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INSTITUTE REPORT NO. 103

NUTRITIONAL EVALUATION OF MEALS CONSUMED IN THE MILITARY DINING HALLS AT TWENTY NINE PALMS MARINE CORPS BASE FOR BOTH THE CONVENTIONAL & BATION/SHORT ORDER AND THE NEW "RESTAURANTS" CONCEPT OF MILITARY FEEDING

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**Recommendations to Correct Deficiencies**,

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NUTRITION TECHNOLOGY



LETTERMAN ARMY INSTITUTE OF RESEARCH PRESIDIO OF SAN FRANCISCO CALIFORNIA 94129

# Nutritional Evaluation of Meals...Twentynine Palms Marine Corps Base. Recommendations to Correct Deficiencies--Johnson et al

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# ABSTRACT

The effects of changing the military feeding system upon the quantities of nutrients consumed by the Marine in the military dining hall were assessed by conducting a before-and-after study at Twentynine Palms Marine Corps Base. The first phase was an 8-day survey of the conventional feeding system in a Force Troops' dining hall and a 7-day survey in the Communications and Electronics School dining hall. Low concentrations of iron and vitamin A per 1,000 kcal and a high consumption of calories per meal were the major observations of this feeding system. Then, this feeding system was converted to a series of restaurants, two in each of the four dining halls. Each restaurant had a The second phase of the study was distinct menu and decor/theme. conducted after the novelty of these changes had subsided. Then the effects upon both students and Force Troops were studied. Vitamin A and iron concentrations were low in most meals; the concentrations of thiamin, riboflavin, and ascorbic acid were also low in many of the Recommendations include monitoring nutritional status of meals. Marines, improving nutrient consumptions through nutrition awareness and education, revising menus, fortifying foods, preparing foods so they do not lose their nutrients, and making more nutritious foods more attractive.

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The Department of Defense must maintain the capability for providing complete subsistence to combat personnel during actual conflict and during training under simulated combat conditions. To maintain supply channels for food and an experienced corps of trained food service personnel, garrison feeding for enlisted personnel is provided at installations. Prior to the inception of the all volunteer Army, unmarried enlisted personnel were dependent upon military dining facilities since they did not have the funds or the liberty to seek other sources of sustenance. These personnel were authorized free meals in the military dining facility and received about 90% of their nutrients from When military pay was increased in order to recruit this source. adequate numbers of personnel for the services, these personnel had more of a civilian-type lifestyle. Therefore, the dependence upon the military dining hall was decreased. As a result, the controls over the nutrient intake were also decreased.

The drastic reduction of dining hall utilization has created many concerns within the military command structure. One of the concerns is how to maintain the capability for combat feeding of all DOD personnel including the navy afloat. A second concern is the question of how to insure that the individual enlisted person is receiving adequate nutrition.

Previously, the military menu was developed in relationship to requirements and since the personnel received the majority of their nutrients from the dining hall with minimal choices besides rejection, military commanders were well assured that the health of these personnel was not being adversely affected by poor nutrition. In addition to the drastic reduction in amounts of nutrients consumed in the military dining facilities, several factors have contributed to the deterioration of the nutritional adequacy of the meals consumed in these dining halls. The first factor was the addition of a short order line in the dining hall. Then most of the dining halls started increasing the number of items available for each course. Now some of the dining halls are being converted to specialty type restaurants. All of these changes in DOD feeding systems were designed to encourage increased utilization of the dining hall by enlisted personnel and to improve his/her opinion of military service. Minimal or no concern for the nutritional adequacies of the menus was given in the new plans.

If the military services are going to expect high levels of physical and mental performances from personnel, it remains imperative that the personnel maintain optimal mental and physical conditioning which includes proper nutrition. These factors could provide the margin between success or failure of a military action and/or could affect the duration of the activity through the quality, quantity, and duration of efforts expended. Since free lifetime health care is provided to the career military person and his/her family, providing good nutrition and sound nutritional information to improve their nutritional status and health would reduce their health care needs and consequently the costs borne by the military services and taxpayers.

Most of the changes in both the military feeding systems and the menus in these dining facilities are being made in response to the desires expressed by the military patrons. Consequently, the nutritional quality of the meals consumed in the military dining hall is no longer maintained by the master menu. This controversy between attempting to increase dining hall utilization by providing popular food items versus the military's responsibility for maintenance of the health of the military person to include proper nutrition is a legitimate predicament. Should the military services ignore their responsibilities for the enlisted person's health in order to have him/her utilize the dining hall more? Will menu changes affect attendance at the dining hall and/or the patron's health? If the enlisted person does not eat in the dining hall, the nutritional quality of the meals available is inconsequential. Therefore, it is important both to increase dining hall attendance and maintain the nutritional quality of the meals. If the person will eat in the dining hall, he/she could be encouraged to consume a well-balanced diet or food items could be fortified to assure adequate intakes of micronutrients. Since these personnel have such a large variety of foods available from both the military feeding system and all other sources, it has become increasingly imperative to monitor the nutritional intakes and status to assure their health and capabilties to perform optimally their military duties in the event of a conflict.

The Marine Corps submitted in March 1974, a request to the DOD Food Research, Development, Testing and Engineering Program for the "Analysis of Marine Corps Food Service System" (Requirement No. USMC 7 -1). This request included a thorough analysis of the present food service system at Marine Corps Base, Twentynine Palms, California, and the development of alternate systems to improve customer acceptance and to increase efficiency and economics of military feeding. Operations Research and Systems Analysis Office (OR/SA) of the U.S. Army Natick Research and Development Command (NARADCOM) submitted plans for initiating a study of the food service system with a request that a study of the nutritional impact of the changes be assessed by Letterman Army Institute of Research (LAIR). The Fourth Annual Meeting of the Joint Nutrition Research

Planning Board (JNRPB), conducted 27 - 28 April 1976, assigned a high priority to the Twentynine Palms study.

OR/SA's plans were a multi-phase, several-years' effort. They included a study of the present system and its patrons' desires regarding feeding systems, designing a new system for the Marine Base, and implementing the new system. In order to assess the nutritional impact of changing feeding systems upon the nutritional intakes and status of the Marine, LAIR conducted a two-phase study at Twentynine Palms Marine Corps Base. The first phase of the Marines feeding system was conducted during March 1977 on the conventional Marine Food Service System while the second phase was conducted during October-November 1978 after a system of restaurants had been operational for several months on this Base. This provided before-and-after comparisons of the nutrient consumptions of these Marines. Although these studies were multifaceted, this report will be restricted to the nutritional evaluations of the meals consumed in the military dining halls.

#### METHODS

The first phase of the study included an eight-day survey of a Force Troops' dining hall followed by a seven-day survey of the students' dining hall in March 1977. Total amounts of each food served at each meal were determined by weighing all foods brought to each serving line (each serving line independent of the other except when menus were the same at breakfasts) and all foods returned to the kitchen. Samples of individual food items were collected (1) from each serving line. Plate wastes for each food were determined by collecting each food item in a separate container and weighing the total amount of each item for each meal. When the same food item (e.g. salads and desserts) was served on both serving lines, the waste was allotted to each line in the same ratio as it was served (i.e., if 30% of the cake was served on the short-order line, then 30% of the cake waste was allotted to that line).

The total number of people eating the meal in the dining hall was determined from the sign-in sheets. A separate headcount was taken of the short-order patrons; however, valid nutrient consumptions could not be calculated separately for short-order and main-line meals during the first phase due to the large number of patrons returning for second helpings mainly from the short-order line, although their first plate may have been obtained from either line.

The second phase of the study was conducted during October -November 1978 after the Marines had become accustomed to the new feeding

sytstem. In this system, each half of each dining hall had a distinct decor and menu so that the Marines had a series of individualized restaurants from which to choose. To evaluate the nutritional contents of the meals consumed in different restaurants, both serving lines from three dining halls were studied by the same methods as were used for the first phase of the study. The first dining hall was studied for 7 days and was serving the A-ration menu and barbecued short-order foods in the two respective restaurants (Lodge and Barbecue Ranch, respectively). The second dining hall was monitored for 5 days and offered a hamburger and a steakhouse menu in the two separate serving areas (29 - Burgers and Meating Place, respectively). The third facility was surveyed for 6 days and offered an A-ration and an Italian pasta menu in the two respective dining areas(Sports Circle and Pasta Palace). Although the Marines were permitted to attend any of the dining halls, the first two facilities surveyed were located in the Force Troops area while the third was in the students area and most Marines attended the one located in their respective areas.

These data, after assigning food item code numbers, were processed using computer programs and handbook values for nutrient contents (1). Although the average amounts of nutrients could not be obtained for each serving line for the first study, the nutrient concentrations (i.e., % kcalories from fat or milligrams of nutrient per 1,000 kcal) were calculated separately and compared.

### RESULTS

The daily dietary nutrient allowances (2) are presented in Table 1. These daily allowances for men are divided by 3 to provide a per-meal standard for comparisons. (It should be noted that the allowances for women never exceed those for men, so that by using men's allowances for each nutrient, the allowances for women should be assured.) As a further comparison of the nutritional balance of the meals, vitamin and iron concentrations per 1,000 kcal or nutrient densities have been calculated. Protein should provide 12.5% of the kcalories for men and 14.5% of the total kcalories for women to meet their respective protein allowances without exceeding the caloric allowances.

The average nutrient consumptions per patron at the Force Troops Dining Hall for the first study are presented in Tables 2 through 4. Average attendance at these meals ranged from 308 for weekend suppers to 472 for weekday lunches with 36 to 37% of the patrons eating short-order meals. The data for the combined meals (short-order plus main line or Aration) are presented at the top of the tables and the data for the individual lines are shown at the bottom. All of the nutrient consumptions with the exception of niacin at the breakfast meals, exceeded one-third of the daily allowances and were greater on weekends than during the week. The caloric distributions (Table 4) indicate that protein levels were adequate; however, fat intakes were high, ranging from 41 to 48% of the calories. Calcium to phosphorus ratios ranged from 0.66 to 0.81. Most of the vitamin A and all of the iron values were low, especially for women. All of the averages for thiamin (except weekday suppers), riboflavin, niacin (except breakfasts), and ascorbic acid were adequate in relationship to calories.

