

Supplementary Materials

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Text S1. Heterogeneity by additional individual characteristics

In our main analyses, we examined the relationship between attained adult height and diabetes at the global level and by world region and country, in addition to stratifying all our analyses by sex. We also tested for heterogeneity by individual-level educational attainment. Educational attainment may induce heterogeneity both because it is an indicator for childhood living standards (Alderman et al., 2001; Brooker et al., 1999) or because education may moderate the effects of early life conditions on diabetes later in life (Monden & Smits, 2009; Bhalotra & Rawlings 2013). We also assessed heterogeneity by birth cohort indicators for infant mortality rate (IMR), as an indicator for early life conditions. Since some countries in our sample have experienced considerable improvements in living standards over time, living standards in early life may differ from current living standards (Deaton 2007, Bozzoli et al., 2009). Bearing in mind the Developmental Origins of Health and Disease hypothesis, we stratified our analyses by birth cohort IMR as well as the absolute decrease in IMR over individual life course.

Fig. S1. Data acquisition process for World Health Organization STEPS surveys

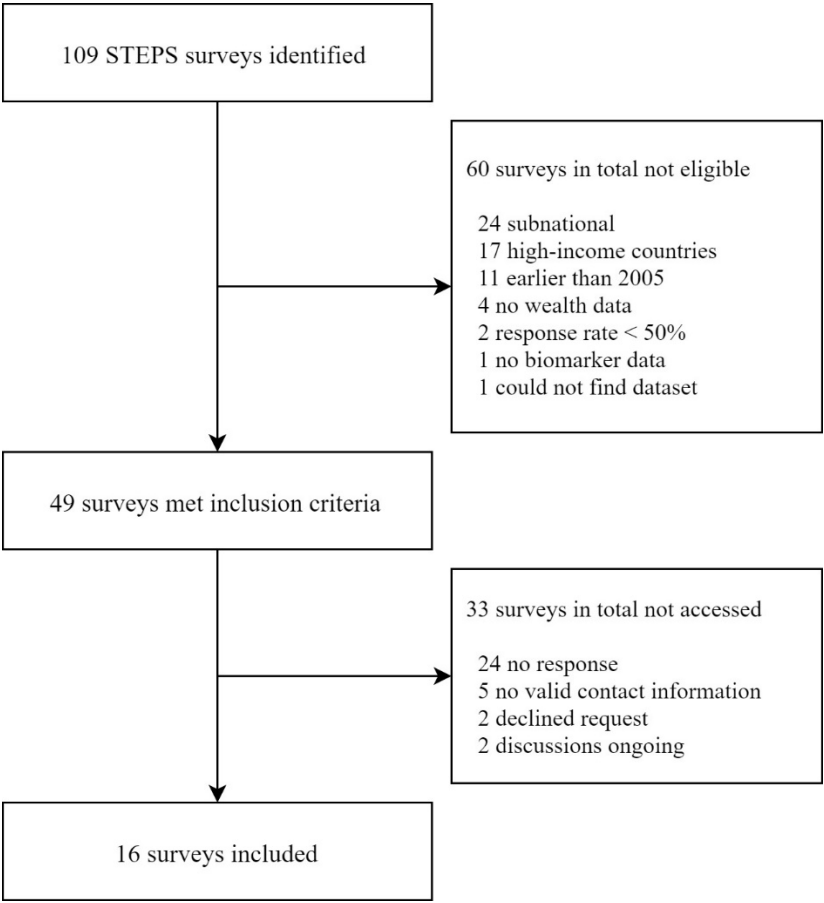


Fig. S2. Data acquisition process for non-STEPS surveys

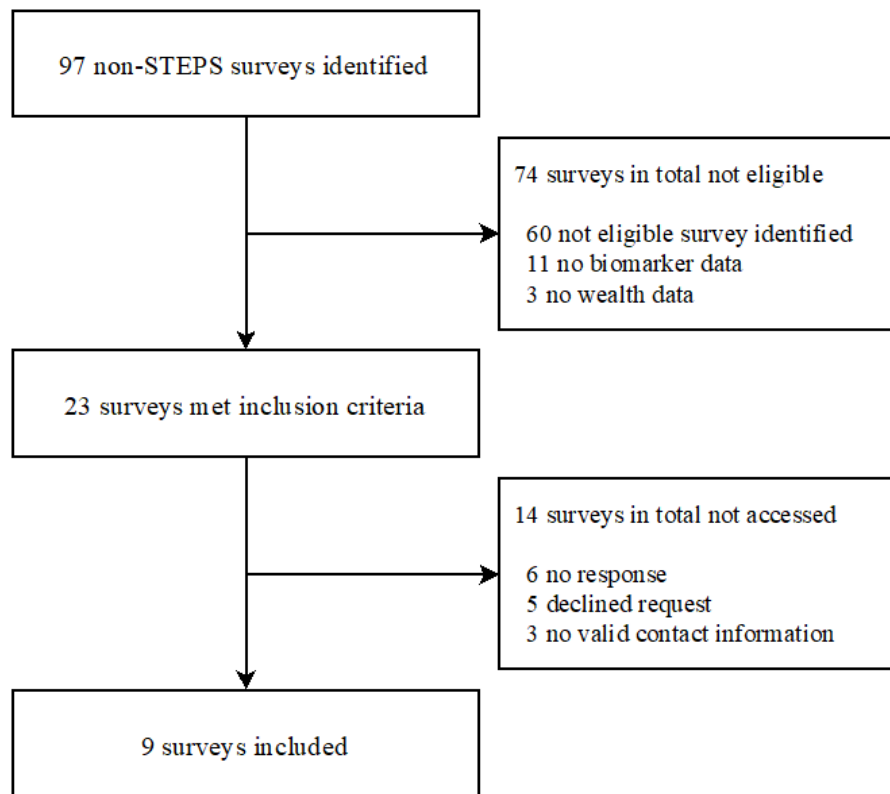
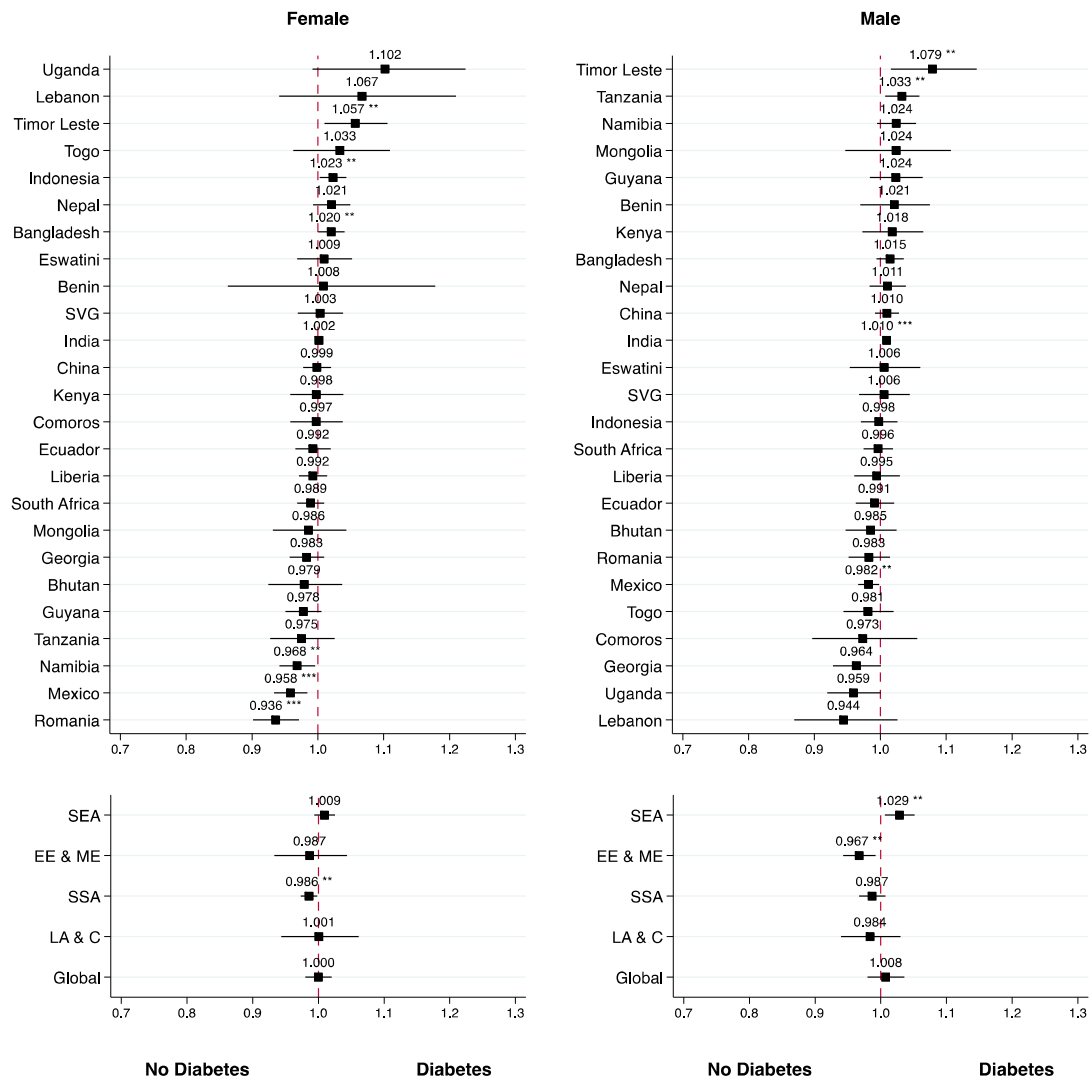


