Renal Sympathetic Denervation for the Treatment of Resistant Hypertension. Office Blood Pressure Versus Three Months Ambulatory Blood Pressure Reduction

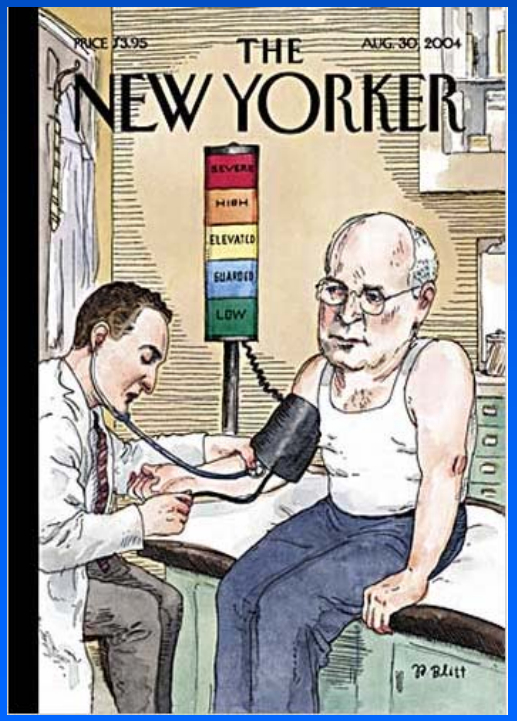
Ayelet Shauer, David Planer, Haim Danenberg, Chaim Lotan

Heart Institute, Hadassah University Hospital
Jerusalem, Israel

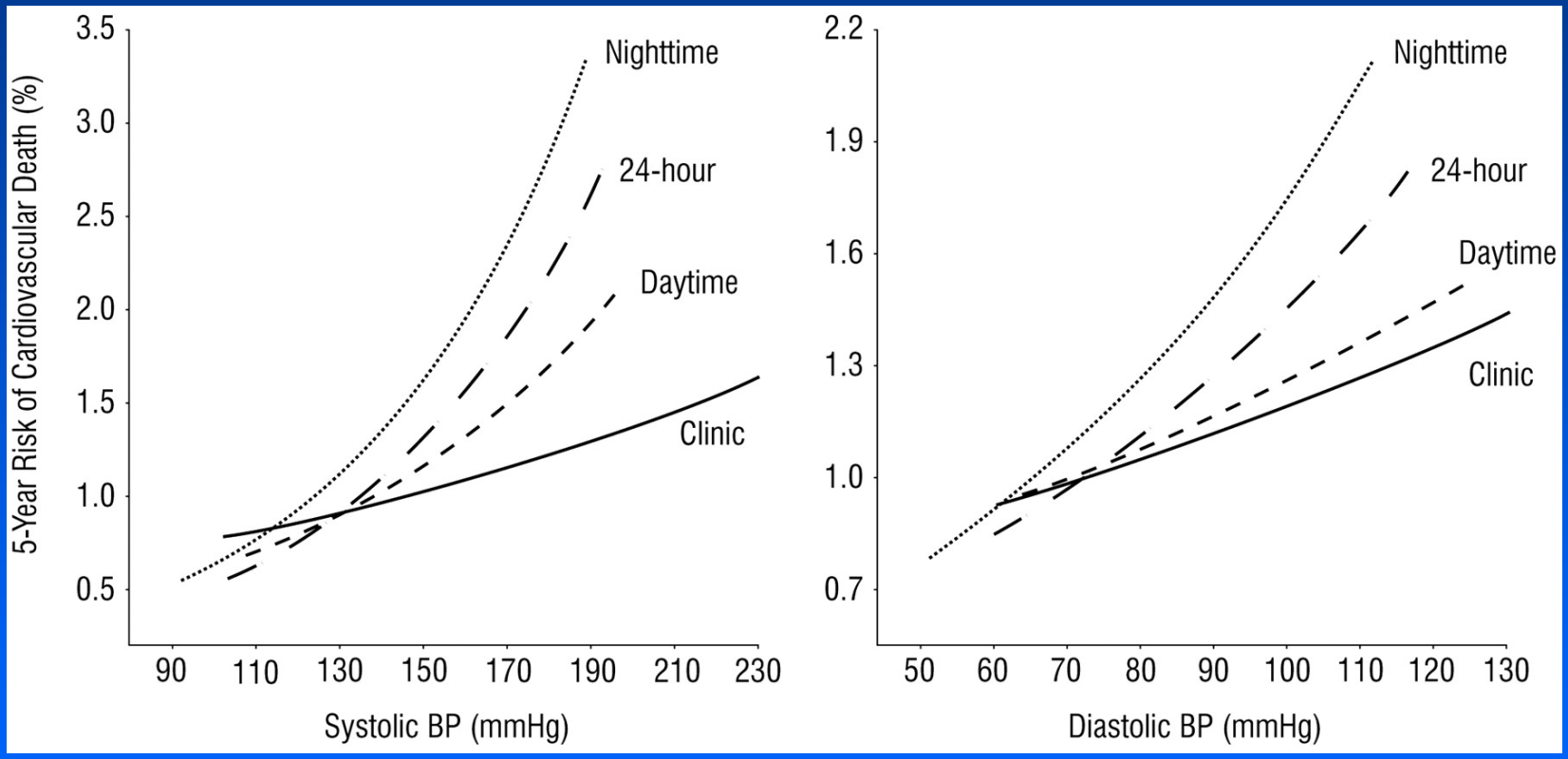
Background

Ambulatory blood pressure monitoring (ABPM) is being increasingly recommended for routine clinical practice:

- Large number of readings
- No “White coat effect”
- Lesser effect of recent activities
- Better predictor of cardiovascular death



Adjusted 5-year Risk of Cardiovascular Death in a Study Cohort of 5292 Patients



Dolan E et al. Hypertension 2005;46:156-161

American Heart Association
Learn and Live

Aims

- To compare ABPM and office blood pressure results at 3 months post renal denervation.

