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# 한국 현대도시의 식생활관리에 관한 연구

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조용범



# 한국 현대도시인의 식생활관리에 관한 연구

-건강음식을 중심으로-

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## A Study of Managing Dietary Lifestyle for Urban Koreans

- Focused on Health Food -

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### ABSTRACT

Korean adults have a dietary habit of eating full three meals a day: breakfast, lunch and dinner. The latest survey showed that people who have dinner most took up 61.8%, lunch most 30.8%, and breakfast most 7.4%.

The Korean Nutrition Association suggests that daily required amount of salt intake is 3,450 mg (8.7 g). But the daily amount of salt intake of Korean people is 15~20g which surpasses the required amount needed a day, which has usually formed before the age of six as a dietary habit.

When Koreans eat out, they choose Korean food(80.5%), Chinese food(7.0%), Western food(4.5%), fast food(4.8%), etc.(3.1%).

The monthly frequency of the urban adults' eating out indicated 32.6% "seldom", 41.1% "less than 5 times monthly," 15.6% "5-10 times," 10.8% "more than 10 times." Most of them responded less than 5 times a month for eating out.

If we look into dietary habits of the urban adults, the frequency of monthly eating out was 73.6%, less than 5 times a month, and 74.9% of the respondents dine regularly.

Keyword : three meals, dietary habit, Health Food

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## I . Introduction

Eating habits is a part of men's lives that satisfies the desire for accomplishing dreams as well as the most fundamental desire for natural urge and the product of culture and society, which is an important factor to determine one's health and the quality of life. To live a happy life, keeping health should be prior to everything, and it can be accomplished by right eating habits(1).

Recently, dietary life of Korean people became well-balanced and varied as their standard of living was improved, and the new form of eating habits was established as living and eating patterns were gradually complicated with the social structure changed in the process of industrialization and urbanization(2,3). From these changes, physique and nutrition has been improved, such chronic degenerative diseases as corpulence, hypertension, diabetes, cerebral apoplexy, and cancer are increasing(4). U.S. Department of Health and Human Services(5) reported that 35% of many causes of cancer resulted from eating habits, and domestic researches explained that the main cause of chronic degenerative diseases was bad eating habits like supernutrition, irregular mealtime, excessive intake of animal fats and spicy and salty food. Like this, diseases of adults derived from bad habits in lives became a main problem in people's health problems(6,7).

Researches of Kim et al.(8) said that the main factor that influenced eating habits of Korean people was their values rather than concern for diet, educational levels, or mental health. Also, the score of eating activity was low in case of people who considered their purpose of eating as just 'to satisfy their hunger' and 'to have a light meal' while the case of people who valued 'to intake nutrition' and 'to eat favorite food' showed high score, so they emphasized that selecting food depended upon individual values and establishing right values should precede to solve the problems of eating habits and nutrition.

Eating habits of modern people was formed by various factors such as sex(9-11), age(9,12), birth order, influence of parents, and local and seasonal characteristics, and, especially as the social variables, occupation, the number of family members, education, socioeconomic standard, media for information about

food culture had a great effect(10,12-14). In this way, eating habits of Korean people are currently acquired to the complicated factors like populational and socioeconomic characteristics and environment, and bad eating habits can affect the development of mental health as well as physical growth because desirable eating habits influence both physical and mental health(15,16).

Consequently, this study insists that good eating habits and values should be established to prevent diseases of adults and keep health, healthful food should be developed through adequate education for promoting nutrition, and there should be many researches to help the development of the local industries for food culture.

## II . Theoretical Background

Various foods to keep Koreans healthy have been being developed and the well-being food are being on the market, and they should be developed as staple food and many dishes for our meals. Since most of the food from nature has a lot of water, however, it is apt to go bad from enzymes in the food itself and microbial action, and much of them cannot be eaten as they are.

The preservative nature and transportation of food are important due to the limit of harvesting and fishing season. The effort for heighten the value of food easy to intake and transport a long distance plays an important role in the improvement of techniques for manufacturing food.

