**Appendix 1-1** Trends in the influence of urbanisation on BMI of middle-aged and older Chinese >=45 years, the CHNS 1991 to 2011

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   |  |  |  |  | **Male BMI** |  |  |  |
|  | **Model 1** |  |  | **Model 2** |  |  | **Model 3** |  |
|   | Coefficient | 95%CI |  | Coefficient | 95%CI |  | Coefficient | 95%CI |
| Year | 0.082\*\*\* | (0.073, 0.091) | 0.085\*\*\* | (0.075, 0.094) |  | 0.096\*\*\* | (0.085, 0.107) |
| *Hukou* (Ref: Rural) |  |  |  | 0.515\*\*\* | (0.347, 0.683) |  | 0.856\*\*\* | (0.605, 1.106) |
| Year\**Hukou* |  |  |  |  |  |  | -0.027\*\*\* | (-0.042, -0.012) |
|  |  |  |  |  |  |  |  |  |
|   |  |  |  |  | **Female BMI** |  |  |  |
|  | **Model 1** |  |  | **Model 2** |  |  | **Model 3** |  |
|   | Coefficient | 95%CI |  | Coefficient | 95%CI |  | Coefficient | 95%CI |
| Year | 0.078\*\*\* | (0.069, 0.087) | 0.077\*\*\* | (0.067, 0.086) |  | 0.095\*\*\* | (0.085, 0.105) |
| *Hukou* (Ref: Rural) |  |  |  | 0.310\*\* | (0.156, 0.464) |  | 0.929\*\*\* | (0.710, 1.147) |
| Year\**Hukou* |  |  |  |  |  |  | -0.049\*\*\* | (-0.061, -0.037) |

\*p<0.05, \*\* p<0.01, \*\*\*p<0.001

CHNS, China Health and Nutrition Survey; CI, confidence interval; BMI, body mass index

Year was centred at 1991

All models adjusted for age (centred at 45 years old), quadratic term of age, education (completed years of formal education in regular school) and log transformation of household income per capita.

**Appendix 1-2** Trends in the influence of urbanisation on probability of obesity of middle-aged and older Chinese >=45 years, the CHNS 1991 to 2011

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   |  |  |  |  | **Male**l **obesity** |  |  |  |
|  | **Model 1** |  |  | **Model 2** |  |  | **Model 3** |  |
|   | Coefficient | 95%CI |  | Coefficient | 95%CI |  | Coefficient | 95%CI |
| Year | 0.039\*\*\* | (0.027, 0.051) | 0.043\*\*\* | (0.031, 0.055) |  | 0.091\*\* | (0.070, 0.113) |
| *Hukou* (Ref: Rural) |  |  |  | 0.831\*\*\* | (0.623, 1.039) |  | 1.851\*\*\* | (1.430, 2.272) |
| Year\**Hukou* |  |  |  |  |  |  | -0.071\*\*\* | (-0.096, -0.047) |
|  |  |  |  |  |  |  |  |  |
|   |  |  |  |  | **Female obesity** |  |  |  |
|  | **Model 1** |  |  | **Model 2** |  |  | **Model 3** |  |
|   | Coefficient | 95%CI |  | Coefficient | 95%CI |  | Coefficient | 95%CI |
| Year | 0.046\*\*\* | (0.037, 0.055) | 0.047\*\*\* | (0.038, 0.056) |  | 0.075\*\*\* | (0.061, 0.088) |
| *Hukou* (Ref: Rural) |  |  |  | 0.310\*\* | (0.135, 0.485) |  | 1.051\*\* | (0.754, 1.347) |
| Year\**Hukou* |  |  |  |  |  |  | -0.054\*\* | (-0.072, -0.037) |

\*p<0.05, \*\* p<0.01, \*\*\*p<0.001

CHNS, China Health and Nutrition Survey; CI, confidence interval

Year was centred at 1991

All models adjusted for age (centred at 45 years old), quadratic term of age, education (completed years of formal education in regular school) and log transformation of household income per capita.

**Appendx 2-1** Trends in the influence of urbanisation on waist circumference of middle-aged and older Chinese >=45 years, the CHNS 1991 to 2011