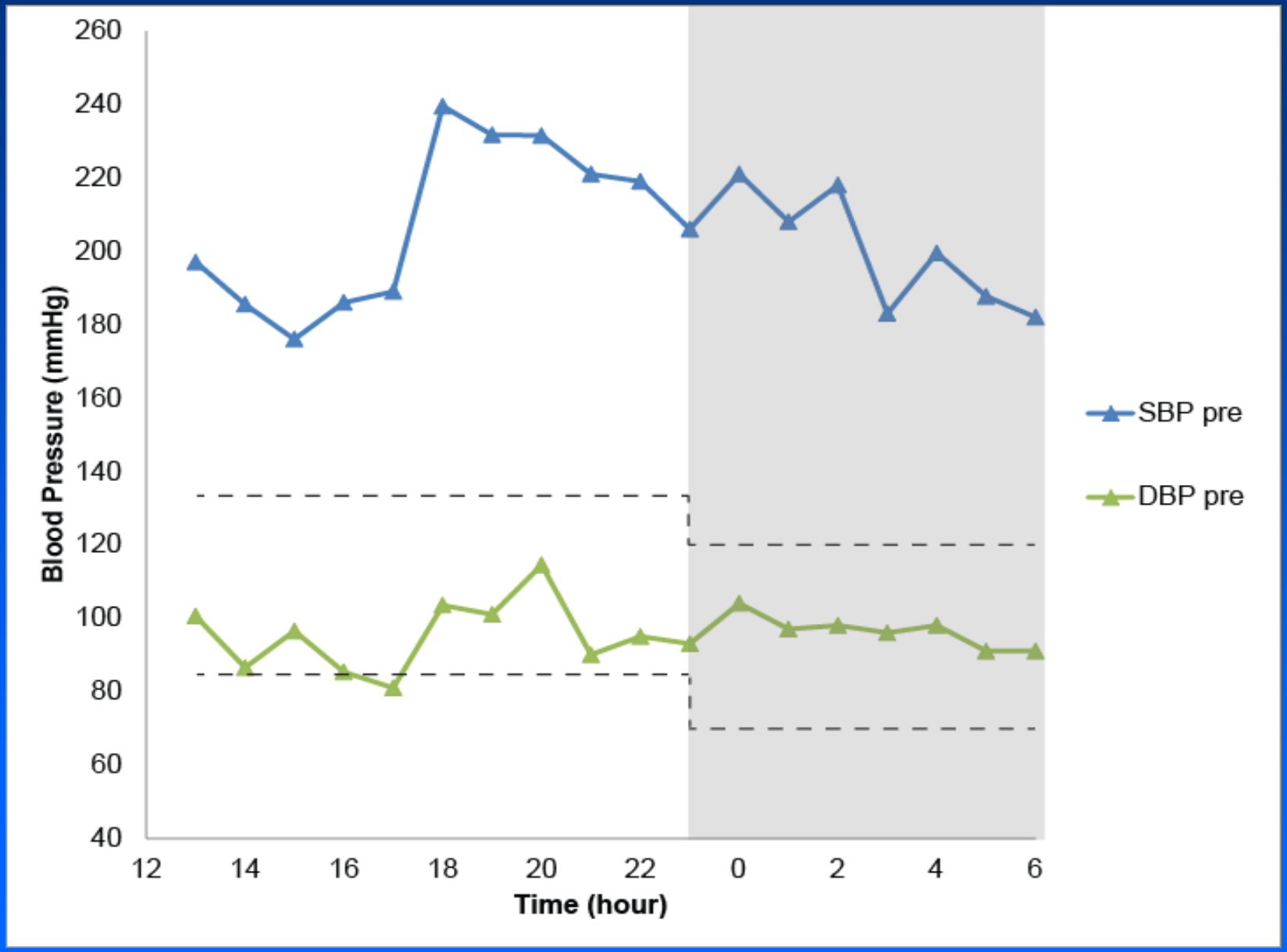
Methods

- 24 patients with treatment resistant hypertension underwent bilateral renal artery denervation.
- Of this group 12 patients had ambulatory blood pressure monitoring before and at 3 months post procedure (75-180d).
- Office and ambulatory blood pressure parameters before vs. after denervation were compared using paired-samples t-tests. The change (Δ) in BP between monitoring sessions was analyzed by gender using independent-samples t-tests and Mann-Whitney U tests.