The average nutritional contents of the meals consumed in the Student Dining Hall for the conventional Marine feeding system are summarized in Tables 5 through 7. Average headcounts in this dining hall ranged from 902 to 966 during the week, but was lower (775 for breakfasts and 570 for suppers) on the weekends. From 43 to 50% of the lunches and suppers were obtained from the short-order line. The average consumptions per meal exceeded one-third of the daily allowances for all nutrients except for vitamin A and niacin in the breakfasts. The percentage of calories (Table 7) present as protein in many of these meals was less than the 14.5% recommended for women. The averages for fat ranged from 39.2 to 46.5% of the calories. Essentially, all of the vitamin A and iron concentrations, niacin in the breakfast meals, and ascorbic acid in the A-ration suppers were low.

After conversion of the dining halls to two "restaurants" each, the average nutrients consumed per meal and the nutrient concentrations of meals served in the first facility surveyed are shown in Tables 8 through 10. Headcount averages ranged from 396 on weekends to 414 during weekdays for breakfasts, from 76 on weekends to 440 (56% short-order patrons) during weekdays for lunches and from 318 during weekdays to 521 on weekends (about half to each restaurant) for suppers. The average caloric consumptions from weekday breakfasts and suppers at the Lodge and weekend lunches at the Barbecue Ranch were less than one-third of men's daily needs. The iron, vitamin A, and niacin contents of the weekday breakfasts consume' at the Lodge and the iron in weekend breakfasts and vitamin A in all meals consumed in the Barbecue Ranch were less than one-third of daily allowances for these nutrients. Most of the meals consumed in the Barbecue Ranch contained less than 14.5% of the calories as protein and all of the meals, except lunches at the Lodge, contained more than 40% of the calories from fat. Vitamin A and iron contents of most meals in both facilities, niacin in breakfasts and ascorbic acid in suppers at the Lodge, and riboflavin in Barbecue Ranch suppers were low in relationship to the caloric contents of these meals.

The nutrients consumed at the 29-Burgers and Meating Place (Tables 11, 12, and 13) were above one-third of the daily allowances with the exception of vitamin A in weekend lunches at 29-Burgers. Average consumptions ranged from 1388 to 1817 kcal at 29-Burgers and 1162 to 1365 kcal at the Meating Place. The total headcounts for this dining hall (both restaurants) averaged from 206 for weekend lunches to 780 for weekday suppers with approximately half of the patrons eating in each restaurant. Weekday lunches at 29-Burgers contained only 13.6% of the calories as protein; calories from fat averaged over 40% for all meals served in this facility except for lunches at the Meating Place (38.7%). All of the meals consumed in both restaurants contained insufficient vitamin A and iron and most were low in thiamin when related to the calorie contents.

The third dining hall surveyed contained the Pasta Palace and the Sports Circle and these yielded the data summarized in Tables 14 through 16. This dining hall served averages of between 550 and 700 meals for all meal periods except weekend lunches when only brunch was offered and an average of 154 patrons were served. The average consumptions for all meals exceeded one-third of Marines' needs/allowances for all nutrients except for calories, iron, vitamin A, and niacin in the weekday breakfasts at the Pasta Palace; and vitamin A and thiamin in lunches at the Sports Circle. Except for lunches and the weekend breakfasts, all of the meals at the Pasta Palace and the brunch at the Sports Circle ocutained less than 14.5% of calories as protein. Fat contributed over 40% of the calories to all meals consumed in the Pasta Palace and to the weekday suppers in Sports Circle. In relationship to caloric intakes, low consumptions of the following nutrients were observed: vitamin A in all meals of both restaurants except for Pasta Palace suppers; thiamin in lunches and suppers in Pasta Palace and Lunches in Sports Circle; niacin in all breakfasts/brunches of both dining halls and suppers at Pasta Palace; ascorbic acid in lunches and suppers in Sports Circle; and iron in all meals of both restaurants.

### DISCUSSION

The first phase of this study was conducted prior to any changes in the Marine feeding system in order to obtain baseline data of nutrients consumed from different serving lines in the military dining hall and the attendance at each line. The nutritional status and the total daily nutrient intakes of each Marine are being reported elsewhere. These Marines appeared to represent two populations. First was the students and cadre for the Communications and Electronics School located at Twentynine Palms and second was the Force Troops and support group maintaining combat readiness. One dining hall provided meals to the school personnel while two others served Force Troops and other permanent personnel. Since there was an apriori assumption that these

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two populations might differ substantially in their activities and, consequently, their nutritional needs and habits, one of the Force Troops dining halls and the student dining hall were studied during the first phase of the study.

The new feeding system instituted at Twentynine Palms Marine Corps Base included renovation of four dining halls to create eight restaurants. Each half of each dining hall had a distinct decor and the menus differed between the two restaurants in each dining facility. Three restaurants served modified 12-day cyclic A-ration menus, two served typical short-order foods, one served Italian foods, one had a steak house menu, and the last one served barbecued foods. Three dining halls were studied during phase two of the study in order to evaluate the nutritional contents of meals from each type of restaurant and to include both school personnel and Force Troops. Six days of A-ration menu and the barbecued foods were monitored in a Force Troops' dining hall, followed by a 5-day evaluation of the steak house and short order menu in a second dining hall in the Force Troops' area and finally the student dining hall serving A-ration (balance of the 12-day menu) and the Italian pasta menus was studied for 6 days. Each dining hall was monitored during both weekend days and for 3 to 4 weekdays.

The average nutrient consumptions from all of the meals served during the first phase of the Twentynine Palms study exceeded one-third of the Daily Nutrient Allowances with the exceptions of niacin in all breakfast meals and vitamin A in the breakfast at the student dining hall. After the menus had been changed, average caloric consumptions (Tables 8, 11, and 14) were less than one-third of men's needs at only weekday breakfast meals in the Lodge and Pasta Palace and weekday suppers in the Lodge. The consumptions contained less than one-third of the daily allowances for iron (weekday breakfasts at the Lodge and Pasta Palace and weekend lunches at the Barbecue Ranch), vitamin A (weekday breakfasts at the Lodge and Pasta Palace, all meals at the Barbecue Ranch, weekend lunches at 29-Burgers and weekday lunches at the Sports Circle) and niacin (weekday breakfasts at the Lodge and Pasta Palace). Three average meals consumed in either dining hall during the first phase of the study would provide at least a 20% excess of all nutrients including calories and as much as 150% excess of calcium and vitamin C. However, any woman eating only 2,200 kcal (estimated needs) per day with the average nutrient distribution would receive only between 70 and 80% of her allowances of iron and vitamin A. After initiating the restaurant concept of feeding, the consumptions from three average meals provided 98 (Lodge) to 135\$ (Pasta Palace) of men's caloric needs and similar quantities (comparable to those of the previous feeding system) of other nutrient intakes except for the Barbecue Ranch's meals which provided

only 75 and 101% of the daily allowances of vitamin A and iron, respectively. Women consuming 2,200 kcal per day would receive between 64 (Barbecue Ranch) and 70% (Lodge) of their iron and from 48 (Barbecue Ranch) to 90% (Pasta Palace) and 175% (Lodge) of their vitamin A allowances. Therefore, iron and vitamin A nutriture, especially for women, would be of concern in both the first and second phase feeding systems.

The caloric distribution in the intakes from the meals indicates protein contents were adequate for all meals served in the Force Troops Dining Hall and for all except weekend main suppers in the Student Dining Hall during the first phase of the study. After initiating the restaurants concept of feeding, the protein contribution to caloric intakes was low for women in weekday lunches and all suppers at the Barbecue Ranch, weekday lunches at 29-Burgers, weekday breakfasts and all suppers at the Pasta Palace, and weekend brunch at the Sports Circle. Not only was the protein content of these meals relatively low, but the fat content was excessive, especially in the two short-order type restaurants (Barbecue Ranch and 29-Burgers). Only the Sports Circle consistently served meals that provided consumptions containing near the goal of less than 40% of calories from fat, although lunches at the Lodge and Meating Place also provided less than 40% fat calories.

The calcium to phosphorus ratio was lower in the intakes from the restaurants and this was particularly noticeable for the two short-order restaurants and the steak house (Meating Place). This is the result of both reduced milk and calcium intakes and increased soft drinks and phosphorus intakes. Some of these ratios are approaching the lowest recommended values of 0.50 although the range for human adults has not been firmly established (3).

Examination of these consumption data as nutrient densities confirmed the low values for iron and vitamin A in the meals from the conventional feeding system during phase one but also revealed that niacin was low in most breakfasts, thiamin was low in weekday suppers in the Force Troops' Dining Hall and vitamin C was low in all suppers in the Student Dining Hall. The initiation of the restaurants for military feeding did not alleviate any of these potential problems and appears to have increased the incidence of meals with low contents of niacin, thiamin, vitamin C, and riboflavin (average riboflavin concentrations were adequate for all of the meals during phase one).

The objectives of designing and implementing a new feeding system at Twentynine Palms Marine Corps Base were to increase utilization by the patron and to improve the efficiency and economy of the operations. Although LAIR was requested to provide an evaluation of the impact of changing feeding systems upon the nutritional intakes of the Marines, it is apparent that nutrition received only superficial attention when the menus were prepared for the restaurants of the new feeding system. If we could get enlisted personnel to increase their utilization of the military dining halls, their nutrition could be improved by education for better food selection, fortification with micronutrients to assure adequate intakes and/or more appealing preparation and presentation of the more nutritious foods. However, none of our data (dining hall headcounts in relationship to base population or dietary diary) indicate any increase in dining hall utilization. It appears that the nutrition of the Marine was worse and his/her utilization of the facility had not increased. The efficiency and economy of operations were not analyzed by our study.

The enlisted Marine's average daily consumption is between two and two-and-one-half meals per day and from one to one-and-one-half of these meals are consumed in the military dining hall (4). This is comparable to observations obtained during other recent surveys. Since the average Marine eats only one to one-and-one-half meals and less than 10\$ eat three meals/day in the dining hall, his/her daily nutrient intakes can not be evaluated from the total nutrients in three dining hall meals. Also, since the average person eats between 2 and 2.5 meals/day from all sources, one meal from the dining hall should account for 40 to 50% of the total daily intake instead of one-third of the intake. Therefore, intakes of 1300 to 1800 kcal/meal as observed appear reasonable. The importance of nutrient density and the adequacy of micronutrient concentrations in military dining halls have increased since previous studies have shown that nutrient densities of micronutrients are less in foods that military persons eat from other sources than are present in military dining hall foods (4,5).

