

**HIGH FAT WESTERN AND THAI FOOD
CONSUMPTION AMONG ADOLESCENTS
LIVING IN BANGKOK, THAILAND.**

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Introduction

A recent study¹ in the United States showed that **during the last 20-30 years**, the **number of overweight** children and adolescents **increase** enormously.

Similar incidence occurred in developing countries where an **increase** in **Westernization** of dietary lifestyles is evident.

1. Deckelbaum RJ, Williams CL. Childhood obesity: the health issue. Obes Res. 2001 Nov;9 Suppl 4:239S-243S.

In **Japan**², during the accelerated economic growth from 1950 to 1970, there was a rapid shift in dietary pattern from Japanese to Western.

In **China**³, a shift in diet to Western style was rapid especially among the urban residents.

2. Popkin BM. Nutritional patterns and transitions. Popul Dev Rev 1993;19:138–57.

3. Popkin BM, Keyou G, Zhai F, Guo X, Ma Ha, Zohoori N. The nutrition transition in China: a cross-sectional analysis. Eur J Clin Nutr 1993;47:333–46.

Information from **other Asian countries** also shows an accelerated change in the structure of diet during the global civilization⁴.

Concurrent with these transitions, **obesity** is increasing in most **Asian nations**⁵.

4. Drewnowski A, Popkin BM. The nutrition transition: new trends in the global diet. Nutr Rev 1997;55:31–43.

5. Popkin BM, Doak CM. The obesity epidemic is a worldwide phenomenon. Nutr Rev 1998;56:106–14.

Thailand also had an experience of economic change like most Asian countries so that

Thai life style unavoidably changes to **Western** type especially those who live in **Bangkok**.

In 2008, **the Department of Health**, Ministry of Public Health, Thailand reported that there were **65 Thai** and **Western food** items containing **high fat** that Thai people usually consumed⁶.

*6.Nutrition Division, Department of Health, Minister of Public Health.
online news available from
<http://nutrition.anamai.moph.go.th/temp/main/view.php?group=8&id=212>*

Objective

The purpose of this study was to investigate the frequency and the amount of high fat Western and Thai food consumption among the adolescents who reside in Bangkok.

Method

☞ **Chulalongkorn University** students who have resided in Bangkok for **> 5 years** were randomly selected. **Weight** and **height** were measured for **Body Mass Index (BMI)** calculation.

☞ **15 Western foods** and **15 Thai foods** which were selected from 65 high fat food lists proposed by the Department of Health according to **the availability in the local market.**



Method (cont.)

➡ From **the lists**, subjects were asked to choose food items that they had eaten during the past **7 days**.

The **frequency** and **amount** of consumption were recorded.

➡ The **correlation** between each pair of studied variables was analyzed by *Pearson Chi-square test*.

➡ The **differences** between groups were analyzed by *Kruskal-Wallis test*.

Results:

Table 1. Characteristics of the participants.

	Total (n=1,490)	Male (n=562)	Female (n=928)
Age (year)	19.71 (1.44)	19.91 (1.53)	19.57 (1.36)
BMI (kg/m ²)	20.40 (2.68)	21.47 (3.88)	19.99 (4.00)
% Overweight	7.5	12.5	19.8
% Normal	66.7	73.3	62.7
% Underweight	25.8	14.2	32.8

() = S.D.

* ————— * = line between 2 variables that were significantly different with $p < .001$

Table 2. The percentages of participants in the high and low frequency and amount of Western food consumption.

		Frequency (times/wk.)			Amount (servings/wk.)			
		None	Low <4	High ≥4	<i>p-value</i>	Low <9	High ≥9	<i>p-value</i>
Gender	Male	3.7	80.6	15.7] <i>NS</i> [35.4	60.9] <i>NS</i> [
	Female	2.8	84.7	12.5		40.9	56.3	
BMI	Over (>24.5 kg/m ²)	8.9	82.1	9.0] <i>.002</i> [32.1	59.0] <i>.002</i> [
	Normal (18.5-24.5 kg/m ²)	3.0	82.9	14.1		39.7	57.3	
	Under (<18.5 kg/m ²)	1.6	84.4	14.0		39.3	59.1	

NS = non significant difference

Table 3. The percentages of participants in the high and low frequency and amount of Thai food consumption.

		Frequency (times/wk.)			Amount (servings/wk.)			
		None	Low <4	High ≥4	<i>p-value</i>	Low <9	High ≥9	<i>p-value</i>
Gender	Male	3.2	92.2	4.6] < .001	47.5	49.3] < .001
	Female	2.8	83.3	13.9		63.0	34.2	
BMI	Over (>24.5 kg/m ²)	3.6	85.7	10.7] NS	39.3	57.1] NS
	Normal (18.5-24.5 kg/m ²)	3.0	88.9	8.1		41.6	55.4	
	Under (<18.5 kg/m ²)	3.1	89.6	7.3		45.3	51.6	

NS = non significant difference

Table 4. The **top 5 Western food** favorite choices.




Food items	Calories (Kcal/100g)	Total Fat (g)	Saturated FA (g)	Trans fat (mg)	subject intake (%)
French fries 	390	20.9	8.7	516	74.4
Ham & cheese Sandwiches 	287	13.6	5.4	258	54.7
Butter cookies 	520	26.9	17.0	337	49.3

Table 4. The **top 5 Western food** favorite choices. (cont.)