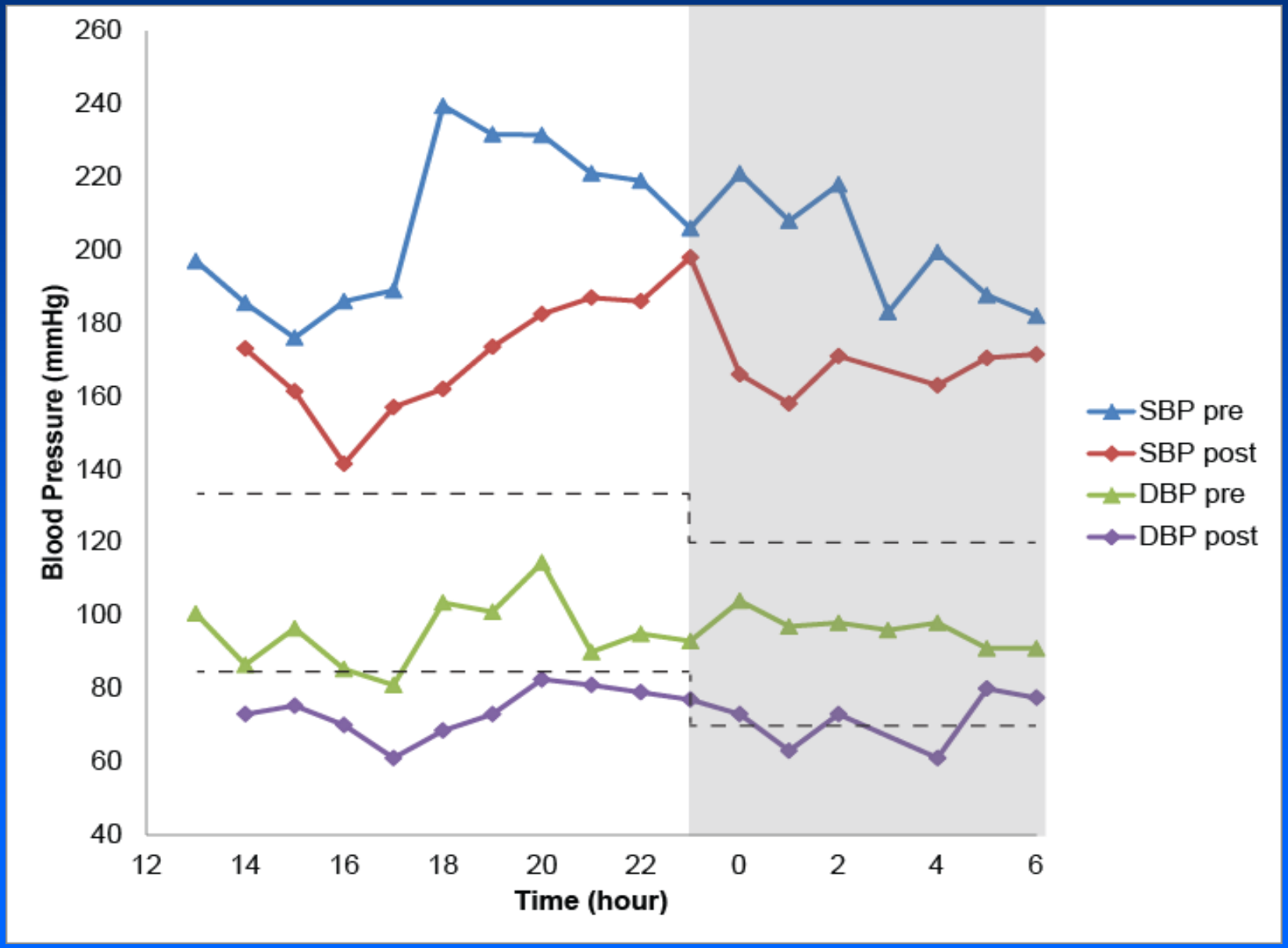
Patient characteristics

	no ABPM	+ ABPM	P-value
N	12	12	
gender, %F	33	42	0.689
age, yr.	64±12	66±10	0.752
weight, kg	82±19	81±18	0.886
BMI, $kg \times m^{-2}$	30.6±5.8	31.6±5.4	0.746
diabetes, %	67	58	0.689
medications, #	4.3±1.7	4.6±1.2	0.687
eGFR, ml/min	71±25	78±19	0.476
SBP, mmHg	190±22	179±20	0.228
DBP, mmHg	95±20	86±9	0.179
ΔSBP, mmHg	-23±25	-24±19	0.924
ΔDBP, mmHg	-10±12	-9±9	0.782

