Living in Pain: A Closer Look at Fibromyalgia

By Stacey Haseleu

Lana groans as her arm reaches across the nightstand in slow motion. Relieved at first to be taken out of yet another nightmare, she slides her hand up the face of the clock, tapping each finger slightly on the clock's smooth, plastic exterior until she finds a fingertip that isn't numb. She uses it to authoritatively hit the "off" switch on the loudest, most annoying alarm clock ever made. This is Lana's third alarm clock in five months. Each a different make, a different model, but despite the allure of "soothing features" like waking up to a rainstorm, or church bells, each alarm gets progressively louder and more obnoxious. "I should have bought stock in alarm clocks," she thinks to herself as she rolls onto her side, slowly allowing gravity to lure her body out of bed. Her feet meet the cold wooden floor just in time to support the weight of her body. She pauses a moment as she stands huddled over in a heap, and slowly, cautiously, straightens her back until she's standing upright. Her lower back gnarls, sending firecrackers of pain shooting up her spine in disagreement. Lana sighs, as if to dismiss the pain.

She closes each swollen finger to its respective palm, then clenches her fist as tightly as she can, holds it for three seconds, then releases her fingers, stretching them like talons. Slowly she raises her swollen hands up to her puffy face and gingerly rubs her eyes. Ever so gently, she allows her fingers to wander to her temples as she rubs them slightly. "Another headache," she tells herself, as if she's wishing it away. The dull ache in her calves, thighs, and feet remind her of the horrendous muscle cramps that catapulted her out of bed at 1:30 a.m., 2:45 a.m., 3:23 a.m., 4:56 a.m., and 5:16 a.m. She glances at the bedside clock, it's now 6:08 a.m.

One foot in front of the other she shuffles into the bathroom. Her swollen fingers fumble and drop the tube of toothpaste. Curse words escape her mouth as Lana takes a deep breath and slowly, mechanically, bends her knees until she reaches the tip of the tube and pulls it back into the safety of a tighter grasp. After brushing her teeth, Lana stiffly sways to the shower, her body creaking and objecting to every movement, her legs still aching, her head throbbing, she turns the shower on and lets the water run for 30 seconds. She knows if she gets in the shower now and the water is too hot her skin will scorch as if it's touching the face of the sun. If the water is too cold, it will make her already numb hands and arms even more numb and cause more cramping in her legs and feet.

After the shower, Lana struggles to bend and maneuver during the act of drying off. She then slips on her robe and staggers into her bedroom to get dressed for the day.

Reaching into her closet she pulls out the blouse she planned to wear for today's meeting at work. Frowning, she curses again realizing another culprit of her recent brain fog; she forgot to iron the blouse. Glancing at the clock it's now 6:36 a.m., just twenty minutes until she has to leave for work and she hasn't even woken up Mitch, her three year old son. Frustrated, she throws the blouse on the unmade bed and pulls out another, less acceptable shirt to pair with her black trousers; the ones with the button that by mid morning feels like a dagger digging into her stomach.

Her hand brushes over her make-up kit as she bypasses it to reach for the loosest watch she owns. “No make-up for you today,” she sings to herself, “we are *not* dealing with *another* rash.” She slides her watch onto the loosest link and picks up her favorite ring out of habit before snickering to herself and putting it back. There’s no way it will fit on any of her swollen fingers.

Feeling her muscles loosen, Lana picks up the pace and heads into Mitch’s room where she gently rubs his back, soothing him to wake up. Mitch rolls over and mumbles jibber jabber, the obvious remnants of a dream. His eyes flutter open, “Morning Mummy,” he murmurs as he flops to his knees and wraps his arms around Lana’s neck. Cringing in pain Lana loosens his hold on her shoulders ever so slightly, kisses his cheek and, against her back’s objections, lifts Mitch to the floor to get him ready for the day.

Barely on time, Lana smiles as her co-worker Andy opens the door for her at the office and says, “Good morning Lana. How are you today?” She pauses a moment, “Actually, I’m good today Andy, pretty good.” He smiles back, completely oblivious to what Lana’s morning was actually like.