Fig. S3. Flowchart for final sample

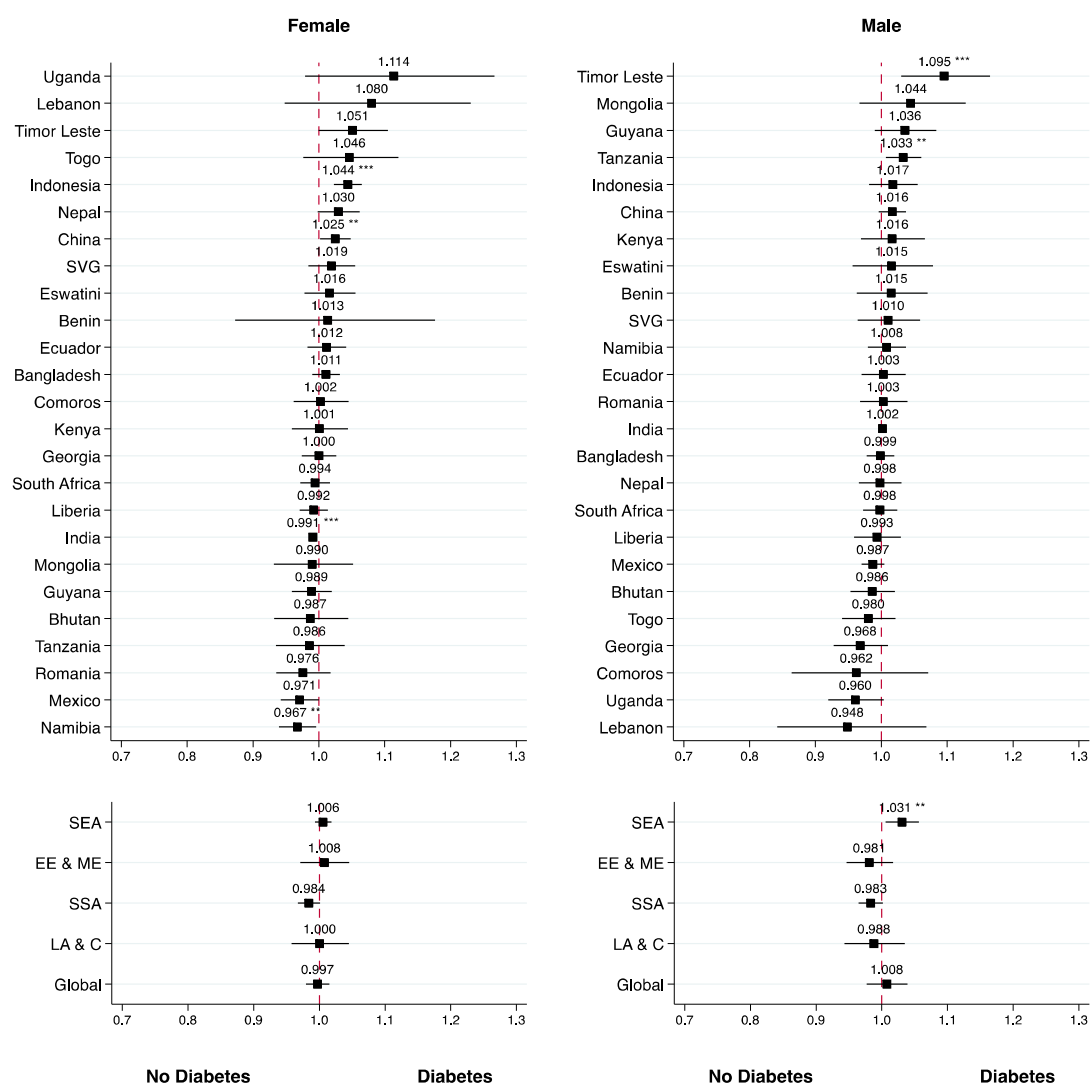


Fig. S4. Regression results: bivariate analysis of height and diabetes



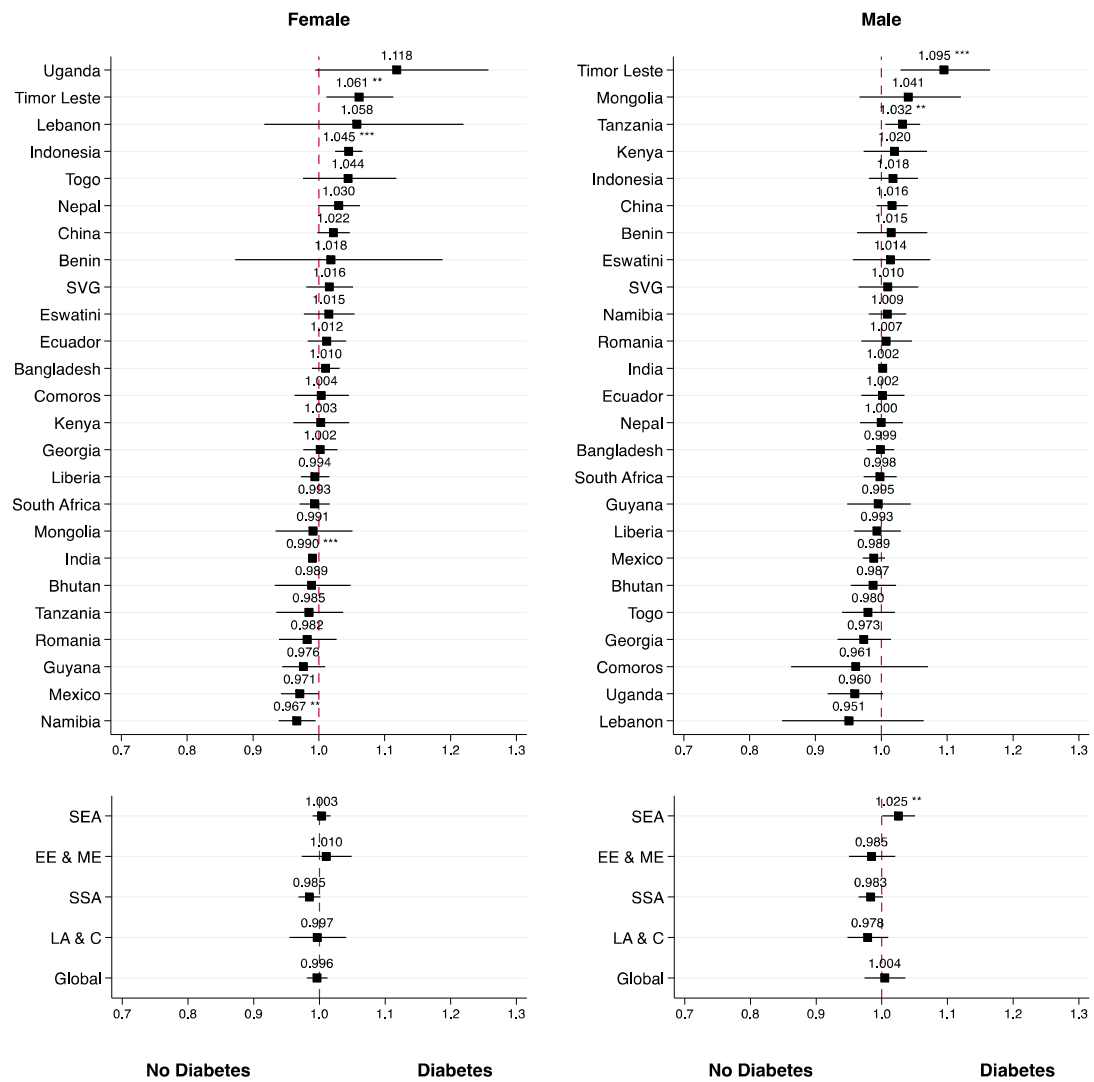
Notes: Figure shows unadjusted odds ratios from mixed-effects models by country, world region, and in the pooled sample, separately by sex. The exposure was height (in centimeters). Regressions for the pooled sample and by world region included random intercepts for country and world region, and equal weights for each country. Error bars represent 95% confidence intervals. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Abbreviations: SVG: Saint Vincent and the Grenadines; LA&C: Latin America and the Caribbean; SEA: South, East, and Southeast Asia; EE&ME: Eastern Europe and Middle East.

Fig. S5. Sensitivity analysis: using a polynomial in age



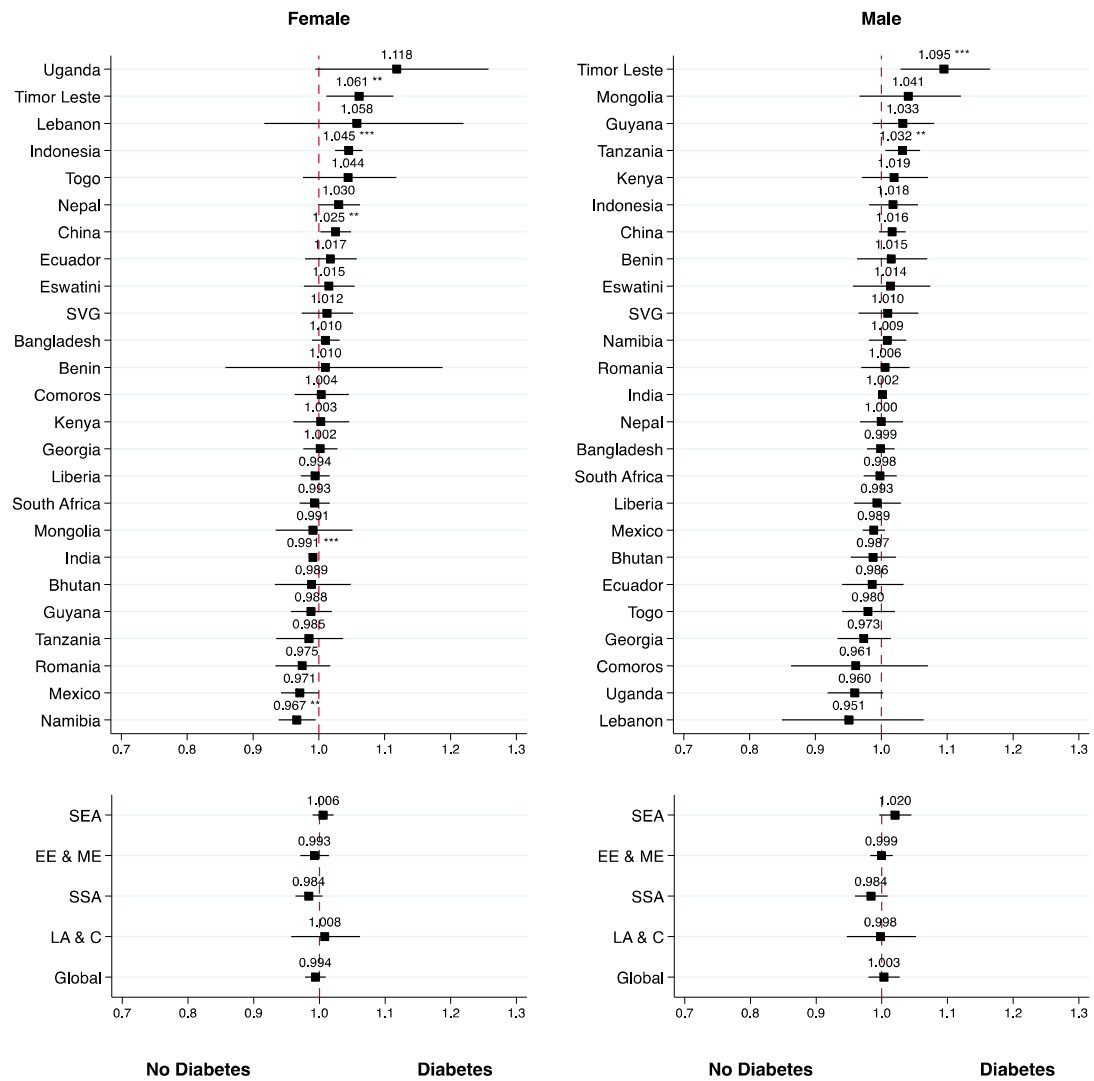
Notes: Figure shows adjusted odds ratios from multivariable mixed-effects models by country, world region, and in the pooled sample, separately by sex. The exposure was height (in centimeters). All models controlled for age, age squared, age cubic, educational attainment, and household wealth. Regressions for the pooled sample and by world region included random intercepts for country and world region, and equal weights for each country. Error bars represent 95% confidence intervals. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Abbreviations: SVG: Saint Vincent and the Grenadines; LA&C: Latin America and the Caribbean; SEA: South, East, and Southeast Asia; EE&ME: Eastern Europe and Middle East.

