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# Cardiologists Conference

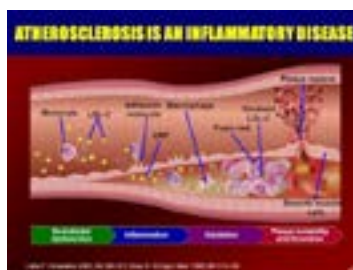
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## Heavy metals and atherosclerosis; One step forward in cardiovascular prevention

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Atherosclerosis is not a single disease entity. In fact, the lesions of atherosclerosis represent a common response of the Artery to numerous and potentially different forms of insult. Examination of atherosclerotic lesions reveals that each lesion contains the elements of an inflammatory response together with varying levels of fibro proliferative response. Many authors have written extensively about the holes in the cholesterol theory, and that mainstream medicine's obsession with reducing cholesterol levels has always been misguided. There is increasing concern regarding the health effects of exposure to various heavy metals in the environment. This is particularly true for mercury, cadmium, lead, aluminum and arsenic. Lead exposure increased through the mid 1970's, largely as a result of use of tetraethyl lead in gasoline. At the peak of lead production, the atmospheric release of lead reached 600.000 tons annually. The half-life of lead in the body is extremely long as it accumulates in the bone. The association between lead and cardiovascular disease has been recognized for years and there is consistent epidemiological evidence that lead is an established risk factor for hypertension, promotes oxidative stress and inflammation, the triggering event of atherosclerosis. Cadmium production increased during the 20th century as a result of the production of nickel-cadmium batteries, metal coatings and plastic stabilizers. Food and smoking are the major sources of cadmium for the general population. Cadmium is stored in the kidneys, liver, lungs, pancreas and central nervous system, with a half-life of over 15 years. A recent systematic review concluded that the evidence supports the role of cadmium as a cardiovascular disease risk factor, especially for coronary disease. Understanding that atherosclerosis is an inflammatory disease and not fat deposits blocking arteries will improve preventative strategies. The consequences of metal toxicity should now be published widely enough in order to avoid cardiovascular problems.



### Recent Publications

1. Mejia Viana S (2015) From framingham to hunt 2: 60 years blaming the wrong culprit? J Cardiol Curr Res 4(1):00131.
2. Nigra A, Ruiz-Hernandez A, Redon J and Navas-Acien A (2016) Environmental metals and cardiovascular disease in adults: a systematic review beyond lead and cadmium. Current Environmental Health Report 3(4): 416–433.
3. Solenkova N V, Newman J D, Berger J S, Thurston G, Hochman J S and Lamas G A (2014) Metal pollutants and cardiovascular disease: mechanisms and consequences of exposure. Am Heart J. 168:812–22.
4. Lamas G A, Navas-Acien A, Mark D B and Lee K L (2016) Heavy metals, cardiovascular disease, and the unexpected benefits of edetate chelation therapy. J Am Coll Cardiol. 67:2411–8.
5. Huang Y-CT and Ghio A J (2006) Vascular effects of ambient pollutant particles and metals. Curr Vasc Pharmacol United Arab Emirates 4:199–203.

### Biography

Sergio Mejia Viana has completed his Cardiology training and Doctorate at University Clinic of Navarra. He was an interventional Cardiologist, Angiologist and Phlebologist for 20 years. He is a Fellow of the European Society of Cardiology, has written more than 100 scientific publications including abstracts, articles and book chapters. He returned to clinical practice with high interest in Prevention. Currently, he is a Consultant at Medical Investigation Unit-St. Bernard's Hospital in Gibraltar.