**SYMPTOMS**
- widespread pain and tenderness
- fatigue
- cognitive disturbance
- emotional distress.

**LIST OF SYMPTOMS BY BODY SYSTEM:**
- **MUSCULOSKELETAL:** myofascial pain, multiple trigger points (see below), cramping, aching, fatigue, twitches, weakness, restless legs, morning stiffness, temporo-mandibular joint (TMJ) dysfunction
- **NEUROLOGICAL:** chronic headaches/migraines, sleep disorders, cognitive impairment, memory impairment, anxiety, depression, dizziness, numbness, allodynia
- **DIGESTIVE:** nausea, abdominal pain, bloating, irritable bowel syndrome
- **SKIN:** dry skin, rashes, itchy/burning skin, tingling sensation
- **EYES:** sensitivity to light, dry eyes, blurred vision, rapidly worsening vision
- **URINARY:** increased urinary frequency, dysuria, irritable bladder
- **REPRODUCTIVE (female):** dysmenorrhea

**TENDER POINTS**

**PATHOPHYSIOLOGY OF FIBROMYALGIA**

- Brain is hypersensitive to pain signals:
  - Down-regulation or decrease in opioid receptor activity that may exaggerate pain sensitivity.
  - Increased levels of inflammatory cytokines in the brain contribute to “fight or flight”

**NUTRITION-BASED SOLUTIONS**

**S-adenosylmethionine (SAMe)**
- Involved in the metabolism of neurotransmitters including serotonin, dopamine and noradrenaline.
- Supplementation seems improvement in neurotransmitter levels and improved binding at receptor sites.
- Has been shown to improve pain, fatigue, stiffness and mood in patients with medically diagnosed fibromyalgia.

**Magnesium**
- Important for the maintenance of healthy mood, nervous system and energy production. Magnesium relaxes nervous tension, which may in turn lead to decreased sleeplessness.
- Deficiency associated with activation of low-grade chronic inflammation (by triggering the excessive production and release of IL-1b, TNF-a and pro-inflammatory neuropeptides) and increased production of free oxygen radicals. Deficient intakes of magnesium and vitamin B6 is associated with an increased risk of inflammation.
- Patients given magnesium claims to have improved energy levels, a better emotional state and less sleeplessness.

**Coenzyme Q10 (CoQ10)**
- CoQ10 is an essential electron carrier in the mitochondrial respiratory chain and a strong antioxidant. It functions to stabilise cell membranes, supporting cellular integrity and function, and helps the body’s energy reserves and energy production.

**Pyridoxal-5-phosphate (P5P) – activated vitamin B6**
- Vitamin B6 cannot be synthesised in the human body and must therefore be obtained from a dietary source.
- Its phosphate ester derivative P5P is the active form and has the most importance in human metabolism.
- In the brain, the synthesis of serotonin, melatonin and other neurotransmitters is catalysed by P5P-dependent enzymes.
- Adequate levels of vitamin B6 are important for the regulation of mental processes and maintenance of healthy mood.