

Online supplement

Lifestyle in progression from hypertensive disorders of pregnancy to chronic hypertension in Nurses' Health Study II: observational cohort study

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Supplementary Tables

Supplementary Table A - The age-, race-, and parity-adjusted association between BMI and chronic hypertension in parous women within categories of HDP history presented as hazard ratios by age

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Supplementary Table A - The age-, race-, and parity-adjusted association between BMI and chronic hypertension in parous women within categories of HDP history presented as hazard ratios by age

	Events / Person-years	BMI category (Hazard ratio, 95% confidence interval)					p, trend ^a
		18.5 - 22.4	22.5 - 24.9	25.0 - 29.9	30.0 - 34.9	≥ 35.0	
Age 32-39 years							
No HDP	571/88,542	1	1.92 (1.45, 2.54)	4.23 (3.30, 5.43)	6.38 (4.81, 8.46)	9.58 (7.08, 12.97)	<0.001
History of HDP	270/11,401	1 ^b	2.16 (1.29, 3.61)	3.43 (2.14, 5.48)	5.60 (3.43, 9.14)	7.78 (4.76, 12.71)	<0.001
Age 40-49 years							
No HDP	5,695/329,956	1	1.53 (1.40, 1.68)	2.72 (2.50, 2.96)	4.77 (4.36, 5.22)	6.76 (6.14, 7.44)	<0.001
History of HDP	1,336/32,406	1 ^b	1.48 (1.17, 1.87)	2.44 (1.99, 3.00)	3.43 (2.77, 4.24)	4.24 (3.42, 5.27)	<0.001
Age 50-59 years							
No HDP	5,343/202,605	1	1.37 (1.25, 1.51)	2.25 (2.07, 2.45)	3.23 (2.94, 3.55)	4.69 (4.22, 5.21)	<0.001
History of HDP	700/14,624	1 ^b	1.54 (1.12, 2.12)	2.05 (1.54, 2.73)	3.09 (2.29, 4.16)	4.14 (3.03, 5.64)	<0.001

BMI: Body Mass Index in kg/m², **DASH:** Dietary approaches to stop hypertension, **HDP:** Hypertensive disorders of pregnancy, **Ref:** Reference

Models include adjustment for age, ethnicity (White, Latina, African-American, Asian, or Other), parity (1, 2, or ≥3 pregnancies), and interaction terms between HDP and BMI categories.

a Continuous BMI included in the models instead of categorical BMI

b The same model as for "No HDP" except that women with prior HDP and BMI 18.5 to 22.4 constitute the reference group.

Supplementary Table B– The age-, race-, and parity-adjusted association between lifestyle and chronic hypertension in parous women within categories of HDP history presented as hazard ratios by lifestyle risk factor and age

Age 32-39 years	Events / Person-years	Physical activity in quartiles ^a (Hazard ratio, 95% confidence interval)				p, trend ^b
		Fourth (High)	Third	Second	First	
No HDP	572/90,887	1.00 (Ref)	1.28 (1.00, 1.64)	1.39 (1.09, 1.78)	1.59 (1.25, 2.03)	<0.001
History of HDP	272/11,549	1.00 (Ref) ^c	1.62 (1.15, 2.29)	1.28 (0.89, 1.84)	1.29 (0.89, 1.87)	0.33
Age 40-49 years						
No HDP	5,716/334,976	1.00 (Ref)	1.23 (1.13, 1.33)	1.35 (1.25, 1.46)	1.62 (1.50, 1.75)	<0.001
History of HDP	1,343/32,646	1.00 (Ref) ^c	1.27 (1.08, 1.49)	1.25 (1.07, 1.48)	1.51 (1.29, 1.77)	<0.001
Age 50-59 years						
No HDP	5,366/205,207	1.00 (Ref)	1.08 (0.99, 1.16)	1.26 (1.17, 1.36)	1.44 (1.33, 1.56)	<0.001
History of HDP	702/14,723	1.00 (Ref) ^c	1.19 (0.95, 1.49)	1.19 (0.95, 1.49)	1.62 (1.31, 2.01)	<0.001
Age 32-39 years	Events / Person-years	DASH diet score in quartiles ^a (Hazard ratio, 95% confidence interval)				p, trend ^b
		Fourth (High)	Third	Second	First	
No HDP	572/90,887	1.00 (Ref)	1.41 (1.07, 1.86)	1.58 (1.19, 2.09)	1.81 (1.39, 2.35)	<0.001
History of HDP	272/11,549	1.00 (Ref) ^c	1.28 (0.88, 1.87)	1.05 (0.70, 1.57)	1.31 (0.91, 1.90)	0.06
Age 40-49 years						
No HDP	5,716/334,976	1.00 (Ref)	1.27 (1.17, 1.38)	1.37 (1.26, 1.48)	1.63 (1.50, 1.76)	<0.001
History of HDP	1,343/32,646	1.00 (Ref) ^c	1.35 (1.14, 1.59)	1.14 (0.96, 1.36)	1.45 (1.23, 1.71)	<0.001
Age 50-59 years						
No HDP	5,366/205,207	1.00 (Ref)	1.29 (1.20, 1.40)	1.45 (1.34, 1.56)	1.55 (1.43, 1.68)	<0.001
History of HDP	702/14,723	1.00 (Ref) ^c	1.07 (0.86, 1.33)	1.26 (1.01, 1.56)	1.51 (1.21, 1.87)	<0.001
Age 32-39 years	Events / Person-years	Na/K intake in quartiles ^a (Hazard ratio, 95% confidence interval)				p, trend ^b
		First (Low)	Second	Third	Fourth	
No HDP	572/90,887	1.00 (Ref)	1.22 (0.93, 1.58)	1.14 (0.88, 1.48)	1.32 (1.03, 1.70)	0.02
History of HDP	272/11,549	1.00 (Ref) ^c	1.12 (0.75, 1.68)	1.32 (0.91, 1.92)	1.36 (0.94, 1.96)	0.06
Age 40-49 years						
No HDP	5,716/334,976	1.00 (Ref)	1.13 (1.05, 1.23)	1.28 (1.18, 1.38)	1.37 (1.27, 1.48)	<0.001
History of HDP	1,343/32,646	1.00 (Ref) ^c	1.08 (0.91, 1.27)	1.13 (0.97, 1.33)	1.24 (1.06, 1.45)	<0.001
Age 50-59 years						
No HDP	5,366/205,207	1.00 (Ref)	1.16 (1.07, 1.25)	1.31 (1.21, 1.41)	1.36 (1.26, 1.47)	<0.001
History of HDP	702/14,723	1.00 (Ref) ^c	1.15 (0.92, 1.42)	1.22 (0.99, 1.51)	1.39 (1.12, 1.72)	<0.001

