currently approved therapeutics that provide at least partial relief to some fibromyalgia patients are thought to act solely within the brain where imaging techniques have detected hyperactivity of unknown origin referred to as "central sensitization." However, an underlying cause has not been determined, leaving many physicians still in doubt about the true origins or even the existence of the disorder. Now, a breakthrough discovery by scientists at Integrated Tissue Dynamics LLC has provided a biological rationale for thi s enigmatic disease. The small biotechnology research company reports on a unique peripheral neurovascular pathology

consistently present in the skin of female fibromyalgia patients which may be a driving source of the reported symptoms. "Instead of being in the brain, the pathology consists of excessive sensory nerve fibers around specialized blood vessel structures located in the palms of the hands," said Dr. Rice the senior researcher on the study. "This discovery provides concrete evidence of a fibromyalgia-specific pathology which can now be used for diagnosing the disease, and as a novel starting point for developing more effective therapeutics." Three years ago, the scientists published the discovery of an unknown nervous system function among the blood vessels in the skin in the journal *Pain.* As Dr. Rice explained, "we analyzed the skin of a particularly interesting patient who lacked all the numerous varieties of sensory nerve endings in the skin that supposedly accounted for our highly sensitive and richly nuanced sense of touch. Interestingly however, this patient had surprisingly normal function in day to day tasks. But, the only sensory endings we detected in his skin were those around the blood vessels". Dr. Rice continued, "We previously thought that these nerve endings were only involved in regulating blood flow at a subconscious level, yet here we had evidencs that the blood vessel endings could also contribute to our conscious sense of touch and also pain" He concluded.

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Colic: Is There any Cure for a Baby's Crying or Just Wait it Out?

Colic is the first severe pain a baby feels in his life. It is usually manifested as an acute abdominal pain with intense spasmodic cramping, but since colicky babies cannot describe exactly what distresses them, it is hard for parents to know the precise cause of their distress. Experts believe that 1 out of every 5 babies born experience colic. Colic is usually diagnosed by the "rule of threes,"(crying for more than three hours per day, for more than three days per week, and for longer than three weeks in an infant who is well-fed and otherwise healthy) beginning between the third and sixth week of life, and in severe cases, lasting up to six months. Colic remains a mystery and the cause is still unknown. Besides constant crying, the baby may curl up the legs, clench the fists, and tense up the abdominal muscles. Crying can begin for no apparent reason. It can persist for three hours or more on a single day. Doctors consider it to be colic when the crying occurs more than three hours daily, three days a week for more than three weeks in a baby who is otherwise healthy. Although no known cure exists, many colic remedies are available to provide fast relief during a crying outburst. Edzard Ernst, who conducted a study posted online in the journal *Pediatrics* states: "The advice is not to use any complementary treatment on them (babies), because some of them are not risk free. All of them cost money. "Fennel tea is a commonly used remedy, it is gentle enough to give to infants and is especially beneficial in treating colic. Fennel tea relaxes smooth muscles and relieves spasms in the gastrointestinal tract which makes it an effective

herbal remedy for treating gas and bloating. It also helps treat constipation, soothe an upset stomach, and relieve abdominal cramps for adults. A commonly used drug is on the market, which is deemed as an "all natural" remedy. The unique homeopathic formula works within minutes, so it is only given on an "as needed" basis. It has been reported that it works wonders for bloating, pressure, stomach cramps, hiccups, teething and even acid reflux. It is also extremely effective on gas created during introduction of new foods into babies' delicate digestive tracts. Although not FDA approved, sodium bicarbonate, or baking soda has been used for crying babies. This is an alkali (antacid) which alters the naturally occurring pH of baby's stomach acid. It may counteract some discomfort caused by acid reflux in cases of acidic stomach. However, changing the delicate pH balance in baby's system can cause over-alkalinity and exacerbate a colicky condition. Furthermore, sodium bicarbonate is also absorbed into the bloodstream and thus can have unwanted side effects. It is important to remember that babies are just getting accustomed to this world and, as they grow older, their colic will eventually subside. Their digestive systems will learn how to function better and adapt to contemporary environmental conditions. In the first three months of life, babies are not well-equipped to calm themselves. Self-calming is a skill that develops slowly over time and at different rates in children.

