**Background:** The high sensitivity C Reactive Protein (hsCRP) which was once considered a risk marker associated with cardiovascular diseases is increasingly considered as an independent risk factor which has atherogenic potential.

**Objectives:** To determine whether a dose response relationship exists between exercise intensity and hsCRP in sedentary individuals.

**Design:** A four year randomized, active controlled, parallel group, outcome assessor blind, multiple arm trial.

**Method:** 98 sedentary (otherwise healthy) individuals with a baseline hsCRP of more than 1 mg/L and less than 15 mg/L were randomly allocated to one of the four groups (Control, and three exercise groups with escalating intensities of exercise). Three exercise groups were administered an exercise program at 50 – 60%, 60 – 70% and 70 – 80% based on heart rate reserve method, respectively for eight weeks. Concentration of hsCRP was measured at baseline and after eight weeks using immunoturbidimetry. The secondary outcome measures in this trial were peak oxygen uptake, waist circumference, fat percentage and body mass index.

**Results:** Participants had a mean (range) age of 23.3 (18-36) and a mean (range) body mass index of 26.6 (17.1-36.8). CRP data was rank transformed as it did not follow normal distribution. The results indicated that there was no dose response relationship between exercise intensity and reduction in hsCRP (F = 1.603, p = 0.19). After removing six participants who had an increase in hsCRP of more than 30% from baseline after eight weeks, we found a significant reduction of 38% in participants who were in the 60 – 70% intensity and about 25% in participants with 50 – 60 and 70 – 80% intensity (F = 3.63, p = 0.01). The changes in hsCRP among exercise groups were independent of the changes observed in the secondary outcome measures.

**Conclusion:** There is no convincing evidence for a dose response relationship between exercise intensity and CRP, however short term aerobic training (eight weeks) at 60 – 70% intensity has a role in reducing subclinical inflammation. The threshold intensity for exercise to have a beneficial effect on the inflammatory front appears to be 60% based on heart rate reserve method.

**Keywords:** Inflammation, Cardiovascular risk and Exercise