

A Survey of Infant and Young Child Feeding in Hong Kong

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**Family Health Service
The Department of Health
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Objective

- **Diet & Nutrition Survey**
 - Current status of diet and nutrient intake of young children
- **Survey of Parental Perceptions and Practices**
 - Feeding practices of parents with young children

METHODOLOGY

Sampling & Recruitment

MCHC Registry (covering 90% of newborn of local parents)
29 MCHCs (Mui Wo & Cheung Chau excluded)

Eligibility :

1. Children aged 6 m, 9 m, 12 m, 18 m, 24 m & 48 m
2. Children born full term
3. Both parents : (a) Chinese, (b) HK citizens & (c) Cantonese Speaking

Exclusion :

1. Congenital abnormalities,
2. Chronic illnesses, or
3. Developmental abnormalities

Random Sample (N=2849)

1893 could be contacted by phone

Survey of Parental
Perceptions and Practices
(n=1474)

Survey of Diet and
Nutrition
(n=1272)

Participants
(n= 1588)

Response rate

78%

67%

Data Collection

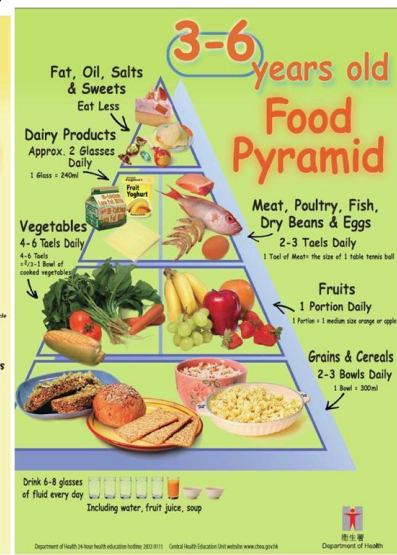
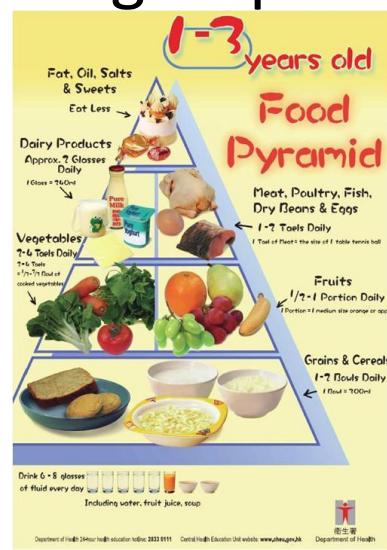
- **Anthropometric data**
 - Body weight, Body length / height, Body Mass Index (BMI)
 - Z scores according to the World Health Organization (WHO) Child Growth Standard (2006)
- **3-day dietary records**
 - Food & drink taken in 2 weekdays and 1 weekend day
 - Completed by parents
- **Questionnaires on Parental Perceptions and Practices of Child Feeding**
 - Administered to parents

Questionnaires on Parental Perceptions and Practices of Child Feeding

- Development
 - Literature review
 - Qualitative study – interview with parents
 - Validation and revision (24 and 48 months)
 - Two-stage pilot study

Diet & Nutrition Survey - Analysis

- Nutritional analysis software CompEat Pro
 - With addition of composition of local foods
- Energy and Nutrient intakes
 - Compared with WHO/FAO recommendations
- Daily consumption of different food groups of children 12 months & older
 - Compared with Local food intake recommendations



RESULTS

Demographics Characteristics

First born child	56%
Mother	
• Form 3 or lower	15%
• Full time employment	60%
• Married	97%
Family	
• Income below \$20,000	37%
• Grandparent(s)	30%
• Domestic helper	40%

Diet & Nutrition Survey

Age group (month)	No. of participants
6	177
9	164
12	171
18	233
24	314
48	213
Total	1272

Nutritional Status

	*Underweight Weight for age Z < -2	Stunting Height for age Z < -2	Wasting BMI for age Z < -2	Overweight/ Obese BMI for age Z > -2	Possible risk of obese BMI for age 1 < Z ≤ 2
ALL	1.30%	2.8%	2.00%	2.70%	12.70%
6-month	1.1%	1.1%	3.3%	2.30%	14.10%
9-month	0.6%	3.0%	1.1%	2.40%	12.20%
12-month	2.9%	3.5%	2.3%	1.20%	12.90%
18-month	1.7%	3.9%	2.2%	1.70%	15.90%
24-month	0.6%	1.9%	2.2%	3.80%	11.10%
48-month	1.4%	3.3%	0.9%	3.80%	10.8%

* WHO Child Growth Standard 2006

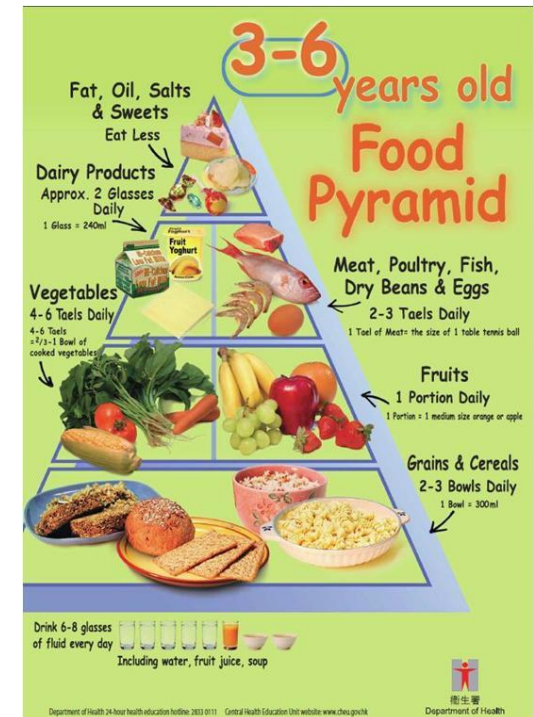
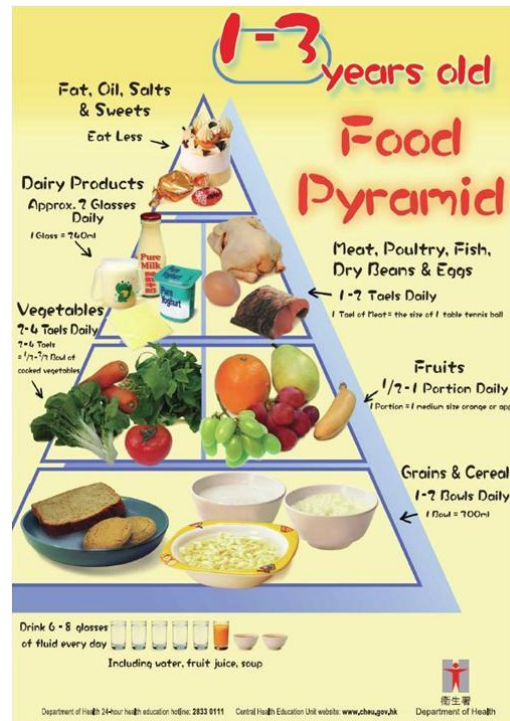
Energy Intake

- **57% with energy intake > Estimated Average Requirement**

	Boys		Girls	
	Median Intake kcal/kg/d	EAR kcal/kg/d	Median Intake kcal/kg/d	EAR kcal/kg/d
6-month	84.3	81	77.3	81
9-month	79.7	79	83.2	78
12-month	93.0	82.4	89.2	80.1
18-month	87.6	82.4	91.3	80.1
24-month	84.0	83.6	85.1	80.6
48-month	77.5	76.8	70.7	73.9