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   |  |  |  |  | **Male waist circumference** |  |  |  |
|  | **Model 1** |  |  | **Model 2** |  |  | **Model 3** |  |
|   | Coefficient | 95%CI |  | Coefficient | 95%CI |  | Coefficient | 95%CI |
| Year | 0.357\*\*\* | (0.330, 0.384) | 0.361\*\*\* | (0.334, 0.388) |  | 0.403\*\*\* | (0.371, 0.435) |
| *Hukou* (Ref: Rural) |  |  |  | 1.236\*\*\* | (0.778, 1.693) |  | 2.552\*\*\* | (1.828, 3.276) |
| Year\**Hukou* |  |  |  |  |  |  | -0.100\*\*\* | (-0.142, -0.057) |
|  |  |  |  |  |  |  |  |  |
|   |  |  |  |  | **Female waist circumference** |  |  |  |
|  | **Model 1** |  |  | **Model 2** |  |  | **Model 3** |  |
|   | Coefficient | 95%CI |  | Coefficient | 95%CI |  | Coefficient | 95%CI |
| Year | 0.308\*\*\* | (0.280, 0.335) | 0.309\*\*\* | (0.281, 0.337) |  | 0.381\*\*\* | (0.348, 0.413) |
| *Hukou* (Ref: Rural) |  |  |  | 0.525\* | (0.030, 1.021) |  | 2.971\*\*\* | (2.205, 3.737) |
| Year\**Hukou* |  |  |  |  |  |  | -0.182\*\*\* | (-0.226, -0.138) |

\*p<0.05, \*\* p<0.01, \*\*\*p<0.001

CHNS, China Health and Nutrition Survey; CI, confidence interval

Year was centred at 1991

All models adjusted for age (centred at 45 years old), quadratic term of age, education (completed years of formal education in regular school) and log transformation of household income per capita.

**Appendx 2-2** Trends in the influence of urbanisation on abdominal obesity of middle-aged and older Chinese >=45 years, the CHNS 1991 to 2011

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   |  |  |  |  | **Male abdonimal obesity** |  |  |  |
|  | **Model 1** |  |  | **Model 2** |  |  | **Model 3** |  |
|   | Coefficient | 95%CI |  | Coefficient | 95%CI |  | Coefficient | 95%CI |
| Year | 0.062\*\*\* | (0.053, 0.070) | 0.064\*\*\* | (0.056, 0.073) |  | 0.093\*\*\* | (0.080, 0.106) |
| *Hukou* (Ref: Rural) |  |  |  | 0.605\*\*\* | (0.466, 0.745) |  | 1.340\*\*\* | (1.068, 1.611) |
| Year\**Hukou* |  |  |  |  |  |  | -0.051\*\*\* | (-0.067, -0.035) |
|  |  |  |  |  |  |  |  |  |
|   |  |  |  |  | **Female abdonimal obesity** |  |  |  |
|  | **Model 1** |  |  | **Model 2** |  |  | **Model 3** |  |
|   | Coefficient | 95%CI |  | Coefficient | 95%CI |  | Coefficient | 95%CI |
| Year | 0.050\*\*\* | (0.044, 0.057) | 0.052\*\*\* | (0.045, 0.059) |  | 0.071\*\*\* | (0.063, 0.080) |
| *Hukou* (Ref: Rural) |  |  |  | 0.184\*\* | (0.052, 0.315) |  | 0.828\*\*\* | (0.612, 1.044) |
| Year\**Hukou* |  |  |  |  |  |  | -0.049\*\*\* | (-0.062, -0.036) |

\*p<0.05, \*\* p<0.01, \*\*\*p<0.001

CHNS, China Health and Nutrition Survey; CI, confidence interval

Year was centred at 1991

All models adjusted for age (centred at 45 years old), quadratic term of age, education (completed years of formal education in regular school) and log transformation of household income per capita.

**Appendx 3-1** Trends in the influence of urbanisation on systolic blood pressure of middle-aged and older Chinese >=45 years, the CHNS 1991 to 2011

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   |  |  |  |  | **Male systolic blood pressure** |  |  |  |
|  | **Model 1** |  |  | **Model 2** |  |  | **Model 3** |  |
|   | Coefficient | 95%CI |  | Coefficient | 95%CI |  | Coefficient | 95%CI |
| Year | 0.170\*\*\* | (0.121, 0.220) | 0.204\*\*\* | (0.153, 0.254) |  | 0.354\*\*\* | (0.292, 0.416) |
| *Hukou* (Ref: Rural) |  |  |  | 1.863\*\*\* | (0.977, 2.750) |  | 6.371\*\*\* | (4.982, 7.760) |
| Year\**Hukou* |  |  |  |  |  |  | -0.362\*\*\* | (-0.448, -0.276) |
|  |  |  |  |  |  |  |  |  |
|   |  |  |  |  | **Female systolic blood pressure** |  |  |  |
|  | **Model 1** |  |  | **Model 2** |  |  | **Model 3** |  |
|   | Coefficient | 95%CI |  | Coefficient | 95%CI |  | Coefficient | 95%CI |
| Year | 0.212\*\*\* | (0.158, 0.265) | 0.225\*\*\* | (0.170, 0.280) |  | 0.394\*\*\* | (0.329, 0.459) |
| *Hukou* (Ref: Rural) |  |  |  | 0.446 | (-0.580, 1.471) |  | 5.91\*\*\* | (4.381, 7.430) |
| Year\**Hukou* |  |  |  |  |  |  | -0.436\*\*\* | (-0.526, -0.345) |

\*p<0.05, \*\* p<0.01, \*\*\*p<0.001

CHNS, China Health and Nutrition Survey; CI, confidence interval

Year was centred at 1991

All models adjusted for age (centred at 45 years old), quadratic term of age, education (completed years of formal education in regular school) and log transformation of household income per capita.

