

Supplementary Table 1. Test of Sleep Duration by Sex Interaction on Body Mass Index (BMI), Stratified by Age Group.

Model	<u>16-17</u>	<u>18-29</u>	<u>30-49</u>	<u>50-64</u>	<u>≥65</u>
	<u>p-value</u>	<u>p-value</u>	<u>p-value</u>	<u>p-value</u>	<u>p-value</u>
Continuous Sleep Duration					
Unadjusted	0.3717	0.0469	0.8582	0.4635	0.5529
Adjusted ^a	0.3096	0.1593	0.8932	0.2357	0.5017
Fully-Adjusted ^b	0.2570	0.6018	0.6338	0.7294	0.3697
Categorical Sleep Duration					
Unadjusted	0.2308	0.1321	0.7702	0.4733	0.1637
Adjusted ^a	0.1662	0.1978	0.8625	0.3328	0.2026
Fully-Adjusted ^b	0.2204	0.3425	0.6886	0.8864	0.0674

^aAdjusted analyses include race/ethnicity, marital status, exercise, income to poverty ratio, and education

^bAdjusted for race/ethnicity, marital status, exercise, income to poverty ratio, education, total caloric intake, alcohol, smoking, number of foods in diet, and depression (in participants over 18)

Supplementary Table 2. Linear Regression Results of Relationships Between Sleep Duration and Body Mass Index (BMI), Stratified by Age Group and Gender.

	Model	16-17	18-29	30-49	50-64	≥65
		<u>β (95% CI)</u>	<u>β (95% CI)</u>	<u>β (95% CI)</u>	<u>β (95% CI)</u>	<u>β (95% CI)</u>
Females	Unadjusted	*-0.77 (-1.47, -0.07)	***-1.10 (-1.65, -0.55)	-0.38 (-0.78, 0.01)	-0.39 (-0.97, 0.19)	-0.17 (-0.51, 0.16)
	Adjusted ^a	*-0.84 (-1.50, -0.17)	***-1.10 (-1.72, -0.47)	-0.29 (-0.68, 0.10)	-0.43 (-1.06, 0.21)	-0.15 (-0.48, 0.19)
	Fully-Adjusted ^b	*-0.81 (-1.44, -0.18)	*-0.80 (-1.46, -0.13)	-0.32 (-0.73, 0.09)	-0.35 (-0.96, 0.25)	-0.00 (-0.37, 0.37)
Males	Unadjusted	-0.24 (-1.16, 0.68)	-0.37 (-0.84, 0.11)	-0.34 (-0.71, 0.04)	-0.12 (-0.52, 0.27)	-0.35 (-0.81, 0.12)
	Adjusted ^a	-0.33 (-1.15, 0.50)	-0.43 (-1.03, 0.17)	-0.41 (-0.83, 0.02)	-0.05 (-0.46, 0.37)	-0.45 (-0.98, 0.07)
	Fully-Adjusted ^b	-0.28 (-1.09, 0.53)	-0.57 (-1.17, 0.02)	-0.33 (-0.79, 0.13)	-0.30 (-0.73, 0.12)	-0.40 (-0.89, 0.09)

*P<0.05, **P<0.01, ***P<0.001

^aAdjusted analyses include race/ethnicity, marital status, exercise, income to poverty ratio, and education

^bAdjusted for race/ethnicity, marital status, exercise, income to poverty ratio, education, total caloric intake, alcohol, smoking, number of foods in diet, and depression (in participants over 18)

Supplementary Table 3. Relationships between Sleep Duration Category and BMI, stratified by Age Group and Sex.