Fig. S6. Sensitivity analysis: using self-reported diabetes



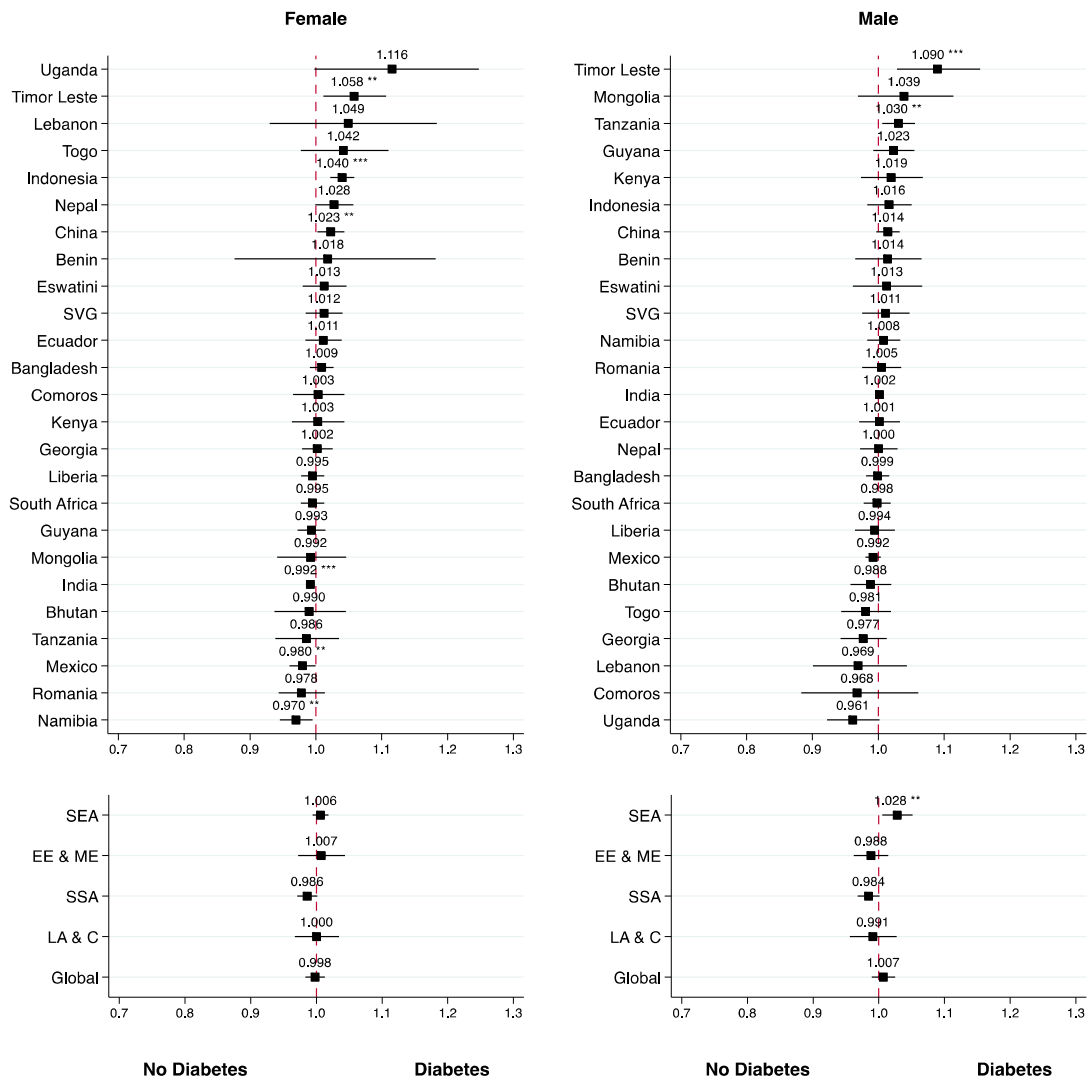
Notes: Figure shows adjusted odds ratios from multivariable mixed-effects models by country, world region, and in the pooled sample, separately by sex. The outcome was diabetes status based on biomarkers or self-report. The exposure was height (in centimeters). All models controlled for age, educational attainment, and household wealth. Regressions for the pooled sample and by world region included random intercepts for country and world region, and equal weights for each country. Error bars represent 95% confidence intervals. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Abbreviations: SVG: Saint Vincent and the Grenadines; LA&C: Latin America and the Caribbean; SEA: South, East, and Southeast Asia; EE&ME: Eastern Europe and Middle East.

Fig. S7. Sensitivity analysis: using alternative fasting definition



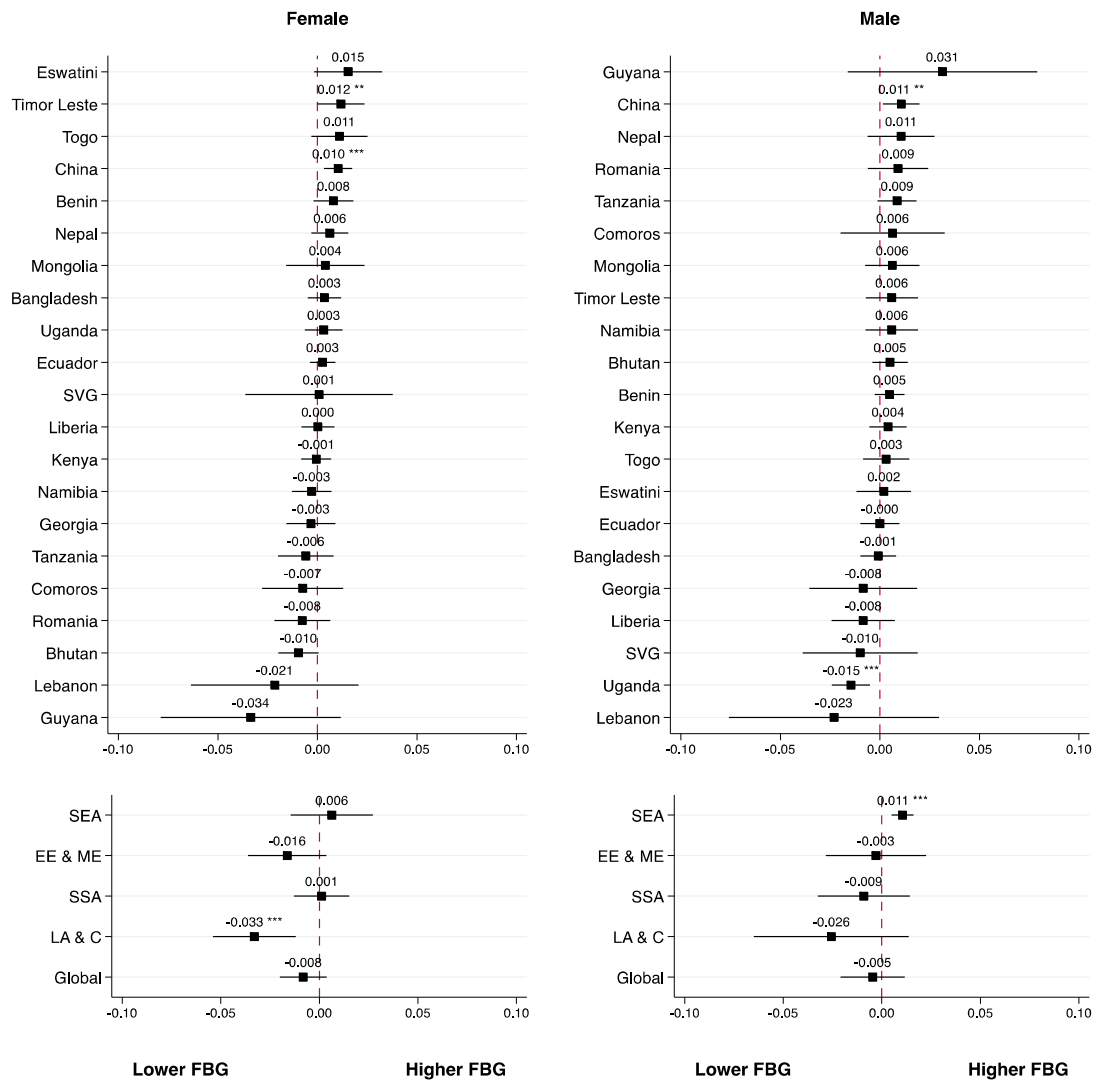
Notes: Figure shows adjusted odds ratios from multivariable mixed-effects models by country, world region, and in the pooled sample, separately by sex. Individuals who did not confirm their fasting status were excluded. The exposure was height (in centimeters). All models controlled for age, educational attainment, and household wealth. Regressions for the pooled sample and by world region included random intercepts for country and world region, and equal weights for each country. Error bars represent 95% confidence intervals. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Abbreviations: SVG: Saint Vincent and the Grenadines; LA&C: Latin America and the Caribbean; SEA: South, East, and Southeast Asia; EE&ME: Eastern Europe and Middle East.

Fig. S8. Sensitivity analysis: using Poisson regression models



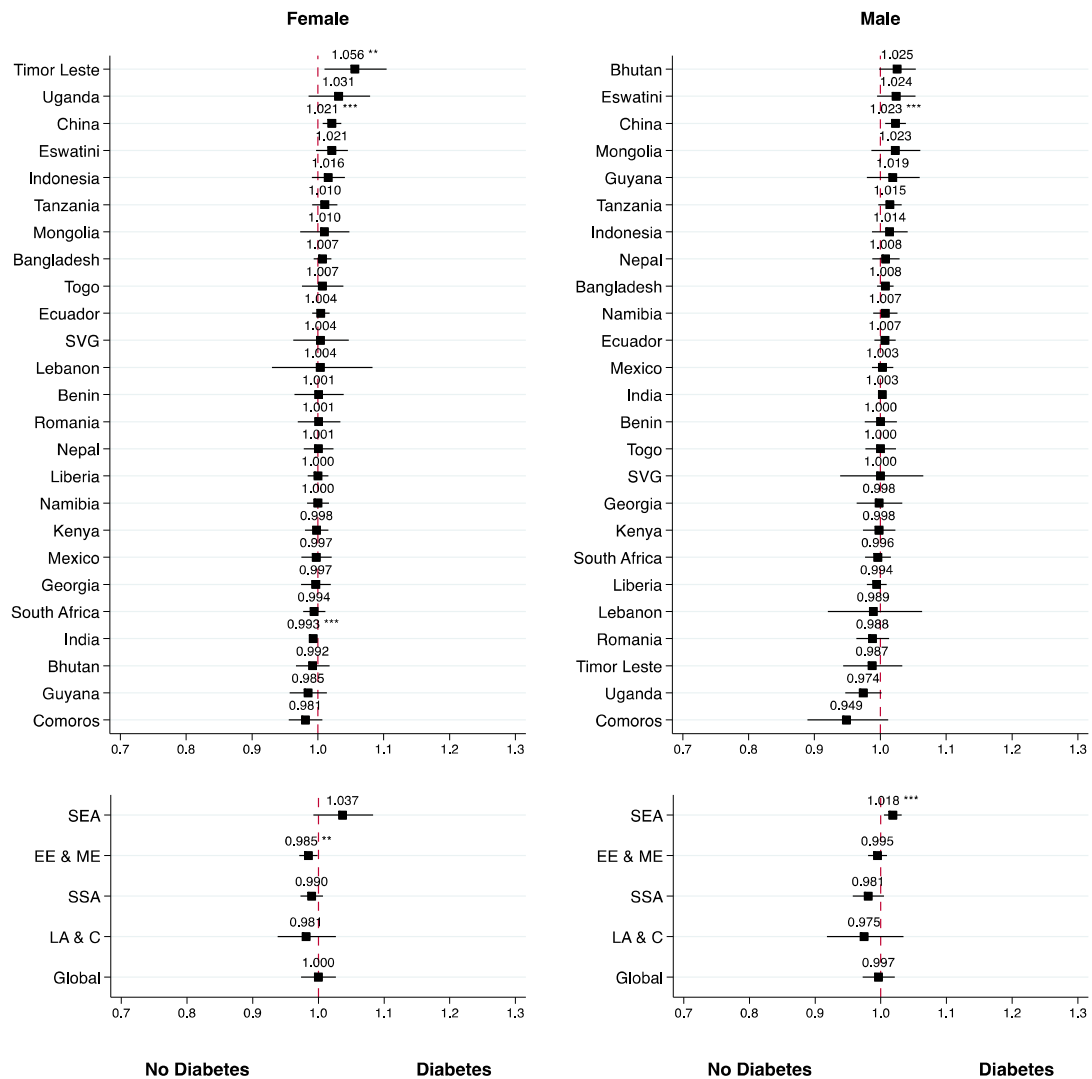
Notes: Figure shows risk ratios from Poisson regression models by country, world region, and in the pooled sample, separately by sex. The exposure was height (in centimeters). All models controlled for age, education, and household wealth. Regressions for the pooled sample and by world region included random intercepts for country and world region, and equal weights for each country. Error bars represent 95% confidence intervals. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Abbreviations: SVG: Saint Vincent and the Grenadines; LA&C: Latin America and the Caribbean; SEA: South, East, and Southeast Asia; EE&ME: Eastern Europe and Middle East.

