Supplementary Material: Metabolic risk and the role of higher education

1 SUPPLEMENTARY TABLES

Table S1. Reference values for anthropometric measurements, blood pressure, and fasting chemical blood analysis.

Variable	Normal level	Cutoff value	Units	% > cutoff	Reference
BMI	18.5 to 29.9	≥ 30	kg/m^2	21.1%	[1,2]
WC					
women	≤ 80	> 80	cm	78.4%	[3]
men	≤ 90	> 90	cm	66.3%	[3]
SBP	120 to 130	> 130	mmHg	7.3%	[1,4]
DBP	60 to 85	> 85	mmHg	12.6%	[1,4]
PP	30 to 60	> 60	mmHg	1.3%	[1,4]
Glucose	70 to 100	> 100	mg/dL	20.2%	[2]
Hb A1c	< 5.7	> 6.4	%	6.0%	[2,5]
Basal insulin	2 to 20	> 20	units/ml	4.3%	[6-8]
HOMA-IR	≤ 1.8	> 1.8		39.8%	[6,9]
Uric acid					
women	≤ 6	> 6	mg/dL	12.0%	[10,11]
men	≤ 7	> 7	mg/dL	31.5%	[10,11]
Triglycerides	40 to 150	> 150	mg/dL	44.3%	[1]
Total cholesterol	140 to 200	> 200	mg/dL	48.9%	[12]
HDL					
women	≥ 50	< 50	mg/dL	52.2%	[12]
men	≥ 40	< 40	mg/dL	42.3%	[12]
LDL	≤ 130	> 130	mg/dL	37.6%	[1]

In Table S2 below we show the incidence of MS in the different educational subgroups. Taking as reference level Primary, all higher levels are statistically significantly ($p < 0.05$) lower in MS incidence than the Primary group. Indeed, each higher group has significantly less incidence of MS than any lower group below it except in the case of Undergraduate versus Secondary where the difference does not reach the 95% confidence level and with Masters versus Doctoral level, where the difference is attributable to the substantially higher average age in the doctoral group versus the Masters group, as can be seen in Table 1. In this case, age is a confounding variable. The binomial regression controls for this confounding factor and there we may conclude that controlling for age the Doctoral level has a lower incidence of MS than the Masters level.

Similarly, we show that for those at risk with a high WC, the percentages associated with presenting no other MS risk factor. We may observe that the percentages with better metabolic health increase as a function of educational level with the differences again being statistically significant relative to the Primary group as reference.

Table S2. Incidence of Metabolic Syndrome for the different educational subgroups

Educational level	**1**	**2**	**3**	**4**	**5**	Total
Number with MS	25	108	138	36	39	346
% with MS	52.1%	37.9%	34.1%	19.9%	25.3%	32.2%
Number WC only	7	39	30	34	38	148
% WC only	16.3%	17.0%	24.2%	29.6%	32.5%	18.6%

Participants are grouped by educational level: 1-primary, 2-secondary, 3-undergraduate, 4-master, 5-doctorate.

