

FINAL TECHNICAL REPORT / RAPPORT TECHNIQUE FINAL ANEXO III IDRC SODIUM LEVELS IN PACKAGED FOODS 2017-2018 AN ANALYSIS OF FOUR LATIN AMERICAN COUNTRIES

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Sodium levels in packaged foods 2017-2018: An analysis of four Latin American countries

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Objective and methods

Objective

To determine proportions of packaged food products meeting regional or lower PAHO targets in 18 commonly consumed food categories and to determine sodium levels in those food categories.

Methods

Data (n=5,663) were collected in supermarkets in Buenos Aires (Argentina), San Jose (Costa Rica), Asuncion (Paraguay) and Lima (Peru) during 2017-2019 by each country team. The Food Labeling Information Program for Latin America (FLIP-LAC) was used for data collection and registration. FLIP-LAC is a smartphone-based technology and methodology developed by The University of Toronto. Foods were classified into eighteen commonly consumed packaged food categories established by the Pan American Health Organization (PAHO) and endorsed by the multi-sectorial Salt Smart Consortium. The sodium content in foods was obtained from the nutrient declarations in mg/serving) and were standardized to mg/100 g. Median, mean and standard deviation were calculated, as well as the min, 25th, 50th, 75th and max percentiles. The proportion of products meeting regional and lower sodium targets (as per PAHO targets) were calculated.

Additional Data Configuration

Upon downloading the reports from the FLIP-LAC databases, additional data configurations were required in order to carry out the requested analyses. The following are the additional variables that were generated and used in the subsequent analysis.

COUNTRY
PAHO_CAT_FINAL
Collection
NA_missing
PAHO_NA_G_ML_AP
PAHO_Targets
RegTarget
LowerTarget
Exceeding_RT
Exceeding_LT

Overview of the results

- Sodium content (mg) per 100 g/ml, sugar content (g) per 100 g/ml in packaged foods by food category, overall and per country.
- Proportions of packaged foods meeting PAHO regional and lower targets, overall and per country.

Table 1. Sodium content per 100g/ml of packaged foods in Argentina, Costa Rica, Paraguay and Peru 2017-2019 (n=5,663)

PAHO categories	Collection	All	Products with sodium data		Sodium (mg per 100g/ml)				Percentiles (mg per 100g/ml)			
	year	n	n	%	Median	Mean	SD	Min	25th	50th	75th	Max
Bread products	2017-2018	350	311	88.9%	432	384	193	0	316	432	500	1030
Breakfast cereals	2017-2018	433	426	98.4%	290	317	267	0	134	290	433	2700
Butter and margarine	2017-2018	145	139	95.9%	571	494	347	0	140	571	714	1571
Cakes	2017-2018	315	230	73.0%	224	272	209	0	112	224	371	1108
Bouillon cubes and powders	2017-2018	51	45	88.2%	20303	19266	7128	1000	15640	20303	24000	33813
Meat and fish seasonings	2017-2018	149	143	96.0%	3213	6401	8058	0	826	3213	8153	36920
Seasonings for side and main dishes	2017-2018	216	210	97.2%	400	1203	3984	1	235	400	516	28000
Cookies and sweet cookies	2017-2018	1240	1178	95.0%	260	293	212	0	177	260	354	3419
Flavored cookies and crackers	2017-2018	135	135	100.0%	690	722	275	0	560	690	864	2000
Mayonnaise	2017-2018	139	135	97.1%	850	899	632	1	767	850	942	7698
Meats and sausages	2017-2018	478	357	74.7%	865	981	862	2	703	865	1120	15400
Cured and preserved meats	2017-2018	82	78	95.1%	1369	1360	706	115	842	1369	1647	3623
Breaded meat and poultry	2017-2018	102	77	75.5%	446	474	245	1	340	446	591	1139
Pasta and noodles, as consumed	2017-2018	487	478	98.2%	450	435	544	0	17	450	639	8000
Pasta and noodles, dry uncooked	2017-2018	643	609	94.7%	4	138	411	0	0	4	20	2666
Snacks	2017-2018	937	914	97.5%	589	662	781	0	317	589	800	16950
Noodles in broth	2017-2018	46	46	100.0%	341	380	135	173	302	341	446	900
Wet and dry soups	2017-2018	154	152	98.7%	300	453	1288	5	250	300	333	14000
TOTAL 2017-2019		6102	5663	92.8%								

