### Title:
The relationship between serum copper and zinc status and lipid levels in Iranian workers.

### Authors:
Maryam Roffa, Parvin Dehghan

### Abstract:
**Introduction:** Copper and zinc are essential trace elements. Both are part of enzymes with antioxidant functions, such as superoxide dismutase, lysyl oxidase, and ceruloplasmin. Superoxide dismutase is an antioxidant enzyme that detoxifies the superoxide radical and whose activity depends on Cu availability.

Epidemiological studies support the possibility that increased serum copper and decreased zinc concentration may increase the risk of cardiovascular disease. However, studies on the role of zinc and copper nutriture as risk factors for cardiovascular disease have produced conflicting results. This study was assessed the relationship between serum copper and zinc with lipid levels in Iranian workers.

**Methods:** This cross-sectional study was conducted on 140 workers (75 men, 65 women) aged 17-50 years who underwent general health screening. Demographic, anthropometric data, and dietary intake were assessed by questionnaire. The serum copper and zinc concentrations were determined by atomic absorption spectrometry.

**Result:** There was a significant gender-related difference in serum zinc (p<0.01) and copper (p<0.01). The mean serum copper was significantly higher in women. However, the mean serum zinc was significantly higher in men. Positive association was observed between serum copper and TC (r=0.52, p=0.01), TG (r=0.49, p=0.05) and LDL-c (r=0.52, p=0.01) in women. Also, there was a significant association between serum zinc and TC (r=0.3, p=0.03) and TG (r=0.3, p=0.05), LDL-c (r=-0.3, p=0.05), LDL-c/HDL-c (r=0.26, p=0.05) and TC/HDL-c (r=0.3, p=0.04) in men. No association was found between Zn/Cu ratio with lipid levels for men and women. There was a positive association between serum zinc and Zn intake (r=0.3, p=0.02).

**Conclusion:** Evaluation of trace elements status may be associated with lipid profile in workers.

**Presentation:** Poster