Model	Sleep Category	<u>16-17</u>	<u>18-29</u>	<u>30-49</u>	<u>50-64</u>	<u>≥65</u>
		<u>β (95% CI)</u>	<u>β (95% CI)</u>	<u>β (95% CI)</u>	<u>β (95% CI)</u>	<u>β (95% CI)</u>
Females Unadjusted	≤4 Hours	5.24 (-2.91, 13.38)	**5.01 (1.77, 8.26)	1.44 (-0.51, 3.40)	3.08 (-0.93, 7.08)	2.23 (-0.36, 4.82)
	5-6 Hours	1.26 (-1.45, 3.96)	**3.23 (1.07, 5.38)	*1.54 (0.33, 2.75)	0.79 (-0.85, 2.44)	0.14 (-1.07, 1.35)
	7-8 Hours	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>
	9+ Hours	-2.08 (-4.78, 0.62)	-1.38 (-3.55, 0.79)	-0.03 (-2.41, 2.35)	1.02 (-1.85, 3.89)	-0.40 (-1.74, 0.94)
Females Adjusted ^a	≤4 Hours	4.19 (-4.03, 12.41)	*4.22 (0.91, 7.54)	0.61 (-1.32, 2.53)	2.87 (-1.58, 7.32)	2.02 (-0.41, 4.45)
	5-6 Hours	0.23 (-2.33, 2.79)	**3.68 (1.23, 6.13)	1.10 (-0.09, 2.29)	1.04 (-0.59, 2.66)	0.08 (-1.12, 1.28)
	7-8 Hours	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>
	9+ Hours	*-3.07 (-6.06, -0.08)	-1.98 (-4.78, 0.81)	-0.46 (-2.68, 1.77)	0.95 (-1.90, 3.81)	-0.37 (-1.81, 1.06)
Females Fully-Adjusted ^b	≤4 Hours	3.28 (-5.16, 11.71)	2.77 (-0.66, 6.21)	0.69 (-1.51, 2.90)	2.23 (-2.07, 6.52)	2.08 (-0.34, 4.50)
	5-6 Hours	1.51 (-1.15, 4.17)	*3.21 (0.56, 5.87)	1.20 (-0.06, 2.46)	0.66 (-1.01, 2.33)	-0.44 (-1.74, 0.86)
	7-8 Hours	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>
	9+ Hours	-1.45 (-4.32, 1.42)	-1.54 (-4.63, 1.55)	-0.47 (-2.74, 1.81)	0.16 (-2.53, 2.86)	-0.06 (-1.67, 1.55)
Males Unadjusted	≤4 Hours		3.22 (-0.59, 7.04)	1.01 (-0.49, 2.51)	0.49 (-1.90, 2.89)	-0.27 (-2.10, 1.55)
	5-6 Hours	1.69 (-1.52, 4.90)	0.33 (-0.97, 1.62)	0.93 (-0.17, 2.03)	0.15 (-1.03, 1.32)	1.56 (-0.03, 3.15)
	7-8 Hours	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>
	9+ Hours	1.61 (-1.64, 4.85)	-1.48 (-3.08, 0.12)	1.30 (-2.07, 4.67)	-1.23 (-3.39, 0.94)	-0.09 (-1.37, 1.19)
Males	≤4 Hours		2.79 (-1.31, 6.90)	1.22 (-0.36, 2.81)	0.55 (-1.96, 3.06)	0.60 (-1.33, 2.52)

Adjusted ^a	5-6 Hours	1.74 (-1.09, 4.56)	0.87 (-0.65, 2.38)	1.03 (-0.15, 2.22)	0.11 (-1.10, 1.32)	1.58 (-0.03, 3.19)
	7-8 Hours	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>
	9+ Hours	1.25 (-1.86, 4.36)	-0.96 (-2.99, 1.07)	1.13 (-2.47, 4.73)	-0.64 (-2.71, 1.42)	-0.43 (-1.80, 0.94)
Males Fully-Adjusted ^b	≤4 Hours		2.36 (-1.91, 6.63)	0.86 (-0.85, 2.57)	1.62 (-1.01, 4.26)	0.30 (-1.91, 2.50)
	5-6 Hours	1.62 (-1.22, 4.47)	0.91 (-0.72, 2.54)	1.12 (-0.14, 2.37)	0.59 (-0.68, 1.86)	*1.61 (0.01, 3.21)
	7-8 Hours	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>
	9+ Hours	1.36 (-1.60, 4.31)	-1.32 (-3.39, 0.75)	1.68 (-2.31, 5.68)	-0.02 (-2.01, 1.96)	-0.20 (-1.63, 1.24)

*P<0.05, **P<0.01, ***P<0.001

^aAdjusted analyses include race/ethnicity, marital status, exercise, income to poverty ratio, and education

^bAdjusted for race/ethnicity, marital status, exercise, income to poverty ratio, education, total caloric intake, alcohol, smoking, number of foods in diet, and depression (in participants over 18)

Supplementary Table 4. Linear Regression Results of Relationships Between Sleep Duration and Body Mass Index Z Score (BMI-z), Stratified by Age Group.