#### CONCLUSIONS

A before-and-after study was conducted to compare the nutritional adequacy of meals consumed in the dining halls of the conventional Marine feeding system to those eaten in a restaurant concept of military feeding in which different serving lines have distinct decors and menus. Meals consumed from the conventional system provided at least one-third of the Marines' caloric needs and nutrient allowances with the exceptions of vitamin A (Student Dining Hall breakfasts) and niacin (breakfasts at both dining halls). Based upon nutrient densities or evaluating quantities of nutrients per 1,000 kcal revealed that women's protein allowances and both men's and women's vitamin A and iron allowances would not be fulfilled without the consumption of an overabundance of calories. Concentrations of thiamin were also borderline in several of

the meals. After initiating the new feeding system, caloric intakes exceeded one-third of men's needs at all meals surveyed except Lodge and Pasta Palace breakfasts and Barbecue Ranch weekend brunches. Iron. vitamin A, and niacin intakes were less than one-third of allowances for several meals. Nutrient density calculations indicated that the majority of the meals contained low concentrations of iron and vitamin A. several had low levels of thiamin and niacin and some were low in riboflavin and ascorbic acid. The majority of the meals consumed during both the first and second phases of the Twentynine Paims Dining Hall study contained excessive levels of fat, as much as 47% of the calories. These data suggest that the meals consumed in the military dining halls of the conventional Marine feeding system contained less than recommended allowances for some of the micronutrients and the nutritional quality of the meals consumed from the dining facilities of the new system were even worse.

#### RECOMMENDATIONS

•Increase the availability of foods that are good sources of iron, vitamin A, thiamin, riboflavin, vitamin C, and niacin.

• Reduce the amount of fat present in the menu, especially in the Barbecue Ranch and 29-Burgers.

•Increase nutrition awareness and nutrition education for the Marine.

•Consider nutrient fortification of certain foods to increase micronutrient intakes or provide nutritional supplements of vitamin A and iron, especially for female Marines.

•Monitor the nutritional status of the Marines to ascertain the degree of the detrimental effects of these diets upon physical and mental performance.

• Improve the quality of preparation of good nutritious foods in the military through better training and career opportunities for food service personnel.

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APPENDIX

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Nutrient	Men	Women	<u>Per Man</u> Meal
Calories (kcal)	3200	2200	1067
Protein (gm)	100	80	33.3
Fat ( <b>\$</b> of kcal)		Not to exceed 40%	
Calcium (mg)	800	800	267
Iron (mg)	18	18	6
Vitamin B,, Thiamin (mg)	1.6	1.1	0.53
Vitamin $B_2$ , Riboflavin (mg)	2.0	1.4	0.67
Niacin (mg)	21	15	7
Vitamin C, Ascorbic Acid (ma	g) 60	60	20
Vitamin A (IU)	5000	5000	1667
Vitamin A, IU/kcal	1.56	2.27	-
Thiamin, mg/1000 kcal	0.50	0.50	
Riboflavin, mg/1000 kcal	0.625	0.636	
Niacin, mg/1000 kcal	6.56	6.82	
Ascorbic Acid, mg/1000	18.75	27.27	
Iron, mg/1000 kcal	5.62	8.18	

TABLE 1. Daily Dietary Nutrient Allowances (2) and Per Meal Standards

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TABLE 2. Average Macronutrient Consumptions From Meals Served in the Force Troops' Dining Hall

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Meal	No. of Meals	Headcount <u>A VG SD</u>	Energy AVG SD	Prote: AVG	u S	Fat A VG	5	Carbohydrate <u>AVG</u> SD
			kcal	8		8		8 11
Breakfast					с с	61 E	0	118.5 7.1
W ookdavs	Q	369 41	C# 6611	1 • / +	י ת יי			
t oboda	2	373 22	1490 77	57.8	0.8	76.7	х <b>.</b> Х	147.U 1U.Z
N eekends All	8	370 36	1272 143	50.2	5.7	65.3	7.5	125.6 15.0
Lunch Leekdavs	9	472 32	1258 71	9 <b>.</b> 64	3.7	61.5	6.4	131.3 6.0
Supper	,	20,004	1 JULE KK	55 A	ц Г	68.3	7.9	129.8 8.8
<u>Veekdavs</u>	٥	16 004	00 6461					
li ookania	2	306 49	1470 73	59.9	0.7	/ 0 /		130.2 10.0
All	8	377 94	1376 85	56.7	₽.3	70.9	<b>6</b> .4	131.4 9.0
ł								
Lunch - Main	·				u u	53 7	с 0	126.9 17.2
Weekdays	9	21 862	051 4611					
Lunch - Short Order			1450 263	58	10 F	75.2	14.8	141.9 28.1
Weekdays	٥	07 4/1	202 2641	- • • • •			•	
Supper - Main	Y	<b>JEO 70</b>	1203 127	55.2	5.6	64.6	12.9	123.1 11.6
Weekdays		21 202				c oy	17.5	118.1 17.1
W eekends	2	209 31	1301 103		- 1		- (	0 0 0 1 0 1 0 1
All	æ	242 66	1295 114	55.5	4.7	1	12.4	0.21 0.121
Supper - Short Order	·			с у 1 1	a	C CL	с г С	142.0 27.0
Weekdays	9	148 30	1432 170				- c	171 0 1 3
M eekends	N	99 18	1826 0	<b>C•</b> /0	2.0	7.07		
All	ø	136 38	1530 232	59.0	7.2	79.7	х. Т.	1.12 0.061

TABLE 3. Average Micronutrient Consumptions From Meals Served in the Force Troops' Dinning Hall

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Meal	Calci AVG S	E O	A V G SD	<u>Vitar</u> AVG	SD A	<u>Thiamin</u> AVG SD	<u>Riboflavin</u> AVG SD	<u>Niacin</u> A VG SD	Ascorb A VG S
+	60 E		20	H	D	8 E	50 E	80 19	50 E
breaklast Weekdays	728	60	6.5 0.6	1700	148	0.64 0.04	1.37 0.10	5.4* 0.	9 43 11
Weekends	854 1	10	8.3 0.0	2201	36	0.81 0.04	1.57 0.13	7.5 0.4	5 51 1
АЦ	760	88	7.0 1.0	1825	264	0.68 0.09	1.42 0.13	5.9# 1.	3 45 10
Lunch									
W eekdays	663	60	7.1 0.7	2507	823	0.78 0.16	1.20 0.10	9.0 1.	0 65 9
Supper									
W eekdays	668	84	7.8 1.1	1928	468	0.72 0.10	1.20 0.09	10.6 2.	2 53 11
W eekends	653	67	8.9 0.5	4911	1041	1.15 0.55	1.29 0.03	12.0 1.0	0 61 10
All	664	76	8.1 1.1	2674	1489	0.83 0.30	1.23 0.08	10.9 2.0	) 55 11
Lunch - Main									
Weekdays	610	40	6.4 1.0	2816	1222	0.77 0.26	1.17 0.16	8.1 0.	5 69 16
Lunch - Short Order									
W eekdays	720	85	8.4 1.6	2063	210	0.78 0.16	1.26 0.13	11.0 3.5	60 15
Supper - Main									
W eekdays	651 1	04	7.8 1.4	2001	717	0.63 0.09	1.18 0.11	10.1 3.	3 46 10
W eekends	584	68	8.6 0.6	6185	1280	1.23 0.80	1.21 0.01	11.0 0.1	9 50 3
АЛ	634	97	8.0 1.3	3047	2086	0.78 0.42	1.19 0.09	10.3 2.9	6 44 6
Supper - Short Order									
W eekdays	663	76	8.0 1.2	1846	265	0.82 0.14	1.23 0.12	11.5 1.	t 65 22
Weekends	799	71	9.7 0.4	2139	344	0.98 0.03	1.46 1.12	14.0 1.	2 84 29
ILA	697	94	8.4 1.3	1920	292	0.86 0.14	1.28 0.16	12.1 1.	70 23
*Less than one-third o	f men's	daily	allowances (	7 mg).					

TABLE 4. Average Caloric Distributions and Nutrient Densities of Meals Consumed in the Force Troops' Dining Hall