**Appendx 3-2** Trends in the influence of urbanisation on diastolic blood pressure of middle-aged and older Chinese >=45 years, the CHNS 1991 to 2011

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   |  |  |  |  | **Male diastolic blood pressure** |  |  |  |
|  | **Model 1** |  |  | **Model 2** |  |  | **Model 3** |  |
|   | Coefficient | 95%CI |  | Coefficient | 95%CI |  | Coefficient | 95%CI |
| Year | 0.117\*\*\* | (0.086, 0.149) | 0.134\*\*\* | (0.102, 0.166) |  | 0.222\*\*\* | (0.183, 0.262) |
| *Hukou* (Ref: Rural) |  |  |  | 1.062\*\*\* | (0.475, 1.649) |  | 3.692\*\*\* | (2.784, 4.600) |
| Year\**Hukou* |  |  |  |  |  |  | -0.211\*\*\* | (-0.266, -0.155) |
|  |  |  |  |  |  |  |  |  |
|   |  |  |  |  | **Female diastolic blood pressure** |  |  |  |
|  | **Model 1** |  |  | **Model 2** |  |  | **Model 3** |  |
|   | Coefficient | 95%CI |  | Coefficient | 95%CI |  | Coefficient | 95%CI |
| Year | 0.091\*\*\* | (0.059, 0.122) | 0.092\*\*\* | (0.059, 0.124) |  | 0.181\*\*\* | (0.142, 0.219) |
| *Hukou* (Ref: Rural) |  |  |  | 0.143 | (-0.484, 0.771) |  | 3.022\*\*\* | (2.098, 3.946) |
| Year\**Hukou* |  |  |  |  |  |  | -0.229\*\*\* | (-0.283, -0.175) |

\*p<0.05, \*\* p<0.01, \*\*\*p<0.001

CHNS, China Health and Nutrition Survey; CI, confidence interval

Year was centred at 1991

All models adjusted for age (centred at 45 years old), quadratic term of age, education (completed years of formal education in regular school) and log transformation of household income per capita.

**Appendx 3-3** Trends in the influence of urbanisation on hypertension of middle-aged and older Chinese >=45 years, the CHNS 1991 to 2011

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   |  |  |  |  | **Male hypertension** |  |  |  |
|  | **Model 1** |  |  | **Model 2** |  |  | **Model 3** |  |
|   | Coefficient | 95%CI |  | Coefficient | 95%CI |  | Coefficient | 95%CI |
| Year | 0.009\*\* | (0.003, 0.015) | 0.012\*\*\* | (0.006, 0.018) |  | 0.023\*\*\* | (0.015, 0.031) |
| *Hukou* (Ref: Rural) |  |  |  | 0.264\*\*\* | (0.156, 0.372) |  | 0.588\*\*\* | (0.412, 0.765) |
| Year\**Hukou* |  |  |  |  |  |  | -0.026\*\*\* | (-0.037, -0.015) |
|  |  |  |  |  |  |  |  |  |
|   |  |  |  |  | **Female hypertension** |  |  |  |
|  | **Model 1** |  |  | **Model 2** |  |  | **Model 3** |  |
|   | Coefficient | 95%CI |  | Coefficient | 95%CI |  | Coefficient | 95%CI |
| Year | 0.005 | (-0.0007, 0.011) | 0.006 | (-0.0004, 0.012) |  | 0.021\*\*\* | (0.013, 0.028) |
| *Hukou* (Ref: Rural) |  |  |  | 0.048 | (-0.067, 0.163) |  | 0.498\*\*\* | (0.319, 0.678) |
| Year\**Hukou* |  |  |  |  |  |  | -0.036\*\*\* | (-0.047, -0.025) |

\*p<0.05, \*\* p<0.01, \*\*\*p<0.001

CHNS, China Health and Nutrition Survey; CI, confidence interval

Year was centred at 1991

All models adjusted for age (centred at 45 years old), quadratic term of age, education (completed years of formal education in regular school) and log transformation of household income per capita.



**Appendix 4** Trends in the influence of *Hukou* on the probabilities of obesity among males (left) and females (right) aged >=45 years in China



**Appendix 5** Trends in the influence of *Hukou* on the probabilities of abdominal obesity among males (left) and females (right) aged >=45 years in China



**Appendix 6** Trends in the influence of *Hukou* on the probabitlities of hypertension among males (left) and females (right) aged >=45 years in China