

SUPPLEMENTARY MATERIAL

This Supplementary Material provides detailed tables with the description of methodological issues and values for the article “Burden of non-communicable diseases attributable to dietary risks in Brazil, 1990–2019: an analysis of the Global Burden of Disease Study 2019”.

SUPPLEMENTARY TABLE 1: Adjustment factors for dietary risk factors applied in the meta-regression (MR-RBT) crosswalk and optimal level of intake (theoretical minimum risk exposure level – TMREL).

Dietary risk	Sex	Data input	Reference or alternative case definition	Gamma	Beta coefficient, log (95%CI)	Adjustment factor	TMREL per person
Calcium	---	DR	Ref	0.24	----	---	Intake of calcium between 1.06 and 1.1 grams per day
Calcium	Fem	FAO	Alt		0.04 (0.04, 0.5)	0.96 (0.64, 1.65)	
Calcium	Fem	FFQ	Alt		-0.04 (-0.04, 0.43)	1.04 (0.59, 1.53)	
Calcium	Male	FAO	Alt		0.17 (0.17, 0.63)	0.84 (0.73, 1.88)	
Calcium	Male	FFQ	Alt		0.09 (0.09, 0.55)	0.91 (0.67, 1.74)	
Fiber	---	DR	Ref	0.33	----	---	Intake of fiber between 21 and 22 grams of fiber per day
Fiber	Fem	FAO	Alt		0.56 (0.56, 1.17)	0.57 (0.93, 3.23)	
Fiber	Fem	FFQ	Alt		0.27 (0.27, 0.88)	0.76 (0.69, 2.41)	
Fiber	Male	FAO	Alt		0.55 (0.55, 1.17)	0.57 (0.92, 3.22)	
Fiber	Male	FFQ	Alt		0.26 (0.26, 0.88)	0.77 (0.69, 2.4)	
Fruit	---	DR	Ref	0.76	----	---	Intake of fruits between 310 and 340 grams per day
Fruit	Fem	FAO	Alt		0.36 (0.36, 1.83)	0.7 (0.31, 6.21)	
Fruit	Fem	Sales	Alt		0.73 (0.73, 2.19)	0.48 (0.45, 8.98)	
Fruit	Fem	FFQ	Alt		-0.15 (-0.15, 1.32)	1.17 (0.19, 3.73)	
Fruit	Fem	HBS	Alt		0.23 (0.23, 1.71)	0.79 (0.27, 5.5)	
Fruit	Male	FAO	Alt		0.32 (0.32, 1.79)	0.73 (0.3, 5.97)	
Fruit	Male	Sales	Alt		0.69 (0.69, 2.16)	0.5 (0.43, 8.64)	
Fruit	Male	FFQ	Alt		-0.19 (-0.19, 1.28)	1.21 (0.18, 3.58)	
Fruit	Male	HBS	Alt		0.19 (0.19, 1.66)	0.83 (0.26, 5.27)	
Legumes	---	DR	Ref	0.74	----	---	Intake of legumes between 90 and 100 grams per day
Legumes	Fem	FAO	Alt		-0.08 (-1.49, 1.39)	1.08 (0.22, 4)	
Legumes	Fem	Sales	Alt		-0.9 (-2.31, 0.56)	2.47 (0.1, 1.75)	
Legumes	Fem	FFQ	Alt		-0.53 (-1.94, 0.95)	1.7 (0.14, 2.58)	
Legumes	Male	FAO	Alt		0.06 (-1.35, 1.53)	0.94 (0.26, 4.61)	
Legumes	Male	Sales	Alt		-0.76 (-2.16, 0.7)	2.14 (0.12, 2.01)	
Legumes	Male	FFQ	Alt		-0.39 (-1.79, 1.09)	1.47 (0.17, 2.98)	
Milk	---	DR	Ref	1.06	----	---	Intake of milk between 360 and 500 grams per day
Milk	Fem	FAO	Alt		0.27 (0.27, 2.57)	0.76 (0.16, 13.01)	
Milk	Fem	Sales	Alt		0.01 (0.01, 2.31)	0.99 (0.13, 10.11)	
Milk	Fem	FFQ	Alt		0.46 (0.46, 2.78)	0.63 (0.18, 16.2)	
Milk	Fem	HBS	Alt		-0.61 (-0.61, 1.69)	1.84 (0.07, 5.4)	
Milk	Male	FAO	Alt		0.28 (0.28, 2.58)	0.75 (0.17, 13.17)	