Protein intake

	Mean Intake g/kg/d	Safe Intake Level g/kg/d
6-month	2.0	1.3
9-month	2.7	1.3
12-month	3.4	1.1
18-month	3.5	1.0
24-month	3.3	1.0
48-month	3.0	0.9

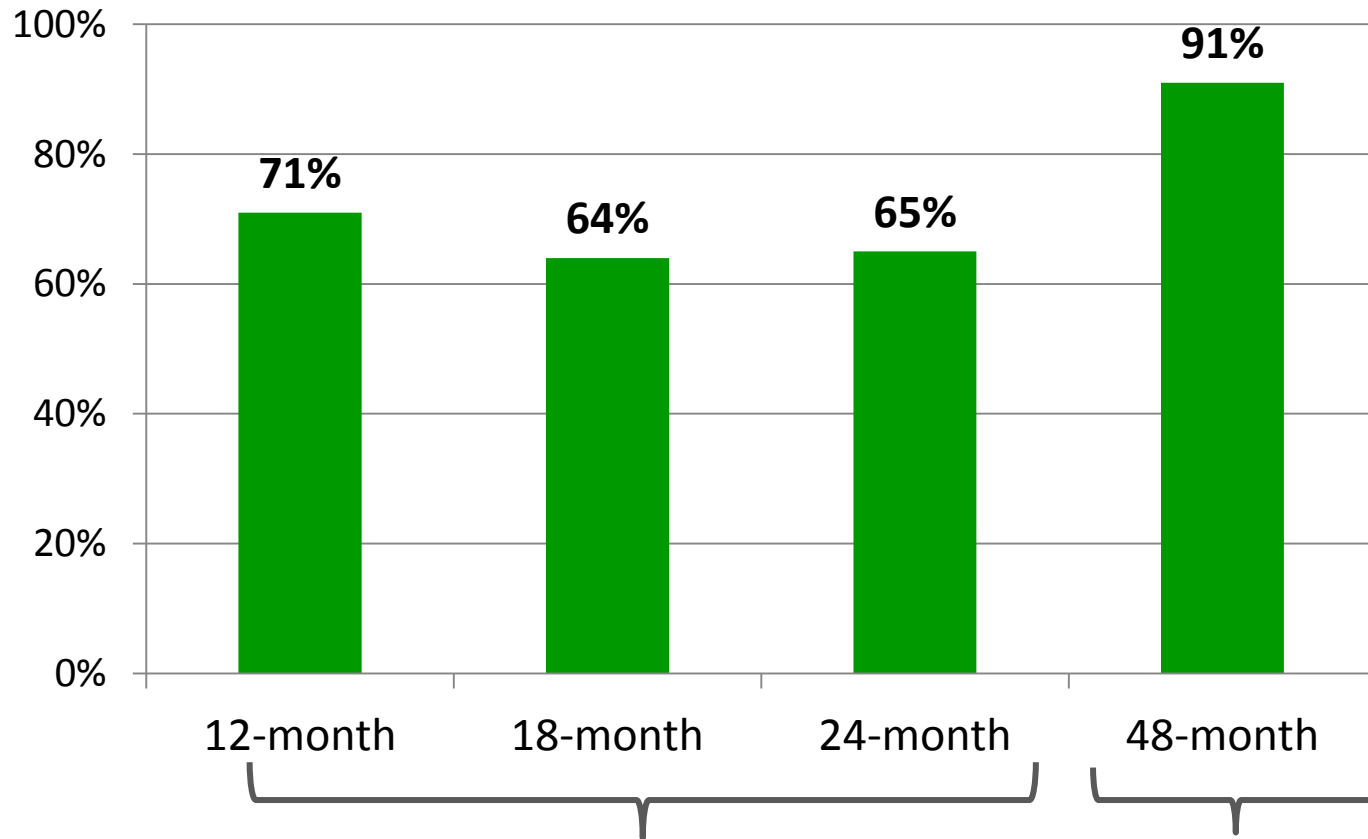


FOOD CONSUMPTION PATTERN

CHILDREN AGED > 12 MONTHS

Vegetables

% Intake Below Recommendation



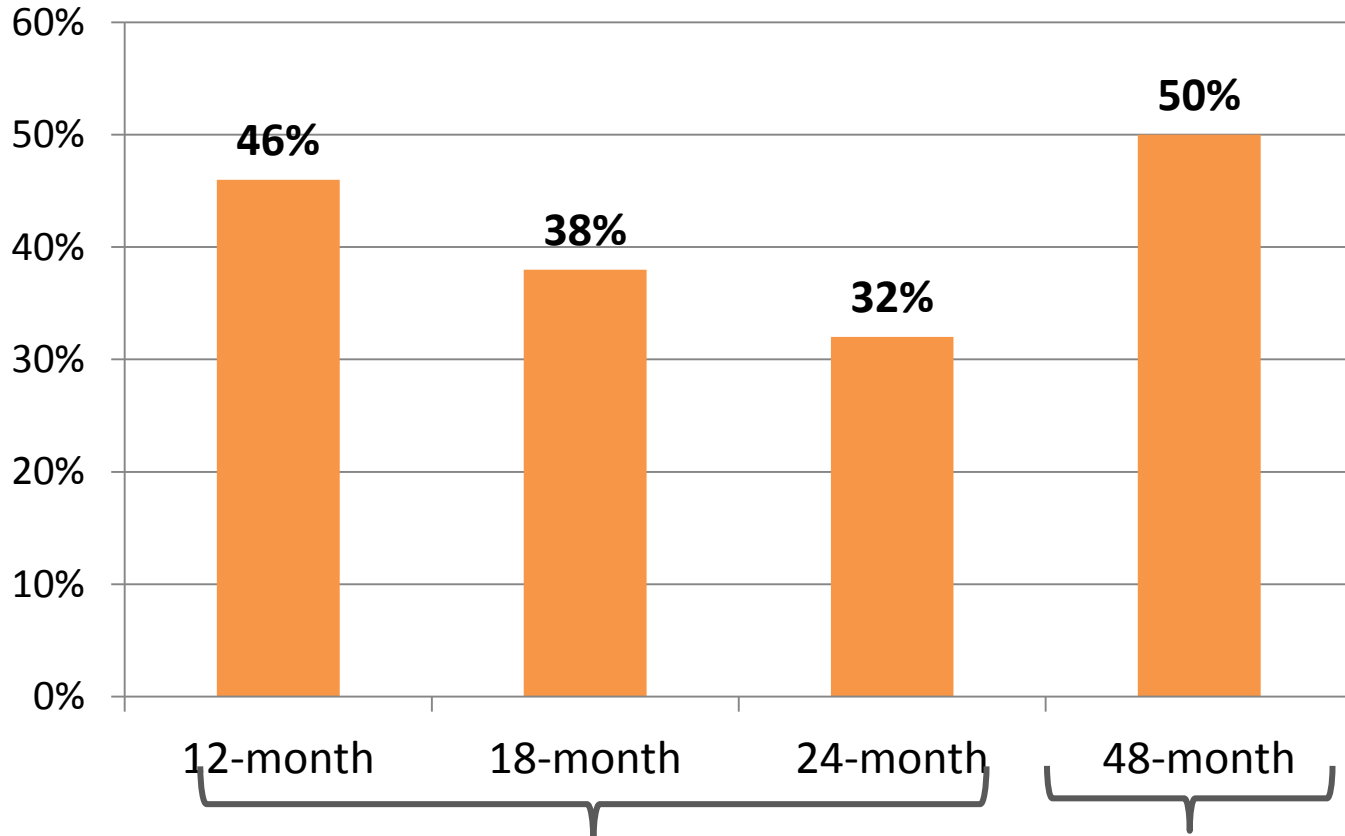
Local
recommendation

1-3 years old
half bowl / day (80g)