Table 2. Proportion of packaged foods meeting PAHO regional and lower targets in Argentina, Costa Rica, Paraguay and Peru 2017-2018 (n=5,663)

PAHO categories	Collection	Products with sodium data <i>n</i>	Meeting Regional Targets		Meeting Lower Targets	
	<i>year</i>		<i>n</i>	%	<i>n</i>	%
Bread products	2017-2018	311	287	92.3%	145	46.6%
Breakfast cereals	2017-2018	426	391	91.8%	355	83.3%
Butter and margarine	2017-2018	139	112	80.6%	61	43.9%
Cakes	2017-2018	230	181	78.7%	107	46.5%
Bouillon cubes and powders	2017-2018	45	24	53.3%	13	28.9%
Meat and fish seasonings	2017-2018	143	135	94.4%	135	94.4%
Seasonings for side and main dishes	2017-2018	210	210	100.0%	204	97.1%
Cookies and sweet cookies	2017-2018	1178	1029	87.4%	603	51.2%
Flavored cookies and crackers	2017-2018	135	133	98.5%	70	51.9%
Mayonnaise	2017-2018	135	127	94.1%	19	14.1%
Meats and sausages	2017-2018	357	285	79.8%	80	22.4%
Cured and preserved meats	2017-2018	78	62	79.5%	38	48.7%
Breaded meat and poultry	2017-2018	77	67	87.0%	43	55.8%
Pasta and noodles, as consumed	2017-2018	478	363	75.9%	234	49.0%
Pasta and noodles, dry uncooked	2017-2018	609	600	98.5%	591	97.0%
Snacks	2017-2018	914	735	80.4%	395	43.2%
Noodles in broth	2017-2018	46	33	71.7%	24	52.2%
Wet and dry soups	2017-2018	152	120	78.9%	89	58.6%
TOTAL 2017-2018		5663	4894	86%	3206	57%

Table 3. Sodium content per 100g/ml of packaged foods in Argentina 2017-2018 (n=1,404)

PAHO categories	Collection	All	Products with sodium data		Sodium (mg per 100g/ml)			Percentiles (mg per 100g/ml)			
	year	n	n	%	Mean	SD	Min	25th	50th	75th	Max
Bread products	2017-2018	111	110	99.1%	443	126	1	396	443	500	1030
Breakfast cereals	2017-2018	85	85	100.0%	283	196	0	130	250	417	810
Butter and margarine	2017-2018	38	38	100.0%	294	259	0	92	200	540	920
Cakes	2017-2018	15	15	100.0%	288	187	45	100	248	478	520
Bouillon cubes and powders	2017-2018	23	22	95.7%	20309	7964	2000	13968	20387	25140	33813
Meat and fish seasonings	2017-2018	19	19	100.0%	14095	4446	7829	10156	13250	17030	23493
Seasonings for side and main dishes	2017-2018	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Cookies and sweet cookies	2017-2018	364	362	99.5%	312	211	0	164	281	429	1120
Flavored cookies and crackers	2017-2018	25	25	100.0%	852	304	0	643	859	1124	1237
Mayonnaise	2017-2018	35	35	100.0%	862	91	550	842	850	925	1042
Meats and sausages	2017-2018	173	173	100.0%	881	281	150	746	844	1045	2142
Cured and preserved meats	2017-2018	40	40	100.0%	1634	655	115	1373	1504	1740	3623
Breaded meat and poultry	2017-2018	17	17	100.0%	469	164	46	408	517	590	618
Pasta and noodles, as consumed	2017-2018	263	259	98.5%	257	295	0	10	36	536	1075
Pasta and noodles, dry uncooked	2017-2018	9	7	77.8%	1453	777	841	899	969	1981	2599
Snacks	2017-2018	139	139	100.0%	595	193	10	494	600	708	1216
Noodles in broth	2017-2018	9	9	100.0%	488	113	330	385	550	570	625
Wet and dry soups	2017-2018	49	49	100.0%	230	101	5	224	256	302	403
TOTAL 2017-2019		1414	1404	99%							

Table 4. Proportion of packaged foods meeting PAHO regional and lower targets in Argentina 2017-2018 (n=1,404)

