## The Effect to Improve Metabolic Syndrome by Essential Oils

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There is no doubt that we live in an ever-increasingly stressful world. Stress can have a wide range of effects on mind and body, including by causing obesity. In this study, we were able to induce weight loss by controlling mental stress through exposure to fragrances.

27 subjects with metabolic syndrome or its preliminary group were divided into 3 groups in this study, 12 subjects did not want the support of public assistance and fragrances. 9 subjects wanted to help the general dietary and exercise therapy, six subjects wanted to help weight loss support by the aroma. For about three months, we compared the changes in weight loss and stress between 3 groups. Before and after the experiment, we measured body weight and preperitoneal fat thickness using abdominal ultrasonographic scanning method, and analyzed the values obtained. We assessed the subjects' mental state using questionnaires (ex. GHQ30 for evaluating neurosis, Zung's Self-Rating Depression Scale (SDS)). We also evaluated the degree of stress by measuring the concentration of cortisol in saliva.

Cypress oil reported that weight loss. I reported that the same weight loss effect in both general therapy and Cypress oil. Compared to a typical diet and exercise therapy group, in the use of cypress oil group, mental health scales (GHQ30, SDS) were improved, salivary cortisol levels are decreased. Cypress oil may improve mental health scale and abnormal HPA (hypothalamic-pituitary-adrenal axis activity) by reducing the level of cortisol in saliva. Cypress might be causing a decrease in visceral fat and west circumference, could lead to weight loss.