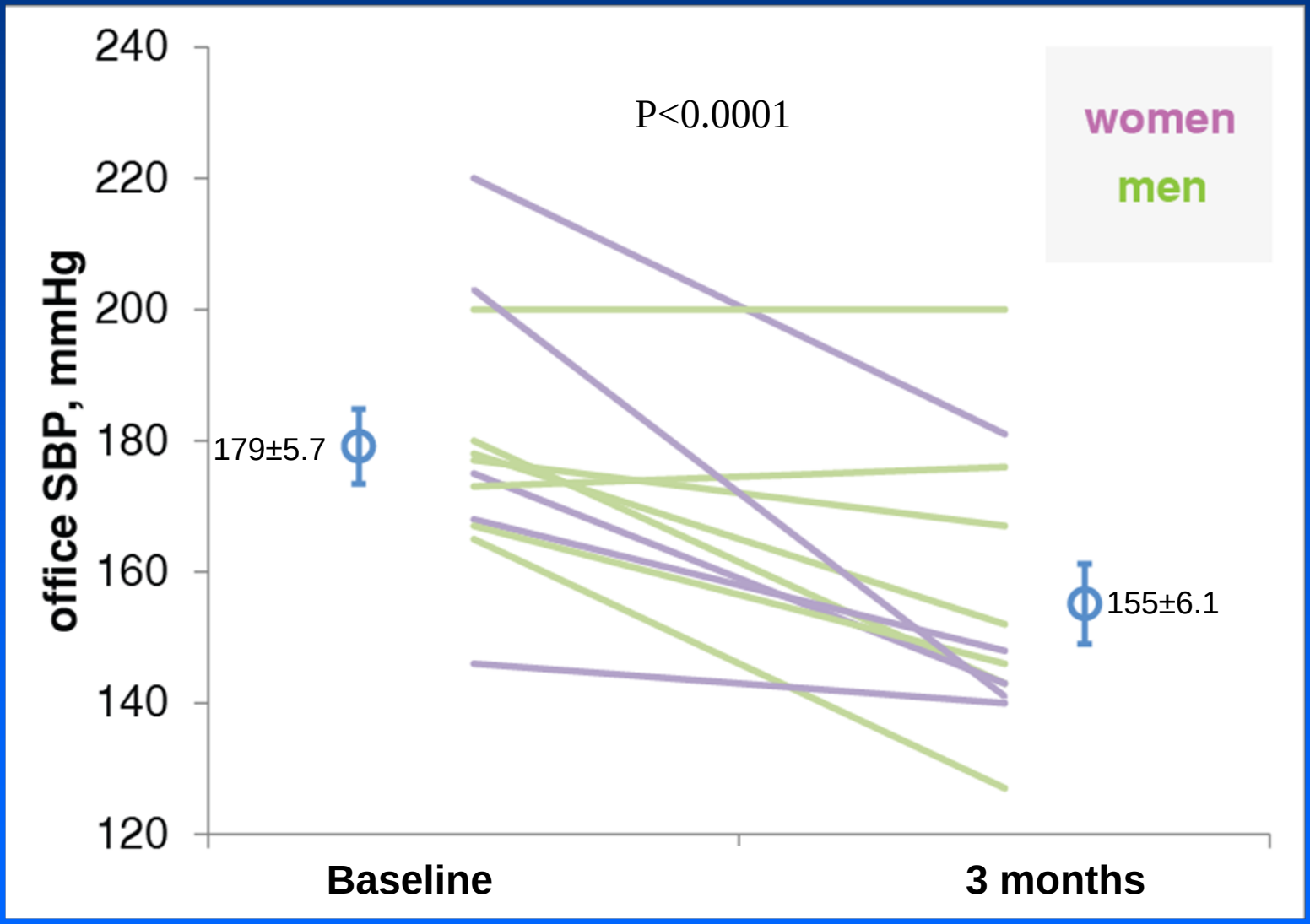
Ambulatory BP monitoring at baseline



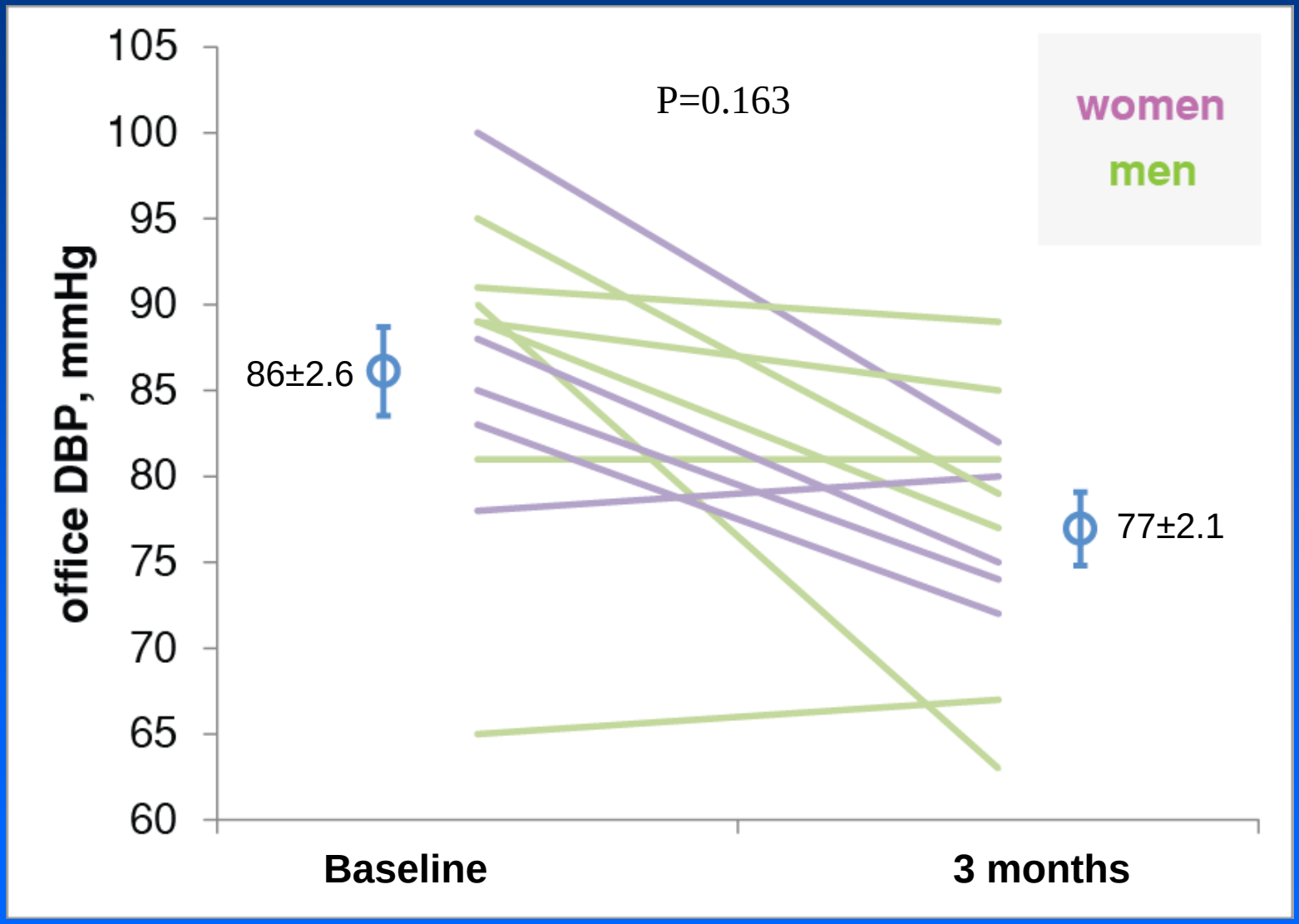
Ambulatory BP monitoring baseline versus 3 months