PAHO categories	Collection	Products with sodium data	Meeting Regional Targets		Meeting Lower Targets	
	<i>year</i>	<i>n</i>	<i>n</i>	%	<i>n</i>	%
Bread products	2017-2018	110	103	93.6%	40	36.4%
Breakfast cereals	2017-2018	85	79	92.9%	71	83.5%
Butter and margarine	2017-2018	38	36	94.7%	27	71.1%
Cakes	2017-2018	15	10	66.7%	6	40.0%
Bouillon cubes and powders	2017-2018	22	11	50.0%	7	31.8%
Meat and fish seasonings	2017-2018	19	18	94.7%	18	94.7%
Seasonings for side and main dishes	2017-2018	n/a	n/a	n/a	n/a	n/a
Cookies and sweet cookies	2017-2018	362	285	78.7%	168	46.4%
Flavored cookies and crackers	2017-2018	25	25	100.0%	10	40.0%
Mayonnaise	2017-2018	35	35	100.0%	1	2.9%
Meats and sausages	2017-2018	173	161	93.1%	33	19.1%
Cured and preserved meats	2017-2018	40	30	75.0%	10	25.0%
Breaded meat and poultry	2017-2018	17	17	100.0%	8	47.1%
Pasta and noodles, as consumed	2017-2018	259	225	86.9%	165	63.7%
Pasta and noodles, dry uncooked	2017-2018	7	5	71.4%	4	57.1%
Snacks	2017-2018	139	135	97.1%	43	30.9%
Noodles in broth	2017-2018	9	4	44.4%	1	11.1%
Wet and dry soups	2017-2018	49	48	98.0%	45	91.8%
Total 2017-2019		1404	1227	87%	657	47%

Table 5. Sodium content per 100g/ml of packaged foods in Costa Rica 2017-2018 (n=1,636)

PAHO categories	Collection	All	Products with sodium data		Sodium (mg per 100g/ml)			Percentiles (mg per 100g/ml)			
	year	n	n	%	Mean	SD	Min	25th	50th	75th	Max
Bread products	2017-2018	136	100	73.5%	366	220	0	194	432	512	869
Breakfast cereals	2017-2018	136	136	100.0%	407	279	0	244	370	510	2500
Butter and margarine	2017-2018	49	44	89.8%	594	265	0	524	643	723	1067
Cakes	2017-2018	156	72	46.2%	594	247	4	176	344	474	1108
Bouillon cubes and powders	2017-2018	22	17	77.3%	18646	7013	1000	19200	20303	21200	25400
Meat and fish seasonings	2017-2018	51	45	88.2%	8577	9320	4	1333	5517	14286	33636
Seasonings for side and main dishes	2017-2018	9	8	88.9%	16269	9755	6000	8000	14622	25350	28000
Cookies and sweet cookies	2017-2018	324	284	87.7%	274	242	0	179	254	320	3419
Flavored cookies and crackers	2017-2018	84	84	100.0%	710	227	5	563	719	864	1433
Mayonnaise	2017-2018	32	32	100.0%	1064	1262	487	680	767	895	7698
Meats and sausages	2017-2018	266	147	55.3%	1135	1275	2	754	1000	1349	15400
Cured and preserved meats	2017-2018	10	8	80.0%	1173	961	273	536	573	2093	2714
Breaded meat and poultry	2017-2018	26	20	76.9%	732	240	375	543	740	904	1139
Pasta and noodles, as consumed	2017-2018	21	19	90.5%	360	82	233	286	359	440	464
Pasta and noodles, dry uncooked	2017-2018	193	168	87.0%	78	266	0	0	0	3	2040
Snacks	2017-2018	371	357	96.2%	567	414	0	260	536	767	2667
Noodles in broth	2017-2018	13	13	100.0%	408	67	308	351	406	448	528
Wet and dry soups	2017-2018	84	82	97.6%	625	1737	47	289	329	369	14000
TOTAL 2017-2019		1983	1636	82.5%							

Table 6. Proportion of packaged foods meeting PAHO regional and lower targets in Costa Rica 2017-2018 (n=1,636)

