

Sodium Intake, Life Expectancy and Mortality

Table S1. Country-level data as extracted from different sources for the year of 2010.

Country	Sodium intake (grams/day)	Healthy life expectancy at birth (years)	Healthy life expectancy at age 60 (years)	ASDR all-cause mortality	ASDR non-communicable diseases	Age standardized BMI (kg/m ²)	Population counts `000	GDP USD	World Bank - Income class
Afghanistan	3.39	51.6	11	1327.4	882.9	22.7	28803	16077921111	4
Albania	3.67	66.4	15.4	678.8	607.3	26.1	2941	11926948284	2
Algeria	4.28	64.5	15.1	613.5	482.7	25.1	36118	161207304960	2
Angola	2.49	51.8	12.8	1372.7	583.1	22.8	23369	83799484640	3
Antigua and Barbuda	2.67	66.5	15.8	657.0	528.2	26.1	95	1147940741	2
Argentina	3.00	67.3	16.6	610.7	481.3	27.1	41224	426487434874	2
Armenia	4.92	65.2	14.8	754.2	676.1	26	2877	9875378350	3
Australia	3.42	72.2	19.7	361.6	318.3	26.9	22120	1293794181138	1
Austria	3.95	71.4	18.7	414.1	369.9	25.4	8410	391892746545	1
Azerbaijan	5.06	63.4	14.2	845.8	733.1	26.4	9032	52905998879	2
Bahamas	2.99	66.4	17.2	606.3	454.6	27.5	361	10095768962	1
Bahrain	5.38	66.3	14.5	604.2	543.5	25	1241	25713271277	1
Bangladesh	3.54	60.7	13.7	827.0	543.5	21.1	152149	114507797698	4
Barbados	3.42	66.2	15.1	693.2	561.2	27.3	280	4364850000	1
Belarus	4.35	62.3	13.5	948.2	810.7	26.3	9473	57231905886	2
Belgium	3.45	70.8	18.3	431.4	363.0	25.9	10939	483548693409	1
Belize	2.62	61.9	13.1	978.9	747.1	28.4	322	1397115000	3
Benin	2.85	51.7	12.9	1328.3	649.3	23.1	9199	6970254725	4
Bhutan	3.64	58.7	13.8	888.1	629.0	23.3	728	1585464266	3
Bolivia	3.59	61	15.7	821.2	544.7	25.8	9918	19649786223	3
Bosnia and Herzegovina	3.46	66.7	14.8	634.2	582.7	25.4	3722	17176320803	2
Botswana	2.53	52.9	12.4	1337.3	676.5	24.1	2015	12786614682	2
Brazil	4.11	64.5	15.6	698.9	526.3	25.8	196796	2208838108593	2
Brunei Darussalam	4.42	67.9	15.8	596.7	519.2	26.4	389	13707116269	1
Bulgaria	3.62	65.7	14.8	743.9	683.8	26	7405	50610343680	2
Burkina Faso	2.88	49.7	11.2	1592.5	746.2	21.8	15605	8979964356	4
Burundi	1.73	50.3	12.1	1476.6	663.0	21.3	8767	2032137629	4
Cambodia	4.41	58.5	12.2	1059.7	705.2	21.6	14309	11242278819	4
Cameroon	2.09	48.3	12.1	1571.6	700.6	24	19971	26143817371	3
Canada	3.71	72.2	19.6	379.0	326.3	26.8	34169	1613463452091	1
Cape Verde	3.25	63.1	13.9	837.4	596.4	24.2	502	1664310632	3
Central African Republic	2.80	42.7	10.9	1952.5	718.0	22.4	4449	2033813912	4
Chad	2.87	45.1	11.2	1755.1	759.0	21.6	11887	9791128578	4
Chile	2.80	68.9	17.3	503.9	417.3	27.4	16993	218537565497	2
China	4.83	67.6	15.4	663.7	573.0	23.2	1367317	6066351252194	2
Colombia	4.09	65.7	16.2	678.8	505.7	25.7	45918	287018179194	2
Comoros	1.67	54.7	12.3	1295.6	695.2	23.8	690	1068064352	4
Congo	2.25	54.2	12.8	1281.6	594.5	22.8	4387	12281046233	3