3-6 years old
1 bowl / day (160g)

Fruits

% Intake Below Recommendation

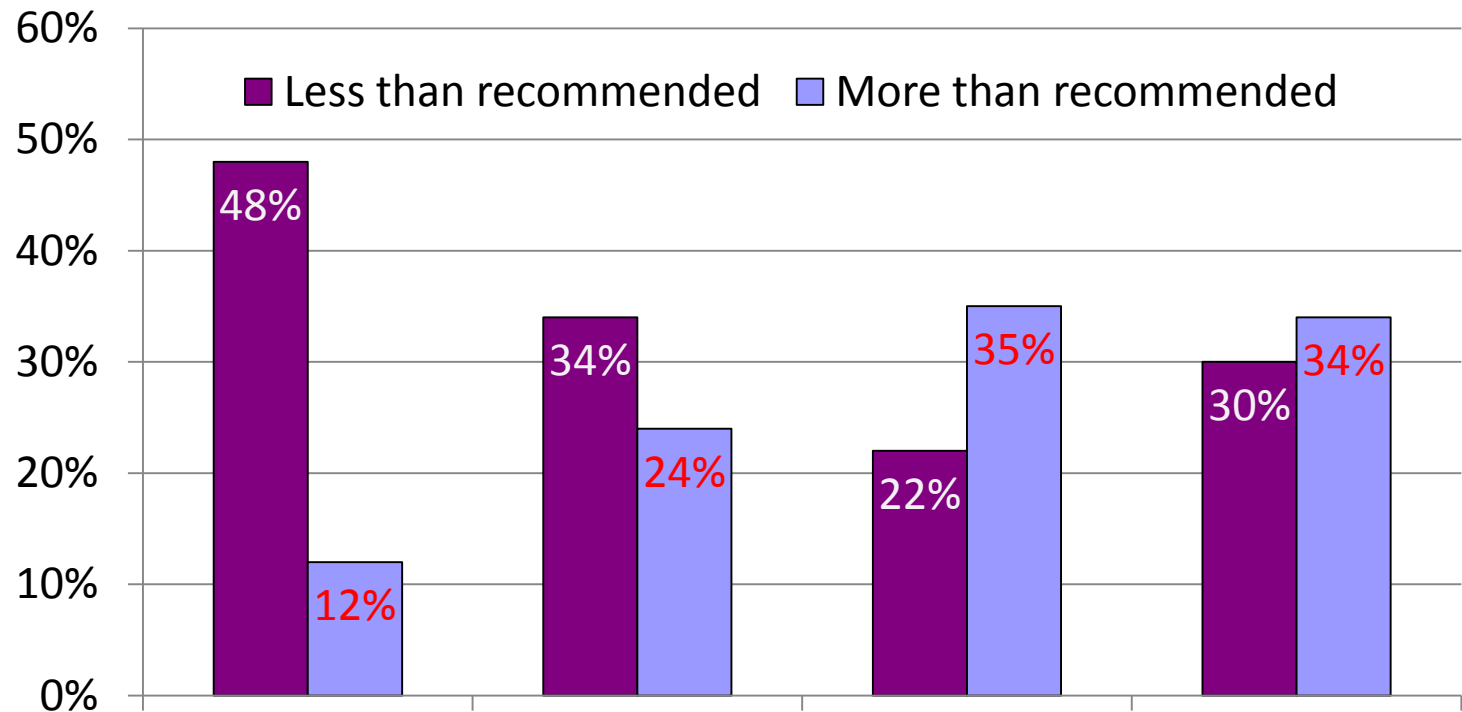


Local
recommendation

1-3 years old
half a fruit / day
(40g)

3-6 years old
1 medium sized fruit/day
(80g)

Meat, fish, eggs and legumes



12

18

24

48

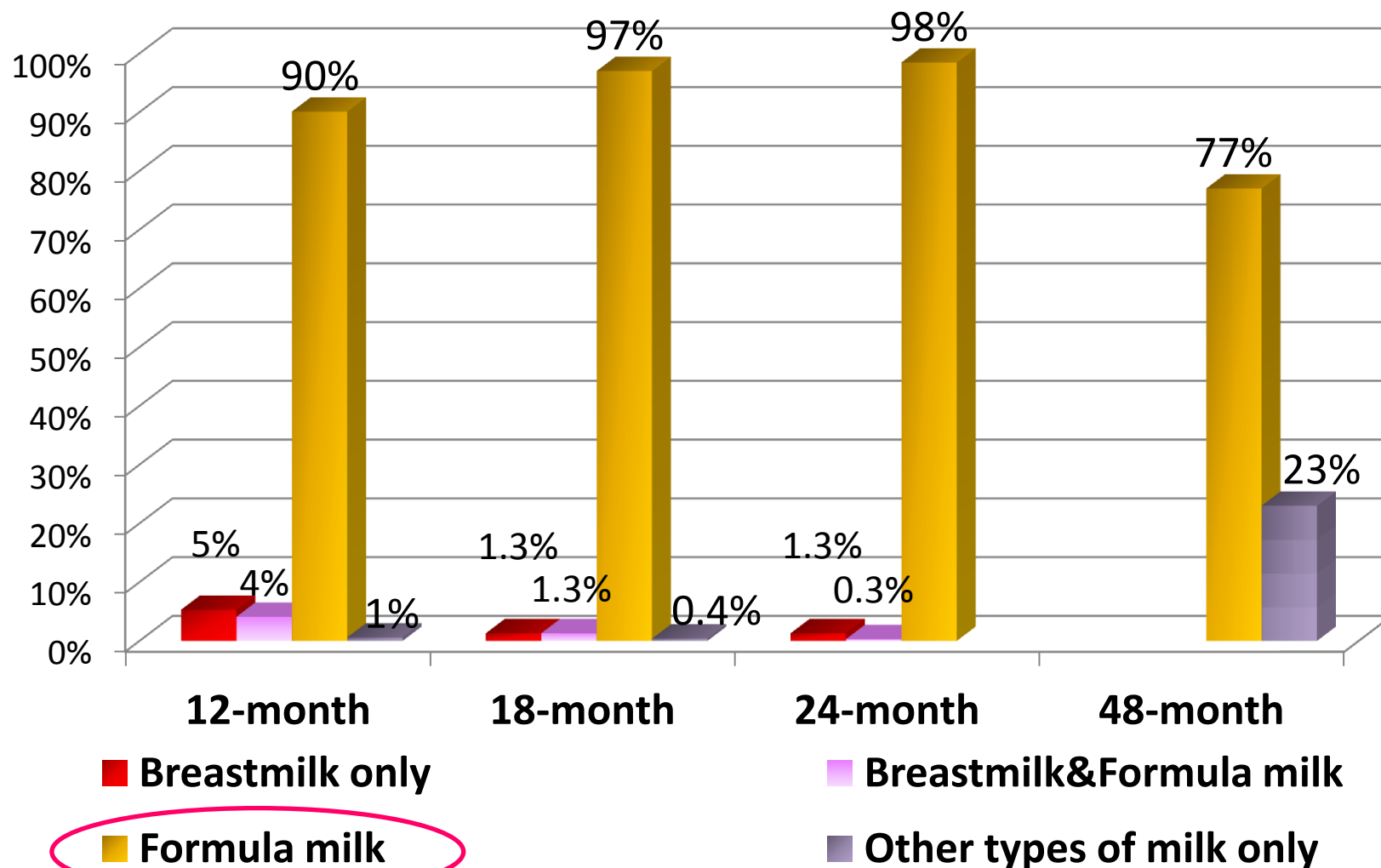
Age (month)