PAHO categories	Collection	Products with sodium data <i>n</i>	Meeting Regional Targets		Meeting Lower Targets	
	<i>year</i>		<i>n</i>	%	<i>n</i>	%
Bread products	2017-2018	100	88	88.0%	46	46.0%
Breakfast cereals	2017-2018	136	118	86.8%	101	74.3%
Butter and margarine	2017-2018	44	34	77.3%	11	25.0%
Cakes	2017-2018	72	47	65.3%	24	33.3%
Bouillon cubes and powders	2017-2018	17	9	52.9%	3	17.6%
Meat and fish seasonings	2017-2018	45	40	88.9%	40	88.9%
Seasonings for side and main dishes	2017-2018	8	8	100.0%	4	50.0%
Cookies and sweet cookies	2017-2018	284	270	95.1%	148	52.1%
Flavored cookies and crackers	2017-2018	84	83	98.8%	40	47.6%
Mayonnaise	2017-2018	32	26	81.3%	8	25.0%
Meats and sausages	2017-2018	147	95	64.6%	27	18.4%
Cured and preserved meats	2017-2018	8	5	62.5%	5	62.5%
Breaded meat and poultry	2017-2018	20	10	50.0%	3	15.0%
Pasta and noodles, as consumed	2017-2018	19	19	100.0%	14	73.7%
Pasta and noodles, dry uncooked	2017-2018	168	167	99.4%	167	99.4%
Snacks	2017-2018	357	293	82.1%	177	49.6%
Noodles in broth	2017-2018	13	7	53.8%	4	30.8%
Wet and dry soups	2017-2018	82	52	63.4%	28	34.1%
TOTAL 2017-2019		1636	1371	83.8%	850	52.0%

Table 7. Sodium content per 100g/ml of packaged foods in Paraguay 2017-2018 (n=2,264)

PAHO categories	Collection <i>year</i>	<u>All</u> <i>n</i>	<u>Products with sodium data</u>		<u>Sodium (mg per 100g/ml)</u>			<u>Percentiles (mg per 100g/ml)</u>			
			<i>n</i>	<i>%</i>	Mean	SD	Min	25th	50th	75th	Max
Bread products	2017-2018	75	73	97.3%	347	207	0	224	381	480	956
Breakfast cereals	2017-2018	130	128	98.5%	233	277	0	78	200	313	2700
Butter and margarine	2017-2018	40	39	97.5%	494	373	0	140	570	670	1110
Cakes	2017-2018	140	140	100.0%	228	177	0	110	169	278	907
Bouillon cubes and powders	2017-2018	6	6	100.0%	17201	3491	13284	14440	17060	20370	20760
Meat and fish seasonings	2017-2018	79	79	100.0%	3310	6151	0	392	2491	4007	36920
Seasonings for side and main dishes	2017-2018	207	202	97.6%	606	1949	1	235	400	476	20340
Cookies and sweet cookies	2017-2018	429	419	97.7%	276	189	0	177	243	320	1240
Flavored cookies and crackers	2017-2018	24	24	100.0%	627	361	0	520	600	664	2000
Mayonnaise	2017-2018	56	56	100.0%	877	126	333	850	925	942	1025
Meats and sausages	2017-2018	32	30	93.8%	791	403	235	600	680	840	2098
Cured and preserved meats	2017-2018	32	30	93.8%	1045	555	295	658	904	1256	2423
Breaded meat and poultry	2017-2018	1	1	100.0%	668	n/a	668	668	668	668	668
Pasta and noodles, as consumed	2017-2018	203	200	98.5%	674	705	0	412	593	712	8000
Pasta and noodles, dry uncooked	2017-2018	438	432	98.6%	140	416	0	0	10	35	2666
Snacks	2017-2018	386	380	98.4%	788	1117	0	280	608	987	16950
Noodles in broth	2017-2018	4	4	100.0%	299	8	288	298	302	304	306
Wet and dry soups	2017-2018	21	21	100.0%	303	70	223	282	288	306	580
TOTAL 2017-2019		2303	2264	98.3%							

Table 8. Proportion of packaged foods meeting PAHO regional and lower targets in Paraguay 2017-2018 (n=2,264)

PAHO categories	Collection	Products with sodium data <i>n</i>	Meeting Regional Targets		Meeting Lower Targets	
	<i>year</i>		<i>n</i>	%	<i>n</i>	%
Bread products	2017-2018	73	70	95.9%	39	53.4%
Breakfast cereals	2017-2018	128	125	97.7%	117	91.4%
Butter and margarine	2017-2018	39	31	79.5%	17	43.6%
Cakes	2017-2018	140	121	86.4%	75	53.6%
Bouillon cubes and powders	2017-2018	6	4	66.7%	3	50.0%
Meat and fish seasonings	2017-2018	79	77	97.5%	77	97.5%
Seasonings for side and main dishes	2017-2018	202	202	100.0%	200	99.0%
Cookies and sweet cookies	2017-2018	419	381	90.9%	234	55.8%
Flavored cookies and crackers	2017-2018	24	23	95.8%	19	79.2%
Mayonnaise	2017-2018	56	56	100.0%	3	5.4%
Meats and sausages	2017-2018	30	26	86.7%	17	56.7%
Cured and preserved meats	2017-2018	30	27	90.0%	23	76.7%
Breaded meat and poultry	2017-2018	1	1	100.0%	0	0.0%
Pasta and noodles, as consumed	2017-2018	200	119	59.5%	55	27.5%
Pasta and noodles, dry uncooked	2017-2018	432	426	98.6%	418	96.8%
Snacks	2017-2018	380	276	72.6%	151	39.7%
Noodles in broth	2017-2018	4	4	100.0%	4	100.0%
Wet and dry soups	2017-2018	21	20	95.2%	16	76.2%
Total 2017-2019		2264	1989	87.9%	1468	64.8%

