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### Original Article

#### Association between Iron Status and Lipid Peroxidation in Obese and Non-Obese Women

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### Abstract:

**Background:** Obesity is associated with increased lipid peroxidation. It has also been suggested that risk of lipid peroxidation increases with increasing body iron stores. The aim of this study was to examine the association of body iron status with the concentration of plasma malondialdehyde (P-MDA) as a marker of lipid peroxidation in obese and non-obese women.

**Methods:** In a case control study we investigated iron status by plasma ferritin, iron and total iron binding capacity (TIBC) measurements and lipid peroxidation by plasma malondialdehyde (MDA) levels measurements in 25 obese women and 25 non-obese women matched for age.

**Results:** Plasma ferritin levels were significantly higher in obese groups compared with control groups ( $P < 0.001$ ). Plasma TIBC levels were not different in both groups and plasma iron levels were significantly higher in obese groups ( $P < 0.05$ ). In obese groups, plasma MDA levels were significantly higher when compared with control groups ( $P < 0.001$ ). There were positive correlation between body mass index and plasma MDA levels ( $r = 0.75, P < 0.0001$ ). Plasma MDA levels were positively correlated with plasma iron levels ( $r = 0.26, P = 0.001$ ) and plasma ferritin levels ( $r = 0.39, P < 0.0001$ ) but not with TIBC levels.

**Conclusion:** These findings suggest that obese menstruating women are at low risk of depleting iron stores and hence, increasing body iron elevates the CHD risk by promoting the lipid peroxidation. Therefore, iron fortification programs might be undesirable for such subjects.

### Keywords:

[Iron status](#) , [Lipid peroxidation](#) , [Women](#) , [Obesity](#)

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