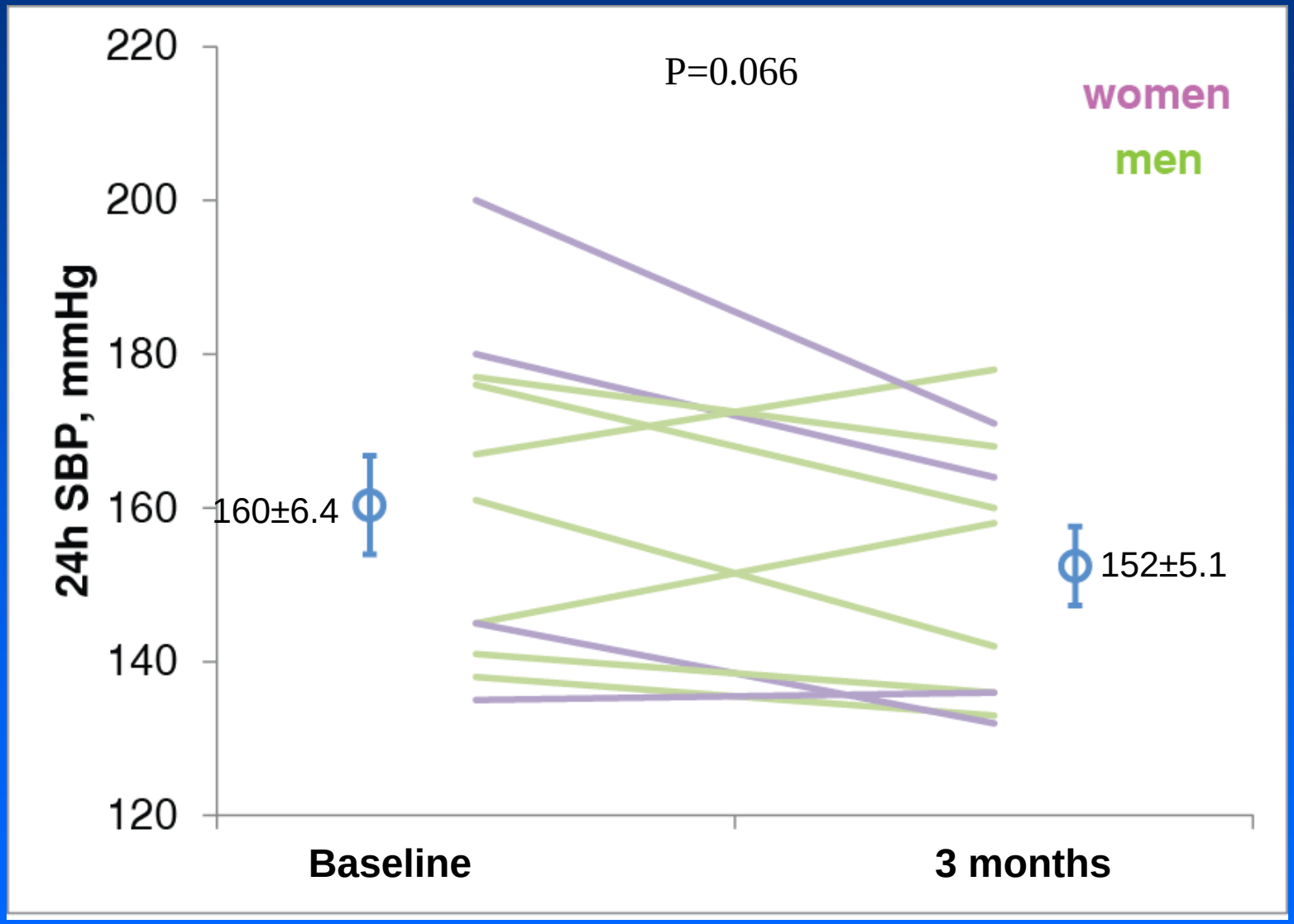
Office SBP reduction (mean±SEM)



