Coenzyme Q10 (CoQ10), also called ubiquinone, is a naturally occurring substance and an essential part of the energy producing mechanism inside every cell where food is converted to energy. CoQ10 improves energy production in cells and, importantly, CoQ10 acts as an antioxidant. While, in general, the benefits of antioxidants have been controversial, the benefits of CoQ10 have a great deal of research in their support.

Current research suggests that CoQ10 may offer benefits for the following conditions:

**Cardiovascular:**
A great deal of research has focused on the benefits of CoQ10 for the heart and high blood pressure. CoQ10 improves the strength of cardiac contractions in conditions where the heart muscle is weak such as congestive heart failure (CHF). While not a stand-alone agent for high blood pressure, CoQ10 appears to help blood pressure medications be more effective. CoQ10 also is believed to reduce the development of atherosclerosis, or "hardening of the arteries".

**Cholesterol Medications (Statins)**
Cholesterol medications such as Lipitor frequently cause muscle pain or weakness and CoQ10 is thought to reduce this risk.

**Migraine Headaches**
CoQ10 has good research to support its use in preventing migraine headaches, with some studies showing a frequency reduction of >60% after 1-2 months of CoQ10 use.

**Fibromyalgia**
The benefits of CoQ10 for fibromyalgia have been well documented. A number of studies reveal improved sleep and reduced pain, fatigue, headaches and depression associated with CoQ10 and fibromyalgia.

**Depression**
CoQ10 appears to be of significant benefit in depression, especially when depression is otherwise resistant to current treatment.

**Chronic Fatigue Syndrome (CFS)**
Supplementation with CoQ10 appears to be effective in reducing the fatigue and nonrestful sleep associated with CFS.

**Central Sensitization of Pain**
While no specific studies look at CoQ10 and central sensitization, based on proposed mechanisms and current theory, there is a good argument that CoQ10 may help reduce the amplification of pain often seen in chronic pain conditions.

**CoQ10 in the Diet**
While the benefits described above are generally achieved only with diet supplements, CoQ10 is present in food. Foods high in CoQ10 include animal meat, especially heart and liver and red meat.

**CoQ10 Supplements**
CoQ10 is generally poorly absorbed so various commercial modifications to the supplements are available to improve absorption, including "solubilized" and "colloidal" forms. Studies are lacking that directly compare brands so it is difficult to make specific recommendations. In some cases it is helpful to obtain blood tests to measure CoQ10 levels to guide treatment.

**Complementary Supplements for Use with CoQ10**
Studies suggest that the benefits CoQ10 may be enhanced if CoQ10 is also taken with other antioxidants such as
carnitine, lipoic acid, N-acetylcysteine (NAC), NADH (20 mg/day), vitamin C, and/or vitamin E. Also, supplementing with Superoxide Dismutase (SOD) may be another method of achieving the same benefits as CoQ10.

CoQ10 Dosing
The optimal dose of CoQ10 is not well established but researchers frequently use doses between 150mg and 1200mg/day, sometimes higher. Doses of 150-300mg/day are generally thought to be appropriate starting doses, with modification of the dose based on treatment response. Trials of 1-3 months may be needed to see results.

CoQ10 Safety and Side Effects
The safety of CoQ10 has been well established and supplementing with CoQ10 appears to offer minimal side effects that might include abdominal discomfort, nausea, diarrhea and loss of appetite.
For further information, please consult your physician.