2 SUPPLEMENTARY FIGURES

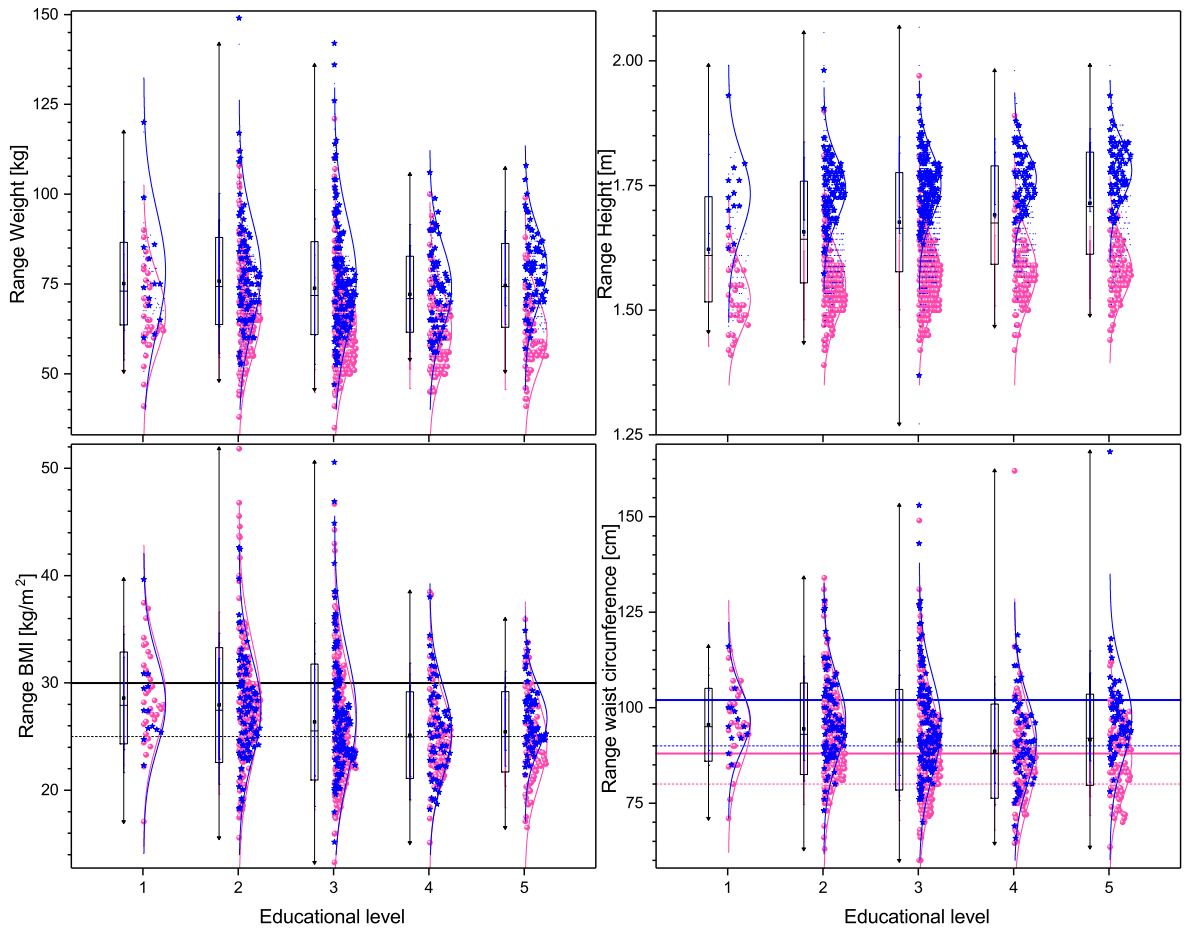

Figure S1. Box plots and distributions of the anthropometric measures for the different educational levels. Upper panels show weight (left), height (right), while bottom panels show BMI (left) and waist circumference (right). Each box corresponds to one standard deviation around the mean (star). Distribution dots correspond to each subject, (pink for female and blue for male), the curve is the best Gaussian fit of the data, and horizontal lines correspond to thresholds defining health.

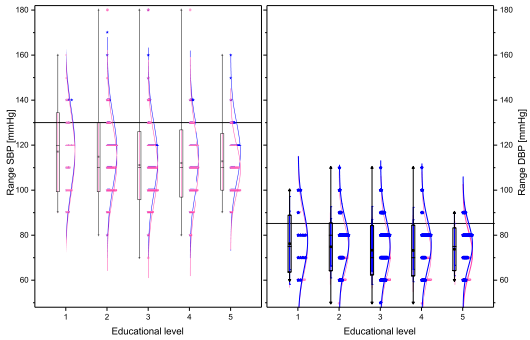

Figure S2. Box plots and distributions of the blood pressure parameters for the different educational levels. From left to right: SBP, and DBP. Each box corresponds to standard deviation around the mean (star). Distribution dots correspond to each subject (pink for female and blue for male), the curve is the best Gaussian fit of the data, and horizontal lines correspond to thresholds defining health.