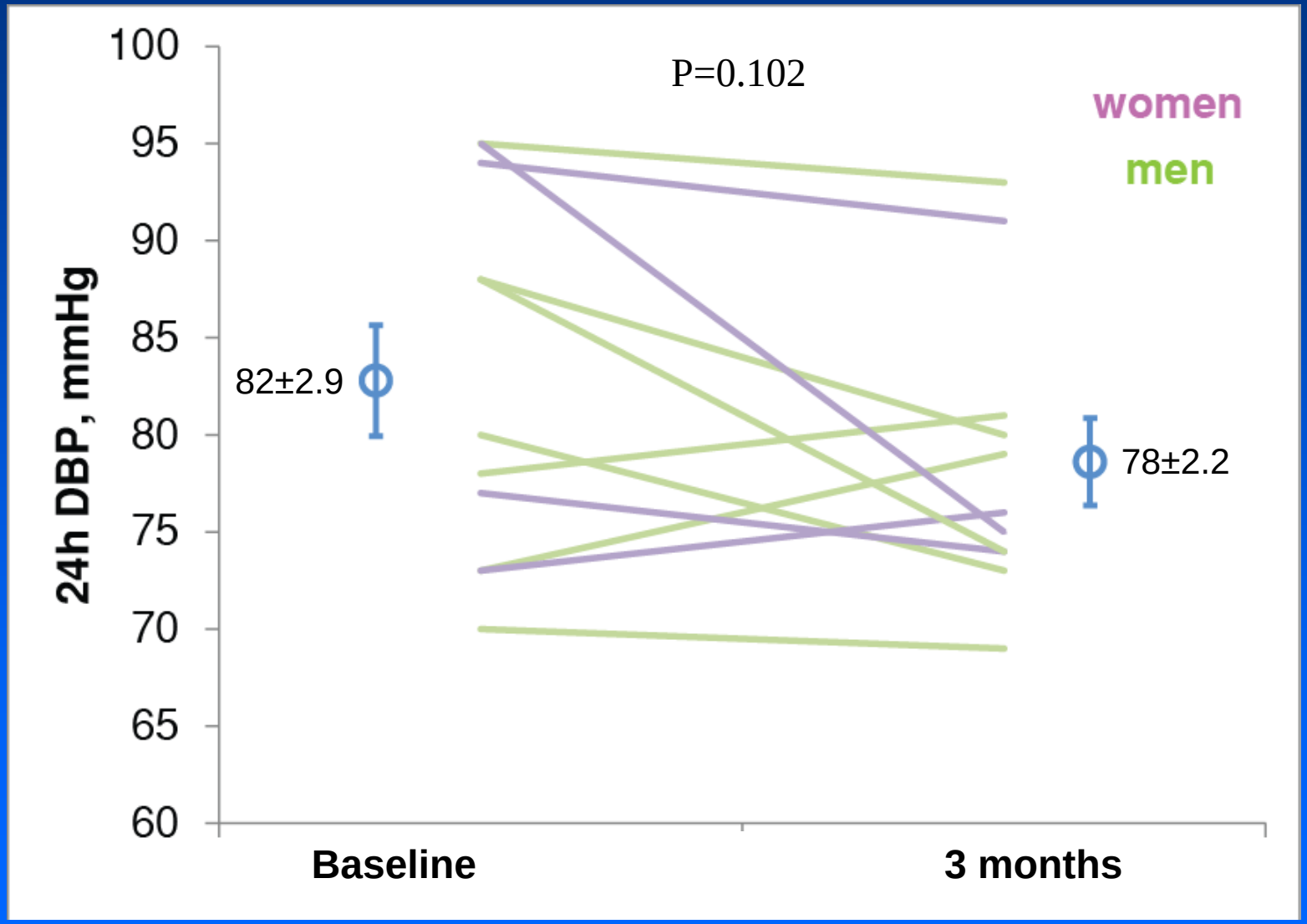
Office DBP reduction (mean±SEM)



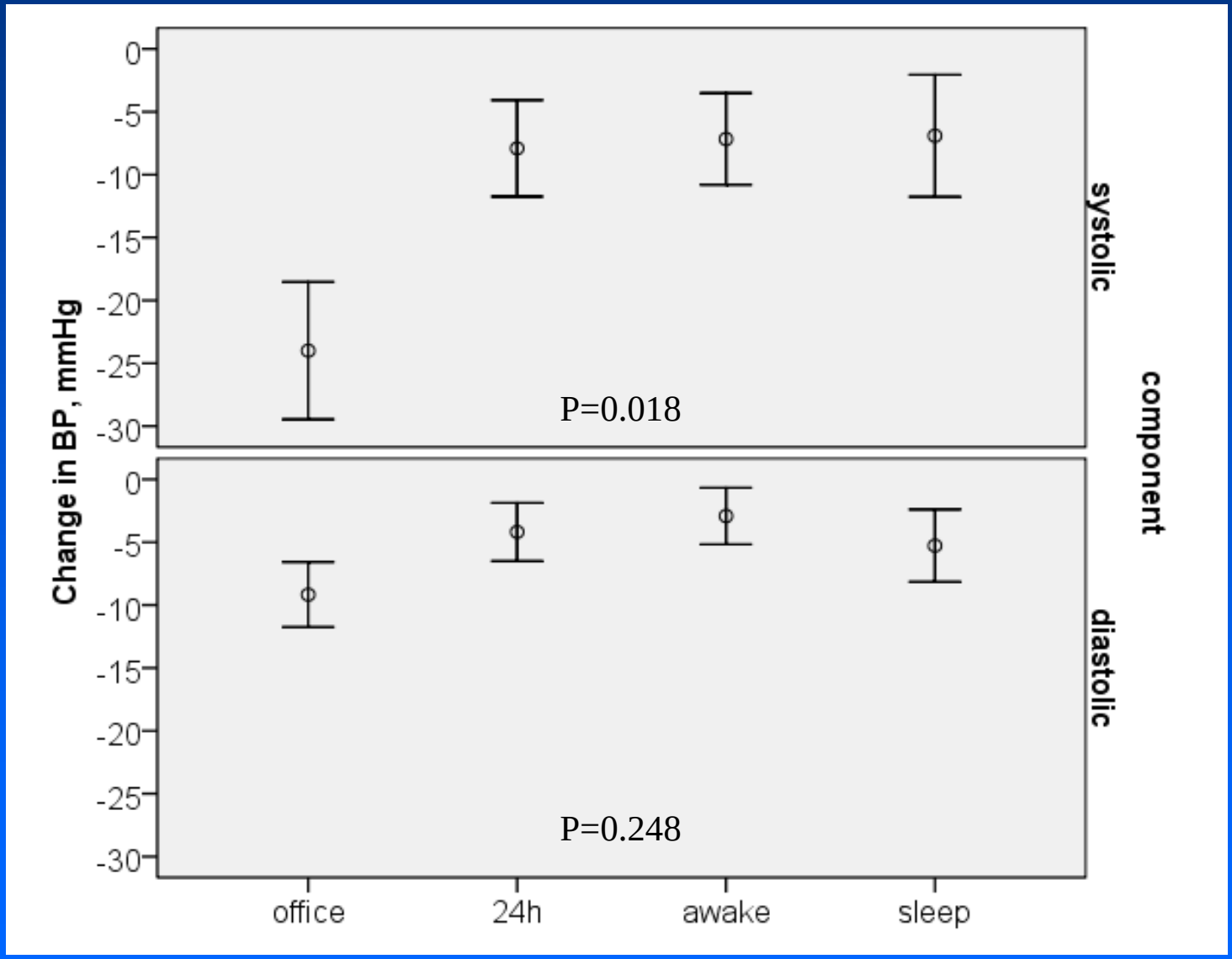
24h Systolic ABPM baseline and at 3 months