Fig. S9. Sensitivity analysis: height and fasting blood glucose (continuous)



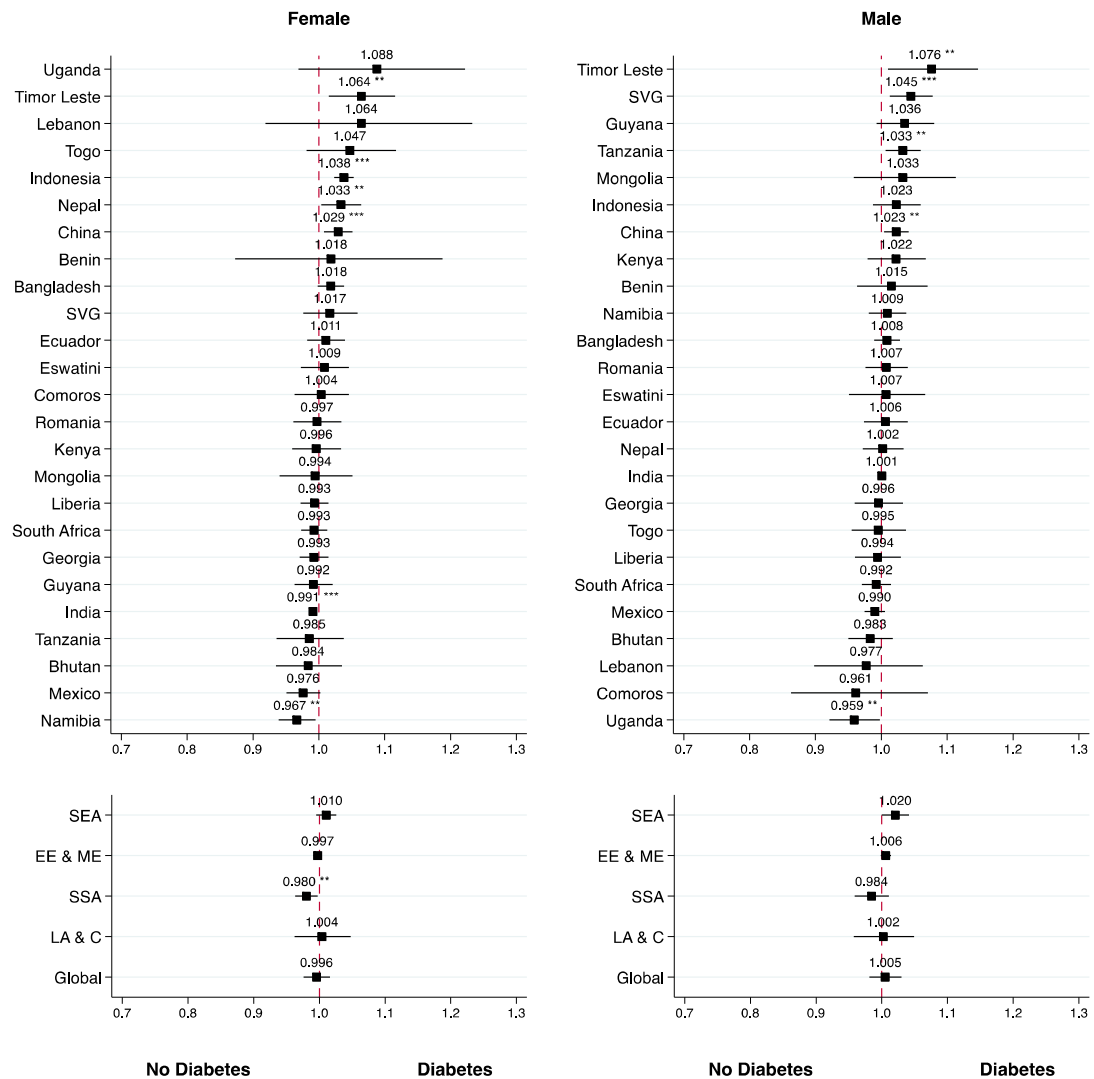
Notes: Figure shows adjusted coefficients from multivariable mixed-effects models by country, world region, and in the pooled sample, separately by sex. The exposure was height (in centimeters). The outcome was fasting blood glucose. All models controlled for age, educational attainment, and household wealth. Regressions for the pooled sample and by world region included random intercepts for country and world region, and equal weights for each country. Error bars represent 95% confidence intervals. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Abbreviations: SVG: Saint Vincent and the Grenadines; LA&C: Latin America and the Caribbean; SEA: South, East, and Southeast Asia; EE&ME: Eastern Europe and Middle East.

Fig. S10. Sensitivity analysis: using dysglycemia



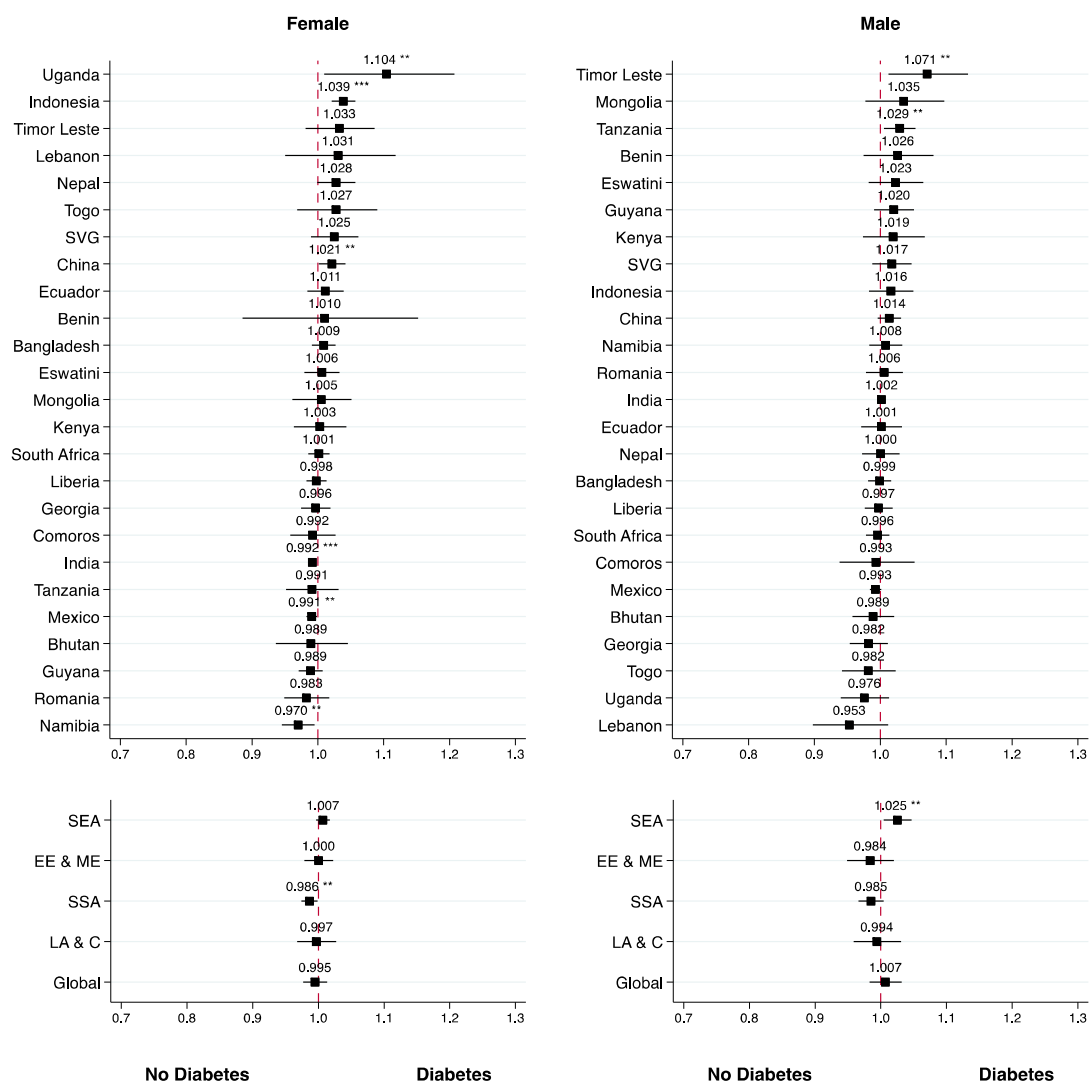
Notes: Figure shows adjusted odds ratios from multivariable mixed-effects models by country, world region, and in the pooled sample, separately by sex. The outcome was dysglycemia defined as fasting blood glucose of 5.6 mmol/L and above, or a HbA1c level of 5.7% and above. The exposure was height (in centimeters). All models controlled for age, educational attainment, and household wealth. Regressions for the pooled sample and by world region included random intercepts for country and world region, and equal weights for each country. Error bars represent 95% confidence intervals. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Abbreviations: SVG: Saint Vincent and the Grenadines; LA&C: Latin America and the Caribbean; SEA: South, East, and Southeast Asia; EE&ME: Eastern Europe and Middle East.

Fig. S11. Sensitivity analysis: using alternative sample definition



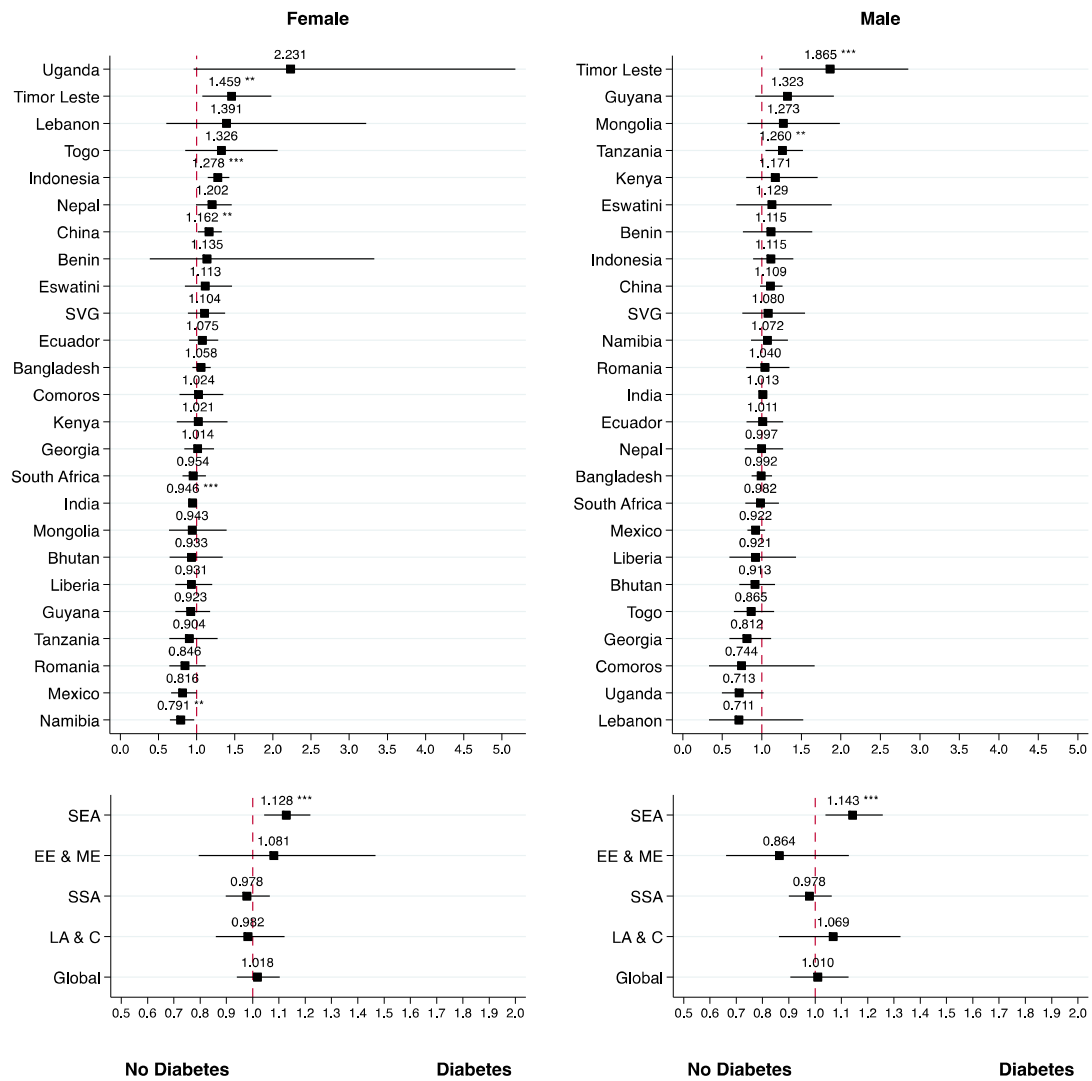
Notes: Figure shows adjusted odds ratios from multivariable mixed-effects models by country, world region, and in the pooled sample, separately by sex. The exposure was height (in centimeters). All models controlled for age, educational attainment, and household wealth. Regressions for the pooled sample and by world region included random intercepts for country and world region, and equal weights for each country. The sample included respondents aged between 20 and 70 years. Error bars represent 95% confidence intervals. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Abbreviations: SVG: Saint Vincent and the Grenadines; LA&C: Latin America and the Caribbean; SEA: South, East, and Southeast Asia; EE&ME: Eastern Europe and Middle East.

