

# Pengaruh pemberian susu bubuk kedelai terhadap kadar malondialdehid perempuan perimenopause dengan hiperkolesterolemia = The effect of soy powder-milk supplementation on malondialdehyde level of hypercholesterolemic perimenopause women

Christina Olly Lada, author

Deskripsi Lengkap: <https://lib.ui.ac.id/detail?id=20338952&lokasi=lokal>

---

## Abstrak

Penelitian uji klinik dengan one group pre-post test design bertujuan untuk mengetahui pengaruh pemberian susu bubuk kedelai terhadap peroksidasi lipid dengan mengukur kadar MDA. Terdapat 21 subyek perempuan perimenopause dengan hiperkolesterolemia yang memenuhi kriteria penelitian, mengkonsumsi susu bubuk kedelai setiap hari sebanyak 2x30g selama delapan minggu. Data yang diambil adalah: data demografi, IMT, asupan zat gizi, isoflavon dan antioksidan. Data laboratorium meliputi kadar kolesterol LDL dan MDA serum sebelum dan sesudah empat, delapan minggu perlakuan. Uji statistik yang digunakan adalah uji t-berpasangan bila distribusi normal dan uji Wilcoxon bila distribusi tidak normal dengan tingkat kemaknaan  $p < 0,05$ . Penelitian ini telah mendapat ijin dari Komite Etik FKUI.

Dua subyek drop out, 19 subyek menyelesaikan penelitian; umumnya berlatar belakang pendidikan rendah rerata usia 49,15 tahun dan IMT tergolong berisiko. Asupan kalori subyek penelitian sebelum perlakuan tergolong kurang, tetapi kemudian tergolong cukup setelah perlakuan. Pola dan asupan harian isoflavon subyek penelitian sebelum perlakuan tergolong cukup, meningkat setelah perlakuan. Pola dan asupan harian antioksidan subyek sebelum dan selama masa perlakuan tergolong kurang. Rerata kadar kolesterol LDL subyek penelitian sebelum masa perlakuan adalah  $134,32 \pm 23,70$  mg/dl.

Setelah perlakuan menurun, tetapi masih tergolong batas tinggi. Rerata kadar MDA serum subyek penelitian sebelum masa perlakuan adalah  $0,82 \pm 0,47$  nmol/mL. Setelah empat dan delapan minggu masa perlakuan kadar MDA serum meningkat, yaitu masing-masing sebesar  $0,98 \pm 0,26$  umol/ml ( $p 0,16$ ) dan  $1,13 \pm 0,40$  nmol/ml ( $p 0,023$ ). Beberapa faktor yang mungkin menjadi penyebab peningkatan tersebut adalah faktor subyek, biomarker MDA, bioavailabilitas dan karakteristik isoflavon serta asupan antioksidan. Bila subyek digolongkan berdasarkan status pre dan pasca menopause, maka setelah minggu IV perlakuan golongan premenopause menunjukkan penurunan kadar MDA yang lebih baik.

.....

The objective of this study is to investigate the effect of soy powder-milk supplementation on lipid peroxidation which is measured by the level of its metabolite, malondialdehyde (MDA). Twenty one hypercholesterolemic pre-menopause women who fulfilled the study criteria. started to consume 2x30g soy powder-milk everyday for eight week. Data taken were: demographic, anthropometric, nutrition intake, isoflavone, antioxidant pattern of isoflavone and antioxidant intake. Whilst laboratory data taken were level of LDL cholesterol and MDA serum before and after four and eight week supplementation. Statistical tests used were paired test if named distribution and Wilcoxon for up normal distribution with significance level of 5%.

Nineteen subjects completed the study. Most subjects had a low educational background, mean age were 49.15 years old and BMI classified as "risk." The subjects' calorie intake before supplementation was low, however after the fourth and eighth week of supplementation was regarded as sufficient. Subjects'

intake pattern and daily intake of isoflavone were sufficient and increased during supplementation. The intake pattern and daily intake of antioxidant subjects before and during supplementation were low. The subjects' mean level of LDL cholesterol before supplementation was  $134,32 \pm 23,70$  mg/dL. After four and eight week supplementation it decreased considerably at  $120,79 \pm 21,30$  and  $122,68 \pm 20,95$  mg/dL, which was still categorized as "high". Subjects' mean level of MDA serum before supplementation was  $0,82 \pm 0,47$  nmol/mL.

After four and eight week of supplementation level of MDA serum was increased consecutively at  $0,98 \pm 0,26$  nmol/mL ( $p = 0,16$ ) and  $1,13 \pm 0,40$  nmol/mL ( $p = 0,023$ ). Several factors that might cause the increase were subjects' age, menopausal status, and BMI, MDA biomarker, bio availability and characteristics of isoflavone and antioxidant intake. The gender of subjects in pre and post-menopause status showed different pattern of MDA level which is after four weeks of supplementation the pre-menopause subjects showed reduced of MDA level more than post menopausal subjects.