Costa Rica	3.18	69.7	18.2	495.9	408.0	26.8	4545	37268635236	2
Côte d'Ivoire	2.80	46.2	10.4	1919.4	934.0	23.5	20401	24884503951	3
Croatia	3.71	67.9	15.6	595.4	538.9	26.7	4328	59829429869	1
Cuba	2.64	69	17.1	525.0	441.8	25.2	11333	64328000000	2
Cyprus	4.06	72.4	18.2	467.5	419.4	26.7	1113	25560729794	1
Czechia	3.98	68.1	15.8	547.7	481.9	26.8	10536	207016402026	1
Democratic People's Republic of Korea	3.79	62.3	13.4	946.9	736.6	23.6	24592	13945167273	4
Democratic Republic of the Congo	2.42	49.9	12.2	1426.6	599.6	21.6	64523	21565746507	4
Denmark	3.27	70.4	17.9	473.9	420.8	25.3	5555	321995350347	1
Djibouti	2.36	54.3	13.2	1235.1	587.2	23.9	851	1066964512	3
Dominican Republic	2.60	63.8	16.8	721.7	503.0	25.9	9898	53131694070	2
Ecuador	3.03	66.8	17.7	587.5	410.8	26.5	14935	69555367000	2
Egypt	3.68	60	12	954.2	835.1	28.8	84108	214630372041	3
El Salvador	3.19	64.2	16.2	727.9	517.0	27.1	6165	21418328456	3
Equatorial Guinea	2.30	51.2	13.5	1478.2	755.7	23.5	951	16298541318	1
Eritrea	2.37	55.3	13	1290.8	681.0	20.5	4391	2117039511	4
Estonia	3.95	66.7	15.9	613.0	540.6	26.1	1332	19502554977	1
Ethiopia	2.27	54	13	1213.6	570.7	20.3	87703	26311297202	4
Fiji	2.87	60.4	12.3	991.4	847.1	27.2	860	3140336425	3
Finland	3.85	70.4	18.2	438.5	386.9	26	5366	247799815768	1
France	3.77	72.2	19.8	383.9	325.8	25.1	63027	2646837111795	1
Gabon	2.01	54.8	13.4	1203.8	515.8	24.7	1640	12882003773	2
Gambia	3.07	52.5	11.4	1493.5	742.7	23.4	1692	952430610	4
Georgia	5.30	64.8	14.7	808.2	720.6	26.8	4232	11638284841	3
Germany	3.54	70.9	18.2	438.8	393.1	26.3	80895	3417094562649	1
Ghana	2.35	54.1	12	1404.5	701.2	23.6	24512	32174210793	3
Greece	3.77	71.5	18.6	420.7	374.3	27.1	11446	299361576565	1
Grenada	2.61	64	14.2	798.5	668.4	26.4	105	771014815	2
Guatemala	2.94	62.1	15.2	765.3	472.2	26	14630	41338158765	3
Guinea	2.77	50	11.1	1600.4	790.4	22.6	10794	6853390371	4
Guinea-Bissau	3.03	48.8	10.4	1629.8	723.9	23	1556	849050091	4
Guyana	2.45	57.8	12.9	1138.8	819.3	25.8	747	2259290304	3
Haiti	2.66	32.3	8.1	3311.3	679.9	24.6	10000	6707774880	4
Honduras	2.95	65.5	16.6	647.1	450.4	26.1	8195	15839344592	3
Hungary	4.23	65.6	14.4	711.2	647.4	26.8	9928	130922638689	1
Iceland	3.58	72.6	19.1	373.8	330.0	26	320	13310568487	1
India	3.72	57.4	12.4	1008.9	622.7	21.4	1230981	1650634716716	3
Indonesia	3.36	60.4	12.4	1055.5	778.0	22.5	242524	755094157594	3
Iran	4.02	63.9	14.3	720.7	605.4	25.8	74568	491098657663	2
Iraq	3.76	59.6	12.9	837.7	663.8	28	30763	117137606838	3
Ireland	3.74	71.5	18.6	409.7	359.9	27.1	4627	221951353834	1
Israel	3.79	72.4	19.3	372.1	320.8	26.9	7426	233611022914	1
Italy	4.42	72.8	19.4	364.7	328.9	25.7	59730	2125058270214	1
Jamaica	1.92	66.1	17	610.9	456.8	26.9	2817	13219465065	2
Japan	4.89	73.8	20.3	334.8	264.0	22.7	128552	5700098114744	1
Jordan	4.13	64.7	14.4	757.1	654.1	28.5	7182	26425379366	2