Sadly, Lana wasn’t lying when she told Andy she was “good today.” Thirty-two year old Lana Richards has been waking up every morning like this for the past ten years, and will probably continue to wake up the same way for the rest of her life. What tomorrow holds for Lana is uncertain. She could be bedridden all day, in so much excruciating pain it hurts to breathe, or she could wake up and repeat this kind of morning, a good morning.

»»»»»»»»»»»»

Can you relate to all or some of Lana’s frustrations during her morning routine? If so, you could be suffering from what doctors refer to as Fibromyalgia Syndrome (FMS). You’re *not* alone, it’s *not* all in your head, and it *is* a real medical condition affecting more than 12 million Americans.

For years, people have suffered from this debilitating set of symptoms which doctors have, in the past, waved off as psychosomatic pain (pain caused by a manifestation of a psychiatric condition such as anxiety or depression).

Today, there’s new hope for those suffering from Fibromyalgia. Although at the moment it remains incurable, researchers have come to realize that the symptoms of Fibromyalgia Syndrome are much more than side effects from depression and anxiety. In fact, it may be Fibromyalgia that is causing the depression and anxiety in patients who see an overlap in these conditions. Although some physicians are hesitant to accept these findings, it’s imperative that people who believe they are suffering from the condition continue to seek doctors willing to embrace the illness and to offer the advice and lifestyle changes needed to alleviate some of the symptoms associated with FMS.

Although Fibromyalgia is not yet curable, it is manageable. And with the number of people diagnosed with Fibromyalgia growing every year, it’s likely that at one point in each of our lives, we will encounter a friend, family member, or we ourselves will experience the gloomy wrath of this unfortunate syndrome.

So how do you know if you or a family member is experiencing the normal aches and pains associated with daily life or if there's more to it? What can you do if you or someone you know has already been diagnosed with Fibromyalgia?

In the past, there have been some articles that address FMS; however, since the syndrome has a history of being disregarded or stigmatized as a simple side affect, not much attention has been paid to educating the general public on how to recognize it or, more importantly, how to cope with its diagnosis. Now that Fibromyalgia is gaining recognition as a biological condition, it's important to understand its symptoms, possible causes, treatments, and the recent developments in research, because, as Lana's three year old son Mitch can probably tell you, in the words of G.I. Joe, "Knowing is half the battle."

»»»»»»»»»»»»»»

What is Fibromyalgia?

The word "Fibro" is a Latin derivative meaning fibrous tissues. "Myo" is a Greek word meaning muscles, and "algia" derives from the Greek word "algos" meaning pain. Therefore, simply stated, Fibromyalgia refers to pain of the muscles and connective tissue. The reason medical literature describes the condition as a syndrome rather than a disease is because the word disease implies the knowledge of a condition's underlying cause. In Fibromyalgia, researchers are still uncertain as to what causes the host of symptoms, although they do have some theories.

Possible Causes

Central Sensitization Theory

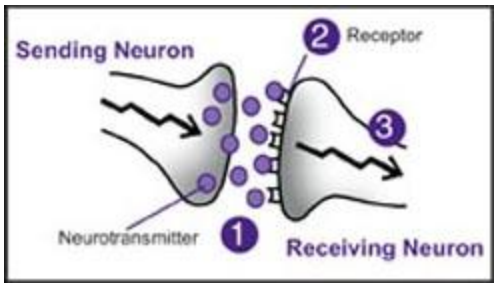

Figure 1: Neuron sending increased neurotransmitters to the receiving neuron interpreting pain

The main theory in today's Fibromyalgia research points to the central sensitization hypotheses. This theory recognizes that the major component of the syndrome is that those who suffer have a lower threshold for pain due to increased sensitivity to pain signals. Researchers believe that neurons in Fibromyalgia suffers overproduce the neurotransmitters (chemicals in the brain which transmit signals to the rest of the body) that send pain signals to receiving neurons causing the FMS sufferer to feel more pain than a healthy individual (See Figure 1). Additionally, the receiving neurons becomemore receptive to the overproduction of the neurotransmitters allowing them to receive more of the pain signals.

The effects on the central nervous system have also been researched through brain scans of those suffering from FMS which indicate that individuals show an abnormal increase in blood flow (brain

perfusion) to the area of the brain that discriminates the intensity of pain. Conversely, a decrease in blood flow to the area of the brain involved in the emotional response to pain was observed.

