

BMC Nutrition | 基于 24 小时膳食回顾法调查中国城市地区母婴护理中心的婴幼儿营养素摄入情况

本文关键字： 营养素摄入情况；中国婴儿；中国幼儿；中国城市

影响因子： 无

建议阅读时间： 2 分钟

背景

目前我们对中国婴幼儿饮食的了解是非常有限的，本研究旨在评估我国城市地区婴幼儿的营养素摄入情况。

方法

作为本研究的一部分，我们从母婴护理中心招募了部分母亲、婴儿和幼儿，通过与主要照料者进行面对面访谈，对年龄在 6-35 个月的 (n=1409) 婴幼儿进行了 24 小时膳食回顾。同时使用中国食品成分表的数据对营养素摄入情况进行了评估，并将其与我国制定的适宜摄入量 (AI) 和平均需要量 (EAR) 进行对比。

结果

大部分营养素的平均摄入量达到或高于 AI，在所有组中平均脂肪摄入量 (能量百分比) 均低于 AI (婴儿为 32% vs. 40%；幼儿及较大幼儿分别为 31 % vs. 35 % 和 32 % vs. 35%) ； 婴儿的维生素 B6、叶酸和硒的平均摄入量低于 AI (分别为 0.3 vs. 0.4mg/天； 93 vs. 100µg/天以及 15.2 vs. 20µg/天) ； 婴儿中我们还发现了铁摄入不足的风险。在所有组中，维生素 A 的平均摄入量超过推荐值，幼儿的平均钠摄入量严重超出了 AI。

结论

基于一天的饮食摄入情况，婴幼儿饮食中大部分营养素的平均摄入量似乎是适宜的，但也有部分例外的情况。包括婴儿脂肪、维生素 B6、叶酸、铁和硒的摄入存在不足的风险，以及在婴儿中出现的脂肪、维生素 B6、叶酸的摄入不足和在幼儿中出现的维生素 A 和钠摄入过量的风险。

参考文献：

Cheng Chen et al. BMC Nutrition (2015) 1:23.

文献链接：<https://bmcnutr.biomedcentral.com/articles/10.1186/s40795-015-0019-5>

Table 1 Characteristics of the infants and toddlers from the MING study

Characteristics	Percent	Standard error
Child's sex		
Male	54.6	1.4
Female	45.4	1.4
Child's Ethnicity		
Han	95.0	0.6
Non-Han	5.0	0.6
Age of mother at birth(y)		
< 19	0.8	0.2
20–24	22.9	1.1
25–29	44.7	1.4
30–34	22.5	1.1
35–39	7.4	0.7
≥ 40	1.7	0.4
Mother's education		
Did not attend school	0.6	0.2
Primary school	2.7	0.4
Middle school	17.9	1.0
High school/Secondary specialized school	22.1	1.1
Technical College	22.7	1.1
Bachelor's degree	25.0	1.2
Master's degree or above	9.0	0.8
Average monthly income (per family member)		
< RMB 500 (<USD 80)	1.1	0.2
RMB 501–1500 (USD 80–240)	10.4	0.6
RMB 1501–2000 (USD 240–320)	14.3	0.7
RMB 2001–3000 (USD 320–480)	20.8	0.8
RMB 3001–4000 (USD 480–640)	14.0	0.7
RMB 4001–6000 (USD 640–960)	13.8	0.7
RMB 6001–8000 (USD 960–1280)	7.6	0.5
> RMB 8000 (USD 1280)	11.3	0.7
Unspecified	4.4	0.4
The main caregiver		
Mother	60.4	1.3
Father	0.5	0.2
Grandparent(s)	36.7	1.3
Nanny	1.1	0.3
Others	1.3	0.3
Missing(not reported)	3.8	0.5

Table 2 One-day nutrient intakes from food, beverage and supplements of infants aged 6 to 11 months (*n* = 444)