Model	16-17	18-29	30-49	50-64	≥65
	<u>β (95% CI)</u>	<u>β (95% CI)</u>	<u>β (95% CI)</u>	<u>β (95% CI)</u>	<u>β (95% CI)</u>
Unadjusted	-0.09 (-0.21, 0.04)	** -0.09 (-0.15, -0.04)	** -0.05 (-0.10, -0.01)	-0.04 (-0.10, 0.02)	-0.04 (-0.08, 0.00)
Adjusted ^a	-0.10 (-0.23, 0.02)	*** -0.13 (-0.19, -0.06)	* -0.05 (-0.09, -0.01)	-0.04 (-0.10, 0.02)	-0.04 (-0.08, 0.00)
Fully-Adjusted ^b	-0.10 (-0.22, 0.02)	*** -0.12 (-0.19, -0.05)	* -0.05 (-0.09, -0.00)	-0.05 (-0.11, 0.01)	-0.03 (-0.07, 0.02)

*P<0.05, **P<0.01, ***P<0.001

^aAdjusted analyses include sex, race/ethnicity, marital status, exercise, income to poverty ratio, and education

^bAdjusted for sex, race/ethnicity, marital status, exercise, income to poverty ratio, education, total caloric intake, alcohol, smoking, number of foods in diet, and depression (in participants over 18)

Supplementary Table 5. Relationships between Sleep Duration Category and BMI-z, stratified by Age Group.

Model	Sleep Category	<u>16-17</u>	<u>18-29</u>	<u>30-49</u>	<u>50-64</u>	<u>≥65</u>
		β (95% CI)	β (95% CI)	β (95% CI)	β (95% CI)	β (95% CI)
Unadjusted	≤4 Hours	*0.85 (0.04, 1.66)	***0.71 (0.33, 1.09)	0.18 (-0.00, 0.37)	0.30 (-0.09, 0.68)	0.19 (-0.08, 0.45)
	5-6 Hours	0.26 (-0.14, 0.65)	*0.22 (0.03, 0.40)	**0.19 (0.06, 0.31)	0.07 (-0.08, 0.22)	0.11 (-0.04, 0.26)
	7-8 Hours	Reference	Reference	Reference	Reference	Reference
	9+ Hours	0.06 (-0.46, 0.59)	-0.04 (-0.29, 0.21)	0.05 (-0.25, 0.34)	0.02 (-0.27, 0.31)	-0.05 (-0.19, 0.10)
Adjusted ^a	≤4 Hours	**0.80 (0.26, 1.34)	**0.64 (0.26, 1.03)	0.12 (-0.07, 0.30)	0.26 (-0.16, 0.67)	0.21 (-0.05, 0.47)
	5-6 Hours	0.17 (-0.22, 0.55)	**0.34 (0.13, 0.54)	**0.17 (0.05, 0.30)	0.08 (-0.07, 0.22)	0.12 (-0.03, 0.27)
	7-8 Hours	Reference	Reference	Reference	Reference	Reference
	9+ Hours	-0.00 (-0.56, 0.55)	-0.15 (-0.42, 0.12)	-0.00 (-0.29, 0.29)	0.02 (-0.26, 0.30)	-0.05 (-0.20, 0.09)
Fully-Adjusted ^b	≤4 Hours	**0.74 (0.18, 1.29)	*0.53 (0.11, 0.94)	0.07 (-0.14, 0.27)	0.32 (-0.11, 0.74)	0.20 (-0.07, 0.46)
	5-6 Hours	0.29 (-0.11, 0.68)	**0.31 (0.10, 0.52)	**0.18 (0.05, 0.32)	0.09 (-0.07, 0.24)	0.08 (-0.08, 0.23)
	7-8 Hours	Reference	Reference	Reference	Reference	Reference
	9+ Hours	0.13 (-0.38, 0.65)	-0.17 (-0.46, 0.11)	0.00 (-0.31, 0.31)	0.05 (-0.23, 0.33)	-0.03 (-0.18, 0.13)

*P<0.05, **P<0.01, ***P<0.001

^aAdjusted analyses include sex, race/ethnicity, marital status, exercise, income to poverty ratio, and education

^bAdjusted for sex, race/ethnicity, marital status, exercise, income to poverty ratio, education, total caloric intake, alcohol, smoking, number of foods in diet, and depression (in participants over 18)

Supplementary Table 6. Test of Sleep Duration by Sex Interaction on Body Mass Index Z Score (BMI-z), Stratified by Age Group.