Fig. S12. Sensitivity analysis: using multiple imputation for missing covariates



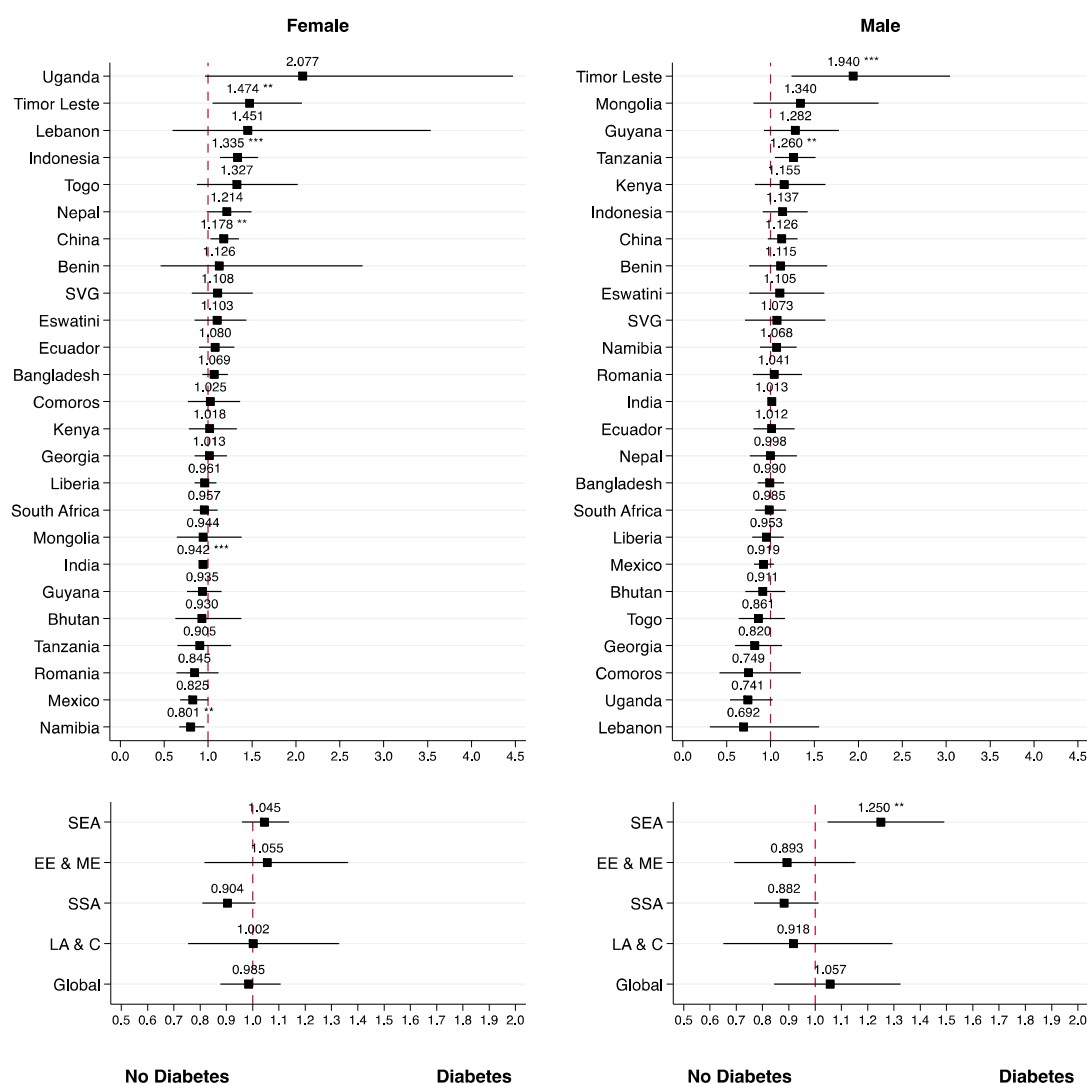
Notes: Figure shows adjusted risk ratios from multivariable mixed-effects models by country, world region, and in the pooled sample, separately by sex. The exposure was height (in centimeters). All models controlled for age, education, and household wealth. Multiple imputation was used for missing variables. Regressions for the pooled sample and by world region included random intercepts for country and world region, and equal weights for each country. Error bars represent 95% confidence intervals. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Abbreviations: SVG: Saint Vincent and the Grenadines; LA&C: Latin America and the Caribbean; SEA: South, East, and Southeast Asia; EE&ME: Eastern Europe and Middle East.

Fig. S13. Sensitivity analysis: z-transformation of height



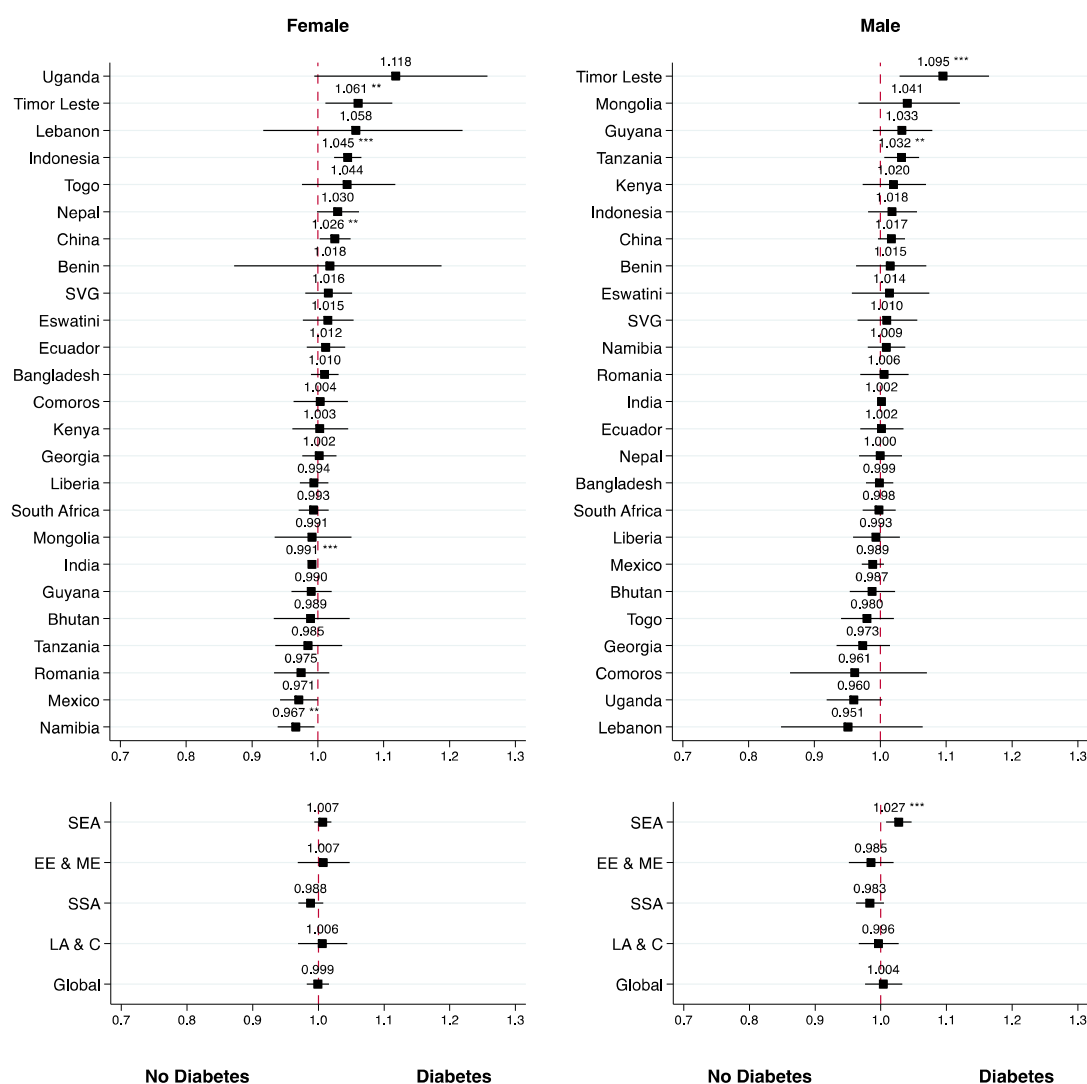
Notes: Figure shows adjusted odds ratios from multivariable mixed-effects models by country, world region, and in the pooled sample, separately by sex. The exposure was z-transformed height (in standard deviations). All models controlled for age, educational attainment, and household wealth. Regressions for the pooled sample and by world region included random intercepts for country and world region, and equal weights for each country. Error bars represent 95% confidence intervals. *** p<0.01, ** p<0.05, * p<0.1. Abbreviations: SVG: Saint Vincent and the Grenadines; LA&C: Latin America and the Caribbean; SEA: South, East, and Southeast Asia; EE&ME: Eastern Europe and Middle East.

Fig. S14. Sensitivity analysis: standardised height (WHO)