Food items	Calories (Kcal/100g)	Total Fat (g)	Saturated FA (g)	Trans fat (mg)	subject intake (%)
Hamburger 	264	22.2	7.5	240	44.3
Brownies 	465	25.1	15.8	313	43.3



Table 5. The **top 5 Thai food** favorite choices.






Food items	Calories (Kcal/100g)	Total Fat (g)	Saturated FA (g)	Trans fat (mg)	subject intake (%)
Fried Pork with Garlic and Pepper 	309	13.6	5.3	355	94.1
Fried chicken With spices 	318	20.8	8.4	271	91.1
Fried bun 	393	17.7	8.2	155	59.1

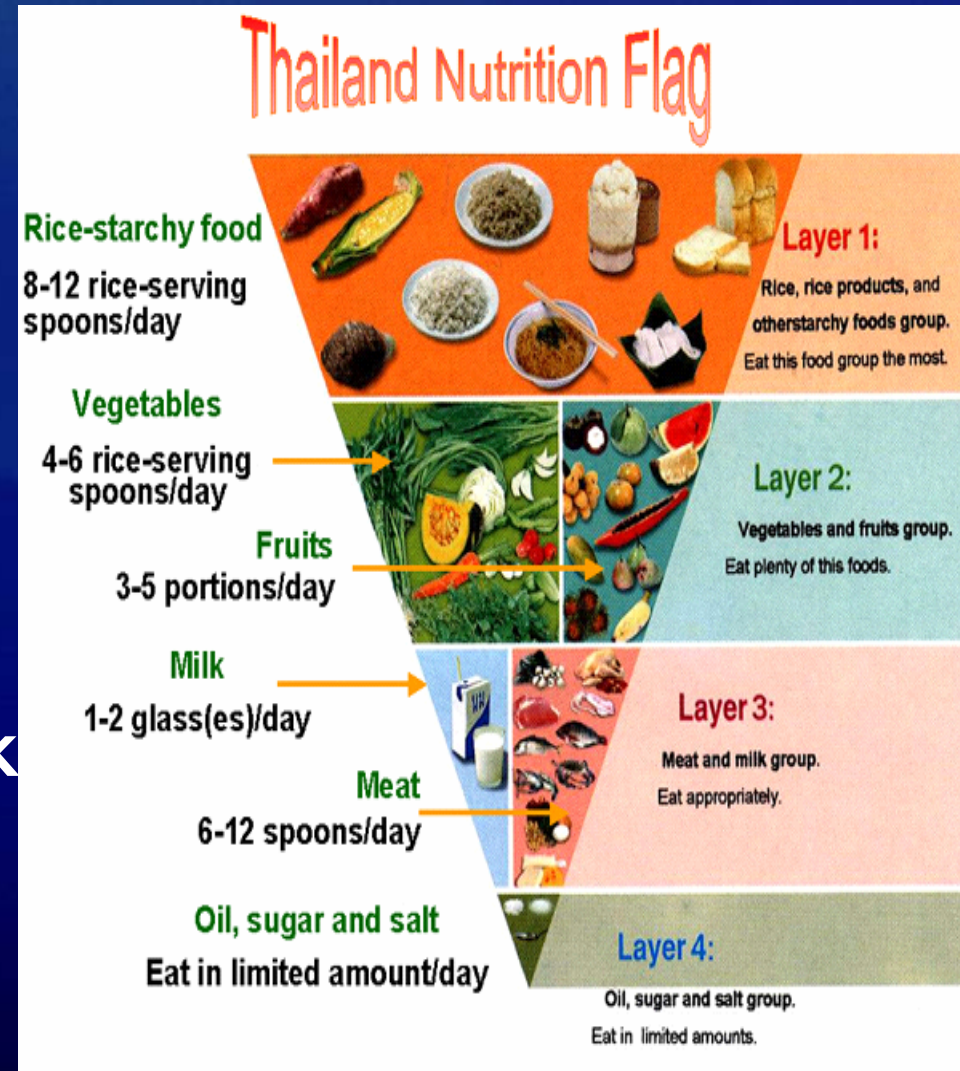
Table 5. The top 5 Thai food favorite

choices. (cont.)

Food items	Calories (Kcal/100g)	Total Fat (g)	Saturated FA (g)	Trans fat (mg)	subject intake (%)
Fried paired-stick bun	426	24.8	11.8	197	40.9
					
Fried small fish	538	37.6	17.4	415	40.8
					

Discussion

According to **Food Guide Thailand Nutrition Flag**, adolescent daily diets **should contain <35 g of fat**, the present data revealed that participants who consumed the studied foods **>4 times** or **>9 servings per week** **would receive fat higher** than the **recommended amount**.



Discussion (cont.)

Among 1,490 students, there were **96.9%** and **97.1%** of them who ate at least 1 of these **15 Western foods** and **15 Thai foods** respectively during the past **7 days**.

The data demonstrated that **females (13.9%)** consumed high fat **Thai food ≥ 4 times/week** while only **4.6% of males** did, however most of females (**63.0%**) consumed **< 9 servings/week**.

Discussion (cont.)

Comparison between **BMI level**, **frequency** and **amount** of food intake demonstrated that the **overweight** participants significantly consumed **Western food** more frequently than the normal and underweight ($p=.002$) while this different **was not** significant in the **Thai Food** group.



Conclusion

These findings suggested that

- more than 95% of adolescents living in Bangkok ate high fat Western and Thai food.
- The BMI was influenced by frequency and amount of high fat Western food intake.
- Female preferred eating high fat Thai foods than male.

Chulalongkorn University

Thank you

