

# **SUPPLEMENTAL MATERIAL**

**Table S1. Cardiac Structure and Function in Relation to Blood Pressure at Baseline in Men.**

Blood Pressure Model	Models Including a Single BP		Models Including Two BP	
	SBP	DBP	SBP	DBP
<b>Unadjusted</b>				
Septal wall thickness, cm	0.024 (0.004 to 0.044)*	0.008 (-0.012 to 0.028)	0.028 (0.005 to 0.051)*	-0.007 (-0.030 to 0.016)
Posterior wall thickness, cm	0.029 (0.011 to 0.048)†	0.009 (-0.009 to 0.027)	0.034 (0.013 to 0.056)†	-0.010 (-0.031 to 0.012)
LV mass index, mg/m <sup>2</sup>	2.26 (-0.58 to 5.09)	0.70 (-2.13 to 3.53)	2.65 (-0.72 to 6.02)	-0.72 (-4.08 to 2.63)
Relative wall thickness	0.011 (0.001 to 0.021)*	0.006 (-0.004 to 0.016)	0.011 (-0.0003 to 0.023)	-0.0005 (-0.012 to 0.011)
E/A ratio	-0.056 (-0.14 to 0.028)	-0.17 (-0.26 to -0.10)‡	0.044 (-0.052 to 0.14)	-0.20 (-0.29 to -0.10)‡
TDI e', cm/s	-0.16 (-0.45 to 0.13)	-0.009 (-0.32 to 0.30)	-0.22 (-0.56 to 0.13)	0.11 (-0.25 to 0.48)
E/e'	-0.042 (-0.75 to 0.67)	-1.20 (-1.94 to -0.46)†	0.76 (-0.054 to 1.58)	-1.62 (-2.48 to -0.76)‡
LA volume index, mL/m <sup>2</sup>	-0.31 (-1.53 to 0.90)	-1.00 (-2.26 to 0.26)	0.29 (-1.15 to 1.73)	-1.16 (-2.66 to 0.33)
Ejection fraction, %	-0.56 (-1.30 to 0.18)	-1.23 (-1.97 to -0.49)†	0.14 (-0.73 to 1.02)	-1.31 (-2.18 to -0.43)†
Longitudinal strain, %	-0.098 (-0.56 to 0.37)	-0.62 (-1.08 to -0.15)†	0.35 (-0.20 to 0.90)	-0.81 (-1.37 to -0.26)†
<b>Adjusted</b>				
Septal wall thickness, cm	0.016 (-0.004 to 0.035)	0.018 (-0.003 to 0.039)	0.010 (-0.015 to 0.033)	0.013 (-0.013 to 0.039)
Posterior wall thickness, cm	0.022 (0.004 to 0.041)*	0.023 (0.003 to 0.042)*	0.015 (-0.007 to 0.038)	0.013 (-0.011 to 0.037)
LV mass index, mg/m <sup>2</sup>	1.65 (-1.27 to 4.56)	1.89 (-1.23 to 5.02)	0.94 (-2.63 to 4.51)	1.31 (-2.53 to 5.15)
Relative wall thickness	0.009 (-0.001 to 0.020)	0.012 (0.002 to 0.023)*	0.004 (-0.008 to 0.016)	0.010 (-0.003 to 0.023)
E/A ratio	-0.082 (-0.17 to 0.002)	-0.14 (-0.23 to -0.046)†	-0.011 (-0.11 to 0.094)	-0.13 (-0.24 to -0.016)*
TDI e', cm/s	-0.18 (-0.48 to 0.13)	-0.036 (-0.38 to 0.31)	-0.24 (-0.61 to 0.14)	0.12 (-0.30 to 0.54)
E/e'	-0.18 (-0.89 to 0.52)	-0.64 (-1.43 to 0.15)	0.23 (-0.64 to 1.09)	-0.79 (-1.77 to 0.18)
LA volume index, mL/m <sup>2</sup>	-0.38 (-1.60 to 0.85)	-0.33 (-1.70 to 1.04)	-0.31 (-1.83 to 1.20)	-0.13 (-1.82 to 1.57)
Ejection fraction, %	-0.76 (-1.52 to 0.002)	-0.87 (-1.69 to -0.054)*	-0.44 (-1.36 to 0.49)	-0.60 (-1.61 to 0.40)
Longitudinal strain, %	-0.19 (-0.69 to 0.30)	-0.61 (-1.13 to -0.090)*	0.21 (-0.39 to 0.82)	-0.74 (-1.38 to -0.10)*