In Korea, adults eat cereals as staple food, but cereals have little protein of poor quality while they have much starch.

Since adults should intake 75g(males) and 60g(females) of protein, it is desirable to eat good quality of protein abundantly. And protein plays a role of forming our body, so it is needed for all age groups to eat protein. Therefore, it is good to eat a lot of fish, chicken, milk, beans, and bean-curd, and the amount of animal protein including beef and pork and the frequency of eating them should be controlled.

Among healthful foods in the dietary lives of modern people, the staple food includes rice, barley, millet, etc. and the side dishes are pulse like bean-curd,

fermented soybeans, and beans cooked in soy sauce, greens and seaweeds like kelp, brown seaweed, and so on. And the common factors of long-lived people are that they eat a small amount of various food which consists of traditional Korean food, so it is prior to everything that such food as beans, bean-curd, mushrooms, kim-chi, and seaweeds should be developed and spread.

### III . Method of Study

The dietary lives of Korean urban people are classified into eating habits of adults and the eating out pattern of urban Koreans as follows. According to Professor Choi(1), there are some points found in the eating habits of adults in city areas.

#### 1) Eating Habits to Have Food Most Abundantly

Traditionally, Korean adults eat three meals a day, breakfast, lunch, and dinner, but it has been gradually varying as life patterns of modern people changed. As the result of research that examines which meals people eat most abundantly, 61.8% of the respondents said it dinner, 30.8% lunch, 7.4% breakfast. This shows that people are not busy mainly at dinner time and it enables all family members to get together.

Examining by socioeconomic characteristics, there is significant difference in Eating abundant food, sex, age, education background. That is, females who don't have jobs relatively and have enough time tend to eat breakfast and lunch abundantly than males. Examining by age, younger age groups except for 20s tend to eat large breakfast and lunch. By Educational background, people graduated from high school tend to have large breakfast and light dinner as compared with the other groups. Eating habits to focus on dinner were changed from those to stress breakfast, which derived from social and economic development. Also, the change of amount of energy used for economic activities reaches the peak before and after lunch time and decreases after dinner. Therefore, present eating habits to focus on dinner can bring about the imbalance between nutrition and consumption of energy. Also, the case that breakfast is often skipped or becomes light increases. But it is most

fundamental to a daily work, and 1/4 of the required amount should be supplied at least(17). Accordingly, it is urgent to spread the right knowledge about adequate nutrition of three meals.

## 2) Preference for Snacks, Salty or Spicy food, and Processed Foodstuffs

The urgent problem of eating habits of adults in city areas is excessive ingestion of salt. When you ingest salt to excess, it increases not only gastric juice which hurts the heart and the kidneys inducing hypertension but elimination of calcium in bones bringing about osteoporosis. Advanced countries including the United State limit the amount of ingesting sodium, therefore, the United States recommends 2,400mg(6g of salt), England 1,600mg(4g of salt), Japan 3,930mg(10g of salt) of sodium a day. In case of Korea, there is no standard amount, but the Korean Nutrition Society recommends 3,450mg(8.7g of salt) a day for adults. However, the average amount of salt that Koreans ingest is reported 15~20g a day, which exceeds the adequate amount of salt needed a day. And this habit of eating salty food is reported to form before six years old(18). The reasons for ingesting excessive salt are not only the traditional food culture to mainly eat cereals with seasoned vegetables but frequent use of salt for fermented food and pickled food to store from old times. And the recent reason why the excessive ingestion of salt has not decreased is that people often eat processed foodstuffs. Also, even though snacks supply inadequate calories and complement some nutrition that we cannot get from meals, they should be controlled because too much ingestion of snacks and nutrition can impede the following meal and cause corpulence.