New Arena of Pain

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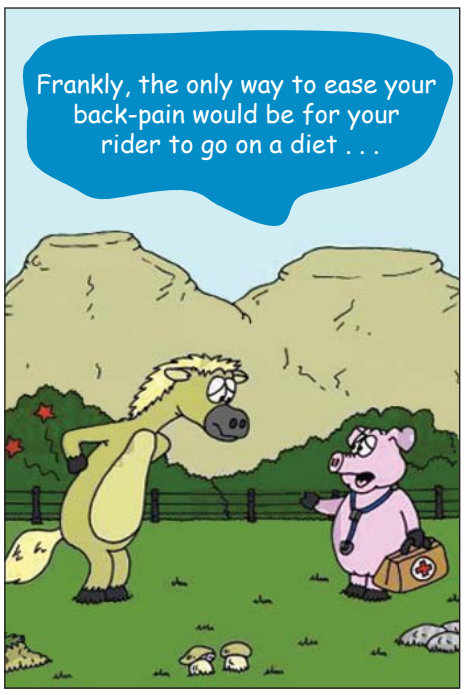
Neurostimulation Lowers Need for Opioids in Chronic Pain

Recognizing that treatment of chronic pain can be confounding, the Neuromodulation Appropriateness Consensus Committee (NACC) has created the first consensus guidelines for the use of neurostimulation in chronic pain. Neurostimulation is an established and growing area of pain therapy that treats nerves with electrical stimulation rather than drugs. Long-term opioid use can lead to the need for escalating doses to bring relief, and raises the risk of physical dependence, overdose, weight gain, depression, and immune and hormone system dysfunction. Many studies contain insufficient evidence to prove the safety or effectiveness of any long-term opioid regimen for chronic pain, indeed, many patients discontinue long-term opioid therapy due to insufficient pain relief or adverse events. Neurostimulation has been shown in clinical studies to be safe and effective for properly selected patients, and is approved by the FDA to treat chronic pain of the trunk and limbs. It belongs to a family of therapies known as neuromodulation because they modulate, or alter the function of nerves, such as nerves that may have become hypersensitized or damaged, or are otherwise sending pain signals long past the initial injury. Since the components of neurostimulators bear some resemblance to heart pacemakers, hence they are sometimes called pain pacemakers. The NACC recommends neurostimulation be used earlier in the treatment of some kinds of chronic pain, such as failed back surgery syndrome and complex regional pain syndrome. Neurostimulation effectiveness correlates with early use in those conditions, with the added benefit of shortening the time. The most common form of neurostimulation, spinal cord stimulation (SCS), used in appropriately selected patients who have had back and/or leg pain longer than six months often find their symptoms relieved by 50 % or more. The therapy uses slender electrical leads placed beneath the skin along the spinal cord and connected to a compact pulse generator, about the size of a pocket watch, that sends mild current along the leads to elicit a natural biological response and limit pain messages sent to the brain.

Patients try the minimally invasive technique to see if it works for them before receiving a permanent implant. A reduction in opioid use among patients treated with SCS was shown in several studies and within two years, using SCS rather than repeat back surgery is not only a more cost-effective use of health resources, but it also correlate with higher rates of return to work. Spinal cord stimulation should be used early in the treatment of failed back surgery syndrome as long as there is no progression of a neurological condition requiring semi-urgent intervention. Patient selection decisions should be made with any clinicians who are treating co-existing conditions, including patient's primary care provider, cardiologist, or neurologist and due to the emotional impact of the experience of pain, an assessment of a psychologist or psychiatrist is recommended within the first year of implant. Peripheral nerve stimulation (beyond the spine) should be reserved for patients in whom the pain distribution is primarily in a named nerve that is known to connect the area of pain. To cover an area that is not located in the distribution of a named peripheral nerve, stimulation of a peripheral nerve field with electrodes placed in the subcutaneous area just beneath the skin may give relief if stimulation from SCS does not reach this area. In many cases a hybrid of two or more of these methods may present the best chance of an acceptable outcome. In patients with Raynaud's syndrome and other painful ischemic vascular disorders, SCS should be used as an early intervention. In the use of SCS to treat painful diabetic peripheral neuropathy, decision-making should be performed on an individualized basis, considering current diagnoses and other factors. A type of SCS that stimulates a structure at the edge of the spinal column, the dorsal root ganglion, may be most suited for this disorder. In a nutshell, when appropriately applied, neurostimulation to target treatment directly to nerves can improve productivity and quality of life for chronic pain patients, offering a potentially less costly and risky option than repeat surgery or long-term painkiller use.

