What is Chelation Therapy?

The term “chelation” comes from the Greek word chele, which means claw, referring to the way the compound used in chelation grabs onto toxic heavy metals 2. Examples of heavy metals are: lead, aluminum, mercury, cadmium, and arsenic. One of the commonly used chelators is ethylene diamine tetraacetic acid (EDTA) which binds to, or chelates, iron, lead, mercury, cadmium, zinc, and some other metals. These are then eliminated from the body through the kidneys. IV chelation therapy is a mainstream treatment for **poisoning** from toxic levels of certain metals found in the body.

Toxic Effects of Heavy Metals on the body:

Heavy metals bind to proteins involved in regular body functions, resulting in alterations of important processes. Increased synthesis of metal binding proteins in response to elevated levels of a number of metals is the body's primary defense against poisoning 1.
Heavy metals compete with minerals for regular body processes. For example, lead follows calcium pathways in the body, and can be instead deposited in bone and teeth. Thallium is taken up into cells like potassium 1.

Nearly all organ systems are involved in heavy metal toxicity; however, the most commonly involved organ systems include the CNS, PNS, GI, hematopoietic, renal, and cardiovascular (CV) 1.

The organ systems affected and the severity of the toxicity vary with the particular heavy metal involved, how long and how much exposure to the metal, the age of the individual, and their genetic predisposition 1.
Exposure to heavy metals can be from a variety of sources, including air pollution, heavy metal tainted seafood, industrial runoff, pesticides, mercury dental fillings, tap water, lead-based paints and commercially raised meats 1.
“Some heavy metals may play an important role in diabetes mellitus as environmental risk factors 4.”
“A previous study in type 2 diabetic patients with high-normal body lead burdens showed that EDTA chelation therapy for 3 months slows progressive **diabetic (nerve pain)** during a 12-month follow-up.” 5. A 27-month course of EDTA chelation therapy confirmed a (slowing) of the progression of diabetic (nerve pain) in type 2 diabetic patients with high-normal body lead burdens 5.”
The heavy metal lead (Pb) is a major environmental and occupational hazard. Studies have demonstrated a strong association between lead exposure and the presence of chronic kidney injury. Chelation therapy can effectively delay the progression of **chronic kidney disease** in patients with measurable body lead burdens 6.

For what other conditions is chelation therapy used?

A large study sponsored by the National Institute of Health in 2003 was published in the Journal of the American Medical Association (JAMA) in March 2013 3. Results of this study, called The Trial to Assess Chelation Therapy (TACT) trial, showed that infusions of chelation therapy with EDTA produced a modest but significant reduction in **heart disease** events in diabetic participants 3.

How is chelation therapy administered?

After testing urine and blood and an interview with one of our providers to determine your unique needs, IV chelation typically follows a once a week course for the initial treatment phase and a once a month course for maintenance. Each session takes approximately 2 hours. This treatment occurs in our comfortable, social IV room with cushy theater recliners, blankets and snacks and access to Vine wifi.

References:

1. Adal, A. & Wiener, S. W. (03/24/2015). *Heavy Metal Toxicity*
   Retrieved on 04/05/2015 from http://emedicine.medscape.com/article/814960-overview

2. American Cancer Society (2014) *Chelation Therapy*
   Retrieved on 04/05/2015 from http://www.cancer.org/treatment/treatmentsandsideeffects/complementaryandalternativemedicine/pharmacologicalandbiologicaltreatment/chelation-therapy

3. Chen YW1, Yang CY, Huang CF, Hung DZ, Leung YM, Liu SH. (2009)
   Heavy metals, islet function and diabetes development.
   Islets; 2009 Nov-Dec;1(3):169-76. doi: 10.4161/isl.1.3.9262.
   Retrieved on 04/05/2015 from http://www.ncbi.nlm.nih.gov/pubmed/21099269

4. National Institute of Health (2013)
   Chelation therapy reduces cardiovascular events for older patients with diabetes
   Retrieved on 04/05/2015 from http://www.nih.gov/news/health/nov2013/nccam-19.htm

5. Chen KH1, Lin JL, Lin-Tan DT, Hsu HH, Hsu CW, Hsu KH, Yen TH. (2012)
   Effect of chelation therapy on progressive diabetic nephropathy in patients with type 2 diabetes and high-normal body lead burdens. Am J Kidney Dis. 2012 Oct; 60(4):530-8. doi: 10.1053/j.ajkd.2012.04.028. Epub 2012 Jun 20. Retrieved on 04/05/2015 from http://www.ncbi.nlm.nih.gov/pubmed/22721929

6. Yang SK1, Xiao L, Song PA, Xu XX, Liu FY, Sun L. (2014)
   Is lead chelation therapy effective for chronic kidney disease? A meta-analysis
   Nephrology (Carlton) 2014 Jan; 19(1):56-9. doi: 10.1111/nep.12162.
   Retrieved on 04/05/2015 from http://www.ncbi.nlm.nih.gov/pubmed/24341661