Effect sizes (95% confidence interval) express the changes in the echocardiographic traits associated with a 1-SD increase in systolic (SBP) and diastolic (DBP) blood pressure. Adjusted estimates account for sex, age, ethnicity, body mass index, heart rate, current smoking, dyslipidemia, diabetes mellitus, use of antihypertensive medications by drug class i.e., diuretics,  $\beta$ -blocker, inhibitors of the renin-angiotensin, calcium-channel blockers, and intake of aspirin, lipid-lowering drugs, other cardiovascular medications, and antidiabetic agents. Longitudinal strain is a negative value, but for ease of interpretation longitudinal strain was expressed as an absolute value. Significance of the associations: \*  $P \leq 0.05$ , †  $P \leq 0.01$ , and ‡  $P \leq 0.001$ .

**Table S2. Cardiac Structure and Function in Relation to Blood Pressure at Baseline in Women.**

Blood Pressure Model	Models Including a Single BP		Models Including Two BP	
	SBP	DBP	SBP	DBP
<b>Unadjusted</b>				
Septal wall thickness, cm	0.031 (0.013 to 0.049)‡	0.006 (-0.012 to 0.024)	0.037 (0.017 to 0.057)‡	-0.013 (-0.033 to 0.008)
Posterior wall thickness, cm	0.021 (0.004 to 0.037)*	0.001 (-0.016 to 0.018)	0.027 (0.007 to 0.046)†	-0.012 (-0.032 to 0.007)
LV mass index, mg/m <sup>2</sup>	3.96 (1.26 to 6.65)†	-0.20 (-2.97 to 2.57)	5.35 (2.26 to 8.44)‡	-2.88 (-6.02 to 0.26)
Relative wall thickness	0.004 (-0.005 to 0.013)	0.002 (-0.008 to 0.011)	0.004 (-0.006 to 0.015)	-0.0003 (-0.011 to 0.010)
E/A ratio	-0.049 (-0.12 to 0.026)	-0.16 (-0.23 to -0.082)‡	0.023 (-0.059 to 0.10)	-0.17 (-0.25 to -0.084)‡
TDI e', cm/s	-0.035 (-0.35 to 0.28)	0.029 (-0.30 to 0.36)	-0.061 (-0.42 to 0.29)	0.058 (-0.31 to 0.42)
E/e'	-0.048 (-0.73 to 0.63)	-1.06 (-1.75 to -0.36)†	0.52 (-0.23 to 1.27)	-1.30 (-2.08 to -0.52)
LA volume index, mL/m <sup>2</sup>	-1.21 (-2.37 to -0.049)*	-1.08 (-2.25 to 0.082)	-0.90 (-2.22 to 0.43)	-0.65 (-1.98 to 0.68)
Ejection fraction, %	0.033 (-0.64 to 0.70)	-0.72 (-1.38 to -0.054)*	0.52 (-0.25 to 1.28)	-0.98 (-1.74 to -0.21)*
Longitudinal strain, %	0.30 (-0.14 to 0.75)	-0.16 (-0.60 to 0.28)	0.47 (-0.024 to 0.97)	-0.37 (-0.86 to 0.12)
<b>Adjusted</b>				
Septal wall thickness, cm	0.022 (0.004 to 0.040)*	0.008 (-0.011 to 0.026)	0.025 (0.004 to 0.046)*	-0.006 (-0.028 to 0.016)
Posterior wall thickness, cm	0.013 (-0.004 to 0.030)	0.002 (-0.016 to 0.019)	0.017 (-0.003 to 0.036)	-0.008 (-0.028 to 0.013)
LV mass index, mg/m <sup>2</sup>	2.82 (0.045 to 5.59)*	-0.019 (-2.95 to 2.92)	3.93 (0.67 to 7.20)*	-2.22 (-5.66 to 1.22)
Relative wall thickness	0.002 (-0.008 to 0.011)	0.002 (-0.008 to 0.012)	0.001 (-0.010 to 0.012)	0.002 (-0.010 to 0.013)
E/A ratio	-0.067 (-0.14 to 0.010)	-0.15 (-0.23 to -0.073)‡	0.004 (-0.082 to 0.090)	-0.16 (-0.25 to -0.064)‡
TDI e', cm/s	-0.034 (-0.36 to 0.30)	-0.032 (-0.38 to 0.32)	-0.025 (-0.40 to 0.35)	-0.019 (-0.42 to 0.39)
E/e'	-0.17 (-0.88 to 0.55)	-0.84 (-1.60 to -0.081)*	0.28 (-0.53 to 1.10)	-0.99 (-1.86 to -0.12)*
LA volume index, mL/m <sup>2</sup>	-0.86 (-2.02 to 0.31)	0.20 (-1.01 to 1.41)	-1.30 (-2.66 to 0.056)	0.89 (-0.51 to 2.30)
Ejection fraction, %	-0.10 (-0.79 to 0.58)	-0.36 (-1.07 to 0.35)	0.11 (-0.70 to 0.92)	-0.42 (-1.26 to 0.42)
Longitudinal strain, %	0.21 (-0.25 to 0.67)	-0.10 (-0.56 to 0.36)	0.34 (-0.19 to 0.86)	-0.26 (-0.79 to 0.27)