Table 9. Sodium content per 100g/ml of packaged foods in Peru 2017-2018 (n=359)

PAHO categories	Collection <i>year</i>	All <i>n</i>	Products with sodium data		Sodium (mg per 100g/ml)				Percentiles (mg per 100g/ml)			
			<i>n</i>	%	Mean	SD	Min	25th	50th	75th	Max	
Bread products	2017-2018	28	28	100%	311	222	0	114	361	422	815	
Breakfast cereals	2017-2018	82	77	94%	337	251	0	150	333	422	1273	
Butter and margarine	2017-2018	18	18	100%	673	442	0	457	761	973	1571	
Cakes	2017-2018	4	3	75%	181	75	128	138	147	207	267	
Bouillon cubes and powders	2017-2018	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
Meat and fish seasonings	2017-2018	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
Seasonings for side and main dishes	2017-2018	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
Cookies and sweet cookies	2017-2018	123	113	92%	343	209	0	217	283	433	1111	
Flavored cookies and crackers	2017-2018	2	2	100%	700	141	600	650	700	750	800	
Mayonnaise	2017-2018	16	12	75%	665	350	1	472	617	1000	1133	
Meats and sausages	2017-2018	7	7	100%	1026	684	301	310	1320	1618	1708	
Cured and preserved meats	2017-2018	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
Breaded meat and poultry	2017-2018	58	39	67%	340	159	1	241	360	446	630	
Pasta and noodles, as consumed	2017-2018	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
Pasta and noodles, dry uncooked	2017-2018	3	2	67%	1	1	0	0	1	1	1	
Snacks	2017-2018	41	38	93%	544	433	0	233	467	788	1800	
Noodles in broth	2017-2018	20	20	100%	328	157	173	238	305	342	900	
Wet and dry soups	2017-2018	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
Total 2017-2019		402	359	89.3%								

Table 10. Proportion of packaged foods meeting PAHO regional and lower targets in Peru 2017-2018 (n=359)

PAHO categories	Collection	Products with sodium data	Meeting Regional Targets		Meeting Lower Targets	
	<i>year</i>	<i>n</i>	<i>n</i>	%	<i>n</i>	%
Bread products	2017-2018	28	26	92.9%	20	71.4%
Breakfast cereals	2017-2018	77	69	89.6%	66	85.7%
Butter and margarine	2017-2018	18	11	61.1%	6	33.3%
Cakes	2017-2018	3	3	100.0%	2	66.7%
Bouillon cubes and powders	2017-2018	n/a	n/a	n/a	n/a	n/a
Meat and fish seasonings	2017-2018	n/a	n/a	n/a	n/a	n/a
Seasonings for side and main dishes	2017-2018	n/a	n/a	n/a	n/a	n/a
Cookies and sweet cookies	2017-2018	113	93	82.3%	53	46.9%
Flavored cookies and crackers	2017-2018	2	2	100.0%	1	50.0%
Mayonnaise	2017-2018	12	10	83.3%	7	58.3%
Meats and sausages	2017-2018	7	3	42.9%	3	42.9%
Cured and preserved meats	2017-2018	n/a	n/a	n/a	n/a	n/a
Breaded meat and poultry	2017-2018	39	39	100.0%	32	82.1%
Pasta and noodles, as consumed	2017-2018	n/a	n/a	n/a	n/a	n/a
Pasta and noodles, dry uncooked	2017-2018	2	2	100.0%	2	100.0%
Snacks	2017-2018	38	31	81.6%	24	63.2%
Noodles in broth	2017-2018	20	18	90.0%	15	75.0%
Wet and dry soups	2017-2018	n/a	n/a	n/a	n/a	n/a
Total 2017-2019		359	307	85.5%	231	64.3%