Real         Frotein Pat Larronydrate         Ratio         IU/kcal         Thiamun fitorlavin Niacin Ascorbio Acid iron           Ereakfast         574         45.7         45.7         45.7         55.79         5.475           Weekdays         15.7         45.7         38.9         0.70         1.482         0.53         1.14         4.475         35.79         5.576           All         15.6         45.5         38.9         0.70         1.482         0.53         1.11         4.475         35.79         5.576           All         15.6         45.5         38.9         0.70         1.482         0.53         1.11         4.475         35.79         5.576           Lunch         15.6         45.5         38.9         0.70         1.482         0.53         1.11         4.475         32.27         5.566           Lunch         16.1         47.4         36.5         0.77         1.943         0.66         7.93         39.93         5.917           Supper         864days         16.1         47.4         36.5         0.71         1.943         0.66         7.93         5.967           Meekdays         15.4         45.6         0.677         1.944<		Perc	ent of Ca	ulories From	Ca:P	Vitamin A	5	lligra ms p	er 1,000 k	calories	
EreakfastEreakfastWeekdays15.745.438.90.611.4820.531.144.47535.795.426Neekcads15.345.738.90.791.4820.531.111.055.03534.025.506Lunch15.645.5738.90.601.1320.531.111.055.135.506Lunch15.645.5738.30.731.4820.531.115.5065.607Lunch16.14.7338.30.731.4320.550.967.1951.365.607Supper16.147.10.771.9430.600.897.1951.365.697Neekcadys16.147.10.771.9430.600.897.1951.365.697All16.147.10.771.9430.600.897.1951.365.667Autor16.345.80.771.9430.600.897.1951.375.757Autor16.147.436.50.771.4420.607.0359.635.666AutorShort0.771.4220.540.500.697.0359.635.666Autor16.345.80.701.4220.570.506.955.666Autor16.345.80.701.4220.570.566.955.666Autor16.714.220.771.422 <t< th=""><th>Neal</th><th>Prote</th><th>ein Fat C</th><th>arbohydrate</th><th>Ratio</th><th>IU/kcal</th><th>Thiari</th><th>n Riboflav</th><th>vin Niacin</th><th>Ascorbic</th><th>Acid Iron</th></t<>	Neal	Prote	ein Fat C	arbohydrate	Ratio	IU/kcal	Thiari	n Riboflav	vin Niacin	Ascorbic	Acid Iron
Weekdays15.745.438.90.81 $1.42^2$ 0.531.11 $4.47^5$ 35.795.426All15.645.538.90.70 $1.43^2$ 0.531.01 $4.64^2$ 32.275.56All15.645.538.90.70 $1.43^2$ 0.531.11 $4.64^2$ 32.275.56All15.645.538.90.70 $1.43^2$ 0.531.11 $4.64^2$ 32.275.56Lunch15.6 $45.3^3$ 38.30.73 $1.43^2$ 0.530.967.1951.305.807Supper16.1 $47.4^4$ 36.50.67 $3.34^4$ 0.76 $0.93^2$ 0.967.1951.305.807Weekdays16.1 $47.4^4$ 36.50.67 $3.34^4$ 0.67 $3.34^4$ 0.795.367All16.3 $45.6^4$ $0.71^3$ $1.94^2$ 0.66 $0.98^2$ 7.9339.935.807Weekdays15.2 $41.3^4$ $0.67^2$ $3.34^4$ $0.76^2$ $0.46^4$ $7.56^4$ $41.31$ $5.76^4$ Lunch - Main15.2 $41.3^4$ $0.76$ $1.42^2$ $0.54^4$ $0.66^2$ $7.93^2$ $5.807^2$ Lunch - Short Order $11^4$ $17.1^4$ $41.45^2$ $38.4$ $0.76^2$ $1.42^2$ $0.54^2$ $6.96^2$ $6.96^2$ Supper - Main $17.1^4$ $41.45^2$ $38.4$ $0.76^2$ $1.42^2$ $0.54^2$ $6.96^2$ $6.96^2$ $5.66^2$ Supper - Main	Breakfast										
Weekends         15.3         45.7         38.9         0.79         1.445         0.54         1.11         4.64         32.27         5.55           Lunch         Weekdays         15.6         45.5         38.9         0.79         1.443         0.53         1.11         4.64         32.27         5.56           Lunch         Weekdays         15.5         43.3         41.1         0.79         1.492         0.53         1.11         4.64         32.27         5.56           Supper         15.6         45.3         38.3         0.73         1.492         0.56         0.96         7.19         51.36         5.66           Supper         16.1         47.4         36.5         0.67         1.94         0.66         7.99         3.99         3.99           All         16.3         45.9         37.8         0.77         1.944         0.67         1.01         7.03         59.63         5.96           Lunch - Main         16.3         45.1         38.4         0.76         0.58         7.91         39.25         5.86           Lunch - Short Order         17.1         41.2         38.4         0.60         2.99         6.96         5.76	Weekdays	15.7	45.4	38.9	0.81	1.425	0.53	41.14	4.475	35.79	5.426
All         15.6         45.5         38.9         0.80         1.43 <sup>6</sup> 0.53         1.11 $4.64^{-5}$ 32.27         5.50 <sup>6</sup> Lunch         Weekdays         15.5         43.3         41.1         0.79         1.99 <sup>3</sup> 0.62         0.96         7.19         51.3         5.50 <sup>6</sup> Weekdays         15.5         43.3         41.1         0.79         1.99 <sup>3</sup> 0.62         0.96         7.19         51.3         5.50 <sup>6</sup> Weekdays         16.3         47.4         36.5         0.67         3.34 <sup>3</sup> 0.62         0.96         7.19         51.36 <sup>7</sup> 5.56 <sup>6</sup> All         16.3         45.9         37.8         0.77         1.94 <sup>3</sup> 0.60         0.88         8.15         41.79         5.56 <sup>6</sup> All         16.3         45.9         37.8         0.67         3.49 <sup>4</sup> 0.60         0.88         8.15         41.31         5.75 <sup>7</sup> Lunch - Main         15.2         43.4         0.06         0.88         8.15         41.31         5.75 <sup>7</sup> Weekdays         15.8         45.8         38.4         0.76         1.42 <sup>7</sup> 0.54         0.66 <td><b>Weekends</b></td> <td>15.3</td> <td>45.7</td> <td>38.9</td> <td>0.79</td> <td>1.485</td> <td>0.54</td> <td>1.05</td> <td>5.03</td> <td>34.02</td> <td>5,576</td>	<b>Weekends</b>	15.3	45.7	38.9	0.79	1.485	0.54	1.05	5.03	34.02	5,576
Lunch Lunch Veckdays 15.5 43.3 41.1 0.79 1.99 <sup>3</sup> 0.62 0.96 7.19 51.30 5.64 Weckdays 15.5 43.3 41.1 0.79 1.99 <sup>3</sup> 0.62 0.96 7.84 39.25 5.80 <sup>7</sup> Weekdays 16.4 45.3 36.5 0.67 3.34 0.78 0.96 7.84 39.25 5.80 <sup>7</sup> Weekdays 16.1 47.4 36.5 0.67 3.34 0.78 0.78 0.98 8.15 41.79 5.89 <sup>7</sup> Mill 16.3 45.9 37.8 0.77 1.944 0.67 1.01 7.03 59.63 5.89 <sup>7</sup> Lunch - Main Weekdays 15.2 41.3 43.4 0.06 2.84 0.67 7.93 39.93 5.89 <sup>7</sup> 1.95 Mill Weekdays 15.2 41.3 43.4 0.76 1.42 <sup>2</sup> 0.54 0.67 7.91 7.03 59.63 5.55 <sup>6</sup> Lunch - Short Order Weekdays 15.2 41.3 43.4 0.76 1.42 <sup>2</sup> 0.54 0.56 0.96 7.98 8.17 47.2 5.55 <sup>6</sup> Mill 17.1 44.5 38.4 0.76 1.42 <sup>2</sup> 0.54 0.66 1.70 7.03 59.63 5.55 <sup>6</sup> Mill 17.1 44.5 38.4 0.76 1.47 <sup>2</sup> 0.54 0.61 0.92 7.96 5.55 <sup>7</sup> Mill 17.1 45.5 37.5 0.70 2.35 0.61 0.92 7.96 2.44 <sup>7</sup> 6.61 3.41 <sup>7</sup> 38.27 6.63 Mill 17.1 45.5 37.5 0.66 4.75 0.55 0.93 8.47 33.21 6.61 Mill 17.1 45.5 37.5 0.60 0.93 8.47 33.21 6.61 Mill 17.1 45.5 37.5 0.69 1.17 <sup>6</sup> 0.55 0.93 8.47 33.21 6.61 Mill 17.1 45.5 37.5 0.60 0.69 1.17 <sup>6</sup> 0.54 0.68 6.65 4.65 Mill 16.2 Mill 15.2 4.61 1.25 <sup>7</sup> 0.55 0.54 7.56 5.50 1.56 5.51 Mill 15.2 4.61 1.3 80.6 0.62 1.17 <sup>6</sup> 0.54 0.64 5.56 5.51 Mill 15.2 4.61 1.3 80.6 0.62 1.17 <sup>6</sup> 0.55 0.54 7.50 0.55 6.53 6.53 6.53 Mill 15.2 4.61 1.3 80.6 0.62 1.17 <sup>6</sup> 0.55 0.54 7.50 0.54 5.50 5.51 Mill 15.2 4.61 1.3 80.6 0.62 1.17 <sup>6</sup> 0.55 0.56 0.54 5.50 5.51 Mill 15.2 4.61 1.3 80.6 0.62 1.17 <sup>6</sup> 0.55 0.56 0.64 7.56 5.40 <sup>7</sup> 8.66 5.40 <sup>7</sup> 8.66 5.40 <sup>7</sup> 8.66 5.50 5.51 4.51 K.50 <sup>10</sup> 6.55 0.55 0.56 5.51 4.55 Mill 15.2 4.61 1.3 80.6 0.62 1.17 <sup>6</sup> 0.55 0.56 0.58 5.45 5.40 <sup>7</sup> 8.65 5.50 5.55 6.53 6.55 6.55 6.55 6.55 6.55 6.55	АЦ	15.6	45.5	38.9	0.80	1.436	0.53		4.64	32.27	
Weekdays15.543.341.10.791.9930.620.967.1951.30 $\varepsilon.64^7$ SupperSupperSupper1.4730.650.960.731.4320.550.967.1951.30 $\varepsilon.64^7$ Supper16.345.937.80.771.4320.550.967.8439.255.807All16.345.937.80.771.9430.60 $c.89$ 7.9339.935.95All16.345.937.80.771.9430.60 $c.89$ 7.9339.935.95Lunch - Main16.345.937.80.771.9430.60 $c.89$ 7.935.95Lunch - MainVeekdays15.241.343.40.06 $c.94$ $a.67$ $a.47$ $a.67$ $a.66$ $a.75$ $a.66$ Lunch - MainVeekdays15.8 $45.6$ $38.4$ 0.76 $1.42^2$ $0.54$ $c.94$ $a.75$ Lunch - MainVeekdays17.1 $44.5$ $38.4$ $0.76$ $1.42^2$ $0.54$ $c.93$ $b.66$ Lunch - MainVeekdays17.1 $44.5$ $38.4$ $0.72$ $1.42^2$ $0.54$ $c.94$ $b.75$ Lunch - ShortOrder $a.144.5$ $38.0$ $0.72$ $1.42^2$ $0.54$ $c.93$ $b.41$ $5.76^2$ Lunch - ShortOrder $1.44.5$ $37.5$ $0.73$ $1.25^2$ $0.49^2$ $7.98$ $26.45$ $b.75$ Neekedays <td>Lunch</td> <td></td> <td>•</td> <td></td> <td></td> <td>(</td> <td>I</td> <td></td> <td></td> <td></td> <td>•</td>	Lunch		•			(	I				•
Supper Keekdays16.445.3 16.438.3 16.40.73 16.4 $1.43^2$ 36.50.53 0.67 $1.43^2$ 36.50.55 0.670.90 36.97.93 26.9339.25 5.897 5.897 5.897 5.897 5.897Lunch - Main Meekdays15.241.31 37.837.8 0.710.711.943 0.600.600.88 0.607.93 39.935.967 5.897 5.897 5.897 5.897 5.897 5.897 5.897Lunch - Main Meekdays15.241.31 43.443.4 0.060.08 2.442.44 0.671.01 7.017.03 7.0359.63 5.856 6.613 5.893Lunch - Short Order Meekdays15.845.81 38.438.4 0.760.76 1.4750.54 0.6670.86 0.867.56 41.316.613 5.767 6.613Supper - Main Meekends17.1445.3 37.538.0 0.700.72 2.3550.497 0.6670.92 0.737.98 5.4475.767 5.663Supper - Main Meekends17.1445.3 37.539.3 0.700.72 2.3550.497 0.6977.98 0.69726.45 5.447Supper - Short Order Meekends14.5 14.537.5 37.50.73 0.7071.252 0.6970.796 0.5665.967 5.967All Mickedays17.145.6 4.550.73 0.721.252 0.6970.56 0.6977.96 0.6925.467 5.467All Mickedays15.246.1 1.4550.72 37.51.252 0.6970.567 0.560.56 0.6947.96 5.467	W eekdays	15.5	43.3	41.1	0.79	1.99 <sup>3</sup>	0.62	0.96	7.19	51.30	5.647
Weekdays         16.4         45.3         38.3         0.73         1.43 <sup>6</sup> 0.53         0.90         7.84         39.25         5.80 <sup>7</sup> All         16.1         47.4         36.5         0.67         3.34         0.78         0.815         41.79         6.55 <sup>7</sup> All         16.1         47.4         36.5         0.67         3.34         0.78         0.815         41.79         6.55 <sup>7</sup> All         16.3         45.9         37.8         0.71         1.94         0.60         0.88         8.15         41.79         6.55 <sup>7</sup> Lunch - Main         Weekdays         15.2         41.3         43.4         0.08         2.44         0.67         3.01         7.03         59.63         5.56 <sup>6</sup> Lunch - Short Order         Weekdays         15.2         41.31         43.4         0.76         1.42 <sup>7</sup> 0.54         6.13         5.76 <sup>7</sup> Weekdays         17.1         44.5         38.0         0.70         1.42 <sup>7</sup> 0.54         0.51         5.76 <sup>7</sup> Supper - Main         17.1         44.75         0.55         0.54         0.51         0.51         5.76           Weekd	Supper		-			c					
Weekends       16.1       47.4       36.5       0.67       3.34       0.78       0.88       8.15       4.79       6.557         All       16.3       45.9       37.8       0.71       1.94       0.60       0.89       7.93       39.93       5.897         Lunch - Main       16.3       45.9       37.8       0.71       1.94       0.60       0.89       7.93       39.93       5.897         Lunch - Short Order       Weekdays       15.2       41.3       43.4       0.08       2.44       0.67       1.01       7.03       59.63       5.556         Lunch - Short Order       Weekdays       15.8       43.4       0.76       1.422       0.54       0.86       7.59       5.556         Weekdays       17.1       447.2       0.76       1.422       0.54       0.86       7.51       5.767         Weekends       17.1       47.2       38.0       0.70       2.355       0.61       6.03       6.18       6.13         Keekedays       17.1       45.5       37.5       0.70       2.355       0.61       6.92       7.96       5.45         Mile       17.1       45.5       37.5       0.61       0.52 <td>W eekdays</td> <td>16.4</td> <td>45.3</td> <td>38.3</td> <td>0.73</td> <td>1.43</td> <td>0.53</td> <td>0.90</td> <td>7.84</td> <td>39.25</td> <td>5.807</td>	W eekdays	16.4	45.3	38.3	0.73	1.43	0.53	0.90	7.84	39.25	5.807
All 16.3 45.9 37.8 0.71 1.94 <sup>3</sup> 0.60 0.69 7.93 39.93 5.89 <sup>7</sup> Lunch – Main Veckdays 15.2 41.3 43.4 0.08 2.44 0.67 1.01 7.03 59.63 5.55 <sup>6</sup> Lunch – Anort Order 15.8 45.8 38.4 0.76 1.42 <sup>2</sup> 0.54 0.86 7.56 41.31 5.76 <sup>7</sup> Lunch – Short Order 17.1 44.9 38.0 0.72 1.55 <sup>2</sup> 0.49 <sup>4</sup> 0.91 7.81 35.87 6.03 <sup>3</sup> Neekdays 17.1 44.9 38.0 0.72 1.55 <sup>2</sup> 0.49 <sup>4</sup> 0.91 7.81 35.87 6.03 <sup>3</sup> Neekdays 17.1 44.5 35.6 0.70 2.35 0.61 0.92 7.96 26.45 6.61 <sup>3</sup> Neekdays 17.1 45.5 37.5 0.73 1.29 <sup>2</sup> 0.57 0.92 7.96 26.45 6.61 <sup>3</sup> Neekdays 15.4 45.3 37.5 0.73 1.29 <sup>2</sup> 0.57 0.80 7.65 45.86 5.99 <sup>6</sup> Neekdays 15.4 45.3 39.3 0.73 1.29 <sup>2</sup> 0.57 0.80 7.65 45.66 5.99 <sup>6</sup> Neekdays 15.4 45.3 39.5 0.61 1.17 <sup>6</sup> 0.54 0.80 7.65 45.66 5.99 <sup>6</sup> Neekdays 15.4 45.3 37.5 0.73 1.29 <sup>2</sup> 0.51 0.80 7.65 45.66 5.99 <sup>6</sup> Neekdays 15.4 45.1 38.8 0.73 1.29 <sup>2</sup> 0.54 0.80 7.65 45.86 5.99 <sup>6</sup> Neekdays 15.4 45.1 80.1 38.8 0.73 1.29 <sup>2</sup> 0.56 0.84 7.96 26.45 6.99 <sup>6</sup> Neekdays 15.4 45.1 80.1 38.8 0.73 1.29 <sup>2</sup> 0.56 0.84 7.96 26.45 6.99 <sup>6</sup> Neekdays 15.4 45.1 80.1 20.6 2.35 0.65 0.84 7.96 26.45 6.99 <sup>6</sup> Neekdays 15.4 45.1 80.1 20.6 0.84 7.96 26.45 6.99 <sup>6</sup> Neekdays 15.6 40.1 20.6 0.84 7.90 45.66 5.99 <sup>6</sup> No 5.65 0.84 7.90 45.66 5.99 <sup>6</sup> No 5.65 0.84 7.90 45.66 5.99 <sup>6</sup> No 6.56 0.84 7.90 45.66 5.99 <sup>6</sup>	W eekends	16.1	47.4	36.5	0.67	3.342	0.78	0.88	8.15	41.70	