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Milk	Male	Sales	Alt		0.03 (0.03, 2.33)	0.97 (0.13, 10.23)	
Milk	Male	FFQ	Alt		0.48 (0.48, 2.8)	0.62 (0.18, 16.43)	
Milk	Male	HBS	Alt		-0.59 (-0.59, 1.7)	1.81 (0.07, 5.48)	
Nuts and seeds	---	DR	Ref		----	---	
Nuts and seeds	Fem	FAO	Alt		0.49 (0.49, 3.63)	0.62 (0.06, 37.68)	
Nuts and seeds	Fem	FFQ	Alt		-0.34 (-0.34, 2.76)	1.41 (0.02, 15.75)	
Nuts and seeds	Fem	HBS	Alt	1.58	-0.72 (-0.72, 2.42)	2.06 (0.02, 11.27)	Intake of nuts and seeds between 10 and 19 grams per day
Nuts and seeds	Male	FAO	Alt		0.6 (0.6, 3.73)	0.55 (0.07, 41.65)	
Nuts and seeds	Male	FFQ	Alt		-0.23 (-0.23, 2.87)	1.26 (0.03, 17.58)	
Nuts and seeds	Male	HBS	Alt		-0.62 (-0.62, 2.54)	1.85 (0.02, 12.66)	
Omega-3	---	DR	Ref		----	---	
Omega-3	Male	FAO	Alt	0.12	-1.15 (-1.15, -0.92)	3.16 (0.25, 0.4)	Intake of seafood omega-3 fatty acids between 430 and 470 milligrams per day
Omega-3	Fem	FAO	Alt		-1.01 (-1.01, -0.78)	2.75 (0.29, 0.46)	
Processed meat	---	DR	Ref		----	---	
Processed meat	Fem	Sales	Alt		0.79 (0.79, 3.14)	0.46 (0.19, 23.07)	
Processed meat	Fem	FFQ	Alt		-0.3 (-0.3, 2.25)	1.35 (0.05, 9.49)	
Processed meat	Fem	HBS	Alt	1.21	-0.46 (-0.46, 1.89)	1.59 (0.05, 6.63)	No intake of processed meat
Processed meat	Male	Sales	Alt		0.95 (0.95, 3.3)	0.39 (0.22, 27.03)	
Processed meat	Male	FFQ	Alt		-0.13 (-0.13, 2.42)	1.14 (0.06, 11.2)	
Processed meat	Male	HBS	Alt		-0.3 (-0.3, 2.06)	1.35 (0.06, 7.82)	
PUFA	---	DR	Ref		----	---	
PUFA	Fem	FAO	Alt		-0.14 (-0.14, 0.14)	1.15 (0.65, 1.15)	
PUFA	Fem	FFQ	Alt	0.14	1.05 (1.05, 1.43)	0.35 (1.96, 4.18)	Intake of PUFA between 7 and 9% of total daily energy
PUFA	Male	FAO	Alt		-0.18 (-0.18, 0.1)	1.2 (0.62, 1.1)	
PUFA	Male	FFQ	Alt		1 (1, 1.38)	0.37 (1.87, 3.98)	
Red meat	---	DR	Ref		----	---	
Red meat	Fem	FAO	Alt		0.89 (0.89, 2.54)	0.41 (0.45, 12.69)	
Red meat	Fem	Sales	Alt		1.09 (1.09, 2.74)	0.34 (0.54, 15.49)	
Red meat	Fem	FFQ	Alt		-0.34 (-0.34, 1.6)	1.4 (0.11, 4.95)	
Red meat	Fem	HBS	Alt	0.83	0.45 (0.45, 2.1)	0.64 (0.29, 8.18)	No intake of red meat
Red meat	Male	FAO	Alt		0.89 (0.89, 2.54)	0.41 (0.45, 12.66)	
Red meat	Male	Sales	Alt		1.09 (1.09, 2.74)	0.34 (0.54, 15.43)	
Red meat	Male	FFQ	Alt		-0.34 (-0.34, 1.6)	1.4 (0.11, 4.94)	
Red meat	Male	HBS	Alt		0.45 (0.45, 2.1)	0.64 (0.29, 8.15)	
Sodium	---	Urinary sodium	Ref		----	---	
Sodium	Fem	DR	Alt		-0.2 (-0.02, 0.85)	1.02 (0.38, 2.34)	
Sodium	Fem	FFQ	Alt		0.47 (0.47, 1.29)	0.63 (0.69, 3.64)	
Sodium	Male	DR	Alt	0.39	-0.06 (-0.06, 0.8)	1.06 (0.38, 2.23)	Average 24-hour urinary sodium between 1 and 5 grams per day
Sodium	Male	FFQ	Alt		0.43 (0.43, 1.26)	0.65 (0.67, 3.52)	
SSBs	---	DR	Ref		----	---	
SSBs	Fem	Sales	Alt	0.61	0.15 (0.15, 1.43)	0.86 (0.37, 4.17)	