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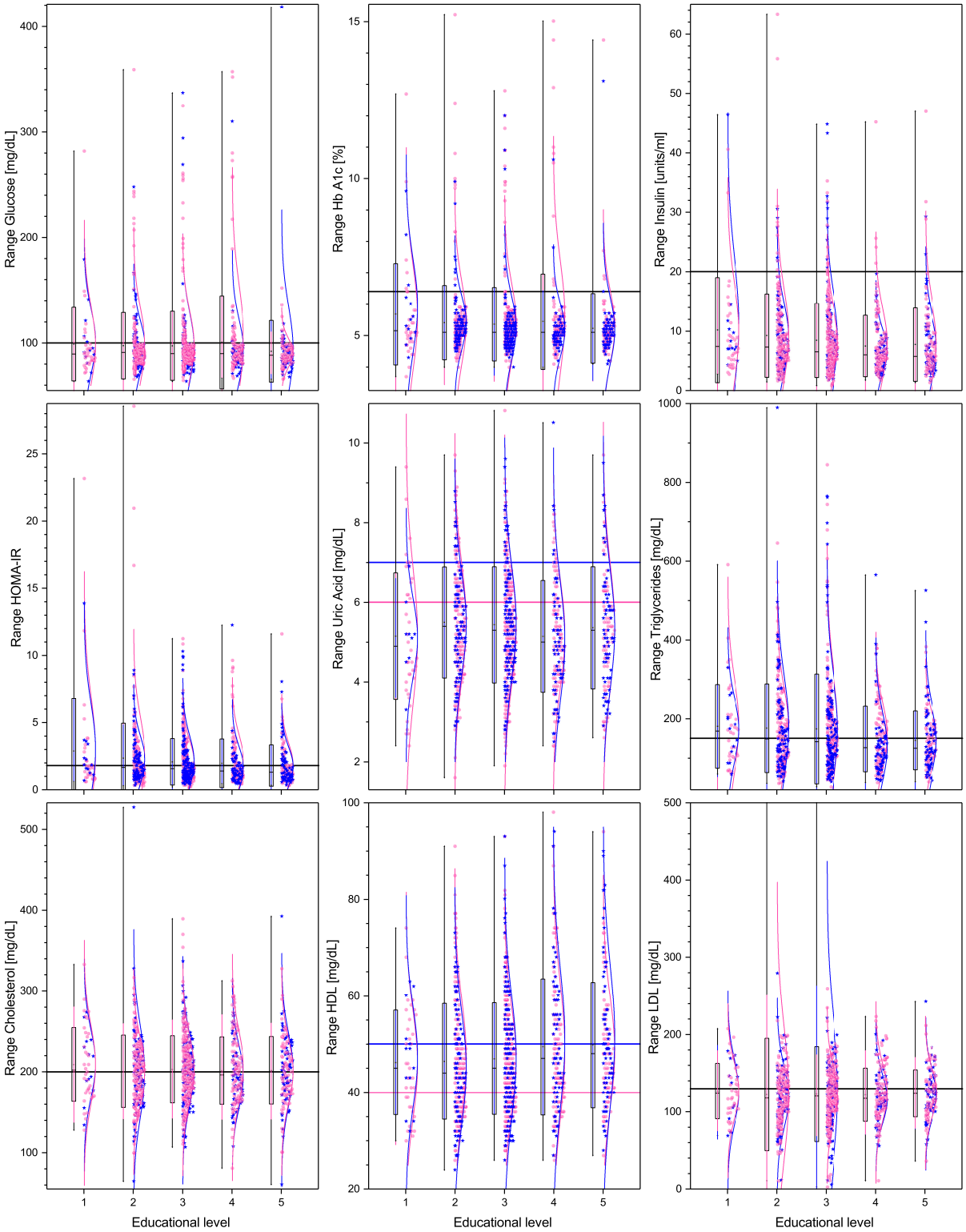

Figure S3. Box plots and distributions of the laboratory chemical analysis of the fasting blood test for the different educational levels. From top right to bottom left are: glucose, Hb A1c, insulin, total cholesterol, HDL, LDL, triglycerides, and uric acid levels. Each box corresponds to one standard deviation around the mean (star). Distribution dots correspond to each subject (pink for female and blue for male), the curve is the best Gaussian fit of the data, and horizontal lines correspond to thresholds defining health.