Local
recommendation

1-3 years old
40-80g / day

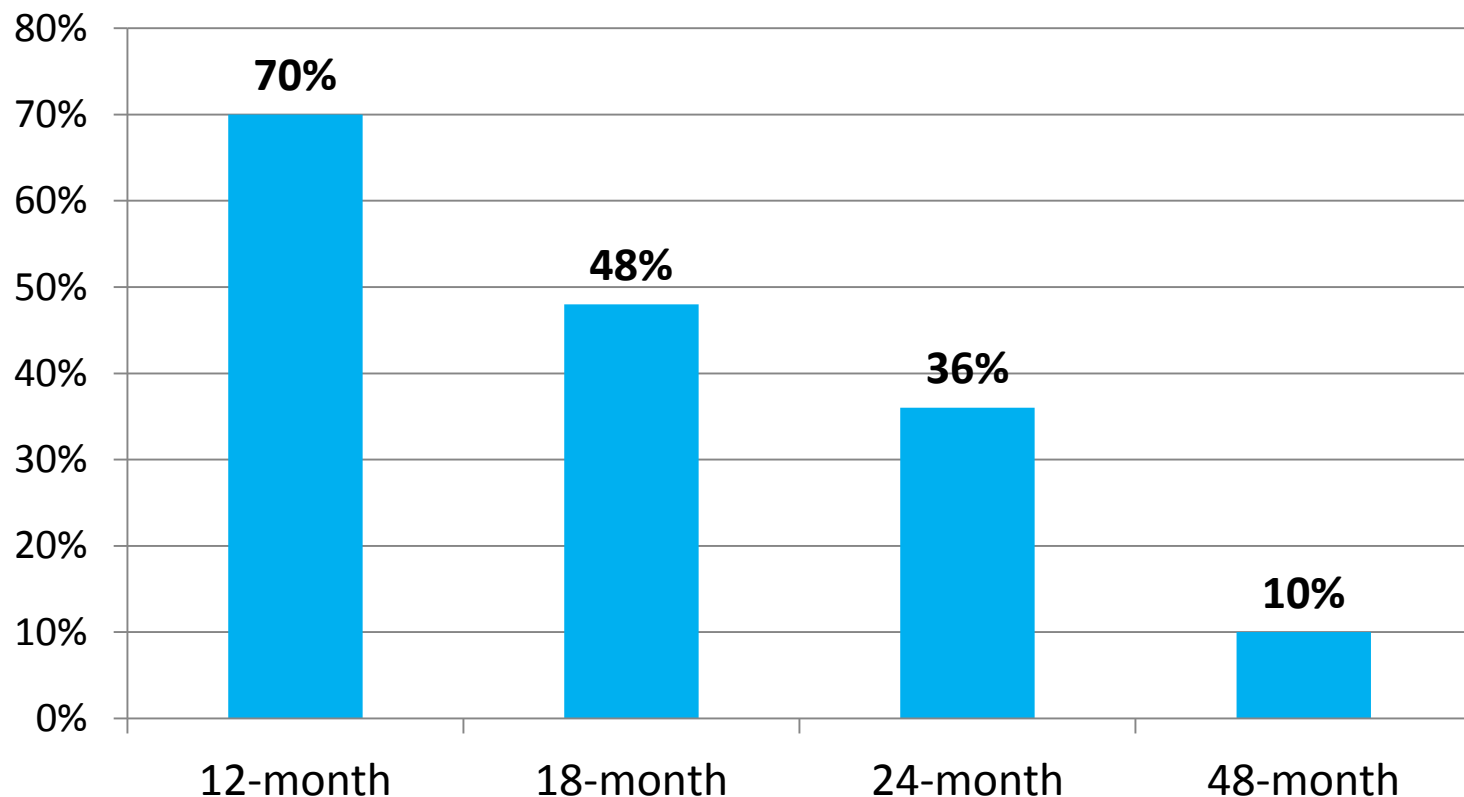
3-6 years old
80-120g/day

Milk Feeding



Milk* (Excluding other dairy products)

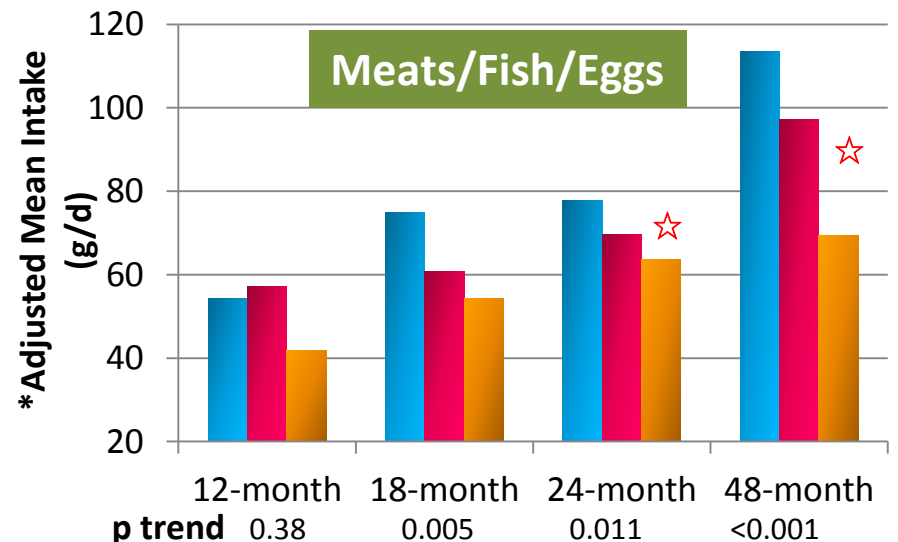
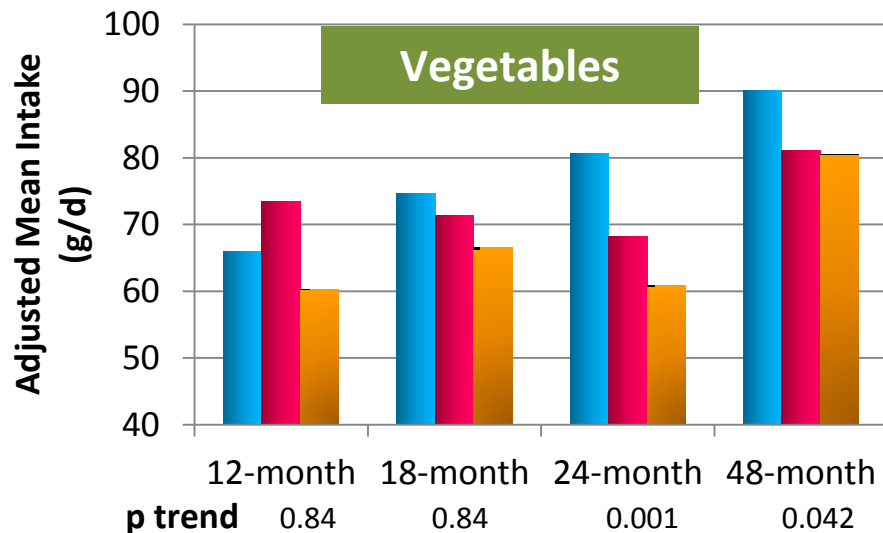
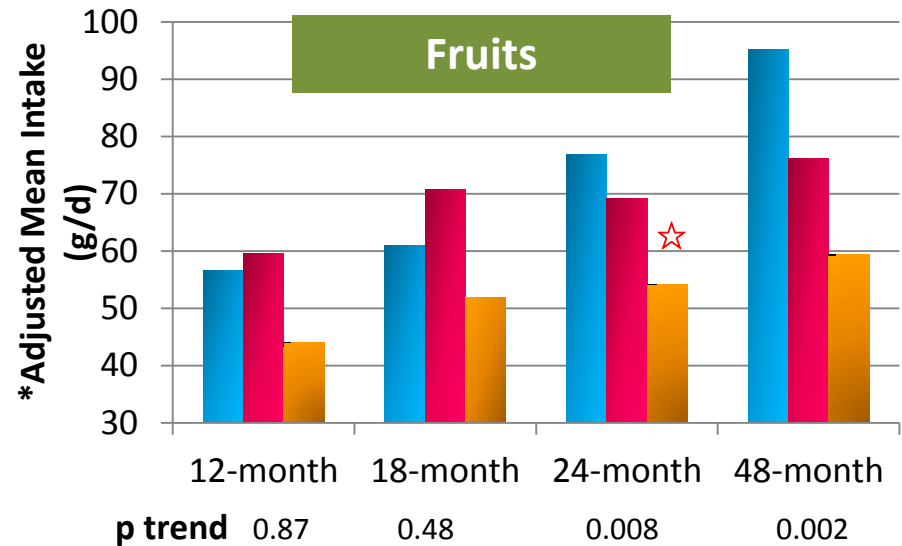
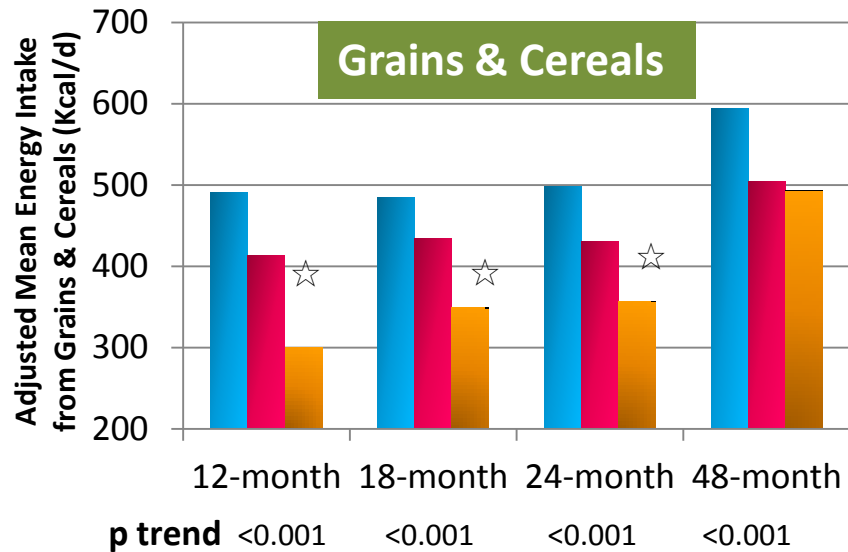
% consumed >2cups (480ml) of milk/d