Lunch - Main Weekdays 15.2 41.3 43.4 0.08 2.44 0.67 1.01 7.03 59.63 5.55 <sup>6</sup> Lunch - Short Order 15.8 45.8 38.4 0.76 1.42 <sup>2</sup> 0.54 0.86 7.56 41.31 5.76 <sup>7</sup> Weekdays 17.1 44.9 38.0 0.72 1.55 <sup>2</sup> 0.49 <sup>4</sup> 0.91 7.81 35.87 6.03 Weekdays 17.1 44.9 38.0 0.72 1.55 <sup>2</sup> 0.49 <sup>4</sup> 0.91 7.81 35.87 6.03 Weekends 17.1 45.5 37.5 0.70 2.35 0.61 0.92 7.96 26.45 6.61 Weekends 17.1 45.3 37.5 0.73 1.29 <sup>2</sup> 0.57 0.56 0.92 7.96 26.45 6.61 Weekends 17.1 45.3 39.3 0.73 1.29 <sup>2</sup> 0.57 0.56 0.94 8.0C 45.6 Weekends 17.1 45.2 46.1 38.8 0.72 1.75 0.54 0.61 0.92 7.96 26.45 6.53 Weekends 17.1 45.5 37.5 0.73 1.29 <sup>2</sup> 0.57 0.56 0.94 7.96 26.45 6.53 Weekends 17.1 45.5 37.5 0.72 1.75 0.56 0.94 7.96 2.35 Weekends 17.1 45.2 46.1 38.8 0.72 1.75 0.54 0.54 0.60 4.56 5.31 Weekends 14.5 47.9 38.6 0.72 1.25 <sup>2</sup> 0.56 0.84 7.90 45.66 5.31 Weekends 14.5 47.9 45.8 0.61 0.72 1.25 <sup>2</sup> 0.55 0.56 0.84 7.90 45.66 5.31 Weekends 14.5 47.9 50.7 0.56 0.84 7.90 45.66 5.40 <sup>2</sup> Note that is recommended in AR 40-25. $\frac{2}{2} < \frac{2}{2} \cdot \frac$	All	16.3	45.9	37.8	0.71	1.943	0.60	C.89	7.93	39.93	5.897
Weekdays       15.2       41.3       43.4       0.08       2.44       0.67       1.01       7.03       59.63       5.55         Lunch - Short Order       Weekdays       15.8       45.8       43.4       0.06       1.42 <sup>2</sup> 0.54       0.66       7.13       5.76 <sup>7</sup> Supper - Main       77.1       44.9       38.0       0.72       1.42 <sup>7</sup> 0.54       0.86       7.51       5.76 <sup>7</sup> Supper - Main       77.1       44.9       38.0       0.72       1.55 <sup>7</sup> 0.49 <sup>4</sup> 0.51       35.87       6.61 <sup>7</sup> Supper - Main       17.1       47.2       38.0       0.72       1.55 <sup>7</sup> 0.61       0.93       6.47       6.61 <sup>7</sup> Keekends       17.1       47.5       37.5       0.70       2.35       0.61       0.92       7.98       26.45       6.16 <sup>7</sup> All       17.1       45.5       37.5       0.73       1.25 <sup>6</sup> 0.55       0.61       0.92       7.98       26.45       6.16 <sup>7</sup> All       17.1       45.6       0.73       1.25 <sup>6</sup> 0.55       0.54       7.96       5.56       5.56         Meekends       14.5       47.9       0.56	Lunch – Main										
Lunch - Short Order Weekdays 15.8 45.8 38.4 0.76 $1.42^2$ 0.54 0.86 7.56 41.31 5.76 Weekdays 17.1 44.9 38.0 0.72 $1.55^2$ 0.49 <sup>4</sup> 0.91 7.81 35.87 6.03 Weekends 17.1 47.2 35.8 0.66 4.75 0.95 0.93 8.47 38.21 6.61 Weekends 17.1 45.5 37.5 0.70 2.35 0.61 0.92 7.98 26.45 6.61 Weekends 17.1 45.5 37.5 0.70 2.35 0.61 0.92 7.98 26.45 6.16 Weekends 15.4 45.3 39.3 0.73 1.29 <sup>5</sup> 0.57 0.54 8.00 4.5.6 5.45 Weekends 14.5 47.9 37.5 0.70 2.35 0.61 0.92 7.98 26.45 5.9 <sup>5</sup> Weekends 14.5 47.9 37.5 0.73 1.29 <sup>5</sup> 0.54 0.84 7.90 45.66 5.49 <sup>5</sup> Weekends 14.5 46.1 38.8 0.72 1.75 <sup>6</sup> 0.54 0.84 7.90 45.66 5.49 <sup>5</sup> Weekends 14.5 46.1 38.8 0.72 1.25 <sup>5</sup> 0.56 0.84 7.90 45.66 5.49 <sup>5</sup> Weekends 14.5 46.1 38.8 0.72 1.25 <sup>5</sup> 0.56 0.84 7.90 45.66 5.49 <sup>5</sup> Weekends 14.5 46.1 38.8 0.72 1.25 <sup>6</sup> 0.56 0.84 7.90 45.66 5.49 <sup>5</sup> Weekends 14.5 46.1 38.8 0.72 1.25 <sup>6</sup> 0.56 0.84 7.90 45.66 5.49 <sup>5</sup> Weekends 14.5 46.1 38.8 0.72 1.25 <sup>6</sup> 0.56 0.84 7.90 45.66 5.49 <sup>5</sup> Weekends 14.5 46.1 38.8 0.72 1.25 <sup>6</sup> 0.56 0.84 7.90 45.66 5.49 <sup>5</sup> Weekends 14.5 46.1 38.8 0.72 1.25 <sup>6</sup> 0.56 0.84 7.90 45.66 5.49 <sup>5</sup> Weekends 14.5 46.1 38.8 0.72 1.25 <sup>6</sup> 0.56 0.84 7.90 45.66 5.49 <sup>5</sup> Weekends 14.5 46.1 38.8 0.72 1.25 <sup>6</sup> 0.56 0.84 7.90 45.66 5.49 <sup>5</sup> Weekends 14.5 46.1 38.8 0.72 1.25 <sup>6</sup> 0.56 0.84 7.90 45.66 5.49 <sup>5</sup> Weekends 14.5 46.1 38.8 0.72 1.25 <sup>6</sup> 0.56 0.84 7.90 45.66 5.49 <sup>5</sup> Weekends 14.5 46.1 38.8 0.72 1.25 <sup>6</sup> 0.56 0.84 7.90 45.66 5.49 <sup>5</sup> Weekends 14.6 4.5 4.5 med weekends 1.6 4.5 4.5 4.60 <sup>5</sup> 0.56 <sup>5</sup> 0.	Weekdavs	15.2	41.21	4.54	0 08	44 0	n 67		CO F	() 1 1	9  
Weekdays15.8 $45.8^{-1}$ 38.4 $0.76$ $1.42^{-2}$ $0.54$ $0.86$ $7.56$ $41.31$ $5.76^{-1}$ Supper - MainSupper - Main $7.11$ $44.9^{-1}$ $38.0$ $0.72$ $1.55^{-2}$ $0.49^{-4}$ $0.91$ $7.51$ $35.57$ $6.03^{-1}$ Weekdays $17.1$ $47.2^{-1}$ $38.0$ $0.72$ $1.55^{-2}$ $0.49^{-4}$ $0.91$ $7.51$ $35.57$ $6.63^{-1}$ Weekends $17.1$ $47.2^{-1}$ $35.6$ $0.72$ $1.55^{-2}$ $0.49^{-4}$ $0.92$ $7.98$ $26.45$ $6.61^{-1}$ All $17.1$ $45.5^{-3}$ $37.5$ $0.70$ $2.35$ $0.61$ $0.92$ $7.98$ $26.45$ $6.61^{-1}$ All $17.1$ $45.6^{-3}$ $37.5$ $0.73$ $1.29^{-2}$ $0.54$ $0.80$ $7.65$ $45.66^{-5}$ Supper - Short Order $14.5$ $47.9^{-3}$ $39.3$ $0.73$ $1.29^{-2}$ $0.54$ $0.80$ $7.65$ $45.66^{-5}$ Supper - Short Order $14.5$ $47.9^{-3}$ $39.3$ $0.72$ $1.29^{-2}$ $0.56$ $0.84$ $7.39$ $45.66^{-5.47}$ Supper - Short Order $14.5$ $47.9^{-3}$ $39.8$ $0.72$ $1.27^{-2}$ $0.56$ $0.84$ $7.39$ $45.66^{-5.47}$ Weekends $14.5$ $40.1$ $38.8$ $0.672$ $1.25^{-2}$ $0.56$ $0.84$ $7.39$ $45.66^{-5.46}$ Number $< 2.271U/kcal standard for women< 2.271U/kcal standard for women< 2.6760.$	Lunch - Short	Order				• •		-	CO+1	50.40	
Supper - Main       Supper - Main         Weekdays       17.1       44.9       38.0       0.72       1.55 <sup>2</sup> 0.49 <sup>4</sup> 0.51       35.67       6.63         Weekdays       17.1       47.2       35.6       0.66       4.75       0.95       0.93       8.47       38.21       6.61         Weekends       17.1       47.2       35.6       0.66       4.75       0.95       0.93       8.47       38.21       6.61         All       17.1       45.5       37.5       0.70       2.35       0.61       0.92       7.96       26.45       6.61         Supper - Short Order       15.4       45.3       39.3       0.73       1.29 <sup>2</sup> 0.57       0.54       0.61       26.45       6.56       5.96 <sup>4</sup> Supper - Short Order       14.5       47.9       37.5       0.73       1.29 <sup>2</sup> 0.57       0.54       7.96       5.45       6.56 <sup>4</sup> Weekdays       14.5       47.9       37.5       0.72       1.75 <sup>6</sup> 0.55       0.61       7.96       5.45       6.56       5.96         Meekends       14.5       47.9       9.5       0.56       0.54       7.96       5.96       5.96	Weekdays	15.8	45.8	38.4	0.76	1.422	0.54	0.86	7.50	41 21	5 707
Weekdays       17.1       44.9       38.0       0.72       1.55 <sup>2</sup> 0.49 <sup>4</sup> 0.51       35.87       6.61         Weekends       17.1       47.2       35.8       0.66       4.75       0.95       0.93       8.47       38.21       6.61         Weekends       17.1       47.2       35.8       0.66       4.75       0.95       0.93       8.47       38.21       6.61         All       17.1       45.5       37.5       0.70       2.35       0.61       0.92       7.96       26.45       6.76         Supper - Short Order       15.4       45.3       39.3       0.73       1.29 <sup>2</sup> 0.57       0.54       8.00       45.66       5.96         Supper - Short Order       14.5       47.9       37.5       0.72       1.77 <sup>2</sup> 0.54       0.80       7.50       5.96	Supper - Main		•			,	1. 1	2 2 2	)	- - -	•
Weekends       17.1       47.2       35.6       0.66       4.75       0.95       0.93       6.47       36.21       6.61         All       17.1       45.5       37.5       0.70       2.35       0.61       6.61       5.45       6.61         All       17.1       45.5       37.5       0.70       2.35       0.61       6.92       7.98       26.45       6.16         Supper - Short Order       17.1       45.5       37.5       0.73       1.292       0.57       0.54       8.00       47.63       5.59         Weekdays       15.4       45.3       37.5       0.69       1.177       0.54       0.80       7.45       45.66       5.49         Weekends       14.5       47.9       37.5       0.69       1.177       0.54       0.80       7.46       45.66       5.49         All       15.2       46.1       38.8       0.72       1.257       0.56       0.84       7.40       45.66       5.49         All       15.2       46.1       38.8       0.72       1.257       0.56       0.84       7.40       45.66       5.49         All       15.2       46.1       38.8       0.72 <td>Weekdays</td> <td>17.1</td> <td>44.9.</td> <td>38<b>.</b>0</td> <td>0.72</td> <td>1.552</td> <td>7 57 C</td> <td>0 °</td> <td>7.51</td> <td>35 A7</td> <td>. eu 9</td>	Weekdays	17.1	44.9.	38 <b>.</b> 0	0.72	1.552	7 57 C	0 °	7.51	35 A7	. eu 9
All       17.1       45.5       37.5       0.70       2.35       0.61       0.92       7.98       50.45       6.16         Supper - Short Order       Neekdays       15.4       45.5       37.5       0.73       1.292       0.57       0.54       8.00       4.63       5.596       5.596         Supper - Short Order       14.5       47.9       37.5       0.73       1.292       0.54       0.80       7.65       45.80       5.96         Neekends       14.5       47.9       37.5       0.672       1.175       0.54       0.80       7.65       45.80       5.196         All       15.2       46.1       38.8       0.722       1.255       0.56       0.54       7.30       45.65       5.196         All       15.2       46.1       38.8       0.722       1.255       0.56       0.84       7.30       45.65       5.196         All       15.2       46.1       38.8       0.722       1.255       0.56       0.64       7.30       45.65       5.196         All       15.2       46.1       38.8       0.722       1.255       0.56       0.64       7.30       45.65       5.96         Vof	Weekends	17.1	47.2	35.8	0.66	4.75	0.95	0.03	6.47		
Supper - Short Order Weekdays 15.4 45.3 <sup>1</sup> 39.3 0.73 1.29 <sup>2</sup> 0.57 0.56 8.00 4.45.8 45.80 5.316 Weekends 14.5 47.9 <sup>1</sup> 37.5 0.69 1.17 <sup>6</sup> 0.54 0.80 7.65 45.80 5.316 MI 15.2 46.1 38.8 0.72 1.25 <sup>6</sup> 0.56 0.84 7.30 45.66 5.49 <sup>6</sup> > 40.8 maximum that is recommended in AR 40-25.1 2 < 2.67 IU Real standard for women and 1.56 11 Real for men. < 2.27 IU/Real standard for women. < 0.6 ms/1000 keal standard for women and women.	ALL	17.1	45.5	37.5	0.70	2.35	0.61	0.02	7.98	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
Weekdays       15.4       45.3       39.3       0.73       1.29 <sup>2</sup> 0.57       0.54       8.00       4.133       5.36       5.316         Weekends       14.5       47.9       37.5       0.69       1.17       0.54       0.80       7.65       45.80       5.316         All       15.2       46.1       38.8       0.72       1.25 <sup>6</sup> 0.56       0.84       7.30       45.66       5.49         All       15.2       46.1       38.8       0.72       1.25 <sup>6</sup> 0.56       0.84       7.30       45.65       5.49         All       15.2       46.1       38.8       0.72       1.25 <sup>6</sup> 0.56       0.84       7.30       45.65       5.49         All       15.2       4.6-25 <sup>4</sup> 2.67 IU Wral standard for women.       < 0.56       0.54 randard for women.       < 0.56 and 6.82 mg/ women.       < 6.5 mg/ women.         < 6.56 and 6.82 mg/1000 kcai standards for men and women.       < 0.5 mg/ women.       < 6.5 mg/ women.       < 5.67 mg/ women.       < 6.56 and 8.18 mg/ women.	Supper - Short	Order									•
Weekends       14.5       47.9       37.5       0.69       1.17       0.54       0.80       7.65       45.80       5.49         All       15.2       46.1       38.8       0.72       1.25       0.56       0.84       7.30       45.66       5.49         All       15.2       46.1       38.8       0.72       1.25       0.56       0.84       7.30       45.66       5.49         All       8       6.72       1.25       0.56       0.84       7.30       45.66       5.49         All       8       7.67       1.25       2.67       1.79       45.67       5.49         S 40 %       maxjmum that is recommended in AR 46-25       2.67       2.67       10.84       7.90       45.67       7.90         For men       2.27       10.700 kcal standard for women.       2.67       2.67       2.67       8.18       400         For men.       2.656       and 6.82       mg/1000 kcal standards for men and women.       2.65       5.462       4.662       4.662       4.600	Weekdays	15.4	45.3	39.3	0.73	1.295	0.57	0.56	8.00	(r. 1) 7	ء در
All       15.2 46.1       38.8       0.72       1.25*       0.56       0.84       7.30       45.68       5.49 <sup>t</sup> > 40%       maximum that is recommended in AR 40-25.       2 < 2.27 IF 2001 standard for women and ".ffTreation"	Weekends	14.5	47.9.	37.5	0.69	1.176	0.54	0.80	7.65	45.80 80	(L) 
<ul> <li>&gt; 40 g maxjmum that is recommended in AR 46-25. <sup>2</sup> &lt; 2.27 IU Roal standard for women and ".ff.II Roal for men.</li> <li>Commen. &lt; 2.27 IU/kcal standard for women. </li> <li>C.F. mr/1000 kcal standard for women.</li> <li>C.F. mr/1000 kcal standard for women.</li> <li>C.F. mr/1000 kcal standards for men apd women, respectively.</li> <li>C.55 and 6.82 mg/1000 kcal standards for men apd women, respectively.</li> </ul>	ALL	15.2	46.1	38.8	0.72	1.25	0.56	0.84	1.40	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
> 40 % maximum that is recommended in AR 46-25.4 <sup>-2</sup> < 2.27 IU Wral standard for women and ".Ff.TU Yeal for men. < 2.27 IU/keal standard for women. < 0.5 mr/1000 keal standard for men and women. < 6.56 and 6.82 mg/1000 keal standards for men and women.							:				
for men. < 2.27 UV/kcal standard for women.	> 40% Eaxin	um that i	is recom	mended in AR	40-25.	1127°2 > 2	Roal star	dand for v	vonen and	1 J. J.	cal
C 6.55 and 5.62 mg/1000 kcal standards for men apd women, respectively. V 6.62 and 8.18 mg/1000	for men.	< 2.27 IU/	kcal stan	idard for wome	en.	< С. <sup>е</sup> ш <i>г</i> /100	)C koal sta	indand for	men and v	somen.	
	<pre>&lt; c.bc and b.</pre>	62 mg/10	00 kcai s	tandards for <b>π</b>	en and v	vor.en, resp	ectively.	29 <b>°</b> ≌ > 2	and 8.18	11 × 1000	