Kazakhstan	5.98	60.2	12.9	1114.9	948.7	26	16399	148047348241	2
Kenya	1.48	55.5	13.7	1171.4	377.1	22.8	41350	39999677643	4
Kiribati	2.22	57.5	12.3	1120.2	800.7	29.6	103	153281601	3
Kuwait	3.88	64.6	12.8	839.4	690.7	29	2998	115416047508	1
Kyrgyzstan	5.38	61.1	13.5	1007.1	842.1	25.8	5422	4794361821	4
Lao People's Democratic Republic	4.45	56	11.9	1197.0	793.2	22.2	6246	7313450659	3
Latvia	4.19	64.6	14.8	756.2	655.4	26.3	2119	23765143538	2
Lebanon	3.13	65.2	14.6	647.7	578.2	27.1	4337	38419635158	2
Lesotho	2.62	45.7	11.5	1888.4	771.1	24.7	2041	2394090236	3
Liberia	2.68	51.6	11.3	1460.7	633.6	23.8	3948	1292000000	4
Libya	4.24	62.9	13.4	801.5	680.6	27.6	6169	80942419624	2
Lithuania	4.07	64.5	15	744.8	629.5	26.3	3124	37130286247	2
Luxembourg	4.07	71.7	18.8	391.3	335.0	26.1	508	53212476812	1
Madagascar	2.20	55.8	12.7	1189.4	665.5	21.1	21152	10401074456	4
Malawi	1.66	50.4	12.4	1516.4	566.6	22.5	15167	6959686850	4
Malaysia	3.57	65.6	14.4	729.7	547.2	25	28112	255017645207	2
Maldives	3.31	67.6	15	607.0	536.2	24.6	365	2588176058	2
Mali	3.15	48.4	11.2	1643.5	816.9	22.6	15075	10678749002	4
Malta	4.10	71.6	18.5	411.8	368.0	27.1	416	8740539199	1
Mauritania	2.97	54.5	12.1	1295.4	636.6	24.6	3610	4337791531	3
Mauritius	5.45	64.5	14.9	729.9	624.4	25	1248	10003670690	2
Mexico	2.76	66.5	16.5	614.0	484.4	27.5	117319	1057800597974	2
Micronesia	2.56	60.3	12.8	983.9	782.0	29.3	104	296525259	3
Mongolia	5.14	60.2	12.8	1075.6	922.4	25.4	2713	7189482030	3
Montenegro	3.63	67.1	15.1	668.3	617.2	26.1	624	4137925817	2
Morocco	4.31	63.5	14.3	710.3	567.5	25.4	32410	93217221947	3
Mozambique	2.24	47.6	12.4	1575.5	574.8	22.3	24221	10154250870	4
Myanmar	4.49	56.3	11.7	1146.7	769.1	22.1	50156	41444923053	4
Namibia	2.64	53.4	12.4	1364.3	710.2	23.8	2173	11282158756	2
Nepal	3.89	59.2	12.5	1014.4	664.2	21.8	27023	16280802530	4
Netherlands	3.32	71.4	18.4	411.8	364.0	25.5	16683	836389937229	1
New Zealand	3.47	72	19.7	390.9	341.1	27.6	4370	146583831538	1
Nicaragua	3.22	65.5	16.7	652.0	510.2	26.7	5738	8758602361	3
Niger	2.92	49.4	11.4	1566.6	695.7	21.5	16426	5718587531	4
Nigeria	2.82	46.2	10.2	1987.6	826.9	23	158578	369062403226	3
Norway	3.80	71.8	18.7	403.7	351.4	26.4	4886	429130952709	1
Oman	3.78	65.5	14.6	628.6	517.3	25.9	3041	58641252346	1
Pakistan	3.91	56.2	12.6	1076.6	727.1	23.4	170560	174507923711	3
Panama	3.39	68.3	18.1	541.9	391.4	26.5	3643	28917170797	2
Papua New Guinea	2.45	56.9	13	1118.9	651.5	25	7108	14204789049	3
Paraguay	4.31	64.5	16	685.6	528.7	26	6210	20047518467	3
Peru	3.07	66.3	16.4	640.8	440.7	26	29374	147527631521	2
Philippines	4.29	60.6	13	1027.2	724.1	22.7	93727	199590933677	3
Poland	3.84	67.3	15.9	599.1	526.9	26.1	38323	479321128909	1
Portugal	4.24	70.8	18.5	443.2	373.4	25.8	10652	238303443425	1
Qatar	4.21	66.7	14.7	574.0	505.0	28.5	1780	123627107054	1