*Includes cow's milk, goat's milk, soy formula / milk powder, and special formula / milk powder

Effect of Milk Consumption on Other Food Groups

Milk intake/d ■ <360ml ■ 360-480ml ■ >480ml

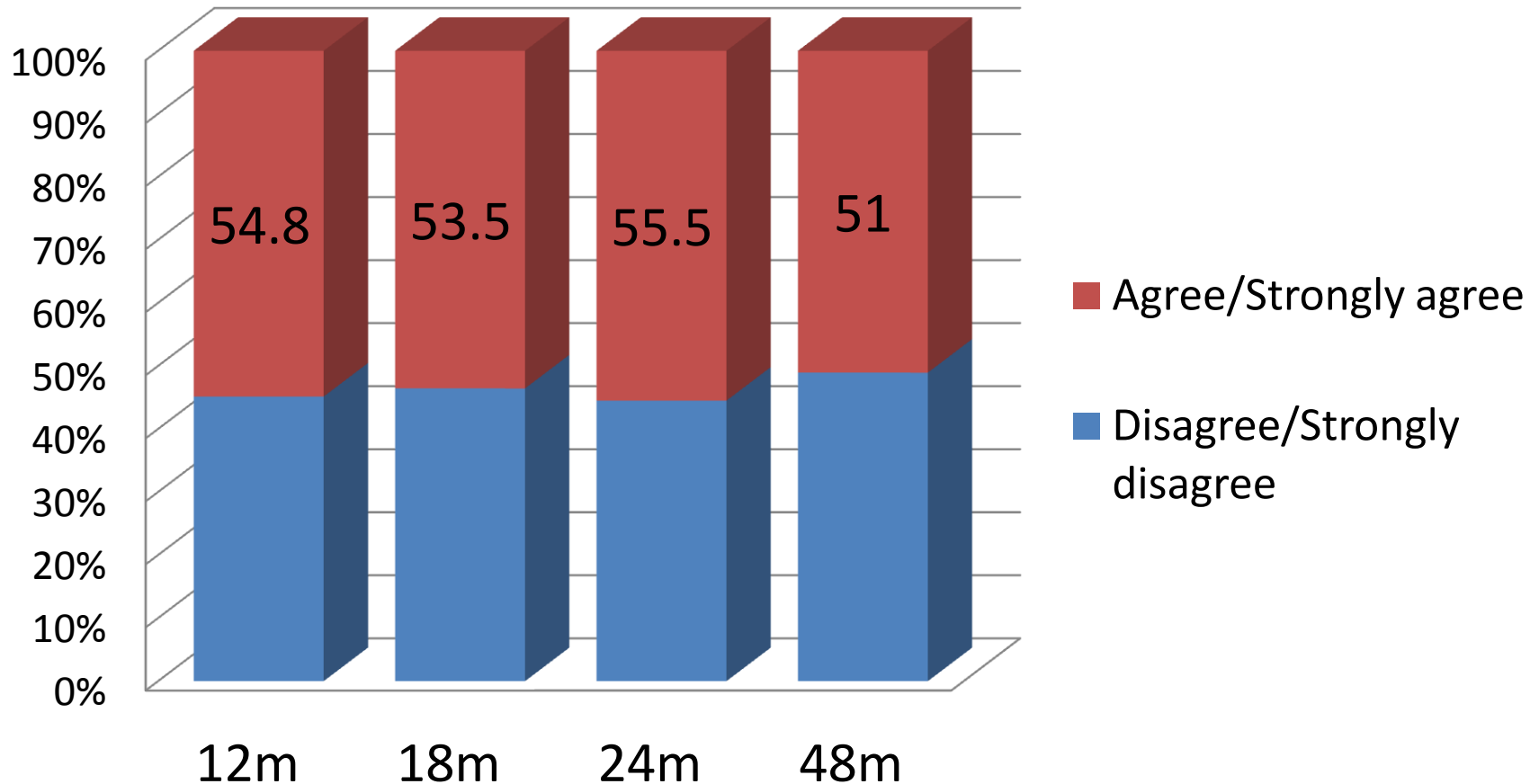


Summary of Finding

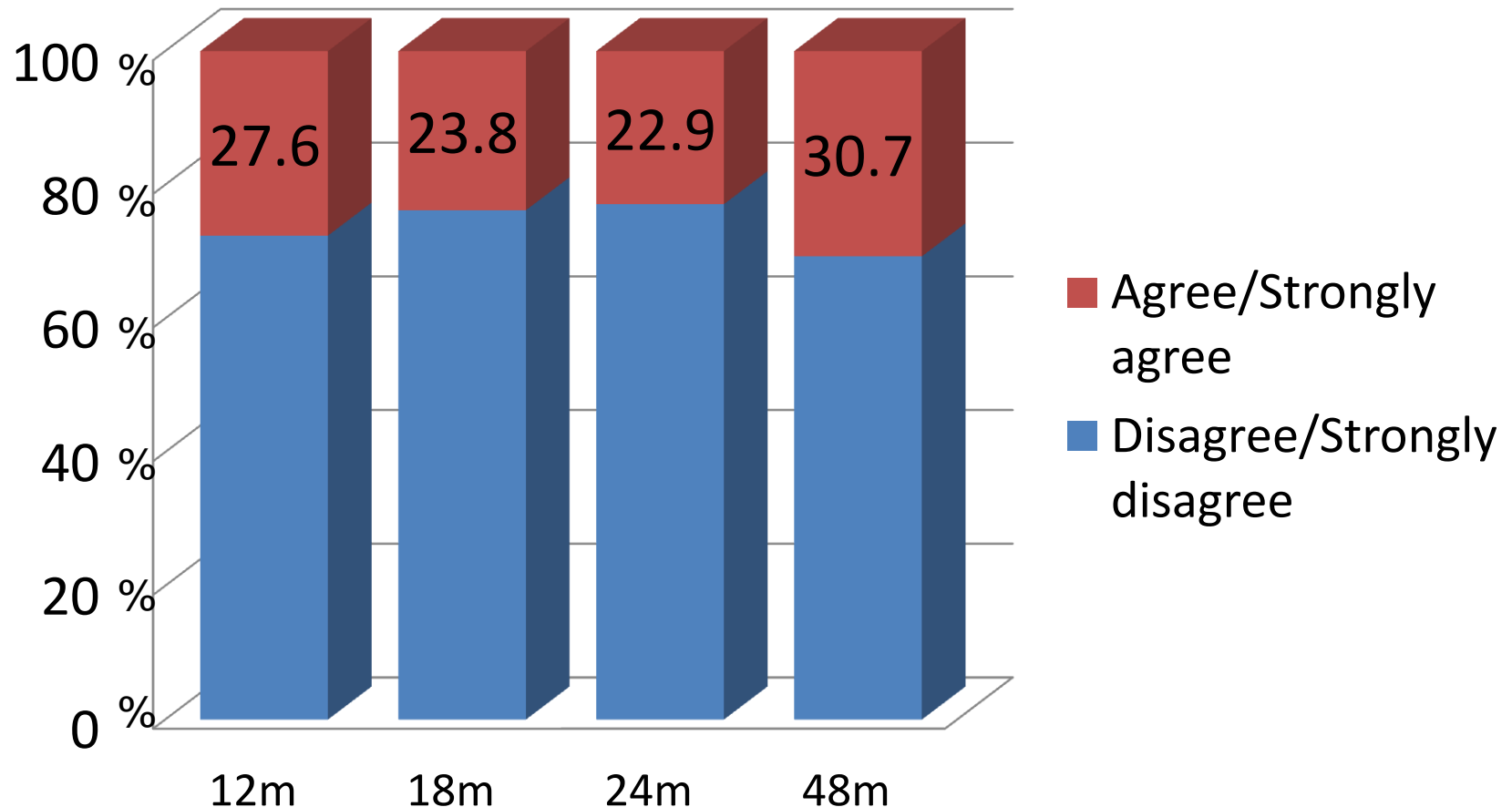
- Energy & macronutrient intake – comparable to WHO/FAO recommendations
- 12 months & older
 - Low vegetable and fruit intakes