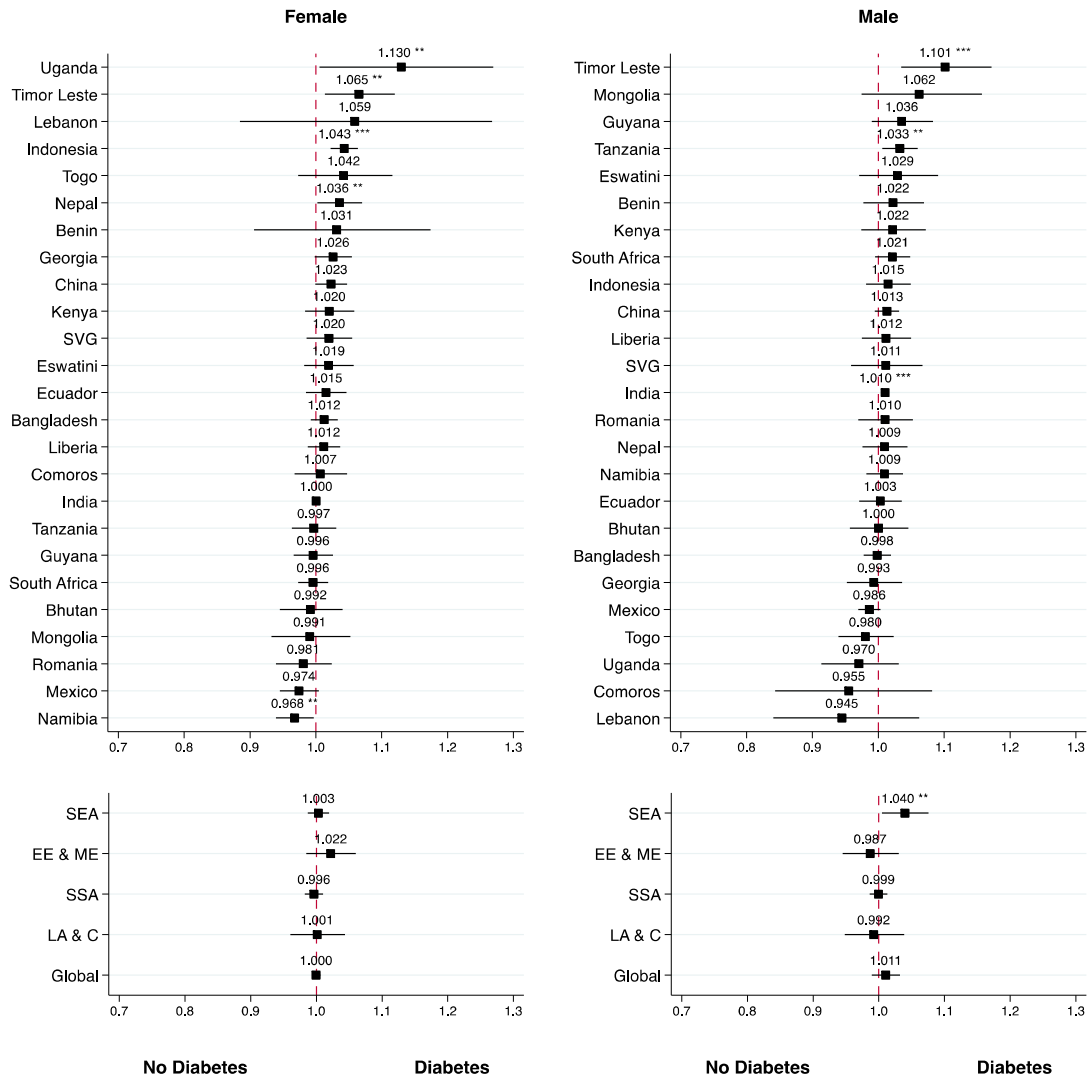
Notes: Figure shows adjusted odds ratios from multivariable mixed-effects models by country, world region, and in the pooled sample, separately by sex. The exposure was height standardized in reference to sex-specific WHO growth standards for attained height in adulthood (in standard deviations). All models controlled for age, educational attainment, and household wealth. Regressions for the pooled sample and by world region included random intercepts for country and world region, and equal weights for each country. Error bars represent 95% confidence intervals. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Abbreviations: SVG: Saint Vincent and the Grenadines; LA&C: Latin America and the Caribbean; SEA: South, East, and Southeast Asia; EE&ME: Eastern Europe and Middle East.

Fig. S15. Sensitivity analysis: controlling for diabetes ascertainment approach



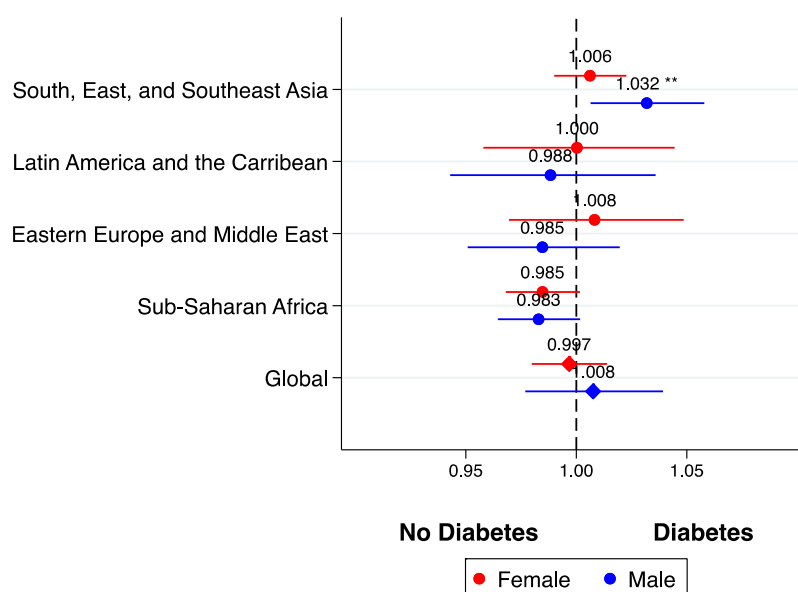
Notes: Figure shows adjusted odds ratios from multivariable mixed-effects models by country, world region, and in the pooled sample, separately by sex. The exposure was height (in centimeters). All models controlled for age, educational attainment, household wealth, and diabetes ascertainment approach. Regressions for the pooled sample and by world region included random intercepts for country and world region, and equal weights for each country. Error bars represent 95% confidence intervals. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Abbreviations: SVG: Saint Vincent and the Grenadines; LA&C: Latin America and the Caribbean; SEA: South, East, and Southeast Asia; EE&ME: Eastern Europe and Middle East.

Fig. S16. Sensitivity analysis: adding BMI (continuous)



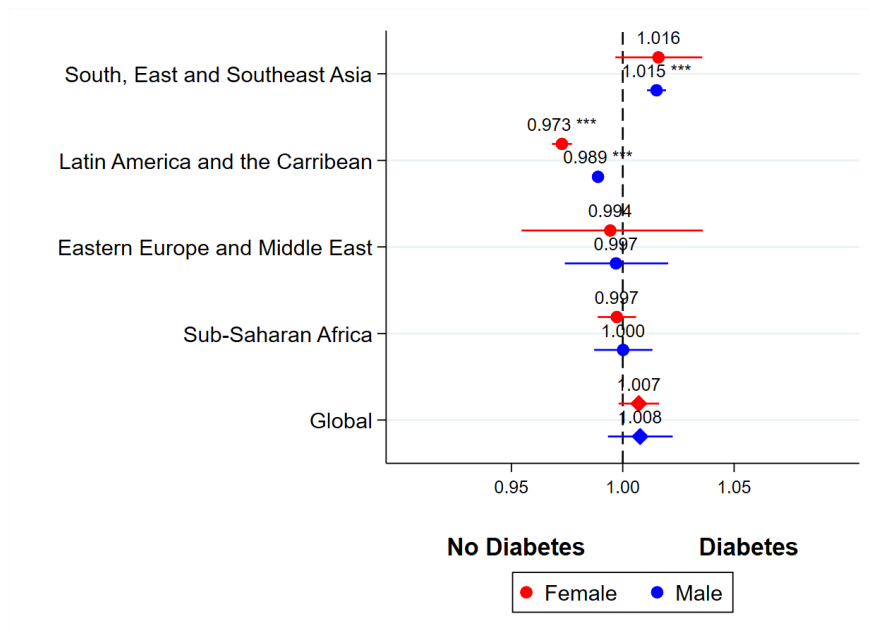
Notes: Figure shows adjusted odds ratios from multivariable mixed-effects models by country, world region, and in the pooled sample, separately by sex. The exposure was height (in centimeters). All models controlled for age, education, household wealth, and body-mass index. Regressions for the pooled sample and by world region included random intercepts for country and world region, and equal weights for each country. Error bars represent 95% confidence intervals. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Abbreviations: SVG: Saint Vincent and the Grenadines; LA&C: Latin America and the Caribbean; SEA: South, East, and Southeast Asia; EE&ME: Eastern Europe and Middle East.

Fig. S17. Sensitivity analysis: excluding India (leave-one-out analysis)



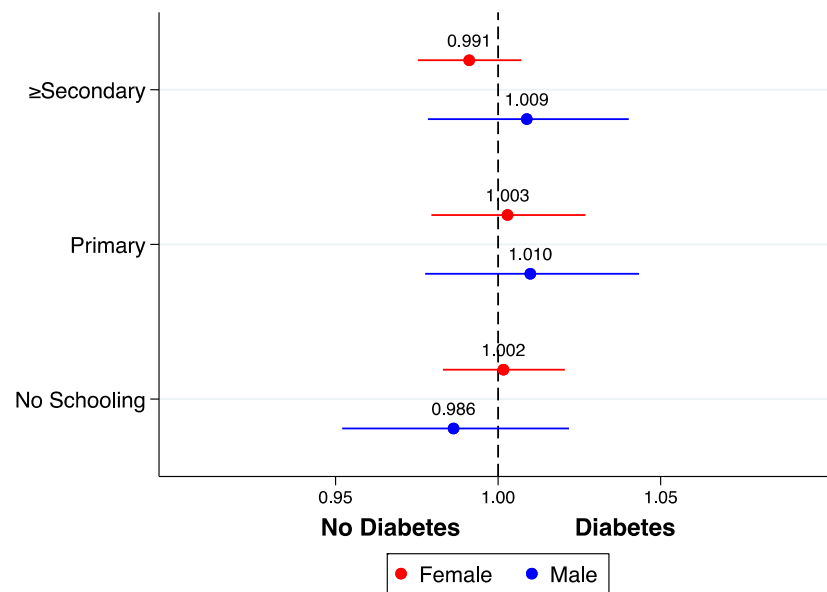
Notes: Figure shows adjusted odds ratios from multivariable mixed-effects logistic regression models in the pooled sample and by world region, separately for women (red) and men (blue). All models controlled for age (years), education, and household wealth, and included a random intercept for country. In the pooled analysis, we added a random intercept for world region. Countries were weighted equally. Error bars represent 95% confidence intervals. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. $N = 63,590$.

Fig. S18. Sensitivity analysis: using alternative sample weights



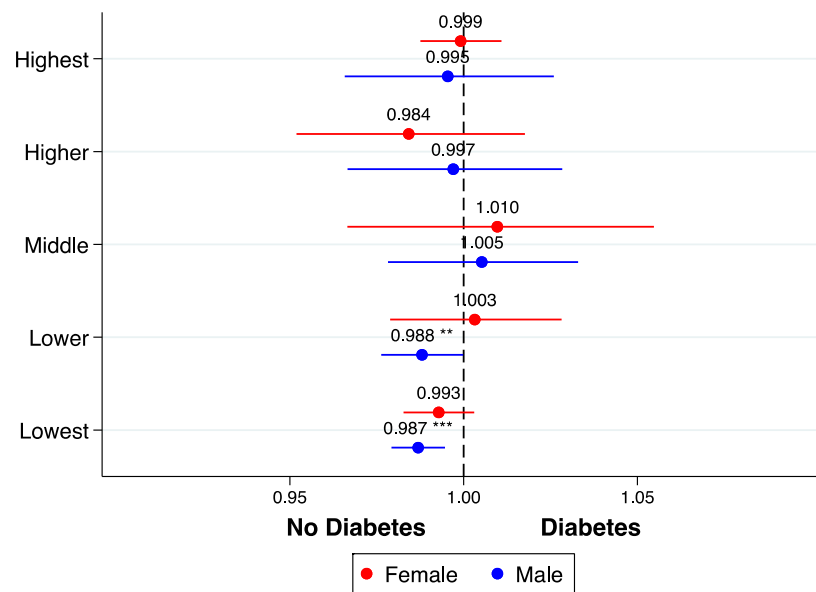
Notes: Figure shows adjusted odds ratios from multivariable mixed-effects models by world region, and in the pooled sample, separately by sex. All models controlled for age, education, household wealth, and included random intercepts for country. Sample weights proportional to population size of each country were used. Error bars represent 95% confidence intervals. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Fig. S19. Heterogeneity by educational attainment