Effect sizes (95% confidence interval) express the changes in the echocardiographic traits associated with a 1-SD increase in systolic (SBP) and diastolic (DBP) blood pressure. Adjusted estimates account for sex, age, ethnicity, body mass index, heart rate, current smoking, dyslipidemia, diabetes mellitus, use of antihypertensive medications by drug class i.e., diuretics,  $\beta$ -blocker, inhibitors of the renin-angiotensin, calcium-channel blockers, and intake of aspirin, lipid-lowering drugs, other cardiovascular medications, and antidiabetic agents. Longitudinal strain is a negative value, but for ease of interpretation longitudinal strain was expressed as an absolute value. Significance of the associations: \*  $P \leq 0.05$ , †  $P \leq 0.01$ , and ‡  $P \leq 0.001$ .

**Table S3. Cardiac Structure and Function in Relation to Blood Pressure in White.**

Blood Pressure Model	Models Including a Single BP		Models Including Two BP	
	SBP	DBP	SBP	DBP
Whites (n=770)				
Septal wall thickness, cm	0.013 (-0.001 to 0.027)	0.006 (-0.009 to 0.021)	0.015 (-0.002 to 0.031)	-0.003 (-0.021 to 0.015)
Posterior wall thickness, cm	0.009 (-0.004 to 0.022)	0.001 (-0.013 to 0.015)	0.012 (-0.003 to 0.028)	-0.006 (-0.023 to 0.011)
LV mass index, mg/m <sup>2</sup>	1.50 (-0.72 to 3.73)	0.099 (-2.29 to 2.49)	2.08 (-0.58 to 4.75)	-1.13 (-3.99 to 1.73)
Relative wall thickness	0.002 (-0.005 to 0.009)	0.002 (-0.006 to 0.010)	0.001 (-0.007 to 0.010)	0.001 (-0.008 to 0.010)
E/A ratio	-0.10 (-0.16 to -0.045)‡	-0.17 (-0.24 to -0.11)‡	-0.029 (-0.098 to 0.039)	-0.16 (-0.23 to -0.084)‡
TDI e', cm/s	-0.12 (-0.36 to 0.13)	-0.15 (-0.42 to 0.12)	-0.065 (-0.35 to 0.22)	-0.11 (-0.43 to 0.21)
E/e'	-0.27 (-0.83 to 0.29)	-0.82 (-1.44 to -0.20)†	0.16 (-0.49 to 0.81)	-0.92 (-1.64 to -0.19)*
LA volume index, mL/m <sup>2</sup>	-0.76 (-1.69 to 0.16)	-0.22 (-1.22 to 0.78)	-0.94 (-2.05 to 0.17)	0.34 (-0.86 to 1.54)
Ejection fraction, %	-0.55 (-1.12 to 0.014)	-0.87 (-1.47 to -0.26)†	-0.15 (-0.83 to 0.53)	-0.78 (-1.50 to -0.055)*