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TABLE 6. Average Micronutrient Consumptions From Meals Served in the Students' Dining Hail

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	Calcium	Iron	Vitamin	A Thiamin	Riboflavin AVC ST	Niacin AVC SD	Ascorbic AVG SD
Meal	AVG SD	AVG SU	AVL	TO DAN OT			
	99 196	ЭШ	II	50) E	u S		é
Break fast				5 U U U U	1 20 0 00	ہ 10 + 0	46 13
Meekdavs	613 40	1.1 0.4	- 60a	5 n. 1 n. n. 61			
	523 25	7.4 0.9	1567# 7	0 0.67 0.06	50.0 6C.S		5 6
All	588 48	7.2 0.5	1597# 1	9 0.67 0.04	1.17 0.07	6.9 1.0	<b>16 51</b>
Lunch							מ מ נ
Weekday s	611 65	7.4 0.7	20 1.652	1		r • > > + • • • •	2
Supper						9 F F OF	42 0
Weekday s	653 65	4.0 4.7	< 141 AC	20 0.13 0.03			
<b>Veekends</b>	681 77	7.8 0.0	2720 9.	14 0.82 C.27	1.20 0.10	10.0 0.01	1 t
All	661 64	7.0 0.7	2311 88	38 0.76 0.14	1.16 0.10	10.1 1.4	43 7
Breakfast - Main						, +	
a particular second	613 21	7.1 0.4	1609	39 0.67 0.03	3.1.20 0.06	t.4 C.3	
leotonde Leotonde	498 48	6.9 1.2	1531 11	15 0.59 0.0'	1.08 0.07	7.0 + 0.7	9 F
	581 62	7.0 0.6	1587# 1	33 0.65 C.O <sup>F</sup>	1.17 0.08	6.6' C.5	11 24
Breakfast Short Arder							•
Veekends	620 53	1.0 7.9	1703 2	35 0.97 0.24	1.12 0.15	14.1 1.6	100 38
Lunch - Main		1			· · · ·		5 6 7
Weekdays	525 74	6.8 1.2	3237 100	10 0.10 L.Z		0.0	2 2
Lunch - Short Order			ţ		•		5 F 4
Weekday s	637 72	7.9 0.3	1963 2	10 0.79 L.U		ر <b>.</b> د.	2
Supper - Main						r .	54 10 10
Weekdays	631 73		11 1422	12 0.07 U.C.		- 1 - 1 - 1 - 1 - 1	
ijeekends	560 36	7.2 0.1	2963 121	57 0.45 C.48	1.06 0.12		
All	610 71	7.3 1.3	2455 1.	20 0.71 0.29	1.09 0.12	0.0 1.2	4 17
Supper - Short Order							t
	634 71	F.7 1.3	1924 b	50 C.80 C.11	1.16 0.13		00
	730 76	E.6 0.7	2141 1	20 0 <b>.85 0.</b> 0	, 1.30 C.13	ب ب ب	1 1 1 1 1 1
	661 81	8.71.1	1986 5	32 0.82 0.0	1.20 6.14		4, 40
t less than one-third of	men's and	d women's	daily allo	wances (1667	· ai		