## 3) Concern for Food and Consciousness of Eating

When incomes increase, utility values of taste, freshness, convenience, hygiene, function, and variety as well as energy and nutrition also rise because consumption of food becomes varied and better in quality. Recently, as the standard of living became improved, concern for nutrition fact and hygiene and safety of food is getting greater than ever before. Besides, the causes of death in Korea include cerebral diseases, heart and blood vessel diseases, hepatic diseases, cancer, diabetes, etc., raised as "ten causes of death"(19). Like this, it

is shown that the causes of chronic degenerative diseases are closely related to eating habits, so researches on this relationship are increasing these days. Examining some chronic diseases and related causes in eating habits, heart and blood vessel diseases are connected with fat and cholesterol, hypertension with salt, alcohol, and calories, and cancer with fat, calories, and salt though its cause varies to the parts(20).

<Table 1> The Eating Pattern by Sex

Section	Female	Male
Eating Speed	Slow	Fast
Intention to Improve Eating Habits	Low	High
Concern for Eating Habits	High	Low
Concern for Nutritional Balance of Diet	High	Low
Having Snacks	High	Low

#### 4) The Pattern of Eating Out

When eating out with family, 80.5% of the respondents said they enjoy Korean food, 7.0% Chinese food, 4.5% Western food, 4.8% fast food, and 3.1% others. This result shows that people still prefer Korean food when eating out with family even though there are many family restaurants and fast food stores. All age groups were shown to enjoy Korean food most, but younger groups tended to prefer fast food in accordance with the result of research by Park and Ahn(21). In selecting menus when eating out with family, there was significant difference according to sex, occupation, composition of family, incomes, educational background. Moreover, in case of eating out with friends, they were also shown to enjoy Korean food(68.4%) most, but the proportions of Western food(8.0%) or fast food(10.7%) were high as compared with eating out with family. As for socioeconomic characteristics, there was some difference in selecting menus by sex, age, occupations, and educational background. While males preferred Korean food more than females, females preferred Western food and fast food more than males. While younger groups preferred Western food and fast food, older groups tended to choose Korean food. While the groups with low level of education and incomes preferred chinese food, the groups with higher levels Western food and fast food. Consequently, selecting menus when eating out with friends appeared to be more influenced by the socioeconomic

characteristics than when eating out with family.

<Table 2> Preference for Food by Age

Section	Food of Preference	Preference for Eating Out	Wellbeing Food	Concern for Food
Elementary School Students	Hamburger, Sausage	Very High	Dairy Products, Curry	Taste, Shape, Color
High School Students	Pizza, Chicken	High	Meat, Cereals	Taste, Variety, Convenience
University Students	Fast Food, Meat	High	Fruits, Fish & Shellfish, Meat	Convenience, Function, Variety
Adults	Pot Stew, Meat	Low	Vegetables, Pulse, Fruits, Fish & Shellfish, Cereals,	Safety, Hygiene, Nutrition
The Old	Pulse, Seaweeds	Very Low	Vegetables, Fruits, Pulse, Fish & Shellfish, Seaweeds	Hygiene, Safety, Nutrition, Freshness

Examining the frequency of eating out per month among the adults living in urban areas, the result (Table 3) shows that 32.9% of 30s and 40s said 'almost never', 45.9% 'less than five times a month', 14.4% 'five to ten times', 6.7% 'more than ten times', so most of them appeared to eat out less than five times a month. By socioeconomic characteristics, males eat out more than females do, but they don't have much difference. And the frequency of eating out decreases in the older groups, corresponding to the result of the national research on health and nutrition in 1998(23). In the study of Lee et al.(16), females and the age group of over 51 eat out fewer times than 20s to 40s, which shows the similar result to this study. As for the frequency of eating out by occupations, students eat out most frequently, and housewives and manufacturing laborers show the lowest rate of eating out. Examining by composition of family, one person and other forms of family eat out most frequently, but there is little

difference by composition of family as a whole. In addition, the higher their incomes and educational level, the more they frequently eat out. In the study of Pyun et al. on the subject of male workers with higher schooling(24), the largest number said they eat out three to four times a week(29.8%), followed by once to twice a week(23.1%), once a day(18.8%), twice a day'(16.3%). It showed higher frequency than the overall frequency of this study, but both can be seen as similar, considering that the respondents are males with higher schooling. Therefore, it is necessary to develop and spread food for pleasant and healthful diet.