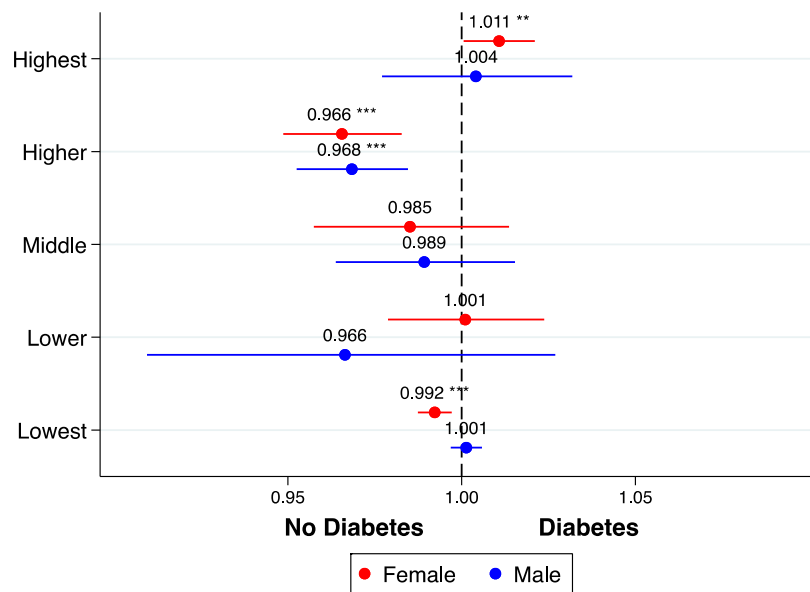
Notes: Figure shows adjusted odds ratios from multivariable mixed-effects models by individual-level educational attainment, separately by sex. Education was categorized as either: no schooling, at least some primary school, and at least some high school or tertiary-level education completed at the time of the survey. All models controlled for age, household wealth, and included random intercepts for country and world region. Equal sample weights were used. Error bars represent 95% confidence intervals. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Fig. S20. Heterogeneity by birth cohort-level IMR



Notes: Figure shows adjusted odds ratios from multivariable mixed-effects models by birth cohort-level Infant Mortality Rate (IMR), separately by sex. Birth cohort-level IMR was divided into five equally sized groups of increasing values. All models controlled for age, education, household wealth, and included random intercepts for country and world region. Equal sample weights were used. Error bars represent 95% confidence intervals. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Fig. S21. Heterogeneity by IMR decrease over life course



Notes: Figure shows adjusted odds ratios from multivariable mixed-effects models by the absolute difference of birth cohort and most current Infant Mortality Rate (IMR), separately by sex. The absolute change in IMR was divided into five equally sized groups of increasing values. All models controlled for age, education, household wealth, and included random intercepts for country and world region. Equal sample weights were used. Error bars represent 95% confidence intervals. *** p<0.01, ** p<0.05, * p<0.1.

Box S1. Search algorithm for non-STEP surveys (n=9)

Search engine: Google

Search terms: “[country name]” AND (“population-based” OR household) AND (“blood glucose” OR “plasma glucose” OR “blood sugar” OR hemoglobin OR haemoglobin OR A1c OR HbA1c OR A1C OR Hb1c OR Hba1c OR HGBA1C

Number of hits reviewed: Hits reviewed until eligible survey identified, or, in the case of no eligible survey identified, first 500 hits (10 hits per page/5 pages reviewed)

Inclusion criteria:

The inclusion criteria were the same as for STEPS surveys, namely that the survey:

- 1) was conducted later than 2004
- 2) was nationally representative
- 3) was comprised of Individual-level data
- 4) had a response rate $\geq 50\%$
- 5) included anthropometric measurements and biomarkers for diabetes
- 6) took place in a country considered a low-, lower-middle-, or upper-middle-income country according to the world bank classification during the survey year
- 7) had information on educational and wealth status.

Countries included in search: Afghanistan, Albania, Algeria, American Samoa, Angola, Argentina, Armenia, Azerbaijan, Bangladesh, Belarus, Belize, Bolivia, Bosnia and Herzegovina, Brazil, Bulgaria, Burundi, Cameroon, Central African Republic, Chad, Chile, China, Colombia, Congo, Cook Islands, Côte d'Ivoire, Cuba, Democratic People's Republic of Korea, Democratic Republic of the Congo, Djibouti, Dominica, Dominican Republic, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Fiji, Gabon, Ghana, Guatemala, Guinea, Guinea-Bissau, Haiti, Honduras, India, Indonesia, Jamaica, Kazakhstan, Kyrgyzstan, Lao People's Democratic Republic, Lesotho, Libya, Macedonia, Madagascar, Malaysia, Maldives, Mali, Marshall Islands, Mauritania, Mauritius, Mexico, Micronesia (Federated States of), Montenegro, Morocco, Namibia, Nicaragua, Niger, Nigeria, Occupied Palestinian Territory, Pakistan, Panama, Peru, Philippines, Romania, Russia, Saint Lucia, Samoa, São Tomé and Príncipe, Senegal, Serbia, Solomon Islands, Somalia, South Africa, South Sudan, Sudan, Suriname, Syrian Arab Republic, Tajikistan, Thailand, Tunisia, Turkey, Turkmenistan, Ukraine, Venezuela, Yemen, Zambia, Zimbabwe

Table S1. Sampling procedures and survey reports by country

Survey	Sampling structure	Age sampled	Source
Bangladesh DHS 2011	Two-staged stratified random sampling	15-54 years	National Institute of Population Research and Training, Mitra and Associates, and ICF International. 2013. Bangladesh Demographic and Health Survey 2011. Dhaka, Bangladesh and Calverton, Maryland, USA: NIPOORT, Mitra and Associates, and ICF International.
Benin STEPS 2008	Five-staged random sampling	25-64 years	Houehanou YC, Lacroix P, Mizehoun GC, Preux PM, Marin B, Houinato DS. Magnitude of cardiovascular risk factors in rural and urban areas in Benin: findings from a nationwide steps survey. <i>PLoS One</i> 2015; 10(5): e0126441.
Bhutan STEPS 2014	Three-staged random cluster sampling	18-69 years	National survey for noncommunicable disease risk factors and mental health using approach WHO Steps Approach in Bhutan – 2014 Available at: http://www.who.int/chp/steps/bhutan/en/
China CHNS 2009	Four-staged random cluster design	18-75 years	Attard et al (2015). Implications of Iron Deficiency/Anemia on the Classification of Diabetes Using HbA1c. <i>Nutrition & Diabetes</i> , 5, e166.
Comoros STEPS 2011	Two-staged stratified random sampling	25-64 years	Translated from Union des Comores STEPS 2011 Note de synthèse. Available at: http://www.who.int/chp/steps/comoros/en/
Ecuador ENSANUT 2012	Three-staged random cluster sampling	20-59 years	Freire WB et al. (2014). Tomo I: Encuesta Nacional de Salud y Nutrición de la población ecuatoriana de cero a 59 años. ENSANUT-ECU 2012. Ministerio de Salud Pública/Instituto Nacional de Estadísticas y Censos. Quito-Ecuador. Translated from: http://www.ecuadorencifras.gob.ec/documentos/web-inec/Estadisticas_Sociales/ENSANUT/MSP_ENSANUT-ECU_06-10-2014.pdf
Eswatini STEPS 2014	Two-staged random sampling	15-69 years	WHO STEPS: Noncommunicable Disease Risk Factor Surveillance Report Swaziland 2014. Available at: http://www.who.int/chp/steps/swaziland/en/
Georgia STEPS 2016	Two-staged random cluster sampling	18-64 years	Georgia STEPS Survey 2016 Fact Sheet. Available at: http://www.who.int/chp/steps/georgia/en/
Guyana STEPS 2016	Two-staged random cluster sampling	18-69 years	STEPwise Approach to Chronic Disease risk factor surveillance (STEPS): Guyana's Implementation Plan. June 20, 2016. Ministry of Public Health, Guyana.
India NFHS 2015-16	Two-staged stratified random sampling	15-54 years	Ministry of Health and Family Welfare (MoHFW) - Government of India. India - National Family Health Survey 2015-2016.
Indonesia IFLS 2014-15	Three-staged stratified random sampling	15+ years	Strauss, J. et al. "The Fifth Wave of the Indonesia Family Life Survey (IFLS5): Overview and Field Report". March 2016. WR-1143/1-NIA/NICHD.
Kenya STEPS 2015	Three-staged random cluster sampling	18-69 years	WHO: Kenya STEPwise Survey for Non Communicable Diseases Risk Factors 2015 Report. Available at: http://www.who.int/chp/steps/Kenya_2015_STEPS_Report.pdf?ua=1

Lebanon STEPS 2008	Multistaged random cluster sampling	18+ years	Sibai AM and Hwalla N. WHO STEPS Chronic Disease Risk Factor Surveillance: Data Book for Lebanon, 2009. American University of Beirut, 2010
Liberia STEPS 2011	Three-staged random sampling	25-64 years	WHO: The Final Report on the Liberia STEPS Survey 2011. Available at: http://www.who.int/chp/steps/Liberia_2011_STEPS_Report.pdf?ua=1
MxFLS 2009-12	Two-staged random sampling	15+ years	The Mexican Family Life Survey website. http://www.ennvih-mxfls.org/english/introduccion.html . Accessed 16 November 2017.
Mongolia STEPS 2009	Four-stage stratified cluster sampling	15-64 years	Mongolian STEPS survey on the prevalence of noncommunicable disease and injury risk factors - 2009. Available at: http://www.who.int/ncds/surveillance/steps/2009_STEPS_Report_Mongolia.pdf
Namibia DHS 2013	Two-staged stratified sampling	15-64 years	The Namibia Ministry of Health and Social Services (MoHSS) and ICF International. 2014. The Namibia Demographic and Health Survey 2013. Windhoek, Namibia, and Rockville, Maryland, USA: MoHSS and ICF International.
Nepal STEPS 2013	Four-staged stratified random cluster sampling	15-69 years	WHO: Non Communicable Diseases Risk Factors: STEPS Survey Nepal 2013. Available at: http://www.who.int/chp/steps/nepal/en/ .
Romania SEPHAR II 2012	Two-staged stratified sampling	18-80 years	Dorobantu M, et al. Objectives and methodology of Romanian SEPHAR II Survey. Project for comparing the prevalence and control of cardiovascular risk factors in two East-European countries: Romania and Poland. <i>Arch Med Sci</i> . 2015 Aug 12;11(4):715-
SANHANES 2012	Multistage stratified cluster sampling	15+ years	Human Sciences Research Council. SANHANES: Health and Nutrition. 2015. Available at: http://www.hsrb.ac.za/en/research-areas/Research_Areas_PHHI/sanhanes-health-and-nutrition
SVG STEPS 2013	Two-staged stratified random sampling	18-69 years	Ministry of Health, Wellness & the Environment. Implementation Plan: National Health & Nutrition Survey (NHNS). Kingstown, Saint Vincent and the Grenadines: Ministry of Health, Wellness & the Environment; 2013.
Tanzania STEPS 2012	Three-staged random cluster sampling	25-64 years	Tanzania STEPS Survey Report. Available at: http://www.who.int/chp/steps/UR_Tanzania_2012_STEPS_Report.pdf?ua=1
Timor-Leste STEPS 2014	Two-staged stratified random sampling	18-69 years	Timor-Leste STEPS Survey Report, [online] at http://www.who.int/entity/chp/steps/Timor-Leste_2014_STEPS_Report.pdf?ua=1
Togo STEPS 2010	Two-staged random sampling	15-64 years	Translated from WHO: The Final Report on the Togo STEPS Survey 2010. Available at: http://www.who.int/chp/steps/2010STEPS_Report_Togo_FR.pdf?ua=1 .
Uganda STEPS 2014	Two-staged stratified random sampling	18-69 years	The Epidemiology of Hypertension in Uganda: Findings from the National Non-Communicable Diseases Risk Factor Survey. <i>PLoS ONE</i> 10(9): e0138991. doi:10.1371/journal.pone.0138991.

Table S2. Full regression output for country-pooled analysis

Characteristics	Female			Male		
	OR	95% CI	p-value	OR	95% CI	p-value
<i>Height (cm)</i>	0.998	0.980 - 1.016	0.800	1.008	0.977 - 1.039	0.627
<i>Age (years)</i>	1.060***	1.054 - 1.065	0.000	1.064***	1.058 - 1.071	0.000
<i>Sex</i>	-			-		
<i>Education</i>						
None	0.554***	0.435 - 0.704	0.000	0.365***	0.303 - 0.440	0.000
Some primary	1.149	0.645 - 2.050	0.637	0.819	0.638 - 1.053	0.119
At least secondary (ref.)	1			1		
<i>Wealth index</i>						
Poorest	1.156	0.855 - 1.563	0.345	1.007	0.732 - 1.385	0.967
Poorer	1.266	0.878 - 1.825	0.206	0.990	0.788 - 1.244	0.932
Middle (ref.)	1			1		
Richer	1.376***	1.088 - 1.739	0.008	1.206***	1.056 - 1.377	0.006
Richest	1.351***	1.256 - 1.453	0.000	1.297	0.935 - 1.798	0.119
Observations		454,110			98,768	

Notes: Adjusted odds ratios from multivariable mixed-effects models using the country-pooled sample, stratified by sex. All models controlled for age, education, household wealth, and included random intercepts for country and world region. *** p<0.01, ** p<0.05, * p<0.1. Abbreviations: Ref: reference category.