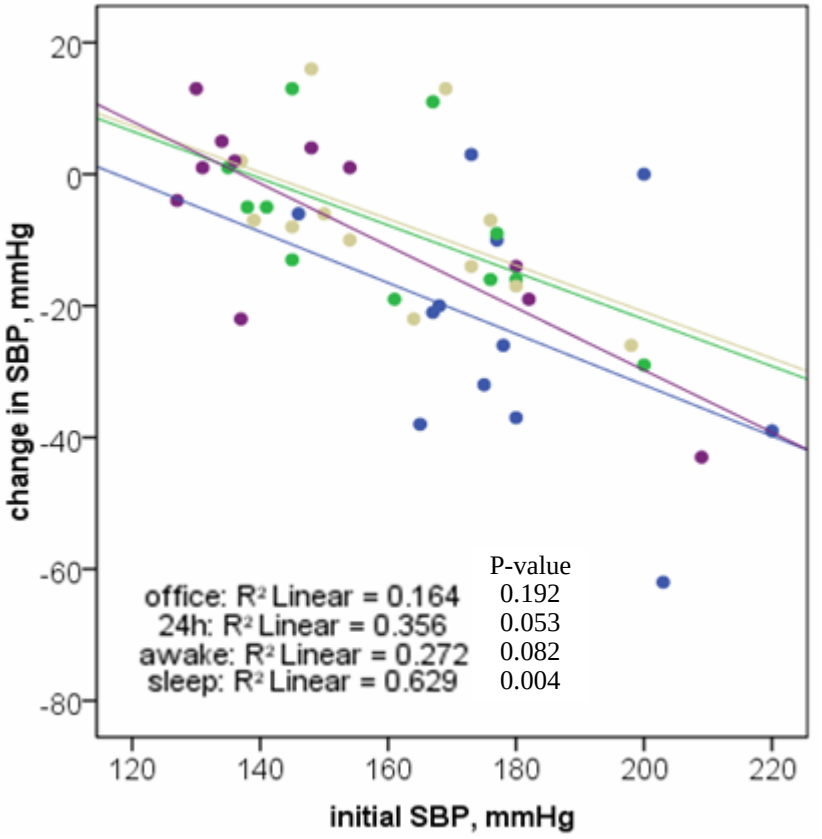
24h Diastolic ABPM baseline and at 3 months