##### 5) Eating Habits of Adults in Urban Areas

This study investigated eating habits and dietary consciousness through 690 adults over twenty years old in a city to examine if there is any difference by socioeconomic characteristics as follows(1). For the frequency of eating out a month, 73.6% of the respondents eat out less than five times a month, and its number is influenced by age, occupations, incomes and educational background. For the menus, they enjoy Korean food when eating out both family and friends. 74.9% of the respondents said that they eat regularly, and the rate of this answer was high in older people, housewives, office workers, and large family. For the speed of eating, 40.9% said 'eat quickly', and males tend to eat faster than females. Preference for snacks and processed food (5 point measure) showed  $3.07 \pm 0.89$  points and  $2.69 \pm 0.84$  points on the average respectively, and it appeared to be effected by age, occupations, and educational background. In case of snacks, preference of females was higher than that of males. Preference for salty and spicy taste (5 point measure) showed  $2.75 \pm 0.83$  points and  $3.28 \pm 0.90$  points respectively, and spicy taste was generally preferred. Salty taste showed some difference by sex and educational background while spicy taste by age. Also, there was mutual relationship between preference for salty, spicy taste, and processed food and chemical seasonings that people who like salty, spicy taste, and processed food tend to use more chemical seasonings. Concern for ingestion of safe and fresh food, balanced nutrition of food, and excessive

ingestion of calories, salt, sugar, fat, etc. showed  $3.26 \pm 0.66$  points,  $2.83 \pm 0.70$  points, and  $2.89 \pm 0.75$  points on the average respectively, and the degree of concern varied by sex, age, occupations, incomes, and educational background. 44.8% of the respondents said that they consider nutrition most, and this answer showed difference by sex and educational background. Half of the respondents have the intention to improve their eating habits, and there was some difference in their intention by sex, age, occupations, incomes. For the details they wanted, 42.8% said 'balanced diet(nutritional balance)' and 19.8% 'regular meals', and the answer showed difference by age and occupation.

<Table 3> Frequency of eating out a month by socioeconomic characteristics

Variable	Group	Never	<5 times	5~10 times	≥10 times
Age	20's	13( 9.4)	44(31.7)	42(30.2)	40(28.8)
	30's	43(26.1)	78(47.3)	28(17.0)	16( 9.7)
	40's	84(39.8)	94(44.5)	25(11.8)	8( 3.8)
	50's over	82(49.4)	63(38.0)	11( 6.6)	10( 6.0)
Occupation	Business, service	24(36.9)	21(32.3)	8(12.3)	12(18.5)
	Manufacture	32(50.8)	24(38.1)	2( 3.2)	5( 7.9)
	Official	52(20.8)	108(43.2)	63(25.2)	27(10.8)
	Housewife	98(46.0)	8(46.0)	13(6.1)	4(1.9)
Education	Student	16(17.6)	30(33.0)	20(22.0)	25(27.5)
	Under middle School	53(60.2)	28(31.8)	6( 6.8)	1( 1.1)
	High School	108(47.2)	90(39.3)	20(8.7)	11( 4.8)
	Over college	62(16.9)	161(44.0)	81(22.1)	62(16.9)

\* From Choi JS, Ji SM, Baek HY, Hong SM, A Study on Eating Habits and Dietary Consciousness of Adults in Urban Areas, J. Korean Soc, Food Sci. Nutr 32(7), p1132-1146(2003)