Model	<u>16-17</u>	<u>18-29</u>	<u>30-49</u>	<u>50-64</u>	<u>≥65</u>
	<u>p-value</u>	<u>p-value</u>	<u>p-value</u>	<u>p-value</u>	<u>p-value</u>
Continuous Sleep Duration					
Unadjusted	0.2379	0.0631	0.8582	0.4635	0.5529
Adjusted ^a	0.2345	0.1649	0.8932	0.2357	0.5017
Fully-Adjusted ^b	0.1807	0.5383	0.6338	0.7294	0.3697
Categorical Sleep Duration					
Unadjusted	0.1123	0.0826	0.7702	0.4733	0.1637
Adjusted ^a	0.1224	0.2212	0.8625	0.3328	0.2026
Fully-Adjusted ^b	0.1524	0.3108	0.6886	0.8864	0.0674

^aAdjusted analyses include race/ethnicity, marital status, exercise, income to poverty ratio, and education

^bAdjusted for race/ethnicity, marital status, exercise, income to poverty ratio, education, total caloric intake, alcohol, smoking, number of foods in diet, and depression (in participants over 18)

Supplementary Table 7. Linear Regression Results of Relationships Between Sleep Duration and Body Mass Index Z Score (BMI-z), Stratified by Age Group and Gender.

	Model	16-17	18-29	30-49	50-64	≥65
		<u>β (95% CI)</u>	<u>β (95% CI)</u>	<u>β (95% CI)</u>	<u>β (95% CI)</u>	<u>β (95% CI)</u>
Females	Unadjusted	*-0.16 (-0.32, -0.01)	***-0.15 (-0.23, -0.06)	-0.06 (-0.12, 0.00)	-0.06 (-0.15, 0.03)	-0.03 (-0.08, 0.02)
	Adjusted ^a	*-0.17 (-0.31, -0.02)	***-0.16 (-0.26, -0.07)	-0.04 (-0.10, 0.02)	-0.06 (-0.16, 0.03)	-0.02 (-0.07, 0.03)
	Fully-Adjusted ^b	** -0.16 (-0.28, -0.04)	*-0.13 (-0.23, -0.03)	-0.05 (-0.11, 0.01)	-0.05 (-0.14, 0.04)	-0.00 (-0.06, 0.06)
Males	Unadjusted	-0.02 (-0.20, 0.16)	-0.04 (-0.12, 0.04)	-0.05 (-0.11, 0.01)	-0.02 (-0.08, 0.04)	-0.05 (-0.12, 0.02)
	Adjusted ^a	-0.04 (-0.22, 0.14)	-0.07 (-0.16, 0.03)	-0.06 (-0.13, 0.00)	-0.01 (-0.07, 0.06)	-0.07 (-0.15, 0.01)
	Fully-Adjusted ^b	-0.03 (-0.21, 0.15)	-0.09 (-0.18, 0.00)	-0.05 (-0.12, 0.02)	-0.05 (-0.11, 0.02)	-0.06 (-0.13, 0.01)

*P<0.05, **P<0.01, ***P<0.001

^aAdjusted analyses include race/ethnicity, marital status, exercise, income to poverty ratio, and education

^bAdjusted for race/ethnicity, marital status, exercise, income to poverty ratio, education, total caloric intake, alcohol, smoking, number of foods in diet, and depression (in participants over 18)

Supplementary Table 8. Relationships between Sleep Duration Category and BMI Z Score, stratified by Age Group and Sex.

