

P-559**EFFECT OF A BIOFEEDBACK SYSTEM USING AN AUTO-SHAPING METHOD ON BLOOD PRESSURE AT REST AND DURING STRESS IN MILD HYPERTENSION**

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There is still controversy over whether biofeedback is efficacious in the treatment of hypertension. This study investigated the effect of a short period of biofeedback treatment using an auto-shaping method on clinic blood pressure (BP), self-measured BP and BP reactivity to psychosocial stress.

Twenty-four outpatients with untreated stage 1 essential hypertension aged 20 to 55 years were enrolled. Subjects were randomly assigned to group A or B. The two groups were well balanced for age, sex, body mass, and BP level. Subjects in group A underwent biofeedback treatment using an auto-shaping method with a personal computer once a week for a total of four sessions and self-monitored their BP throughout the treatment period and for two weeks after the end of treatment. Those in group B did not receive biofeedback treatment and self-monitored their BP for six weeks. All subjects underwent continuous Finapres BP monitoring at baseline and after four weeks. During the recordings, the following two tests were performed: 1) BP measurement by a doctor unknown to the subject (white-coat reaction), and 2) 4 sets of speech test with different content in front of an audience (simulated public speaking).

Clinic BP was reduced by 11/10 mmHg during treatment in group A whereas it remained unchanged in group B ($p = .018 / < .001$). Also self-monitored BP decreased in group A and not in group B ($p < .001 / = .014$). The white-coat reaction was attenuated in subjects of group A compared to subjects of group B ($p = .017 / .024$). Also the BP response to laboratory-modeled public speaking with anxiety content was smaller after treatment in subjects of group A than in those of group B though the difference did not attain the level of statistical significance.

A short period of biofeedback treatment proved effective in reducing BP measured either in the clinic or outside the hospital environment. Furthermore, biofeedback was able to smooth the BP response to stress. Biofeedback appears to be a suitable intervention for hypertensive patients chiefly for those whose BP increases with stress.

Key Words: Biofeedback, Hypertension, Stress

P-560**THE EFFECT OF 18 MONTHS OF A BEHAVIORAL AND EXERCISE INTERVENTION IN OVERWEIGHT WOMEN OF MOZAMBIQUE**

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We evaluate the effect of a behavioral and exercise intervention program on weight and cardiovascular risk factors in overweight women from Mozambique.

A group of 24 overweight women (BMI 33.6 ± 5) were randomly assigned to an active group submitted to a healthy lifestyle intervention with decreasing levels of professional contact for 18 months or a control group with no intervention. Both groups were clinically and biochemically evaluated and submitted to a 24 hour BP monitoring both at the beginning and at the end of the study. The intervention group went through a program of 90-min classes that were held weekly for the first 3 months, bi-weekly for months 4-6, monthly for months 7-12, with no contact for months 13-18. The focus of the classes was to help women diminish their personal barriers to healthy eating and exercise. A t-test for within group comparisons was used to evaluate pre and post-test scores on BP and biochemical measures.

As table shows, the control group had no significant differences between the initial and the final values for BMI, cholesterol (Chol), HDL cholesterol (HDL Chol), fasting blood sugar (F. B. sugar) 24 H systolic BP (24H SBP) and 24 H DBP. On the other side, the active group although did not showed a significant decrease of the BMI, Chol, HDL Chol or FB sugar, had a statistically significant decrease of the 24 hour SBP and 24 H DBP. No correlation was found between the change of the BP and the change of any other variable.

In conclusion, a healthy lifestyle intervention that does not focus on body weight can help overweight women participate in healthier behaviors that reduce disease risk, especially blood pressure.

Mean \pm STD values of BMI, Chol, HDL Chol, FB sugar and 24 H SBP and 24H DBP taken in the beginning and at the end of the study for both groups, and paired t test analysis between these values within group

		BMI	Chol.	HDL Chol	F B sugar	24H SBP	24 H DBP
Active Group	Before	32.5 \pm 5	4.43 \pm 1.2	1.3 \pm 0.4	5.61 \pm 2	122.3 \pm 11	77 \pm 7
	After	32 \pm 5	4.66 \pm 1.3	1.4 \pm 0.4	4.91 \pm 0.6	115.6 \pm 10	71.8 \pm 7
t test (before v after)		0.2	0.12	0.17	0.17	0.005	0.001
Control Group	Before	34.6 \pm 4	4.85 \pm 1.1	1.4 \pm 0.4	5.28 \pm 0.8	125.8 \pm 13	79.8 \pm 10
	After	34.7 \pm 4	5.02 \pm 1	1.4 \pm 0.3	5.24 \pm 0.8	121.9 \pm 14	77.1 \pm 10
t test (before v after)		0.8	0.24	0.9	0.52	0.11	0.19

Key Words: Lifestyle Intervention, Non Pharmacologic Treatment, Obesity

P-561**REDUCTION OF HOME BLOOD PRESSURES AND WHITE COAT EFFECT AFTER 8 WEEKS OF DEVICE-GUIDED PACED BREATHING**

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Interactive device-guided paced breathing for 15 minutes/day over 8 weeks reduced elevated office blood pressures (BPs) in several clinical trials, but its effects on home BPs have not been evaluated. We pooled data from 239 subjects (56% male, 57 \pm 11 years of age, BMI 28 ± 4 kg/m², 77% drug-treated, average office BP $149 \pm 13 / 88 \pm 8$ mm Hg) in 6 separate 8-week clinical trials, which recorded home BPs in the morning for both groups. Each evening, 150 subjects performed device-guided slow breathing (RESPeRATE, Intercure Ltd., Fort Lee, NJ) for 15 minutes/day; 89 received a control intervention (relaxation music played by a Walkman, home BP monitoring alone, or both). Endpoints of interest included the average of the last 10 days of home BP readings, and the change in office to home BP difference ("white-coat effect"). At baseline, this BP difference was not significant between groups: $26 \pm 3 / 16 \pm 1$ vs. $24 \pm 2 / 15 \pm 2$ mm Hg (mean \pm S.E., treatment vs. control, $P = 0.40 / 0.80$). After adjustment for baseline BPs, the change in home BP for paced breathing was greater than for control: $-3.2 \pm 0.7 / -2.0 \pm 0.4$ vs. $-1.3 \pm 0.9 / -0.6 \pm 0.5$ ($P < 0.05 / 0.01$, respectively). The reduction was most marked in those with home BPs $> 135 / 85$ mm Hg: 5.2 vs. $0.8 / 3.3$ vs. 1.4 mm Hg ($P < 0.005 / 0.05$, respectively). For those with an initial home BP $> 128 / 76$ mm Hg (the median home BP for the entire cohort), paced breathing reduced home BP by 21%/20% ($P < 0.001 / 0.001$). No significant change was seen in either of these parameters in control patients. After adjustment for baseline BPs, treatment reduced the white-coat effect by $21 \pm 2 / 12 \pm 2$ mm Hg (or 86%/80% of its initial values), vs. only $11 \pm 2 / 6 \pm 2$ (or 45%/40% of its initial values) in controls ($P = 0.002 / 0.02$). No side-effects were reported, and these effects were independent of gender and medication status. These data suggest that both office and home BPs are reduced after a program of 8 weeks of daily device-guided breathing, and may be due, in part, to an attenuation of the "white-coat