As for the ingestion amount by seasons and food, males eat more potatoes in summer, showing little difference in the ingestion amount of mushrooms by seasons. Females eat more cereals, sugars, beans, vegetables, seasonings, drinks and alcoholic beverages, meat, dairy products, and fish and shellfish in winter, showing little difference in the ingestion amount of seaweeds and eggs. For the ingestion amount of food a day on the annual average of respondents,  $513.5 \pm 161.2\text{g}$ (86.4%) were from vegetable food and  $79.3 \pm 56.7\text{g}$ (13.3%) from animal

food. People said that they eat cereals most, followed by order of vegetables, fruits, fish and shellfish, drinks and alcoholic beverages, seasoned and processed food, beans, meat, milk, potatoes, etc. For the frequency of ingestion by food in the adults living in city areas, rice was highest (80.1~89.2%) among cereals, beef soup, bean-paste soup, bean-paste pot stew among soups and stews. In case of fish and meat, yellow corvinas were most preferred(9.4~12.4%), and the ingestion rate of seasonal food was high when examined by seasons. In case of Kimchi, the ingestion rate of cabbage kimchi was high over 70% all seasons. As for one-dish meals, the ingestion rate of ramen and noodles was high.

After all, eating habits of adults in the city and dietary consciousness showed much difference to the socioeconomic characteristics; the younger groups, students, and people with better educational background generally had bad eating habits, and males, 20s, students, people graduated from over middle school and college showed little concern for eating meals. And, males, people running businesses, the groups with high incomes showed intention to improve their eating habits.

Consequently, since the younger groups, students, and people with better educational background generally have bad eating habits and little concern for eating meals, so education about nutrition to build up the values for eating and correct the bad habits and various recipes and healthful food should be developed.

## VI. Results and Considerations

### 1. Food for Brain Health

#### 1) Beans: meat from a field

Beans have such plenty of protein (40%) and fat (18%) that they are said to be meat from a field. Protein in beans is the best among the crops and consists of glycine and various amino acids. Fat in beans contains about 50% ofLynol acid and 6% of Lynolrein acid. Their unsaturated fat acid plays a role of dissolving cholesterol from excessive ingestion of animal fat.

2) Bean oil has 10.4mg of vitamin E which prevent aging, so it is good to heart diseases and hypertension. There are a variety of processed food from beans in advanced countries.

3) Beans are helpful to keep brain health with abundant saponin and lecithin. Saponin can keep fat peroxide from forming in human bodies and lecithin can get rid of cholesterol, help fat burn, and prevent fat from accumulating in the liver. Beans help the activities of brain, relieve nerves, and make blood clean.

4) For digestion of beans, though they have various nutrients, their tissues are so hard that they cannot be digested well when boiled or fried as they are. This is why beans should be processed. The processed bean food includes soy sauce, soybean paste, bean-curd, bean sprouts, etc. And bean-curd digests (95%) better than fried beans do(50~70%).

5) 90% of bean' protein can be extracted by water, over 80% of it is glycinin which belongs to globulin. Bean' protein can be changed by heat, but it can be changed less when n-hexane with low boiling point is used as an extract solvent for removal of fat, and this helps solubility of protein relatively high.

6) <Bonchogangmok> says that saponin is helpful to make people look better, change gray hair black, prevent aging, make blood, and neutralize a poison. Also, beans have five saponins that dissolve red blood corpuscle and never have harmful materials, i.e., soya saponin I, II and A1,2,3, which prevent aging and keep youthfulness.

7) Bean sprouts have asparagine acids that help hangover alleviated by removing strong digestive oxide of alcohol. Besides, they contain cellulose, vitamin C, low-calory amino acids, enzyme, so they are effective to eliminate feces contained long in the intestines, strengthen the liver, and cure cold, fatigue, and digestive upset from alcohol. There is a record in Hyangyakkugeupbang, a medical book in Koryeo, that "daeduhwang", made from sprouting beans and drying them in the sun, was used as a medicine, and hot

bean sprout soup is helpful to cold and fatigue. Bean sprouts has an ingredient to supply oxygen to the brain, keeping it clear.

