RECOMMENDED INGREDIENTS
FOR THE EDTA CHELATION IV INFUSION

1. Isotonic carrier Solution: 5% Dextrose in Water (D5W) or Normal Saline. (Subsequent infusion must be at least half normal to prevent hemolysis. Osmolality has not been a further concern when an isotonic carrier solution is used)

2. Disodium EDTA, 3 Grams. Reduced dosage to be computed for impaired kidney function using the Cockcroft-Gault formula . Do not use Calcium EDTA or Calcium Disodium EDTA. 3.0 grams infused slowly over 3 hours or more is the usual adult dose, calculating a reduced dose if serum creatinine is above 2.0 mg/dL)

3. Lidocaine, up to 200 mg as needed to prevent pain at the infusion site.

THE FOLLOWING INGREDIENTS ARE OPTIONAL AND ARE NOT NECESSARY FOR CHELATION THERAPY TO BE FULLY EFFECTIVE

EDTA, infused slowly, painlessly, and safely, is the important active ingredient. There is no evidence that additional ingredients will increase benefit. Many published studies performed between 1955 through 1995 used only disodium EDTA (without calcium) plus added lidocaine in an isotonic carrier solution with excellent results . Since that time studies have used more ingredients but the results were not any better—and quite possibly worse.

4. Sodium bicarbonate, 20 meq, may reduce any potential for discomfort but may reduce benefit.

5. Heparin 2,400 to 5,000 units may reduce incidence of local phlebitis at the point of infusion—although EDTA itself is an effective anticoagulant.

6. Folic Acid, 1 mg

7. Cyanocobalamin (Vitamin B-12), 1 mg

8. Additional lidocaine may be added during the infusion if needed for discomfort (40 mg to 80 mg slowly infused directly into the IV tubing—total lidocaine not to exceed 400 mg in 24 hours). Moist heat may also help discomfort. Occasional patients are more susceptible to discomfort and the use of a larger antecubital vein will reduse this.

Note: Vitamin C (ascorbate) has sometimes been added to the EDTA infusion bottle, but laboratory studies show that when ascorbate is combined with EDTA in solution it can trigger a Haber-Weiss cycle with an ascorbate-driven Fenton reaction. That reaction can convert ascorbate from an anti-oxidant to a pro- oxidant when infused into the body's iron-rich circulation. Such a reaction would increase

production of hydroxyl-radicals, superoxide radicals, and hydrogen peroxide in the body, resulting in continuous redox-cycling reactions between iron, oxygen, EDTA, and ascorbate. Such an event could accelerate cell death, which is just the opposite of what is intended. For that reason, it is recommended that intravenous vitamin C (ascorbate) not be added to the EDTA mixture, but be administered orally or separately from EDTA.

Nutritional supplements can safely be given by mouth, but that is a separate issue, unrelated to chelation. For purely theoretical reasons, supplemental trace metals are best avoided within 12 hours before or after an infusion.

Virtually all of published clinical trials achieved excellent results using only ingredients 1. through 3. listed above. No improvement has ever been reported from adding additional ingredients. To the contrary, careful observation and analysis of data over the years seem to indicate that overall benefit was less when more ingredients were added.

A temporary drop in plasma pH occurs when infusing disodium EDTA (without calcium). EDTA releases acid into the circulation when it binds to intravascular cations, such as calcium, magnesium, and many others. Two hydrogen ions are released for each polyvalent cation as it is chelated. The resulting acid shift in plasma pH increases the chelating properties of EDTA. This may be another reason that disodium EDTA seems more effective than calcium EDTA. That acid shift does not occur when infusing either calcium EDTA or magnesium EDTA.

Some clinicians have come to prefer calcium EDTA because it can be infused more rapidly without warning signs of hypocalcemia. They forget, however, that renal toxicity may occur silently, without any warning symptoms in susceptible patients when a full dose of even calcium EDTA is infused in less than three hours.

Because disodium EDTA (without calcium or magnesium) can cause pain at the infusion site (venous spasm as a result of the acid shift in pH), lidocaine is added to the infusion. If discomfort is still a problem, the use of a larger antecubital vain, application of moist heat, or infusion of a bit more lidocaine directly into the IV tubing will usually solve that problem. If patients ae informed that the discomfort is related to beneficial effect, they will be reassured.

In some locations it is difficult to find disodium EDTA (without the calcium). In that case it may be necessary to have a compounding pharmacy make the necessary supply.

The TACT study used a complex infusion solution with magnesium EDTA and many other additives. Personal observations over the years seem to show that benefits were better with the simple protocol above, used for many earlier years, from 1955 through 1995, with only disodium EDTA and lidocaine in an isotonic carrier solution. The many earlier published studies using that simple protocol reported results that appear better than TACT results.

For a more thorough discussion of this topic, refer to the links below:

http://drcranton.com/chelation/chelationthoughts.pdf

http://drcranton.com/chlamydia.htm

http://drcranton.com/chelation/TACT2A.pdf

http://drcranton.com/chelation/EDTAstudies.pdf