

Presenter Disclosure Information

The Effects of Carbohydrate, Protein, and Fat Intake on Cardiovascular Risk Factors: Main Results From the OmniHeart Feeding Study

DISCLOSURE INFORMATION:

No relationships to disclose



Background, Objective and Design

- **Background:** the DASH diet
 - is rich in carbohydrate and reduced in saturated fat
 - emphasizes fruits, vegetables, low-fat dairy, whole grains
 - lowers blood pressure and LDL cholesterol
- **Objective:** in the setting of a healthy diet, determine effects of partially replacing carbohydrate with protein (about half from plant sources) or unsaturated fat (predominantly monounsaturated) on blood pressure, lipids, and estimated CVD risk
- **Design:** randomized feeding study, 3 diets, weight held constant, 164 adults with prehypertension or hypertension



Three Study Diets*

% Calories from:	CARB*	PROT	UNSAT
Carbohydrate	58	48	48
Fat	27	27	37
<i>Saturated</i>	6	6	6
<i>Monounsaturated</i>	13	13	21
<i>Polyunsaturated</i>	8	8	10
Protein	15	25 (~ half plant)	15

* Each diet provided same amt of cholesterol < 150 mg/day, fiber > 30 gm/day, sodium 2,300 mg/day, potassium 4,700 mg/day, calcium 1,200 mg/day (in 2100 kcal version)



Mean Change from Baseline after Eating Each Diet for 6 Weeks

	Mean Change from Baseline in Each Diet			
	Baseline	CARB	PROT	UNSAT
SBP (All)	131.2 mmHg	-8.2	-9.5	-9.3
SBP (HTN)	146.5 mmHg	-12.9	-16.1	-15.8
LDL (All)	129.2 mg/dL	-11.6	-14.2	-13.1
LDL (≥ 130)	156.7 mg/dL	-19.8	-23.6	-21.9
HDL	50.0 mg/dL	-1.4	-2.6	-0.3
Triglycerides	101.5 mg/dL	0.1	-16.4	-9.3
Estimated 10 Yr CHD Risk	5.1%	- 16.6%	- 21%	- 19.6%



Comparison with CARB (Main Results)

	PROT - CARB	UNSAT - CARB
SBP (All)	-1.4 mmHg	-1.3 mmHg
SBP (HTN)	-3.5 mmHg	-2.9 mmHg
LDL (All)	-3.3 mg/dL	-1.5 mg/dL
LDL (≥ 130)	-3.3 mg/dL	-1.5 mg/dL
HDL	-1.3 mg/dL	+1.1 mg/dL
Triglycerides	-15.7 mg/dL	-7.1 mg/dL
Estimated 10 Yr CHD Risk	-5.8%	-4.2%



Conclusion

- In the setting of a healthy diet, partial replacement of carbohydrate with protein (about half from plant sources) or with monounsaturated fat can further:
 - lower BP
 - improve lipid profiles
 - reduce estimated CHD risk

For more information about OmniHeart:
 - Publication in JAMA (November 16th issue)
 - <http://www.omniheart.org/>