Longitudinal strain, %	0.22 (-0.15 to 0.58)	-0.16 (-0.54 to 0.22)	0.40 (-0.025 to 0.82)	-0.37 (-0.81 to 0.072)
Non-Whites (n=165)				
Septal wall thickness, cm	0.045 (0.009 to 0.080)*	0.034 (-0.004 to 0.072)	0.039 (-0.004 to 0.082)	0.011 (-0.035 to 0.056)
Posterior wall thickness, cm	0.050 (0.018 to 0.082)†	0.048 (0.013 to 0.082)†	0.036 (-0.003 to 0.075)	0.026 (-0.016 to 0.067)
LV mass index, mg/m <sup>2</sup>	6.01 (1.36 to 10.7)*	4.06 (-0.92 to 9.04)	5.65 (-0.015 to 11.3)	0.68 (-5.31 to 6.66)
Relative wall thickness	0.018 (-0.001 to 0.037)	0.023 (0.003 to 0.043)*	0.009 (-0.015 to 0.032)	0.018 (-0.007 to 0.042)
E/A ratio	0.037 (-0.10 to 0.18)	-0.054 (-0.21 to 0.10)	0.096 (-0.075 to 0.27)	-0.11 (-0.30 to 0.075)
TDI e', cm/s	-0.0002 (-0.56 to 0.56)	0.29 (-0.31 to 0.89)	-0.23 (-0.91 to 0.45)	0.44 (-0.30 to 1.18)
E/e'	-0.015 (-1.16 to 1.13)	-0.53 (-1.76 to 0.69)	0.40 (-1.00 to 1.80)	-0.78 (-2.28 to 0.72)
LA volume index, mL/m <sup>2</sup>	0.090 (-1.97 to 2.15)	0.58 (-1.65 to 2.80)	-0.28 (-2.74 to 2.18)	0.74 (-1.92 to 3.40)
Ejection fraction, %	0.24 (-0.92 to 1.41)	0.40 (-0.82 to 1.62)	0.046 (-1.37 to 1.46)	0.37 (-1.11 to 1.85)
Longitudinal strain, %	-0.39 (-1.18 to 0.39)	-0.74 (-1.57 to 0.091)	0.020 (-0.94 to 0.98)	-0.75 (-1.80 to 0.29)

Effect sizes (95% confidence interval) express the changes in the echocardiographic traits associated with a 1-SD increase in systolic (SBP) and diastolic (DBP) blood pressure. Adjusted estimates account for sex, age, body mass index, heart rate, current smoking, dyslipidemia, diabetes mellitus, use of antihypertensive medications by drug class i.e., diuretics,  $\beta$ -blockers, inhibitors of the renin-angiotensin, calcium-channel blockers, and intake of aspirin, lipid-lowering drugs, other cardiovascular medications, and antidiabetic agents. Longitudinal strain is a negative value, but for ease of interpretation longitudinal strain was expressed as an absolute value. Significance of the associations: \*  $P \leq 0.05$ , †  $P \leq 0.01$ , and ‡  $P \leq 0.001$ .