Republic of Korea	5.21	71.4	18.4	410.8	324.3	23.5	49553	1094499350178	1
Republic of Moldova	3.95	61.3	12.7	1042.7	905.0	26.6	4084	5811622394	3
Romania	4.12	65.2	14.7	732.5	649.5	26	20440	167998049026	2
Russian Federation	4.17	61	13.7	971.6	803.2	26.1	143154	1524916698233	2
Rwanda	1.60	56.2	13.4	1104.5	570.1	21.7	10247	5774003679	4
Saint Lucia	2.93	65.7	16.7	636.8	510.2	28.7	173	1244296296	2
Saint Vincent and the Grenadines	2.82	63.4	14.6	808.3	627.9	26.6	109	681225926	2
Samoa	2.07	64.4	14.3	739.0	609.1	31.5	186	679252092	3
Sao Tome and Principe	2.36	59	13.9	997.7	627.9	24.4	175	197454025	3
Saudi Arabia	3.20	64.4	13.7	747.8	599.6	28.1	27426	528207332650	1
Senegal	3.15	56.1	12.4	1232.2	686.5	22.7	12916	12925679250	3
Serbia	3.67	66.2	14.3	703.4	655.6	25.8	9030	39460338235	2
Seychelles	4.34	64.6	15.1	784.0	623.1	26.2	91	969964538	2
Sierra Leone	2.51	43.9	9.8	2216.1	1018.1	22.6	6459	2578026280	4
Singapore	5.14	74.8	20	378.5	290.8	23.5	5074	236420337243	1
Slovakia	4.23	66.8	15.1	655.3	577.0	26	5404	89501012916	1
Slovenia	4.23	69.2	16.8	458.0	395.0	26.1	2045	48013606724	1
Solomon Islands	2.33	60.6	12.6	961.6	739.1	25.8	528	719622919	3
Somalia	2.07	47.6	12.3	1632.1	619.8	22.8	12053	1071191223	4
South Africa	2.48	50.5	11.5	1531.1	752.7	26.9	51585	375348270354	2
Spain	4.02	72.9	19.7	360.4	324.7	26.2	46789	1431616749640	1
Sri Lanka	3.87	66.1	15.5	669.1	542.6	22.5	20198	56725754848	3
Sudan	2.37	54	12.6	1152.0	761.1	24.2	34386	54458738026	3
Suriname	2.89	61.8	14.2	857.6	648.8	26.1	526	4368377356	2
Swaziland	2.53	44.2	11.2	1911.1	788.8	26.4	1203	4436297681	3
Sweden	3.65	71.9	18.8	387.6	343.8	25.8	9390	488377689565	1
Switzerland	3.61	72.5	19.6	353.4	311.8	25.1	7832	583782977866	1
Syrian Arab Republic	4.18	64.1	14.2	741.3	662.1	27.7	21019	60465112082	3
Tajikistan	5.40	62.4	14	897.6	710.5	25.2	7642	5642175856	4
Thailand	5.31	65.5	16.1	665.2	469.0	23.8	67209	341104671649	2
North Macedonia	3.91	66.5	14.5	719.2	674.5	26.3	2071	9407160111	2
Timor-Leste	4.47	57.3	10.3	1054.8	684.8	20.7	1110	3998800146	3
Togo	2.78	51.1	11.2	1628.2	821.1	23.1	6503	3426118972	4
Tonga	2.73	63.7	13.8	776.6	657.4	31.8	104	373874368	3
Trinidad and Tobago	2.93	62.4	14.4	839.6	670.7	27	1328	22122941831	1
Tunisia	4.43	65.1	14.5	676.5	574.2	25.9	10640	44051138745	2
Turkey	4.10	64.4	14.7	664.9	591.3	27.5	72327	771876791418	2
Turkmenistan	5.43	59.8	13.9	995.7	813.3	25.8	5087	22583157895	3
Uganda	2.11	50.4	12.4	1469.3	650.9	22	33915	19803211403	4
Ukraine	4.19	62.2	13.7	956.8	809.3	26.3	45793	136012480322	3
United Arab Emirates	3.67	66.4	14.8	620.0	530.0	28	8271	289787452661	1
United Kingdom	3.61	71.3	18.8	417.5	367.6	27	63307	2441173394730	1
United Republic of Tanzania	2.75	52.3	13	1386.0	539.6	22.8	46099	31105429967	4
United States of America	3.60	68.7	17.8	483.1	412.8	28.5	308641	14964372000000	1
Uruguay	2.73	68	16.9	580.8	475.3	26.7	3374	40284556645	2
Uzbekistan	5.63	63.2	14.1	838.2	719.1	26	28606	39525875086	3

Vanuatu	2.24	62	13.2	886.0	707.9	25.9	236	700804045	3
Venezuela	3.55	65.7	16.6	676.8	496.3	26.6	29028	393805672596	2
Viet Nam	4.59	66.5	16.7	600.4	452.6	21	88473	115931749905	3
Yemen	3.37	54.3	11.3	1200.0	909.3	23.3	23607	29031038812	3
Zambia	2.27	50.1	12.2	1477.5	592.1	22.2	13850	20265400495	3
Zimbabwe	3.10	46.7	12.3	1810.4	633.0	23.6	14086	10052045231	4

