Some functional foods are helping in the combat to overweight, as green tea (*Camellia sinensis*). That blind-double study controlled with placebo, had as it is aim, investigates soluble green tea consumption effects in women with body mass index (BMI) about 25–35 Kg/m² in the body composition and resting metabolic rate (RMR). The volunteers were divided in four groups: group 1 - soluble green tea; group 2 - placebo; group 3 - soluble green tea plus resistance training; group 4 - placebo plus resistance training. They made a adaptative diet for one month and after this period the experimental protocol began with adaptative diet continuation for more two months. Groups 3 and 4 performed one repetition maximum test before the resistance training program. The four groups were submitted to biochemical analyses, bioelectrical impedance and indirect calorimetry. The results showed a weight loss in group 1 (5.7 Kg), with RMR decrease, there were body fat decrease and lean body mass maintenance. Group 2 presents no change in appraised parameters. Groups 3 and 4 showed decrease in body fat and triglycerides and increase in lean body mass, RMR, and muscle strength, so the results were significantly larger in the group 3. Soluble green tea promoted body composition modification and coupled with resistance training promoted a larger decrease in body fat and triglycerides, larger increase in lean body mass, muscle strength and RMR.