

## Combine proper exercise and regular taking antihypertensive medicine was better to lower diastolic blood pressure among diastolic prehypertensive and hypertensive subjects

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### Abstrak

Tujuan: Untuk membuktikan bahwa olahraga yang sesuai dan minum obat dapat menurunkan tekanan darah diastolik (TDD) &#8805; 5 mmHg. Metode Penelitian eksperimen kuasi selama 8 minggu di antara karyawan suatu instansi di Jakarta bulan Maret?Agustus 2008. Semua pengidap prahipertensi dan hipertensi yang ditemukan saat survei diundang mengikuti penelitian eksperimen kuasi. Ceramah diberikan pada awal penelitian, dan konseling sekali seminggu tentang olah raga, minum obat antihipertensi, serta hal terkait upaya penurunan TDD. Analisis memakai regresi Cox. Hasil: Sebanyak 1016 dari 1300 karyawan mengikuti survei tekanan darah, 318 subjek mempunyai TDD 80 mmHg atau lebih. Dari 120 subjek yang sukarela mengikuti eksperimen kuasi sebanyak 104 subjek yang menyelesaikannya. Dibandingkan dengan subjek yang tidak berolahraga dan juga tidak minum obat antihipertensi, subjek yang berolahraga sesuai dan minum obat antihipertensi teratur mempunyai kemungkinan penurunan TDD &#8805; 5 mmHg lebih 12 kali [risiko relatif suaian (RRa) = 12,32; 95% interval kepercayaan (CI) = 0,65-234,54; P = 0,095], sedangkan subyek yang berolahraga sesuai atau minum obat antihipertensi namun tidak teratur mempunyai kemungkinan penurunan TDD &#8805; 5 mmHg hampir 11 kali (RRa = 10,94; 95% CI = 2,04-58,74; P = 0,05. Subjek dengan TDD = 90-99 mmHg dibandingkan dengan yang TDD = 80-89 mmHg mempunyai kemungkinan penurunan TDD &#8805; 5 mmHg 4,8 kali (RRa = 4,75; 95% CI = 1,19-18,65). Subjek yang obes, dengan denyut nadi istirahat bradikardia, serta tekanan nadi rata-rata tinggi tidak terjadi penurunan TDD &#8805; 5 mmHg dengan olahraga dan minum obat antihipertensi. Kesimpulan: Kombinasi olahraga sesuai dan minum obat antihipertensi menurunkan TDD &#8805; 5 mmHg di antara pengidap (pra-)hipertensi diastolik. Namun pada subjek yang obes, dengan denyut nadi istirahat bradikardi atau tekanan nadi rata-rata tinggi TDD tidak dapat diturunkan dengan olahraga dan minum obat antihipertensi.

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<b>Abstract</b><br>

Aim: To prove that proper exercise and taking antihypertensive medicine may reduce diastolic blood pressure (DBP) by &#8805; 5 mmHg. Method: A quasi-experimentation study was done on employees of a government bureau in Jakarta, for 8 weeks from March to August 2008. All prehypertensive and hypertensive subjects were detected through a survey prior to the quasi-experimentation study. A talk was given at the beginning of the quasi-experimentation study, and weekly counseling sessions on exercise, taking medications, and other related topics continued for 8 weeks. Cox regression was used for calculating relative risk. Results: A total 1,016 employees out of 1,300 were involved in this blood pressure survey. Of these, 318 subjects had a DBP of 80 mmHg or more. Out of 120 subjects who voluntarily participated, 104 subjects completed the quasi-experimentation study. Compared to those who did not exercise properly and did not take antihypertensive medicines, subjects who did exercise properly and took medicines regularly had a lower diastolic blood pressure DBP &#8805; 5 mmHg by more than 12-fold [adjusted relative risk (RRa) = 12.32; 95% confidence interval (CI) = 0,65-234,54; P = 0.095. However subjects who exercised

properly or took antihypertensive medicines irregularly were found to lower their DBP  $\pm$  5 mmHg by almost 11 fold [adjusted relative risk (RRa) = 10.94; 95% confidence interval (CI) = 2.04-58.74]; P = 0.005. Subjects with DBP = 90-99mmHg had a decrease of DBP  $\pm$  5 mmHg 4.8 fold (RRa = 4.75; 95% CI = 1.19-18.65) compared to those with DBP = 80-89mmHg. Compared to the normal subjects, the obese, resting pulse rate bradycardia, and high average pulse pressure subjects had less probability of lowering DBP  $\pm$  5mmHg, by 87%, 90%, and 65%, respectively. Conclusion: Combine proper exercise and taking antihypertensive medicine was reduce DBP by  $\pm$ 5 mmHg among DBP (pre-) hypertensive subjects. The obese, bradycardia, or high pulse pressure subjects failed to lowering their DBP  $\pm$ 5 mmHg by proper exercise and taking antihypertensive medicine.