Another link between Fibromyalgia and the central nervous system has been researched by collecting cerebrospinal fluid (the fluid surrounding the brain and spinal chord) from FMS sufferers. In testing this fluid, researchers find that individuals with FMS have three times the amount of substance P (a chemical messenger in the nervous system associated with pain perception) then healthy individuals.

But what is causing Fibromyalgia sufferers to have these disruptions in their central nervous system? Currently there are many theories as to why pain perception is affected. Researchers believe that individually or collectively, these factors combine to create the disruption and cause the syndrome.

Genetics

Some scientists suspect that individuals may be born with certain genes that regulate the way the body responds to pain. Although the individual or group of genes responsible for this irregularity has not yet been discovered, research indicates that individuals are, in some way or another genetically pre-disposed to develop Fibromyalgia.

Chronic Sleep Disturbances

Researchers note that individuals suffering from FMS often complain of sleep disturbances. According to the Encyclopedia of Natural Medicine, a key finding in patients with Fibromyalgia is disturbed sleep patterns. In the course of a normal night's sleep, a healthy adult goes through five or six sleep cycles. Each sleep cycle is characterized by periods of REM (rapid eye movement) and non-REM sleep. During non-REM sleep, there are four stages of sleep. As sleep deepens, a person enters a higher stage of sleep. Healthy individuals experience all four stages of sleep as well as at least one hour of REM sleep per sleep cycle in one night. Individuals with FMS, however, are lucky if they enter stages 3 and 4 of non-REM sleep and rarely enter REM sleep at all.

The decrease in deep, restorative sleep patterns not only leads to Fibromyalgia sufferers waking up feeling tired, un-refreshed, and worn out, but it also leads to pain. Scientists explain that it is during the deep stages of sleep that our bodies produce growth hormones which heal and protect us from pain. If we don't enter the deep sleep stages, then these hormones are not produced.

Growth Hormone (IGF-1) Deficiency

Since individuals suffering from FMS aren't entering the deep stages of sleep, it is natural that testing would show a growth hormone deficiency. IGF-1 (or insulin-like growth factor-1) is diminished in individuals with Fibromyalgia. Low levels of this hormone lead to impaired thinking, lack of energy, muscle weakness, and intolerance

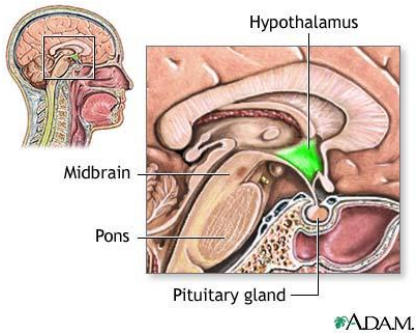

Figure 2: Hypothalmus in relation to the Pituitary Gland

to the cold, all of which are symptoms of Fibromyalgia. Studies suggest that the changes in growth hormone production are linked to the hypothalamus in the brain (see Figure 2).

Other Hormonal/Chemical Imbalances

Other abnormalities linked to the hypothalamus have been found in Fibromyalgia sufferers. The hormone system known as the hypothalamus-pituitary-adrenal gland (HAP) axis controls important functions in the body such as sleep, stress responses, and depression. Changes in the HAP axis produce lower levels of the stress hormones norepinephrine and cortisol. These lower levels of stress hormones lead to an impaired reaction to psychological as well as physical (ie exercise and infection) stresses.

Another important chemical messenger in the brain is serotonin. Serotonin impacts deep sleep, pain, and feelings of well-being. Low levels have a distinct link to depression, migraines, and irritable bowel syndrome all of which most FMS patients also suffer. Additionally, Serotonin is a key ingredient in making melatonin which is the natural chemical the body uses Serotonin to produce. Melatonin helps people fall asleep and enter the deeper stages of sleep at night. If the serotonin levels of FMS patients are lower, it is believed that this also directly affects the amount of melatonin produced.

Some Fibromyalgia patients exhibit low levels of muscle-cell chemicals that ensure the proper amount of calcium is regulated to your muscles. When levels are low, muscles stay contracted rather than relaxing.

Psychological Factors

Although researchers concede it is not the primary cause, psychological factors are believed to contribute to the onset of FMS by making an individual more susceptible, triggering the onset, or perpetuating the condition. Studies report higher numbers of severe emotional and/or physical abuse in patients with Fibromyalgia as opposed to those without FMS. This suggests that chronic stress and Post-traumatic Stress Disorder (PTSD) may in some cases play a role in the development of the condition.