Table S3. Sensitivity analysis: using height quartiles

Characteristics	Both sexes			Female			Male		
	OR	95% CI	p-value	OR	95% CI	p-value	OR	95% CI	p-value
<i>Height quartiles</i>									
Q1 (ref.)	1			1			1		
Q2	0.912	0.575 - 1.445	0.694	0.983	0.632 - 1.530	0.939	1.159	0.804 - 1.671	0.430
Q3	0.926	0.569 - 1.508	0.757	0.971	0.547 - 1.724	0.921	1.332	0.695 - 2.550	0.387
Q4 (tallest)	0.991	0.507 - 1.936	0.979	1.012	0.577 - 1.774	0.967	1.328	0.637 - 2.771	0.449
<i>Age (years)</i>	1.061***	1.057 - 1.066	0.000	1.060***	1.054 - 1.065	0.000	1.064***	1.058 - 1.071	0.000
<i>Sex</i>	1.001	0.719 - 1.394	0.995	-			-		
<i>Education</i>									
None	0.477***	0.420 - 0.542	0.000	0.563***	0.448 - 0.708	0.000	0.367***	0.310 - 0.435	0.000
Some primary	0.983	0.643 - 1.504	0.938	1.161	0.643 - 2.096	0.621	0.821	0.636 - 1.060	0.131
At least secondary (ref.)									
<i>Wealth index</i>									
Poorest	1.093	0.894 - 1.337	0.387	1.153	0.853 - 1.559	0.354	1.007	0.735 - 1.380	0.966
Poorer	1.141	0.939 - 1.388	0.185	1.265	0.879 - 1.821	0.206	0.989	0.791 - 1.237	0.922
Middle (ref.)	1			1			1		
Richer	1.301***	1.092 - 1.549	0.003	1.374***	1.085 - 1.740	0.008	1.201***	1.054 - 1.369	0.006
Richest	1.353***	1.132 - 1.616	0.001	1.348***	1.248 - 1.457	0.000	1.293	0.936 - 1.787	0.120
Observations		554,122			454,110			98,768	

Notes: Adjusted odds ratios from multivariable mixed-effects models using the country-pooled sample. All models controlled for age, education, household wealth, and included random intercepts for country and world region. The sample with both sexes additionally controlled for sex. *** p<0.01, ** p<0.05, * p<0.1. Abbreviations: Ref: reference category.

Table S4. Sensitivity analysis: association of height with RBG and HbA1c (continuous)

Country	Female			Male		
	Coef	95% CI	p-value	Coef	95% CI	p-value
<i>RBG (mmol/L)</i>						
India	-0.001	-0.002 - 0.000	0.292	-0.004***	-0.006 - -0.001	0.008
<i>HbA1c (mmol/mol)</i>						
China	0.011***	0.006 - 0.016	0.000	0.010***	0.004 - 0.016	0.001
Guyana	-0.007	-0.033 - 0.020	0.631	0.033	-0.009 - 0.075	0.127
Indonesia	0.007	-0.003 - 0.017	0.176	0.003	-0.011 - 0.017	0.634
Mexico	-0.013	-0.030 - 0.005	0.157	-0.003	-0.018 - 0.012	0.674
Romania	-0.007*	-0.014 - 0.001	0.086	-0.001	-0.009 - 0.008	0.892
South Africa	-0.003	-0.011 - 0.005	0.474	0.001	-0.008 - 0.010	0.832

Notes: Adjusted coefficients from multivariable models by country, separately by sex. All models controlled for age, education, and household wealth. The exposure was height (in centimeters). The outcome was random blood glucose (in mmol/L) or HbA1c (in mmol/mol), respectively. RBG was available for India in our dataset; whereas HbA1c was available for China, Guyana, Indonesia, Mexico, Romania, and South Africa. *** p<0.01, ** p<0.05, * p<0.1.

Table S5. Sensitivity analysis: association of height with diabetes diagnostic categories (women)

	Pre-Diabetes			Diabetes		
	OR	95% CI	p-value	OR	95% CI	p-value
<i>Global</i>	1.002	0.995 - 1.009	0.592	1.001	0.992 - 1.011	0.781
<i>World Region</i>						
LA & C	0.995	0.979 - 1.012	0.559	0.992	0.976 - 1.009	0.346
EE & ME	0.996	0.985 - 1.008	0.496	1.009	0.972 - 1.047	0.643
SEA	1.007	0.998 - 1.016	0.119	1.022***	1.007 - 1.036	0.003
SSA	1.004	0.998 - 1.011	0.152	0.999	0.989 - 1.010	0.888
<i>Country</i>						
Bangladesh	1.006	0.992 - 1.020	0.430	1.013	0.991 - 1.036	0.233
Benin	1.000	0.965 - 1.035	0.979	1.018	0.873 - 1.188	0.818
Bhutan	0.993	0.968 - 1.019	0.589	0.988	0.931 - 1.048	0.681
China	1.019**	1.004 - 1.034	0.013	1.033***	1.008 - 1.058	0.008
Comoros	0.954**	0.913 - 0.998	0.040	1.002	0.962 - 1.043	0.931
Ecuador	1.003	0.988 - 1.017	0.720	1.012	0.983 - 1.042	0.409
Eswatini	1.021	0.994 - 1.048	0.129	1.020	0.981 - 1.060	0.314
Georgia	0.990	0.990 - 0.990	.	1.001	1.001 - 1.001	.
Guyana	0.984	0.946 - 1.024	0.436	0.985	0.954 - 1.018	0.375
India	1.000	0.994 - 1.005	0.869	0.991***	0.988 - 0.994	0.000
Indonesia	0.983	0.946 - 1.021	0.367	1.043***	1.021 - 1.066	0.000
Kenya	0.997	0.977 - 1.017	0.747	1.002	0.961 - 1.046	0.912
Lebanon	0.994	0.923 - 1.069	0.863	1.055	0.907 - 1.228	0.487
Liberia	1.002	0.987 - 1.017	0.820	0.995	0.970 - 1.020	0.687
Mexico	1.012	0.987 - 1.037	0.360	0.976	0.946 - 1.008	0.145
Mongolia	1.012	0.975 - 1.050	0.525	0.997	0.934 - 1.063	0.919
Namibia	1.012	0.994 - 1.031	0.197	0.969**	0.941 - 0.998	0.034
Nepal	0.992	0.967 - 1.018	0.535	1.029*	0.997 - 1.062	0.080
Romania	0.995	0.978 - 1.013	0.606	0.991	0.965 - 1.017	0.478
South Africa	0.973	0.886 - 1.068	0.567	1.014	0.978 - 1.052	0.448
SVG	1.015	0.997 - 1.034	0.106	0.987	0.937 - 1.040	0.629
Tanzania	1.050	0.979 - 1.127	0.169	1.063**	1.013 - 1.116	0.013
Timor Leste	0.996	0.964 - 1.028	0.798	1.044	0.975 - 1.118	0.219
Togo	1.009	0.973 - 1.047	0.626	0.979	0.936 - 1.024	0.355
Uganda	1.015	0.969 - 1.064	0.531	1.119*	0.995 - 1.258	0.06

Notes: Adjusted odds ratios from multinomial logistic regression models (reported as relative risk ratios using Stata's *rrr* command) for women in the pooled sample and separately by world region and country. The exposure was height in cm (continuous). The outcome was glycemia grouped into three categories (normal, pre-diabetes, diabetes). Normal glycemia as reference category not reported. All models controlled for age, education, household wealth, and country indicators (in pooled analyses), and included equal weights for each country. *** p<0.01, ** p<0.05, * p<0.1.

Table S6. Sensitivity analysis: association of height with diabetes diagnostic categories (men)

	Pre-Diabetes			Diabetes		
	OR	95% CI	p-value	OR	95% CI	p-value
<i>Global</i>	1.003	0.997 - 1.010	0.342	1.003	0.991 - 1.014	0.663
<i>World Region</i>						
LA & C	1.009***	1.003 - 1.016	0.006	1.012	0.984 - 1.041	0.403
EE & ME	0.996	0.975 - 1.017	0.683	0.981	0.955 - 1.008	0.168
SEA	1.013***	1.003 - 1.023	0.009	1.022***	1.009 - 1.035	0.001
SSA	1.000	0.992 - 1.008	0.971	0.997	0.988 - 1.007	0.604
<i>Country</i>						
Bangladesh	1.008	0.995 - 1.021	0.213	1.003	0.981 - 1.026	0.782
Benin	0.996	0.966 - 1.026	0.785	1.015	0.963 - 1.069	0.583
Bhutan	1.033**	1.002 - 1.065	0.034	0.992	0.957 - 1.029	0.663
China	1.022***	1.006 - 1.039	0.008	1.025**	1.002 - 1.047	0.030
Comoros	0.938**	0.887 - 0.993	0.028	0.959	0.859 - 1.070	0.449
Ecuador	1.008	0.990 - 1.026	0.396	1.003	0.971 - 1.037	0.854
Eswatini	1.026*	0.997 - 1.056	0.079	1.020	0.961 - 1.083	0.508
Georgia	1.038	1.038 - 1.038	.	0.976	0.976 - 0.976	.
Guyana	1.004	0.956 - 1.053	0.884	1.036	0.988 - 1.087	0.147
India	1.008	0.996 - 1.020	0.187	1.002	0.997 - 1.007	0.472
Indonesia	1.011	0.980 - 1.043	0.496	1.019	0.982 - 1.057	0.326
Kenya	0.993	0.966 - 1.020	0.605	1.019	0.972 - 1.069	0.431
Lebanon	1.011	0.939 - 1.089	0.763	0.957	0.848 - 1.080	0.477
Liberia	0.996	0.982 - 1.009	0.507	0.991	0.956 - 1.028	0.641
Mexico	1.012	0.993 - 1.031	0.215	0.994	0.975 - 1.013	0.532
Mongolia	1.019	0.980 - 1.061	0.344	1.047	0.972 - 1.127	0.226
Namibia	1.006	0.984 - 1.028	0.591	1.010	0.982 - 1.039	0.489
Nepal	1.012	0.988 - 1.035	0.328	1.002	0.969 - 1.036	0.915
Romania	0.996	0.976 - 1.017	0.714	0.996	0.968 - 1.025	0.791
South Africa	0.979	0.829 - 1.156	0.800	1.011	0.966 - 1.057	0.647
SVG	1.011	0.991 - 1.030	0.283	1.034**	1.007 - 1.061	0.012
Tanzania	0.942**	0.894 - 0.993	0.027	1.092***	1.026 - 1.163	0.006
Timor Leste	1.009	0.982 - 1.036	0.538	0.981	0.941 - 1.022	0.348
Togo	0.985	0.959 - 1.012	0.273	0.997	0.959 - 1.036	0.861
Uganda	0.982	0.949 - 1.016	0.288	0.959*	0.917 - 1.002	0.063

Notes: Adjusted odds ratios from multinomial logistic regression models (reported as relative risk ratios using Stata's *rrr* command) for men in the pooled sample and separately by world region and country. The exposure was height in cm (continuous). The outcome was glycemia grouped into three categories (normal, pre-diabetes, diabetes). Normal glycemia as reference category not reported. All models controlled for age, education, household wealth, and country indicators (in pooled analyses), and included equal weights for each country. *** p<0.01, ** p<0.05, * p<0.1.

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