Antibiotic Shows Analgesic Action Following Surgery

A single dose of the antibiotic ceftriaxone given for antimicrobial prophylaxis prior to surgery enhanced patient pain thresholds after the procedure, according to a study published in *The Journal of Pain.* Previous studies have shown that drugs with a mode of action to enhance glutamate clearance might be effective in the treatment of chronic pain. In animals, repeated doses of the antibiotic ceftriaxone have reduced both visceral and neuropathic pain. The drug induces activation of the GLT-1 gene. This is the first study to explore the analgesic activity of ceftriaxone in humans. Researchers at University Sapienza in Rome analyzed whether a single dose of Ceftriaxone given for antimicrobial prophylaxis prior to surgery could enhance patient pain thresholds after surgery. Forty-five patients undergoing surgery for carpal tunnel syndrome or ulner nerve compression disease participated in the study. They were randomized in three treatment group: Intravenous doses of saline, saline with ceftriaxone and saline with cefazolin. Injections were administered one hour prior to surgery. Mechanical pain thresholds were measured 10 minutes before the injections and 4 to 6 hours following surgery. No analgesic drugs were allowed in the first six hours after surgery. Results in the human subjects showed that those treated with saline and cefazolin showed no change in mechanical pain thresholds six to seven hours after surgery, but pain thresholds in patients given a single preoperative does of ceftriaxone increased significantly. This is the first study showing analgesia resulted from administration of an antibiotic in humans. The authors concluded that ceftriaxone should be the drug of choice for surgical prophylaxis in situations when pain does not rapidly resolve following surgery or when strong pain is expected to occur after surgery.'



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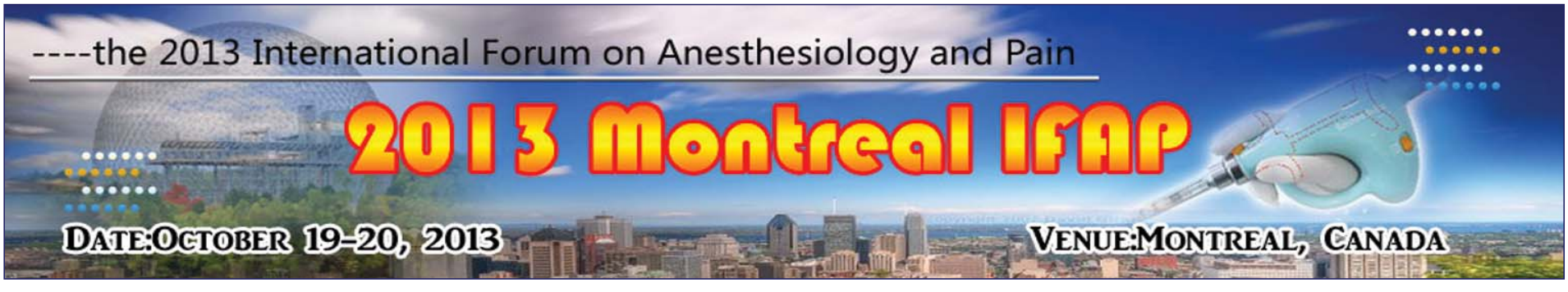
News Highlights