## 2. Nutrition of Bean-Curd and Fermented Soybeans

### 1) Bean-Curd

There are some well-being food like bean-curd, beans, seaweeds, and mushrooms, and, among them, bean-curd is one of three traditional Korean foods, roast beef, kimchi, and bean-curd, popular over the world with its nutritional advantage. It has much protein of good quality and easy to digest by making beans extracted, adding coagulant to watersoluble protein, and forming it by dehydrating. It was first made by Hoenamwang in the 2nd century B.C. according to <Bonchogangmok> in the Ming Dynasty, <Myeongmulgiryak>, and <Jaemulbo> in our history.

According to Shinoda, the first document on bean-curd is <Cheongirok> in the early Song Dynasty, so its origin does not trace back to the Han Dynasty. In China, northern nomads came in the midlands from the Period of North and South Dynasties to the T'ang Dynasty with fried bean-curd, it seemed that they used soybean milk instead of milk after the middle of the T'ang Period because pasturage was not flourishing in the midlands.

Curd doesn't mean stale but soft and tender like the brain. Fried bean-curd of nomads can be seen as an original one of cheese, and soybean milk was used instead of milk. It seemed that bean-curd spread over the general public in the Song Dynasty, and it might be an invention of our ancestors, the Dong-i tribe, because its place of origin is Manchuria. In our historical documents, a poem about bean-curd can be found in <Mokeyunip> by Yi Saek in the late Koryeo, and <Sumunsaseol>, <Seonhosaseol>, <Jaemulbo>, and <Myeongmulgiryak> said bean-curd 'po(foam)', which derived from <Aeongakbi> by Jeong Yak-yong, saying "Bean-curd is soybean milk." The original name of bean-curd was 'baekasun,' but our ancestors think the name a dialect and said it 'po.'

### <Table 4> Calories and Nutrition Fact of Bean-Curd(100g)

Food	Calories(kcal)	Protein	Carbohydrate	Calcium	Potassium
Bean-Curd	84	9.3	1.2	126	90
Uncurdled Bean-Curd	47	4.7	1.0	48	95
Half-curdled Bean-Curd	41	5.2	0.7	62	95

\* Jeon Eun-ja: Nutritional meal service and the analysis on nutrition fact.  
p.542, 2000

## 2) Fermented Soybeans

Recently, there has been many researches that the high molecule nucleic acid in fermented soybeans is efficacious against cancer. Above all, fermented soybeans is the best food leading 'healthy diet.' If you eat less to reduce your weight, you are lack of important nutrition like protein, vitamin, etc. And it may well be harmful to your health. Fermented soybeans are health food that contains plenty of nutrition and is easy to be absorbed into the body(98%). Fat people mostly have low metabolism. Fermented soybeans, however, encourage metabolism, so you don't have to take medicines for promoting nutrition. Moreover, lecithin and saponin in fermented soybeans prevent corpulence by eliminating fat from blood. If you eat fermented soybeans, you need not have yogurt. While a lactic acid drink has one million lactic ferments a gram, fermented soybeans have a billion lactic ferments a gram. And the survival rate of lactic acid is only 30%, but that of fermented soybeans is 70%. Its cellulose and enzyme are effective to intestinal troubles and good for beauty making fair skins.

What is the best way to use the function of fermented soybeans most effectively? Experts recommend that you should eat them uncooked. It is good to drink yogurt and milk with a spoonful of fermented soybeans and to sprinkle fermented soybean dressing on vegetable salads. Fermented soybean dressing can be made by mixing brown rice vinegar and oil at the ratio of one to four, adding garlic, leek, ginger, and sesame oil, and mixing all with fermented soybeans.

Recently, there have been academic presentations and researches for manufacturing and globalizing traditional Korean food from various viewpoints

and studies focused on preservation and charge of documents. Accordingly, it is urgently required to continue to study to succeed traditional Korean food for the diet and health of modern people and to be a competent goods for exportation all over the world.

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