**Table S4. Cardiac Structure and Function in Relation to Blood Pressure by Median of Age.**

Blood Pressure Model	Models Including a Single BP		Models Including Two BP	
	SBP	DBP	SBP	DBP
<b>Age &lt;70 years</b>				
Septal wall thickness, cm	0.036 (0.019 to 0.055)‡	0.019 (0.0001 to 0.038)*	0.039 (0.017 to 0.061)‡	-0.004 (-0.027 to 0.019)
Posterior wall thickness, cm	0.036 (0.019 to 0.053)‡	0.019 (0.002 to 0.037)*	0.037 (0.017 to 0.058)‡	-0.003 (-0.024 to 0.018)
LV mass index, mg/m <sup>2</sup>	5.70 (2.90 to 8.50)‡	3.00 (0.070 to 5.93)	6.01 (2.59 to 9.43)‡	-0.56 (-4.09 to 2.98)
Relative wall thickness	0.010 (0.002 to 0.019)*	0.007 (-0.002 to 0.016)	0.009 (-0.001 to 0.020)	0.002 (-0.009 to 0.013)
E/A ratio	-0.053 (-0.13 to 0.027)	-0.14 (-0.22 to -0.066)‡	0.036 (-0.057 to 0.13)	-0.16 (-0.26 to -0.070)‡
TDI e', cm/s	-0.23 (-0.58 to 0.11)	-0.063 (-0.42 to 0.30)	-0.28 (-0.69 to 0.12)	0.098 (-0.33 to 0.52)
E/e'	0.39 (-0.28 to 1.06)	-0.67 (-1.36 to 0.017)	1.03 (0.25 to 1.81)†	-1.24 (-2.05 to -0.44)†
LA volume index, mL/m <sup>2</sup>	-0.001 (-0.88 to 0.88)	-0.065 (-0.99 to 0.86)	0.052 (-1.03 to 1.13)	-0.096 (-1.23 to 1.03)
Ejection fraction, %	-0.74 (-1.48 to 0.001)	-0.79 (-1.55 to -0.019)*	-0.45 (-1.36 to 0.45)	-0.52 (-1.45 to 0.42)
Longitudinal strain, %	-0.32 (-0.82 to 0.19)	-0.55 (-1.06 to -0.043)*	-0.024 (-0.62 to 0.58)	-0.54 (-1.14 to 0.071)
<b>Age ≥70 years</b>				
Septal wall thickness, cm	0.002 (-0.017 to 0.021)	0.010 (-0.010 to 0.030)	-0.005 (-0.027 to 0.018)	0.013 (-0.011 to 0.036)
Posterior wall thickness, cm	-0.001 (-0.019 to 0.017)	0.009 (-0.010 to 0.027)	-0.008 (-0.029 to 0.013)	0.013 (-0.009 to 0.035)
LV mass index, mg/m <sup>2</sup>	-0.96 (-3.84 to 1.92)	-0.34 (-3.34 to 2.66)	-1.09 (-4.50 to 2.32)	0.26 (-3.29 to 3.81)
Relative wall thickness	-0.0001 (-0.010 to 0.010)	0.009 (-0.002 to 0.019)	-0.006 (-0.019 to 0.006)	0.012 (-0.001 to 0.025)
E/A ratio	-0.084 (-0.17 to -0.001)*	-0.14 (-0.23 to -0.050)†	-0.025 (-0.12 to 0.070)	-0.12 (-0.23 to -0.022)*
TDI e', cm/s	-0.018 (-0.32 to 0.29)	-0.048 (-0.38 to 0.28)	0.007 (-0.36 to 0.37)	-0.052 (-0.44 to 0.34)
E/e'	-0.61 (-1.36 to 0.13)	-0.77 (-1.58 to 0.040)	-0.33 (-1.21 to 0.54)	-0.58 (-1.53 to 0.38)
LA volume index, mL/m <sup>2</sup>	-1.47 (-2.88 to -0.064)*	0.047 (-1.44 to 1.53)	-2.07 (-3.73 to -0.42)*	1.20 (-0.54 to 2.94)
Ejection fraction, %	-0.24 (-0.95 to 0.48)	-0.51 (-1.24 to 0.23)	0.036 (-0.81 to 0.88)	-0.53 (-1.39 to 0.34)
Longitudinal strain, %	0.37 (-0.074 to 0.82)	-0.12 (-0.59 to 0.35)	0.58 (0.064 to 1.10)*	-0.43 (-0.97 to 0.11)

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