Less than one-third of men's and women's daily allowances the base than one-third of men's daily allowances (7 mg).

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anot.								:		
N PENJATI				•	•	•	•	•	•	
Supper					-			:	-	, 1
мееклауг	•	1	••••			•	•	 1	•	•
Weekends	.'		` <b>.</b> ;	•	;		•	•	; ; ;	ť
ALL	2.1.	1. 1. 1. 1. 1. 1.	• • •			•	1 L.	•	•	•
Breakrast - Main		ť								•
weekdays	بت	, , , <del>,</del> ,	رر •	ур. • .		•	•		•	
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ALL	້. ເລ	, 6°C 1		•	•••	1. 	•	•		•
Breakfast - Short	Orden				•					- 1
n ookond	с <b>.</b>		ч. t.	•	•		•		•	
Lunch - Main	••	(A						:		
ii eekdays	., 	t: - : : 1	<b></b> 111	•	•	•		•	•	•
Lunch - Short Ord	er .	r.					·	r		•
Weekdays	نے ج	10°11	t- - -	•	•	•		•	,	-
Supper - Main		t							•	
Weekdays	Ę.	- 5°-,	40.2	•	- ,	•	•	, ·	,	•
A revends	 . J . T				•	•	•	. :		•
; ] ; ]	10.0		1::	•	•		•	•	•	•
Support - Short Co	ter	r								
SVEL TOAK				•	•	•	•	`. `	•	•
a eexerda	•			•	•	•		,	•	
	· • •			•	•	•			•	•
	· · ·			1 A. L. W. M.	•••••••••••••••••••••••••••••••••••••••	• • • • • •		· · · ·		
an the third much the the the	• • 1 • 1 • 1	• • •		cal var. H					•	
CHELTER CEUR,	н 10 м 11 м 11 м	÷				- 1 SPACE -		•		
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Average Macronutrient Consumptions From Meals Gerved in the Lodge and Barbecue Ranch TABLE 6.