Trauma or Infection

Most patients diagnosed with Fibromyalgia report having been through a traumatic experience such as a car accident, surgery, or other injury immediately prior to experiencing symptoms.

Others report having an infection such as the flu, bronchitis, or other virus. Although at one point researchers believed that the Epstein Bar Virus (the same virus responsible for Mono or “the kissing disease”) was to blame, the focus has shifted. Researchers do recognize, however, the link between a traumatic event and/or infection leading to the onset of Fibromyalgia. They believe that it is perhaps these events that trigger its onset and not necessarily cause the condition.

Symptoms and Diagnosis

Fibromyalgia Syndrome is characterized by allodynia, which is a heightened response to pain and

pressure that would normally not cause pain in a healthy individual. To qualify as Fibromyalgia, an individual must have tenderness (measured by a physician exerting a specific amount of pressure to each tender point) in 11 of the 18 tender points illustrated in Figure 3.

Additionally, the American College of Rheumatology (ACR) set the following criteria for a diagnosis of Fibromyalgia in 1990:

1. Widespread pain present for at least three months and occurring in all of the following locations:
   a. Both sides of the body
   b. Above and below the waist
   c. Along the length of the spine
2. Long-term symptoms that include the following:
   a. Fatigue
   b. Headache
   c. Morning Stiffness
   d. Numbness or tingling in the hands or feet
   e. Sleep disturbance

Figure 3: "Trigger" Points in Fibromyalgia patients

Since 1990, additional criteria has been added and widely accepted for diagnosing Fibromyalgia. Patients report experiencing some or all of the following symptoms in addition to those listed above:

- Prolonged muscle spasms
- Weakness in the limbs
- Muscle twitching
- Palpitations (heartbeat irregularities)
- Bowel disturbances (possible diagnosis of Irritable Bowel Syndrome)
- Cognitive dysfunction (also known as Fibro Fog) characterized by impaired concentration, problems with short and long-term memory, impaired speed of performance, diminished attention span, and inability to multi-task
- Hypoglycemia (low blood sugar)
- Anxiety
- Depression
- Swelling and numbness in addition to tingling of the hands and feet
- Sensitivity to the following
  - Chemicals such as cleaning agents
  - Make-up
  - Alcohol
  - Hot and/or Cold temperatures
  - Certain foods

Many patients diagnosed with FMS report that the symptoms are always present, others indicate the condition can be aggravated at certain times causing periods of remission and flare-ups. The symptoms of Fibromyalgia may intensify in relation to time of day, amount of tension, inactivity, changes in weather, cold or drafty conditions, overexertion, hormonal fluctuations that may occur prior to a woman's menstrual cycle, stress, depression, and/or other emotional factors.

Because FMS cannot be detected through laboratory tests, it is very difficult to diagnose causing many to remain undiagnosed for months or even years. Fibromyalgia has become known as a diagnosis of elimination, meaning that once other diseases with the same symptoms such as Multiple Sclerosis, Lyme Disease, Arthritis, and Lupus are ruled out, then the patient is diagnosed with Fibromyalgia. Another major factor in diagnosing Fibromyalgia is the physical examination and pressure on the above mentioned tender points.

Prognosis/Treatments

Fibromyalgia can cause mild discomfort, can render an individual completely disabled, or can provide a host of symptoms that falls somewhere in between the two extremes. Even in the mildest forms of the syndrome patients report a substantial emotional toll. Research suggests that those suffering from FMS experience greater psychological distress and impact on quality of life than individuals suffering from other chronic conditions. A reported one half of Fibromyalgia patients have difficulties with or are unable to perform routine daily activities. Additionally, an estimated 30% - 40% of FMS patients have been forced to quit work or change jobs due to the symptoms. Because of the negative stigma placed on Fibromyalgia, those suffering from the condition are more likely to lose jobs, possessions, and support from friends and family than individuals suffering from other diseases causing fatigue.

But even with the staggering pain, there is hope. Twenty-five to thirty-five percent of patients have reported some improvement in pain symptoms over time. Those with a positive attitude towards proactively fighting the syndrome report a higher success in improvement of symptoms then those that "give up."