DASH: Dietary Approaches to Stop Hypertension, **HDP:** Hypertensive disorders of pregnancy, **Ref:** Reference

Models include adjustment for age, parity (1, 2, or ≥3 pregnancies), ethnicity (White, Latina, African-American, Asian, or Other), and interaction terms between HDP and lifestyle factor quartiles.

a Descending DASH diet score and physical activity and ascending Na/K intake.

B Lifestyle risk factor included in the model as a continuous variable (Na/K intake and physical activity as Metabolic Equivalents (METs) are log transformed).

c The same model as for "No HDP" except that women with prior HDP in the quartile of lifestyle factor with the highest risk constitute the reference group.

Supplementary Table C - Statistics for additive interaction between hypertensive disorders of pregnancy and BMI in multivariable adjusted models of chronic hypertension by age

Additive Interaction Statistic	Age (years)	BMI Category			
		22.5-24.9	25.0-29.9	30.0-34.9	≥35.0
RERI (95% CI, null = 0)	32-39	2.35 (0.07, 4.63)	4.00 (1.28, 6.71)	8.48 (3.31, 13.66)	12.74 (4.81, 20.67)
	40-49	0.55 (-0.10, 1.20)	1.59 (0.90, 2.27)	2.00 (0.95, 3.04)	2.08 (0.68, 3.48)
	50-59	0.59 (-0.06, 1.25)	0.55 (-0.08, 1.17)	1.40 (0.44, 2.36)	1.92 (0.44, 3.39)
Attributable Proportion^a (95% CI, null = 0)	32-39	0.38 (0.01, 0.76)	0.39 (0.12, 0.66)	0.50 (0.19, 0.81)	0.51 (0.19, 0.84)
	40-49	0.17 (-0.01, 0.34)	0.29 (0.17, 0.40)	0.25 (0.12, 0.37)	0.20 (0.07, 0.34)
	50-59	0.23 (0.02, 0.44)	0.16 (0.01, 0.30)	0.26 (0.09, 0.43)	0.25 (0.06, 0.44)
Synergy Index (95% CI, null = 1)	32-39	1.84 (1.25, 2.43)	1.77 (1.41, 2.13)	2.12 (1.76, 2.49)	2.14 (1.78, 2.50)
	40-49	1.31 (0.99, 1.63)	1.54 (1.35, 1.73)	1.40 (1.23, 1.56)	1.29 (1.13, 1.45)
	50-59	1.58 (1.05, 2.11)	1.29 (0.99, 1.58)	1.47 (1.22, 1.72)	1.41 (1.17, 1.65)

BMI: Body mass index in kg/m², **RERI:** Relative excess risk due to interaction

The reference group is BMI 18.5 to 22.4. Underweight women are excluded as the reference group should have the lowest risk in analyses or additive interaction.

a The proportion of excess risk that is attributable to the interaction between HDP and BMI (RERI).