Weeks after Stroke, Some Patients Develop Chronic, Debilitating Pain

Nearly 1 in 10 stroke patients suffer chronic and debilitating pain, typically described as sharp, stabbing or burning pain. It's called Central post-stroke pain syndrome (CPSP), first described more than 100 years ago, published in a medical journal in 1906, it was then called "thalamic syndrome". More than a century later, CPSP still is frequently misdiagnosed. It is treatable with medications and magnetic or electrical stimulation of the brain. But physicians today often fail to correctly diagnose the condition, Loyola University Medical Center stroke specialists report in the journal topics in *Stroke Rehabilitation.* Central post-stroke pain syndrome is a form of neuropathic pain caused by damage or dysfunction within the central nervous system. It typically begins days or weeks after a stroke. One study found that 63 % of patients were affected within one month, 18 %within six months and the remaining 18 % after six months. Patients can experience hyperpathia (abnormally painful reaction to a painful stimulus) or allodynia (pain in response to a light touch, contact with clothing or bed sheets, air currents, etc.) which is reported in two-thirds of CPSP patients. The prevalence of CPSP among stroke patients is 8%, but can range from 1% to 12 %. It is among several types of post-stroke pain, which also include headache and musculoskeletal pain, especially pain related to abnormal shoulder movement. First-line drug treatments for CPSP include amitriptyline (an antidepressant) and lamotrigine (an anticonvulsant). Second-line treatment includes the anticonvulsant gabapentin. If medications don't work, a non-invasive therapy called trans-cranial magnetic stimulation (TMS), a therapy which sends short pulses of magnetic fields to the brain should be considered. If drugs and TMS both fail, invasive therapies that electrically stimulate the brain should be considered in carefully selected patients. The treatments involve inserting electrodes into the membrane covering the brain (motor cortex stimulation) or into the brain itself (deep brain stimulation).



Ice-cream Headache!

Ice cream headaches are brief, stabbing headaches that can happen when a person eat or drink something cold. Ice pops, slushy frozen drinks, ice cream, and other cold foods and drinks can have the same "brain-freeze" effect. Everyone experienced that sharp, shooting headache as a result of stuffing their face with ice cream. Previously, scientists have suggested it's just a result of the rapid cooling and rewarming of blood vessels in the sinuses—but a new study shows that the cause is actually buried much deeper. The research, carried out in part by Harvard Medical School, used trans-cranial Doppler imaging to study blood flow in the brains of patients while they had ice cream headaches—sometimes referred to as brain freeze—induced using iced water. They also performed the experiment with normal water as a control. The results show that brain freeze is accompanied by a rapid dilation of the anterior cerebral artery, which floods the brain with blood and in turn causes pain. When the vessel constricts, patients report that the pain disappears. The researchers speculate that it's a form of self-defense for the brain. The researchers said — "The brain is one of the relatively important organs in the body, and it needs to be working all the time. It's fairly sensitive to temperature, so vasodilation might be moving warm blood inside tissue to make sure the brain stays warm." They also explain that, because the skull is rigid, an increase in blood volume in the brain causes an increase in pressure, which causes the pain. While it's neat to get a better understanding of what causes those nasty ice cream headaches, the findings could prove far more useful than that. The researchers point out that similar blood flow alterations could be behind migraines and other types of headaches. If that's the case, targeting headaches with drugs that can specifically affect dilation of blood vessels could bring a lot of relief to an awful lot of people. But there's good news. Most ice cream headaches are gone in the time it would take you to say their medical name — "headache attributed to ingestion or inhalation of a cold stimulus." This kind of headache goes away on its own. Some doctors say that simply eating cold foods more slowly can help prevent brain freeze, even one can also try warming foods up a tiny bit in the front of the mouth before swallowing them. And if one start to feel an ice cream headache coming on, then she should take a break from the cold food for a minute or two.

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Interesting Facts

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Interesting Headache Facts

Most of us get headaches at one time or another - and they're not pleasant. Whatever the cause, headaches are a real pain, but how many of the following facts about headache did we know?

Headaches in ancient times
The ancient Greeks and Romans used peppermint tea to treat their headaches. But that wasn't the only thing they used – they also drank juices made from camomile, rosemary and lavender. They also applied raw potato, cabbage and onion to the head in an effort to relieve headache.

A hole in the head
In times gone by, headaches were often thought to be the work of evil spirits, and rituals were performed to drive them off. In the Neolithic period, circular chunks of skull were removed in order to let the spirits escape. Oddly enough, people seemed to have survived these operations, as skeletons have been found that showed new bone growth around these holes.