 - High meat consumption in older children
 - High milk consumption in the 1-2 years group
- High consumption of milk is associated with low intake of other foods

PARENTAL PERCEPTIONS & PRACTICES OF MILK FEEDING

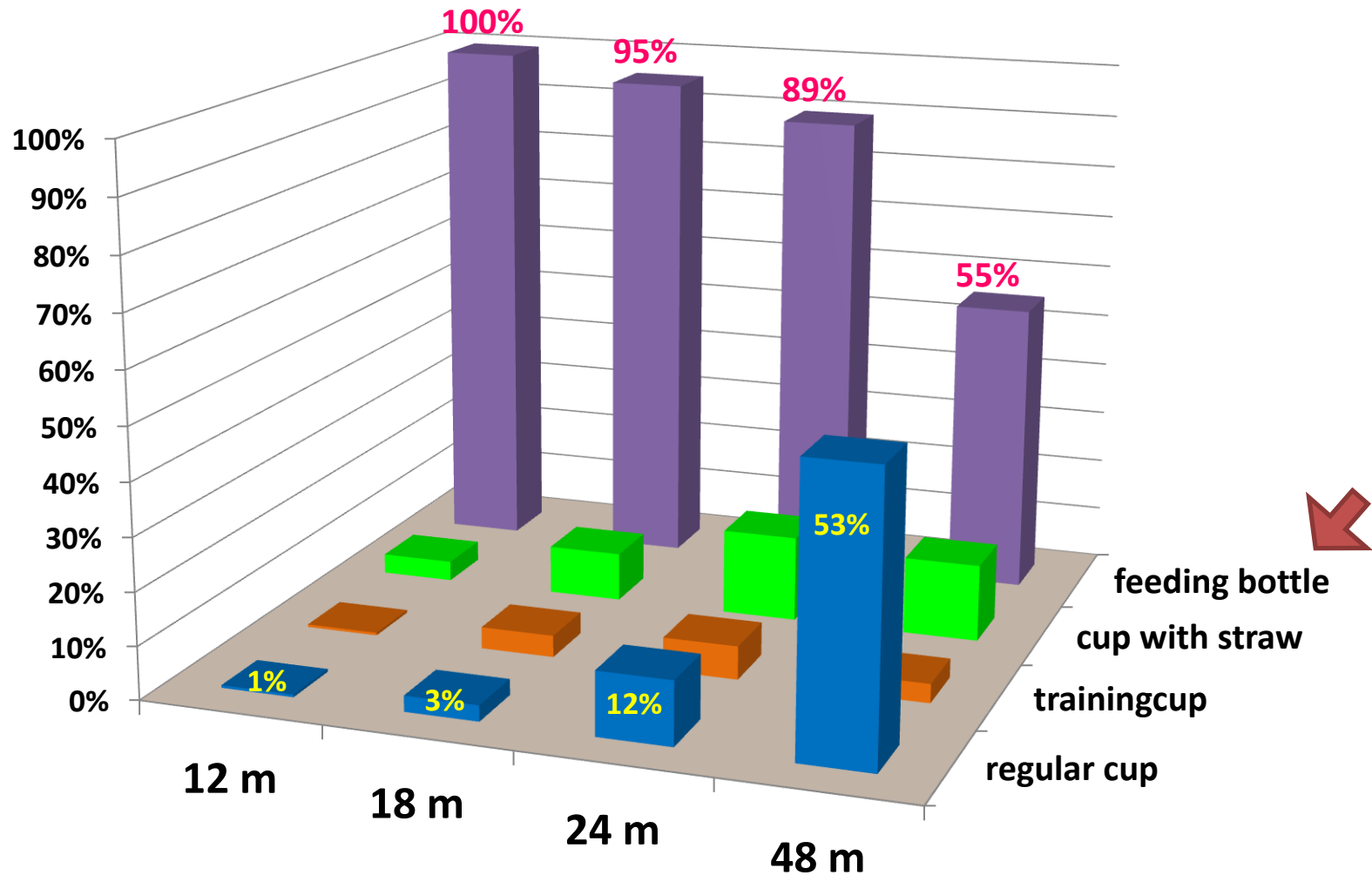
“Follow up formula is added with nutrients that promote the child’s brain development, which cannot be found in the other foods.”