Nutrient	RNI or AI	EAR	Median	Mean \pm SD
Macronutrients				
Energy (EER, Kcal/d)	80		73	79 \pm 46
Fat (g/d)			26	25 \pm 14
Carbohydrate (g/d)	80 (AI)		85	103 \pm 74
Protein (g/d)	20	15	20.8	23.8 \pm 15.6
Fibre (g/d)			1.2	20 \pm 2.8
As percentage of total energy				
Fat (%)	40 (AI)		34	32 \pm 12
Carbohydrate (%)			54	56 \pm 13
Protein (%)			12.4	13.1 \pm 3.9
Antioxidants				
Vitamin C (mg/d)	40 (AI)		53	55 \pm 45
Vitamin E (mg/d)	4 (AI)		6.0	7.3 \pm 8.6
B vitamins				
Thiamine (mg/d)	0.3 (AI)		0.4	0.5 \pm 0.4
Riboflavin (mg/d)	0.5 (AI)		0.7	0.8 \pm 0.6
Niacin (mg/d)	3 (AI)		3.3	4.2 \pm 3.5
Vitamin B6 (mg/d)	0.4 (AI)		0.3	0.3 \pm 0.4
Folate (μ g dietary folate equivalents/d)	100 (AI)		73	93 \pm 92
Bone-related nutrients				
Calcium (mg/d)	250 (AI)		470	524 \pm 424
Phosphorus (mg/d)	180 (AI)		366	431 \pm 293
Magnesium (mg/d)	65 (AI)		114	120 \pm 81
Other micronutrients				
Vitamin A (μ gRAE/d)	350 (AI)		622	697 \pm 514
Iron (mg/d)	10	7	7.3	8.5 \pm 6.0
Zinc (mg/d)	3.5	2.8	4.3	4.9 \pm 3.3
Sodium (mg/d)	350		307	564 \pm 1005
Potassium (mg/d)	550		515	636 \pm 479
Selenium (μ g/d)	20 (AI)		12.3	15.2 \pm 12.6

RNI Recommended Nutrient Intake, AI Adequate Intake, EAR Estimated Average Requirements, EER Estimated Energy Requirement, RAE retinol activity equivalent. A blank space in columns of RNI/AI and EAR indicates that no value has been defined by the Chinese Nutrition Society

Table 3 One-day nutrient intakes from food, beverage and supplements of toddlers aged 12 to 35 months (*n* = 965)

Nutrient	RNI or AI	EAR	12 to 23 months		24 to 35 months	
			Median	Mean \pm SD	Median	Mean (SD)
Macronutrients						
Energy (EER, Kcal/d)	12–23 months: M 900, F 800 24–35months: M 1100, F 1000		953	1138 \pm 647	1060	1189 \pm 586
Fat (g/d)			35	41 \pm 27	36	41 \pm 24
Carbohydrate (g/d)		120	124	154 \pm 93	144	163 \pm 91
Protein (g/d)	25	20	34	41 \pm 26	40	45 \pm 24
Fibre (g/d)			3.2	4.1 \pm 4.1	4.1	5.9 \pm 6.5
As percentage of total energy						
Fat (%)	35 (AI)		33	32 \pm 11	31	31 \pm 11
Carbohydrate (%)	50 ~ 60		53	54 \pm 12	54	54 \pm 12
Protein (%)			13.7	14.5 \pm 4.3	14.8	15.6 \pm 4.2
Antioxidants						
Vitamin C (mg/d)	40	35	59	87 \pm 91	50	76 \pm 182
Vitamin E (mg/d)	6 (AI)		10	12 \pm 8	10.3	12.4 \pm 8.9
B vitamins						
Thiamine (mg/d)	0.6	0.5	0.6	0.8 \pm .07	0.6	0.8 \pm 0.8
Riboflavin (mg/d)	0.6	0.5	0.8	1.2 \pm 1.2	0.8	1.1 \pm 1.0
Niacin (mg/d)	6	5	6.2	7.5 \pm 5.5	7.2	8.8 \pm 6.2
Vitamin B6 (mg/d)	0.6	0.5	0.4	0.5 \pm 0.6	0.4	0.6 \pm 0.7
Folate (μ g dietary folate equivalents/d)	160	130	112	138 \pm 108	124	174 \pm 180
Bone-related nutrients						
Calcium (mg/d)	600	500	559	804 \pm 829	510	646 \pm 528
Phosphorus (mg/d)	300	250	606	764 \pm 577	677	762 \pm 415
Magnesium (mg/d)	140	110	129	152 \pm 95	143	160 \pm 87
Other micronutrients						
Vitamin A (μ gRAE/d)	310	220	610	805 \pm 756	445	587 \pm 503
Iron (mg/d)	9	6	10.8	13.3 \pm 9.4	11.8	15.2 \pm 13.8
Zinc (mg/d)	4	3	6.1	7.7 \pm 5.5	6.7	7.6 \pm 4.4
Sodium (mg/d)	700 (AI)		1981	2399 \pm 1757	1941	2271 \pm 2351
Potassium (mg/d)	900 (AI)		1052	1328 \pm 1022	1158	1343 \pm 820
Selenium (μ g/d)	25	20	23	27 \pm 21	27	31 \pm 17

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