Fasting can cause headaches
Fasting may cause headaches, as a fasting person is likely to have very low blood sugar.

Rebound headaches
One can get a headache from taking too many headache medications too often. This is called a rebound headache. It will not go away until the person stops taking the headache medication entirely.

Hereditary migraines
Most children who get migraines, have at least one close family member who suffers from migraines too. If a child has one parent who suffers from migraines, they have a 50% chance of getting them too, if both are sufferers, this rises to 75%.

Headaches mostly harmless
While most headaches are uncomfortable and sometimes disabling, they are mostly not dangerous. Most of them can be cured by over-the-counter headache medications and by lying down in a quiet dark room for a while.

Lifestyle the cure
Lifestyle plays an important part in preventing headaches. If a person don't smoke, don't drink excessively, get regular sleep, eat a healthy diet and get daily exercise, then he is unlikely to suffer from headaches frequently, unless he has a medical problem.

Tension headaches the most common
Tension headaches can affect anyone and is the most common type of headache. Tension headaches are often the result of neck and shoulder muscles going into spasm, and can sometimes last for days.

Headaches in Men & Women
More men than women suffer from cluster headaches and more women than men suffer from migraines. Adult women get headaches four times more often than men do, and these are linked to hormonal fluctuations. In both men and women, the severity and frequency of headaches decline with advancing years.

Hangover blues
Hangover headaches are largely caused by acetaldehyde, which replaces the glucose molecules in the brain. Those with hangovers also suffer from dehydration and low blood sugar. Person getting hangover headaches should drink large quantities of water or sugared tea – not sodas or coffee, as these can cause further dehydration.

Blood vessels the culprits
Headache signals do not come from the brain, contrary to what many people believe. These pain signals are caused by interactions between the blood vessels, the brain and surrounding nerves. The pain comes from activated nerves around the skull, the blood vessels, and the head muscles.

Steer clear of these triggers
There are certain foodstuffs and beverages that can trigger migraines in certain individuals. These include coffee, chocolates, yellow cheese, other dairy products, red meat, nuts, vegetable extracts, foods high in monosodium glutamate and alcohol. These are the most common triggers, but individual sufferers may respond to a variety of different foodstuffs or beverages.

Kids get headaches too
Even children get headaches, some well before the age of ten. Before puberty, headaches are more common in boys.

Most commonly-found pain
Headache is the most common cause of pain. Most people, however, treat themselves with over-the-counter drugs and many migraine sufferers go undiagnosed.

Rosehip Powder Reduce Arthritis Pain & Inflammation

Rosehip powder (Rosa L Canina) is gaining international acclaim with two new studies supporting its powerful anti-inflammatory action to help reduce arthritic pain. The two new scientific studies have shown that the standardized Rosehip powder can not only reduce inflammation and pain in people with arthritis but also help protect the joints of active people. The clinical study, conducted in the U K, found standardized Rosehip powder helps improve knee mobility and may help prevent damage to knee cartilage. It also help to decrease joint pain and joint resistance in the knee. A further Danish study found that high levels of Rosehip seeds helped to reduce inflammation in patients with inflammatory arthritis. Conducted by Horsens Hospital in Denmark, the study found that higher levels of Rosehip seeds resulted in higher reductions in inflammation for people. The Danish study, presented at the Osteoarthritis Research Society International's (OARSI) 2013 World Congress on Osteoarthritis in Philadelphia, suggested Rosehip seeds have the potential to significantly reduce the inflammation thereby helping to reduce stress on joints. Moreover, the study found a 50:50 ratio of Rosehip shells and lipid-rich seeds was the most effective at reducing inflammation levels, and it also supports previous research suggesting that the lipid-rich seeds of Rosehip that contain the galactolipid have unique anti-inflammatory properties. The studies adds to the mounting scientific evidence, over 30 scientific studies including four double-blind placebo controlled clinical trials unique to a standardized Rosehip powder, supporting standardized Rosehip as a natural anti-inflammatory which may help relieve the pain of arthritis and help increase joint mobility.

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