“For children aged 1 year or above, follow up formula can **replace other food** to provide nutrients.”



Utensils for Milk Drinking



Persistent Bottle Users

	Bottle users (24 & 48m) (n= 435)	Cup users (24 & 48m) (n=117)	
Milk Consumed (median)	24-month : 480 ml /d 48-month : 360 ml /d	24-month : 360 ml /d 48-month : 240 ml/d	p=<0.001
BMI z-score Mean (95% C.I.)	0.24 (0.14; 0.33)	-0.01 (-0.17; 0.15)	p=0.02
BMI z >2	5.6%	1.7%	P=0.08

- **Parents' belief about formula milk**
 - Influences their choice of food for children
- **Persistent Bottle User consumed more milk**
 - Displace appetite for other food



Parental Perceptions and Practices of Child Feeding

Results:

Some Parents did not Trust Their Children's Self Regulation

Parent's Belief about Child's Self-Regulation

I am worried my child may not have enough, if I let him decide how much to eat

38%

Parents should decide how much the children should eat

55%

Parent's Actual Practices

At meal time, I let my child decide how much he eats

27%

Almost Never

I demand my child to finish up his meal

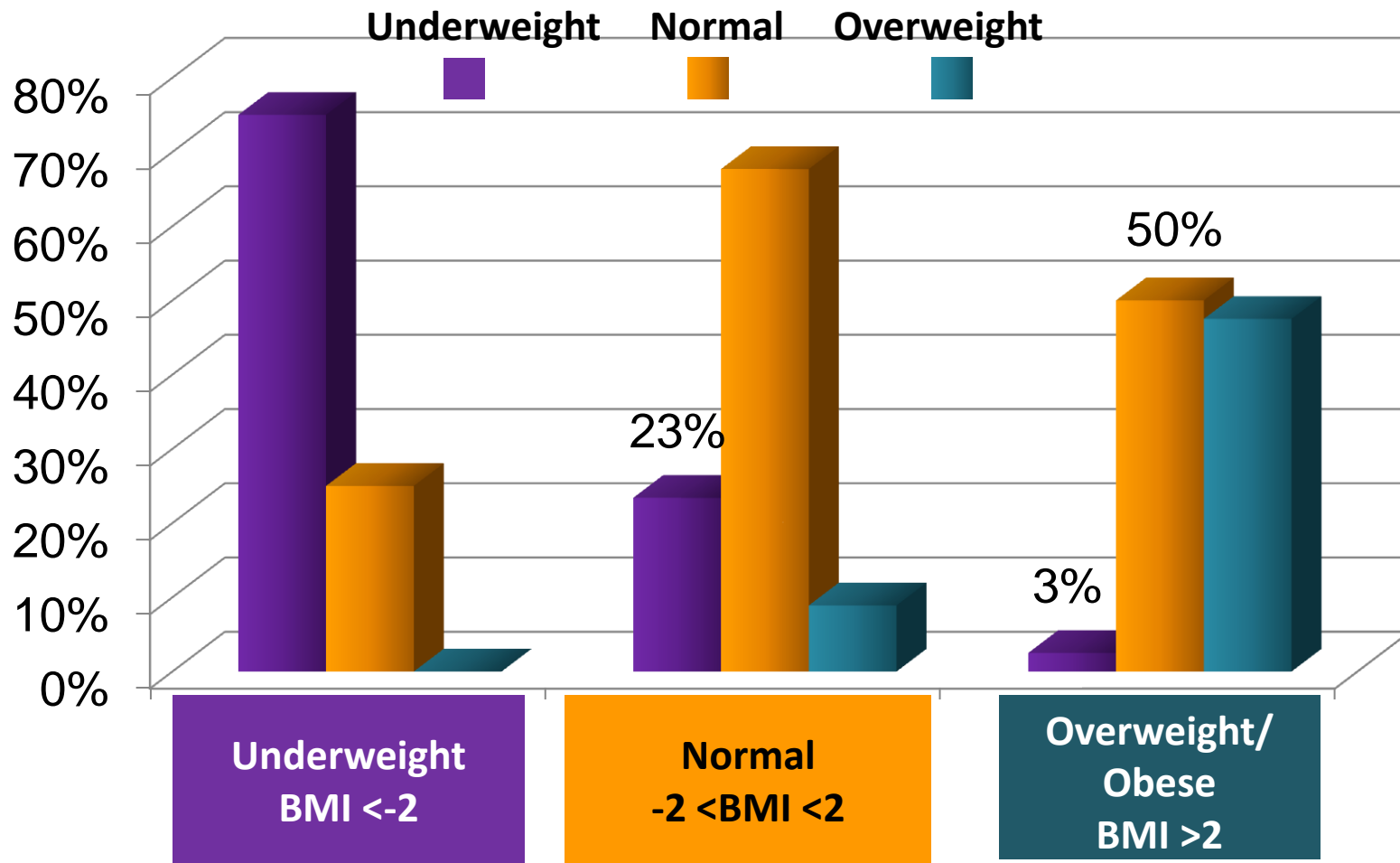
40%

Always

Results:

More Parents were Concerned About Their Children Being Underweight and not Eating Enough

Parental Perception of Children's Weight



Actual Weight Status

Parental Concern About Children Becoming Underweight / Overweight

Parents worried about their children **Becoming**

Underweight	Overweight
34.6%	18.5%

- **Normal** and **Overweight** children : 33.6% of parents were concerned becoming underweight.
- Parental concern about children's weight
 - Unrelated to the child's actual weight
 - Associated with how **they perceived their child's weight**

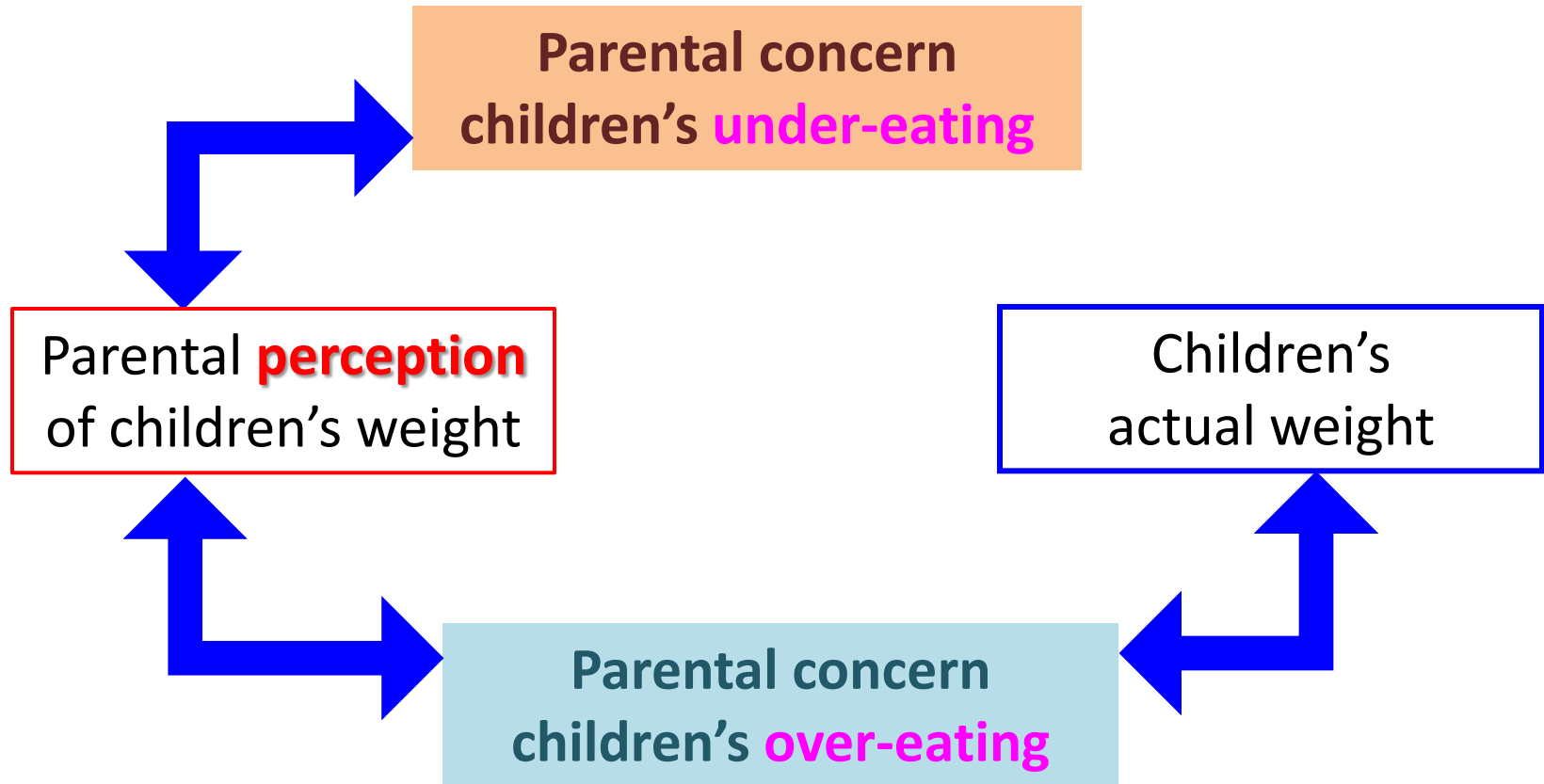
Parental Concern About Children Over-eating / Under-eating