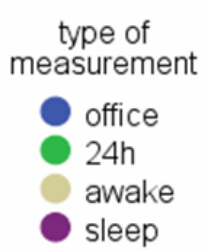


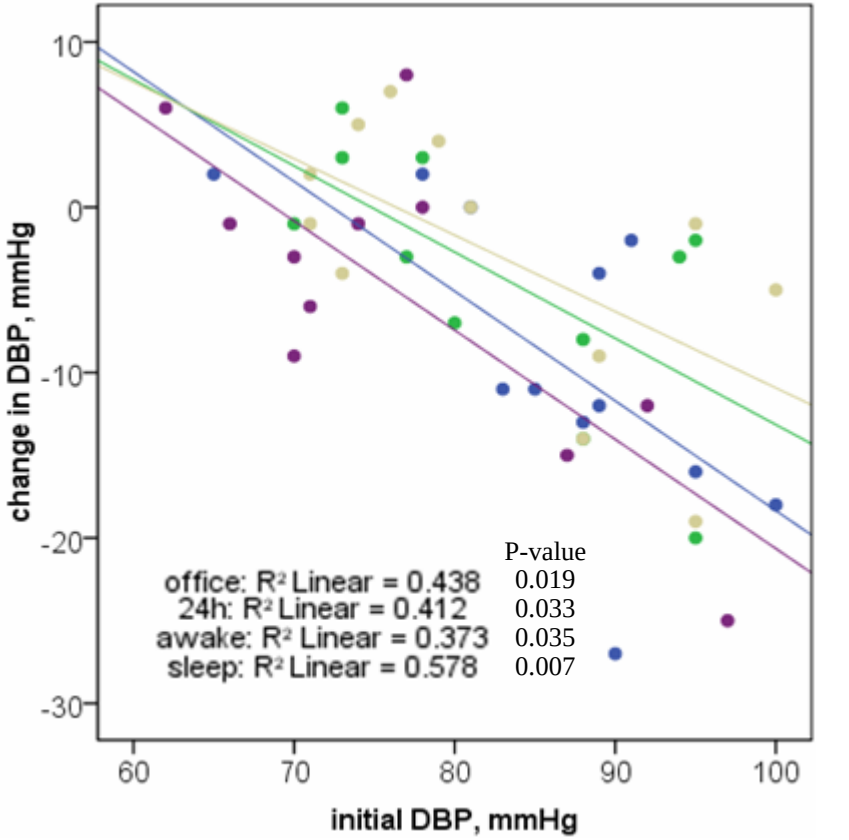
Change in Office Blood Pressure versus ABPM



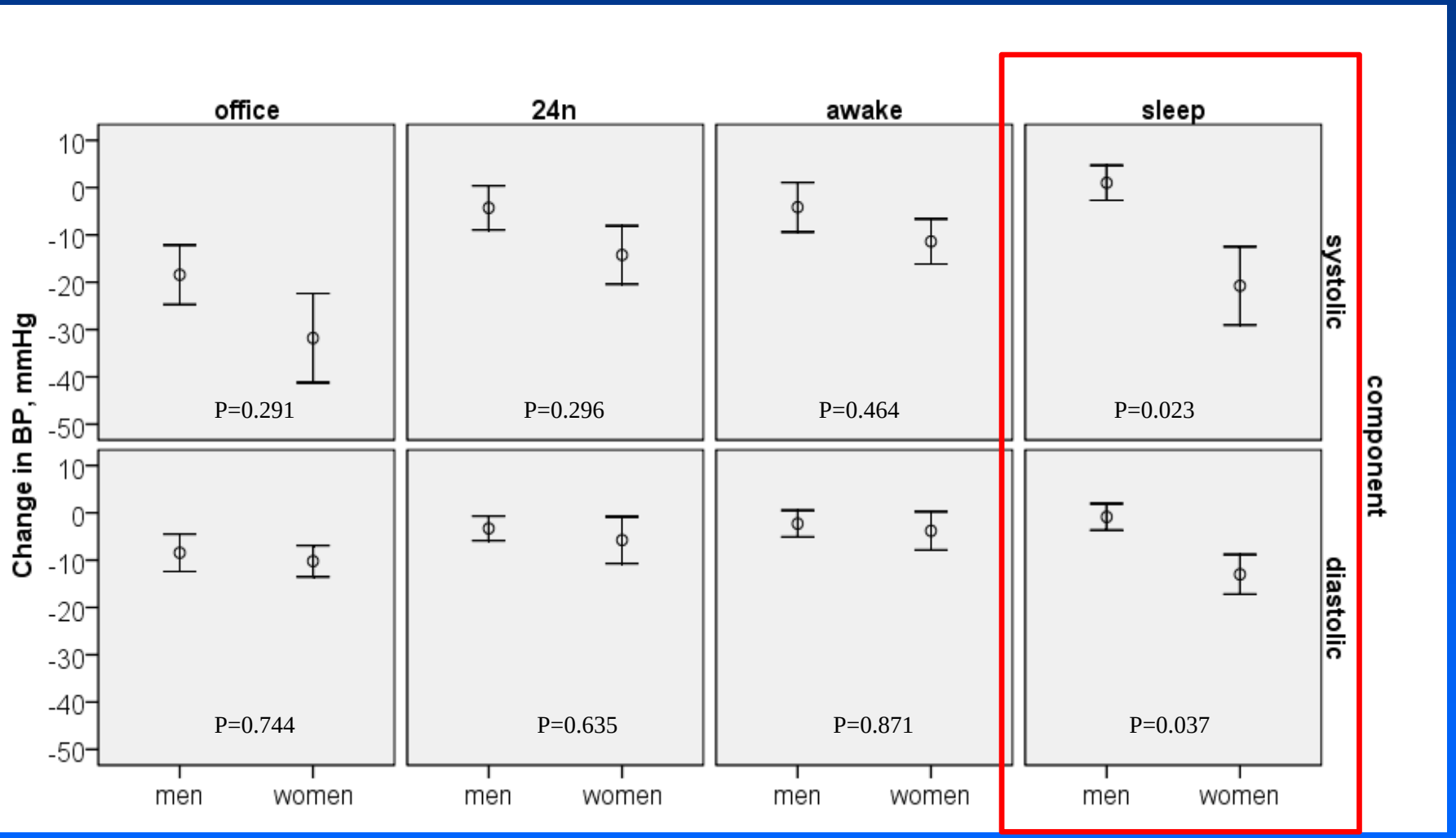
Change in BP versus Baseline BP







Change in BP Men versus Women



Conclusion

- In this small cohort the change (Δ) in BP between monitoring sessions at baseline and at three months was smaller than the change in office BP.
- ABPM monitoring of women during sleep showed a significant change. However, a larger sample is needed to point whether this is true gender difference phenomenon.