Supplementary Table D - Statistics for additive interaction between HDP and lifestyle in multivariable adjusted models of chronic hypertension by lifestyle risk factor and age

		Physical activity		
Additive Interaction Statistic	Age (years)	Third Quartile	Second Quartile	First Quartile
RERI (95% CI, null = 0)	32-39	0.96 (-0.16, 2.08)	-0.05 (-1.06, 0.97)	-0.32 (-1.31, 0.68)
	40-49	0.16 (-0.18, 0.50)	-0.03 (-0.35, 0.29)	0.01 (-0.31, 0.33)
	50-59	0.13 (-0.23, 0.48)	-0.02 (-0.37, 0.33)	0.21 (-0.14, 0.56)
Attributable Proportion^a (95% CI, null = 0)	32-39	0.26 (-0.03, 0.54)	-0.02 (-0.32, 0.29)	-0.13 (-0.45, 0.19)
	40-49	0.08 (-0.05, 0.20)	-0.02 (-0.14, 0.11)	0.01 (-0.12, 0.13)
	50-59	0.08 (-0.09, 0.25)	-0.01 (-0.18, 0.16)	0.12 (-0.03, 0.28)
Synergy Index (95% CI, null = 1)	32-39	1.53 (1.01, 2.06)	0.97 (0.39, 1.56)	0.82 (0.20, 1.43)
	40-49	1.17 (0.83, 1.50)	0.96 (0.62, 1.31)	1.01 (0.69, 1.33)
	50-59	1.28 (0.57, 1.98)	0.96 (0.28, 1.65)	1.42 (0.80, 2.05)
		DASH diet		
Additive Interaction Statistic	Age (years)	Third Quartile	Second Quartile	First Quartile
RERI (95% CI, null = 0)	32-39	0.16 (-1.19, 1.50)	-0.73 (-2.07, 0.62)	-0.003 (-1.32, 1.32)
	40-49	0.33 (-0.08, 0.70)	-0.15 (-0.50, 0.21)	0.11 (-0.26, 0.47)
	50-59	-0.16 (-0.55, 0.23)	0.03 (-0.38, 0.44)	0.21 (-0.23, 0.65)
Attributable Proportion^a (95% CI, null = 0)	32-39	0.04 (-0.27, 0.35)	-0.25 (-0.59, 0.09)	-0.001 (-0.29, 0.29)
	40-49	0.14 (0.02, 0.26)	-0.08 (-0.21, 0.06)	0.05 (-0.08, 0.17)
	50-59	-0.10 (-0.26, 0.07)	0.02 (-0.14, 0.17)	0.09 (-0.07, 0.26)
Synergy Index (95% CI, null = 1)	32-39	1.06 (0.54, 1.58)	0.73 (0.16, 1.29)	1.00 (0.52, 1.48)
	40-49	1.31 (1.00, 1.61)	0.87 (0.54, 1.20)	1.08 (0.80, 1.36)
	50-59	0.82 (0.35, 1.29)	1.03 (0.62, 1.45)	1.21 (0.81, 1.61)
		Na/K intake		
Additive Interaction Statistic	Age (years)	Second Quartile	Third Quartile	Fourth Quartile
RERI (95% CI, null = 0)	32-39	0.28 (-0.79, 1.35)	0.41 (0.59, 1.41)	0.20 (-0.77, 1.18)
	40-49	-0.03 (-0.37, 0.31)	-0.14 (-0.47, 0.20)	-0.09 (-0.42, 0.23)
	50-59	-0.02 (-0.39, 0.35)	-0.01 (-0.38, 0.36)	0.12 (-0.26, 0.51)
Attributable Proportion^a (95% CI, null = 0)	32-39	0.10 (-0.23, 0.43)	0.15 (-0.16, 0.45)	0.08 (-0.22, 0.37)
	40-49	-0.01 (-0.14, 0.12)	-0.07 (-0.20, 0.06)	-0.05 (-0.17, 0.08)
	50-59	-0.01 (-0.18, 0.16)	-0.01 (-0.17, 0.15)	0.07 (-0.10, 0.23)
Synergy Index (95% CI, null = 1)	32-39	1.19 (0.51, 1.86)	1.29 (0.62, 1.96)	1.14 (0.51, 1.77)
	40-49	0.98 (0.64, 1.31)	0.88 (0.56, 1.19)	0.92 (0.61, 1.22)
	50-59	0.97 (0.43, 1.51)	0.98 (0.50, 1.47)	1.17 (0.68, 1.65)

DASH: Dietary Approaches to Stop Hypertension, HDP: Hypertensive disorders of pregnancy, RERI: Relative excess risk due to interaction

Reference group for each exposure is the quartile with the lowest *a priori* risk.

^a The proportion of excess risk that is attributable to the interaction between prior HDP and the lifestyle risk factor (RERI).