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SSBs	Fem	FFQ	Alt		-0.01 (-0.01, 1.32)	1.01 (0.3, 3.75)	No intake of beverages with ≥50 kcal per 226.8 gram serving
SSBs	Fem	HBS	Alt		-0.59 (-0.59, 0.68)	1.8 (0.18, 1.98)	
SSBs	Male	Sales	Alt		0.35 (0.35, 1.63)	0.7 (0.45, 5.1)	
SSBs	Male	FFQ	Alt		0.19 (0.19, 1.53)	0.83 (0.37, 4.6)	
SSBs	Male	HBS	Alt		-0.39 (-0.39, 0.89)	1.48 (0.22, 2.43)	
Trans fatty acids	---	DR	Ref		----	---	No intake of trans fatty acids
Trans fatty acids	Male	Sales	Alt	0.22	-0.23 (-1.27, 0.94)	1.25 (0.28, 2.55)	
Trans fatty acids	Fem	Sales	Alt		-0.23 (-1.27, 0.94)	1.25 (0.28, 2.55)	
Trans fatty acids	Male	FFQ	Alt		0.59 (-2.72, 4.23)	0.56 (0.07, 68.72)	
Trans fatty acids	Fem	FFQ	Alt		0.86 (-2.63, 4.9)	0.42 (0.07, 134.0)	
Vegetables	---	DR	Ref		----	---	Intake of vegetables between 280 and 320 grams per day
Vegetables	Fem	FAO	Alt		0.12 (0.12, 1.33)	0.89 (0.31, 3.78)	
Vegetables	Fem	Sales	Alt		0.62 (0.62, 1.83)	0.54 (0.51, 6.21)	
Vegetables	Fem	FFQ	Alt		-0.05 (-0.05, 1.16)	1.05 (0.26, 3.18)	
Vegetables	Fem	HBS	Alt		0.1 (0.1, 1.31)	0.91 (0.3, 3.69)	
Vegetables	Male	FAO	Alt	0.64	0.16 (0.16, 1.37)	0.85 (0.32, 3.94)	
Vegetables	Male	Sales	Alt		0.66 (0.66, 1.87)	0.52 (0.53, 6.49)	
Vegetables	Male	FFQ	Alt		-0.01 (-0.01, 1.2)	1.01 (0.27, 3.32)	
Vegetables	Male	HBS	Alt		0.14 (0.14, 1.35)	0.87 (0.32, 3.85)	
Whole grains	---	DR	Ref		----	---	Intake of whole grains between 140 and 160 grams
Whole grains	Fem	FAO	Alt	0.69	1.94 (1.94, 3.37)	0.14 (1.82, 29.05)	
Whole grains	Fem	FFQ	Alt		-0.35 (-0.35, 1.37)	1.42 (0.13, 3.94)	
Whole grains	Male	FAO	Alt		2.09 (2.09, 3.52)	0.12 (2.12, 33.76)	
Whole grains	Male	FFQ	Alt		-0.2 (-0.2, 1.52)	1.22 (0.15, 4.58)	

95%CI: 95% Coefficient Interval; **Alt.:** Alternative; **DR:** 24-hour dietary recall; **FAO:** Food and Agriculture Organization; **FFQ:** Food Frequency Questionnaire; **HBS:** Household Budget Survey; **PUFA:** polyunsaturated fatty acids; **Ref.:** Reference; **SSBs:** sugar-sweetened beverages; **TMREL:** Theoretical minimum risk exposure level. Source: Adapted from the GBD 2019 Risk Factors Collaborators Supplement.