<u>Model</u>	<u>Sleep Category</u>	<u>16-17</u>	<u>18-29</u>	<u>30-49</u>	<u>50-64</u>	<u>≥65</u>
		<u>β (95% CI)</u>	<u>β (95% CI)</u>	<u>β (95% CI)</u>	<u>β (95% CI)</u>	<u>β (95% CI)</u>
Females Unadjusted	≤4 Hours	0.80 (-0.02, 1.62)	***0.79 (0.34, 1.25)	0.22 (-0.08, 0.51)	0.46 (-0.14, 1.07)	0.34 (-0.05, 0.73)
	5-6 Hours	0.16 (-0.32, 0.63)	**0.49 (0.17, 0.80)	*0.23 (0.05, 0.41)	0.12 (-0.13, 0.37)	0.02 (-0.16, 0.20)
	7-8 Hours	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>
	9+ Hours	-0.57 (-1.28, 0.14)	-0.05 (-0.41, 0.32)	-0.00 (-0.36, 0.35)	0.15 (-0.28, 0.59)	-0.06 (-0.26, 0.14)
Females Adjusted ^a	≤4 Hours	0.65 (-0.20, 1.49)	**0.75 (0.27, 1.24)	0.09 (-0.20, 0.38)	0.43 (-0.24, 1.10)	0.30 (-0.06, 0.67)
	5-6 Hours	-0.01 (-0.50, 0.47)	**0.55 (0.20, 0.91)	0.17 (-0.01, 0.34)	0.16 (-0.09, 0.40)	0.01 (-0.17, 0.19)
	7-8 Hours	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>
	9+ Hours	-0.69 (-1.47, 0.10)	-0.20 (-0.60, 0.20)	-0.07 (-0.40, 0.27)	0.14 (-0.29, 0.57)	-0.06 (-0.27, 0.16)
Females Fully-Adjusted ^b	≤4 Hours	0.42 (-0.44, 1.27)	*0.62 (0.07, 1.18)	0.10 (-0.23, 0.44)	0.34 (-0.31, 0.98)	0.31 (-0.05, 0.68)
	5-6 Hours	0.27 (-0.21, 0.75)	*0.50 (0.11, 0.89)	0.18 (-0.01, 0.37)	0.10 (-0.15, 0.35)	-0.07 (-0.26, 0.13)
	7-8 Hours	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>
	9+ Hours	-0.34 (-0.96, 0.29)	-0.11 (-0.55, 0.32)	-0.07 (-0.41, 0.27)	0.02 (-0.38, 0.43)	-0.01 (-0.25, 0.23)
Males Unadjusted	≤4 Hours		0.61 (-0.06, 1.29)	0.15 (-0.07, 0.38)	0.07 (-0.29, 0.44)	-0.04 (-0.32, 0.23)
	5-6 Hours	0.37 (-0.27, 1.02)	0.00 (-0.22, 0.22)	0.14 (-0.03, 0.31)	0.02 (-0.16, 0.20)	0.23 (-0.00, 0.47)
	7-8 Hours	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>
	9+ Hours	0.46 (-0.18, 1.10)	-0.02 (-0.35, 0.31)	0.20 (-0.31, 0.70)	-0.18 (-0.51, 0.14)	-0.01 (-0.21, 0.18)
Males	≤4 Hours		0.51 (-0.10, 1.12)	0.18 (-0.05, 0.42)	0.08 (-0.30, 0.46)	0.09 (-0.20, 0.38)

Adjusted ^a	5-6 Hours	0.42 (-0.24, 1.08)	0.15 (-0.09, 0.39)	0.16 (-0.02, 0.33)	0.02 (-0.17, 0.20)	0.24 (-0.01, 0.48)
	7-8 Hours	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>
	9+ Hours	0.41 (-0.25, 1.07)	-0.05 (-0.41, 0.31)	0.17 (-0.37, 0.71)	-0.10 (-0.41, 0.21)	-0.06 (-0.27, 0.14)
Males Fully-Adjusted ^b	≤4 Hours		0.43 (-0.21, 1.06)	0.13 (-0.13, 0.39)	0.24 (-0.15, 0.64)	0.04 (-0.29, 0.38)
	5-6 Hours	0.40 (-0.27, 1.07)	0.16 (-0.09, 0.41)	0.17 (-0.02, 0.36)	0.09 (-0.10, 0.28)	*0.24 (0.00, 0.48)
	7-8 Hours	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>
	9+ Hours	0.44 (-0.20, 1.07)	-0.12 (-0.49, 0.25)	0.25 (-0.35, 0.85)	-0.00 (-0.30, 0.30)	-0.03 (-0.25, 0.19)

*P<0.05, **P<0.01, ***P<0.001

^aAdjusted analyses include race/ethnicity, marital status, exercise, income to poverty ratio, and education

^bAdjusted for race/ethnicity, marital status, exercise, income to poverty ratio, education, total caloric intake, alcohol, smoking, number of foods in diet, and depression (in participants over 18)