2010 sodium intake (Powles et al.). 2010 Healthy life expectancy (<http://apps.who.int/gho/data/view.main.HALEXv>, last accessed October 2nd 2018), 2010 ASDR (http://www.who.int/healthinfo/global_burden_disease/estimates/en/, last accessed July 11th 2018), age standardized BMI (<http://apps.who.int/gho/data/node.main.A904?lang=en>, last accessed October 2nd 2018), GDP USD (<http://data.un.org>, last accessed July 8th 2018), 2010 World Bank Income Class (siteresources.worldbank.org/DATASTATISTICS/Resources/OGHIST.xls, last accessed February 24th 2019). 1 = high income, 2 = upper middle income, 3 = lower middle income, 4 = low income. ASDR were available for 182 of the 187 countries analyzed in Powles et al.. No ASDR was available for Andorra, Dominica, Marshall Islands, Taiwan, and Palestine. Data from Haiti were omitted because of the excessive death toll following the earthquake on January 12, 2010. Abbreviations: BMI, body mass index; GDP, gross domestic product; USD, US dollars; ASDR, age standardized death rate per 100 000 persons.

Table S2. Linear and quantile regression for sodium intake for the year of 2010 without considering the interaction of gross domestic product per capita or age standardized body-mass index for the 181 countries worldwide.

Sodium intake (grams/day)	Life expectancy at birth	Life expectancy at 60 years	Death due to non- communicable diseases	All-cause mortality
Linear regression				
β -coefficient (95%CI)	4.14 (3.08 to 5.20)	0.87 (0.48 to 1.25)	-14.43 (-39.8 to -10.9)	-211 (-270 to -153)
<i>p</i> -value	<0.001	<0.001	0.262	<0.001
R ²	0.250	0.101	0.010	0.221
Quantile regression				
25th percentile				
β -coefficient (95%CI)	4.37 (2.77 to 5.98)	0.56 (0.12 to 0.99)	-61.26 (-107 to -15.9)	-135 (-211 to -59.7)
<i>p</i> -value	<0.001	0.012	0.008	0.001
R ²	0.185	0.058	0.020	0.043
50th percentile				
β -coefficient (95%CI)	3.47 (1.87 to 5.08)	0.95 (0.50 to 1.39)	-16.95 (-49.8 to 15.8)	-188 (-274 to -103)
<i>p</i> -value	<0.001	<0.001	0.310	<0.001
R ²	0.099	0.071	0.003	0.098
75th percentile				
β -coefficient (95%CI)	3.69 (2.23 to 5.15)	1.40 (0.49 to 2.31)	3.05 (-32.7 to -38.8)	-218 (-319 to -117)
<i>p</i> -value	<0.001	0.003	0.870	<0.001
R ²	0.056	0.031	0.001	0.162

CI, confidence interval.

Table S3. Linear and quantile regression for sodium intake for the year of 2010 without considering the interaction of gross domestic product per capita or age standardized body-mass index for the 46 countries classified as high-income countries by the World Bank.

Sodium intake (grams/day)	Life expectancy at birth	Life expectancy at 60 years	Death due to non- communicable diseases	All-cause mortality
Linear regression				
β -coefficient (95% CI)	2.98 (1.06 to 4.91)	0.61 (-0.50 to 1.71)	-60.7 (-121 to 0.13)	-141 (-236 to -45.7)
<i>p</i> -value	0.003	0.274	0.050	0.005
R ²	0.181	0.027	0.084	0.168
Quantile regression				
25th percentile				
β -coefficient (95% CI)	3.25 (-0.31 to 6.80)	1.33 (-1.16 to 3.83)	-40.2 (-76 to -4.41)	-27.4 (-60.3 to 5.59)
<i>p</i> -value	0.073	0.287	0.029	0.101
R ²	0.039	0.035	0.050	0.009
50th percentile				
β -coefficient (95% CI)	1.45 (-1.34 to 4.24)	0.62 (-1.18 to 2.42)	-46.1 (-136 to 43.7)	-20.4 (-138 to 97.3)
<i>p</i> -value	0.302	0.493	0.310	0.729
R ²	0.013	0.011	0.038	0.010
75th percentile				
β -coefficient (95% CI)	1.53 (0.63 to 2.43)	0.81 (0.03 to 1.58)	-81.7 (-233 to 69.6)	-152.4 (-380 to 75.1)
<i>p</i> -value	0.001	0.043	0.282	0.184
R ²	0.055	0.039	0.034	0.041

CI, confidence interval.