Since FMS is such a mysterious condition and researchers are not quite sure what causes the condition, there is no known treatment; however, there are many steps Fibromyalgia sufferers can take to greatly improve their quality of life.

In 2007 the U.S. Food and Drug Administration (FDA) approved pregabalin (Lyrica) as the first drug treatment for Fibromyalgia. A study showed that this prescription reduced pain associated with

Fibromyalgia in 63% of patients. One year later, the FDA also approved Cymbalta, which has been shown to decrease pain by more than 30%. In addition to these drugs, anti-depressants such as Prozac and Paxil as well as muscle relaxants such as Tramadol have also been administered with some effectiveness. Health professionals agree, however, that it is a combination of prescription drugs and lifestyle changes that is most effective in treating the symptoms of FMS. Patients should also try

physical therapy, low impact exercise, relaxation, and cognitive behavioral therapy.

Since a key factor in Fibromyalgia is sleep disturbance, many doctors suggest proper sleep management including:

- Regular sleep habits (going to bed at the same time, and waking at the same time everyday)
- Avoiding caffeine and alcohol later in the afternoon and evening
- Regular daytime exercise to promote tiredness at the end of the day
- Avoiding daytime naps
- Reserving the bedroom for sleeping only (no watching TV, doing work, paying bills etc)
- Keeping the bedroom dark, quiet, and cool
- Avoiding liquids and spicy meals before bedtime
- Set aside relaxation time prior to going to bed

Living with a chronic condition can be difficult. Health care professionals suggest those diagnosed with FMS seek psychological support through family and friends. Additionally, support groups and counseling are recommended to help improve understanding of the condition and help with coping skills.

Hope for the Future?

The cause of Fibromyalgia remains unknown; therefore, a cure is not yet possible. There have been, however, many advances within the last ten years providing a glimmer of hope for FMS sufferers. Most recently, the FDA approval of prescription drugs in the treatment of Fibromyalgia has opened many doors in acknowledging that Fibromyalgia is not "all in your head." With the recognition of the physical/biological components of the syndrome, science is headed in the right direction to researching the cause of this pain laden syndrome and, hopefully, one day finding a cure. No one should have to go through the pain and agony Lana experiences every morning. For now, there are lifestyle changes, prescription medicines, and support groups that can help you or anyone you know that may be suffering from Fibromyalgia. In the future, who knows, perhaps Lana will have mornings where she can hug her son Mitch tightly and smile to herself knowing that the next morning she will be able to wake up without pain.

References

http://education.yahoo.com/reference/dictionary/entry/fibromyalgia

http://www.webmd.com/fibromyalgia/guide/what-is-fibromyalgia

http://en.wikipedia.org/wiki/Fibromyalgia

http://www.differencebetween.net/science/health/difference-between-syndrome-and-disease/

http://chronicfatigue.about.com/od/treatingfmscfs/a/neurotranshub.htm

http://adam.about.net/reports/Fibromyalgia.htm

http://chronicfatigue.about.com/od/whatcausesfmscfs/a/fms_causes.htm

http://en.wikipedia.org/wiki/Substance_P

http://arthritis.about.com/od/arthqa/f/fmscause.htm

http://www.holisticonline.com/Remedies/cfs/fib_insomnia.htm

http://en.wikipedia.org/wiki/HPA_axis

http://www.medterms.com/script/main/art.asp?articlekey=5468

http://www.webmd.com/sleep-disorders/tc/melatonin-overview

http://www.webmd.com/fibromyalgia/guide/fibromyalgia-causes

http://en.wikipedia.org/wiki/Allodynia

http://www.webmd.com/fibromyalgia/guide/fibromyalgia-diagnosis-and-misdiagnosis?page=2

http://en.wikipedia.org/wiki/File:Tender_points_fibromyalgia.gif

http://www.webmd.com/fibromyalgia/understanding-fibromyalgia-symptoms

http://www.womenshealth.gov/publications/our-publications/fact-sheet/fibromyalgia.cfm#d

http://www.lyrica.com/Default.aspx

http://www.cymbalta.com/Pages/index.aspx

http://www.webmd.com/fibromyalgia/guide/fibromyalgia-treatments

http://en.wikipedia.org/wiki/Tramadol