Parents concerned about their children

Not eating enough	Eating too much
30.7%	9.7%

- **Overweight / Obese** children : 17.5% of parents were concerned that their children did not eat enough.

Parental Concern About Over- / Under- Eating



Controlling Strategies at Meal times

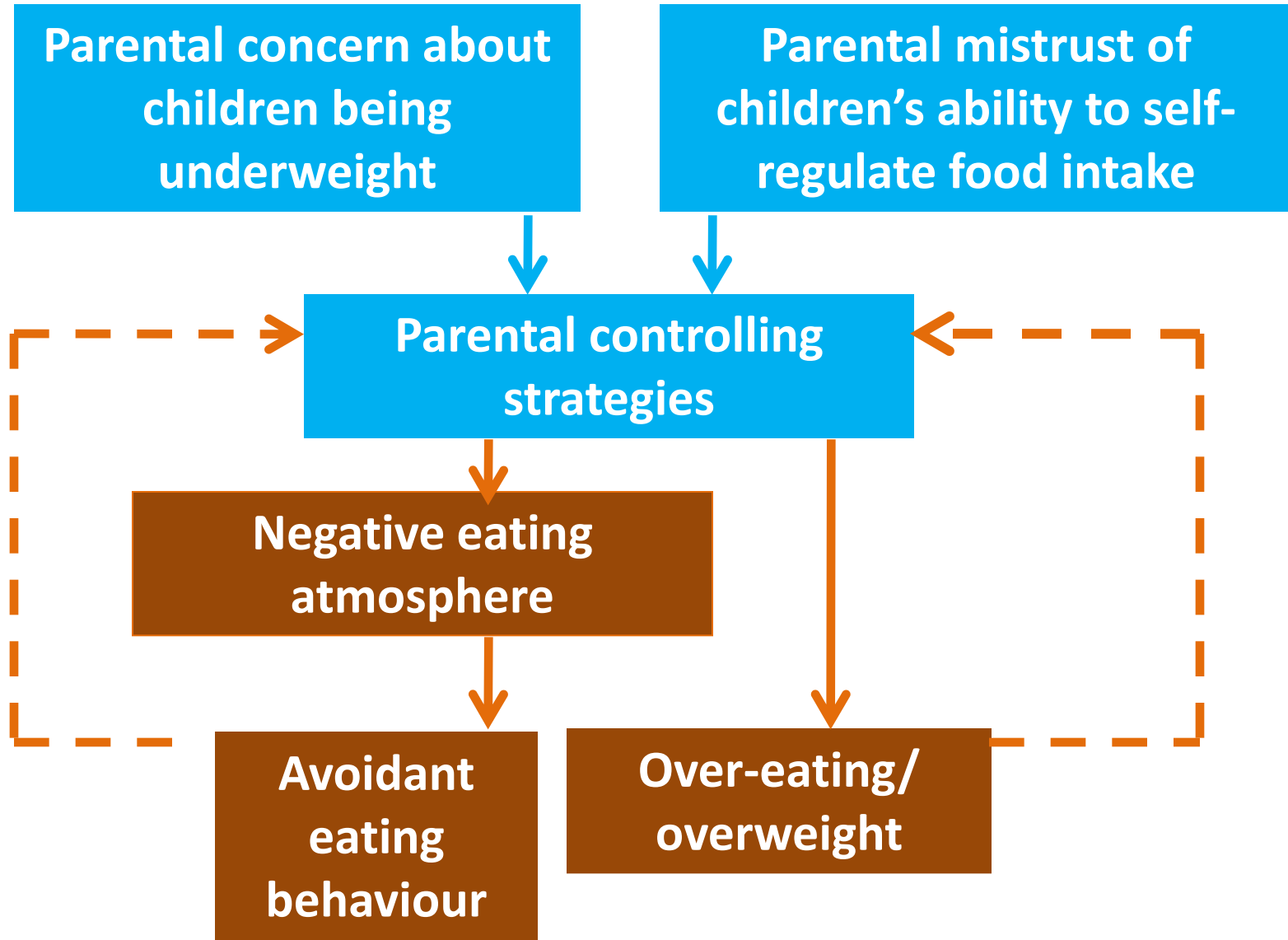
Parental concern about

- Children's under-eating, and
- Children becoming underweight
- (Multiple regression, $p < 0.05$)

Controlling Strategies at Meal times

- Hurrying the child when he slows down in eating his meals
- Urging the child to eat more repeatedly
- Pushing food into my child's mouth when he slows down
- Offering milk or alternatives when the child eating less
- Chasing after the child to feed him to make him finish his meal
- Offering the child toys while having meals

Feeding Practices - Summary



Recommendations

Parent's Responsibility	Child's Responsibility
<ul style="list-style-type: none">• Distraction free & comfortable environment	
<p>Provide</p> <ul style="list-style-type: none">• a variety of nutritious food,• in aged appropriate texture	<ul style="list-style-type: none">• What food to eat
<ul style="list-style-type: none">• Be sensitive to child's hunger and fullness cues	<ul style="list-style-type: none">• How much to eat

Recommendations

- Parents provide a balanced diet with a variety of foods
 - Plenty of fresh vegetables, fruits and some whole grain food
 - Appropriate amount of protein rich foods including meat, fish, egg and legumes
 - Appropriate amount of milk – about 2 cups daily (360-480 ml)
- Adequate nutrient
- Foster a dietary pattern – rich in vegetables, fruits



Recommendations

- Parents should support children developing self feeding skills
- About 2 years old: eat independently with parents' supervision
- Stop use of bottle by 18 months
 - Introduce cup for children at 7-9 months



Parental Anxiety
Mis-perception of children's weight

Limitations

- Cross-sectional study
- Participants sampled from those who were registered with Maternal and Child Health Centres
- Mainly parent's report
- Validity of questionnaires

Thank You!