Meal	Ne.01 Meals	Headcount AVG SD	Energy AVG SI	<u>AVG</u>	<u>r</u> El	AVG	5	AVG	trate
			kcal	E ta		 		8 B	
	Ľ	odge Dining	Hall/A-ration	menu					
Breakfast						1			
Weekdavs	-1	414 60	923 <b>*</b> 52	36.5	с, С	47.4	1.2	87.8	14.2
Weekends	2	396 74	1067 112	49. د	ۍ. ۱	5.64	4.6	111.4	13.7
AII	¢.	406 56	96 <b>*</b> 175	40.5	ດ ສ	48.2	2.6	95.7	17.5
Lunch									
Weekdays	-1	195 18	1078 225	53.2	16.5	47.4	12.3	113.6	32.7
Supper									
Meekdavs	ۍ ا	164 30	1049#115	52.1	11.9	9.64	6.3	100.3	<b>.</b> .
		048 V1	1165 31	11.04 1	7.5	58.7	1. 1	112.4	ری • t
All	-	188 49	1082 116	51.4	10.2	52.2	8.2	103.6	10.0
4									
	ſ		Ę						
	ñ	arbecue kanc	h/short order	. menu					
Lunch	7	ਸਿੰਘ ਤਿਸ਼ੇ ਹੈਸ਼	1248 73	1.44	ч. 1	64.6	-1•-3	127.5	t. 9
Weedende Weedende	• (	76 40	1027# 33	40.3	7.0	52.6	6•3	0.69	υ. 1
All		189 93	1174 133	43.3	5.C	60.7	в <b>.</b> Э	118.0	16.0
Supper									
Weekdavs	u)	154 23	1302 106	45.1	6. L	69.2	7.5	130.1	r (n
Weekends	t d	273 42	1349 35	: 	m 	72.0	0.0	137.0	- <b>T</b> •
	t	C Ju U T	1215 01	[ ]	۲ س	70.0	6. v	132.3	5.7

\*Less than one-third of men's daily reeds.

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TABLE 9. Average Micronutrient Consumptions From Meals Served in the Lodge and Barbeeve Ranch

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	Le J		12			e						
Keal		10. 10.	A V G	5. 5.	11 10 A		ds pva	AVG SD	AVG		AVG	
	e.	50	с. 	<u>ب</u> د	F		Ъ́Ш	н С	E E		60 E	
Breakfast					ೆನ್ನ ಗಂಗಿಕ್	· Dinin	g ‼all/A-ratio	n menu				
Weekdays	519	38	¥ √≎• ग	ц) • •Э	1467 <b>#</b>	. ⊇80	0.58 0.07	1.12 0.16	#8 <b>*</b>	0.6	36 2	-
Weekends	1	11	ഗ • !~		155 152 152	344	0.80 0.12	1.31 0.21	. n . 8	1.6	1	لا س
All I mob	573	66	സ • •	••	1685	430	0.65 0.14	1.18 0.16	6.0 <sup>†</sup>	2.1	49 2	9
Weekdays	র্চমা	80	8°0	2.0	8425	9631	1.05 0.50	1.34 0.82	11.3	0.4	36	4
Weekdays	516	141	6.4	1.7	2395	1454	0.56 0.20	1.07 0.27	C G	6.9	4	c
W eekends	637	305	1.7	0.7	2277	586	0.68 0.14	1.08 0.09	7.8		- <del>-</del> 09	bc
All	550	180	6.6	1.4	2361	1213	0.60 0.18	1.07 0.22	8.7	5.0	58.	ათ
					- Codac B							
Lunch												
Weekdays	361	59	7.1	0.7	1138#	228	0.72 0.13	0.79 0.12	10.5	1.1	61	7
<b>k</b> eekends	332	63	5.6*	1.2	500	<u>1</u> 5	0.54 0.00	0.70 0.67	8.6	-5	33.1	· 0
All	251	64	6.6		925*	374	0.66 0.14	0.76 0.11	6•6	1.4	1 1 1	
oupper Weekdays	352	51	6.8	6.0	1126 #	183	0.74 0.15	0.78 0.11	10.7	1.7	ر ت	a
Weekends	402	37	7.1	0.3	1236 #	75	0.76 0.09	0.84 0.07	6 6	0 <b>.</b> 5	1 1	
ILA	19c	50	6.9	0.7	1157#	163	0.75 0.13	0.60 0.10	10.5	- C	20	
* Less than or	e-thind	ofme	in's and	NO THE	lieb slut	iolie v	vanoes (b.m.c.o	6				
. 7 and 5 mg	of niac	in. res	pective					ID AT LAAL SMAT	UT III P'IT A	H I		
T Less than on	e-third	of me	n's dai	ly allo	wances	(7 m.g	of niacin).					

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TABLE 10. Average Caloric Distributions and Nutrient Densities of Meals Consumed -Lodge and Barbecue Ranch

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ADLE IC. AV										
Meal	Percent Protein	of Calo Fat Carl	ries from bohydrate	Ca:P Ratio	Vitamin A IU/kcal	Thia min	Milligra ms Riboflaví	per 1,000 Niacin As	kcalories scorbic Aci	d Iron
			Lodg	e Dining	Hall/A-ratic	n menu				
Bunal fact		¢	)	ł			, ,	с <sub>20</sub> 6	38.48	5.202
DEADAIG	4 E B	hr R <sup>2</sup>	7.75	0.84	1.593	0.03	22.1			800 6
Weekdays		28.1		0.76	1.995	0.75	1.22	9/.9.1	11.01	00 0 0 0 0 0 0 0 0
Weekends All	16.6	41°75	39.1	0.81	1.743	0.67	1.22	6.19	50.31	10.0
Lunch		C CC	д 1 <i>1</i>	0.57	7.82	0.97	1.25	10.46	32.96	7.420
Weekdays	19.4	39.0	- - -		-				7	8., ,
Supper	t	20 01	2.R. O	0.70	2.282	0.54	1.02	8.62	26.677	6.106
Weekdays		10.02	200	0.72	1.962	0.58	0.93	6.70	25.387	9.0.9 9.0
Weekends	18.8	43.12	38.1	0.71	2.183	0.55	0.99	8.03	26,28	0.0
TT N		,								
			Barb	ecue Ran	ich/Short-ord	ler menu				c
Lunch		1, 2		0 51	0.91	0.58	0.64	8.40	38.96	5.69°
Weekdays	14.1	40.4 20.72				0.53	0.68	8.42	32.25	5.458
Weekends	15.6	46.0	30.4			0.56	0.65	8.40	37.00	5.62
All	14.5	45.9	39.0				•			c
Supper	1,	1,2	0 0 0 0	0 R1	0.86 <sup>4</sup>	0.57	$0.60^{5}_{E}$	8.22	39.72	5.229
Weekdays	13.01	t	0 • 0 ÷	 	0.92	0.57	0.625	7.37	39.86	5.260
Weekends	12.1	41.42		0 1 1 0	0.88	0.57	0.612	7.97	39.76	5.25
All	13.4	4/.1	C• AC	10.0	•			d		
11 5 4 200	ned hv wo	mento	obtain prote	in allowa	nces withcut	c exceedin	g caloric r	eeds.	> 40% 6 11 2001	
maximum that	is recomm	ended ir	1 A R 405-25		2.27 IU/kcal	standard f	or women.	r renand	WO TU ACAL	
standard for n	iene as well	as 3 ab	ove.	).625 and	u.ojo mg/ H ards for men	and wome	anua us respect	ively.		
respectively.	00. v o o o o o o o o o o o o o o o o o o	and v.v. andard f	or women.		18 mg/1000	kcal stand	ard for wc	men.		
9 < 5.62 mg/1	000 kcal sta	andard f	or men, as v	vell as <sup>8</sup>	above.					

TABLE 11. Average Macronutrient Consumptions From Meals Served in the 29-Bunger: and Meating Place

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Meal	No. of Meals	Headcount AVG SD	Ener EV AVG SD	Protein AVC S		Fat	6	Carbohyo <u>A''G</u>	SD
			kual	gm	ļ	Bm		Зп	
		29-Burgers/	Short-order	menu					
Lunch	ſ	067 E7	1612 115	52.0	5.4	77.4	7.5	156.6	13.3
Weekdays	י <b>ר</b> אי ווי	10 102	1467 71	56.4		74.5	 	144.8	6.7
Weekends All	N IC	236 51	1495 92	53.8	4.7	76.4	5.7	2.131	12.2
Supper	r	305 H7	1386 83	53.0	2 • D	<b>68.</b> 9	5.3	142.4	7.3
Weekdays	∩ ∩	55 55	1617 88	68.6	0.6	94.3	2.2	177.4	17.3
weekenas All	1 W	342 85	1563 246	59.2	8.8	1.97	14.5	ະສຸ ເດ ຍາ	21.6
		Meating Plac	e/Steak hous	e menu					
Breakfast Weekends	ŝ	331 16	1164 52	45.7	0.5	61.3	0.7	110.3	13.7
Lunch Weekdays	£	251 11	1294 118	49.5	3.7	56.3	3.1	150.9	19.4
Supper	۲۳	385 62	1162 114	43.8	1.9	53.7	7.0	7.75:	14.8
weekudy s Mookonds	<b>)</b> (1	286 49	1365 84	54.0	2.1	64.7	0.0		
All	5	345 83	1243 144	47.9	2° 2	58.1	0.)	54.5	

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TABLE 12. Average Micronutrient Consumptions From Meals Served in the 29 - Burgers and Meating Place

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	2					Eth officiation	Niacin	Ascorbi	0
l co X	Calcium A VG SD	A VG SD	Vitamin AVG	SDA	A V G SD	AVC SD	AVG SD	AVG SI	
MEAT		;					a e	80 E	
	8 E	н Ю	IU 29 Bi	urgers	/Short-order m	enu	0		
				)			1 C UL	46 14	
Lunch	667 75	7.9 0.7	2048	778	0.72 0.11		о 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	149 5	
weekdays		850.8	1328*	524	0.82 0.12	1.22 0.11		48 10	
W eekends	592 72	8.1 0.7	1760	726	0.76 0.11	1.14 0.10			
TTU				Ċ		1 0 1 0 07	11.4 0.6	5 448 6	
upper 11 - aladaura	517 28	7.6 0.7	2041	538	0.000.0		14.2 1.	57 12	
w eekdays	02 1.29	10 4 0 4	2589	600	0.90 0.12	1.21 U.VO		7 52 9	
weekenus All	571 77	8.7 1.6	2260	570	<۲.0 TT.0				
			Meati	al Ai	ce/Steak house	menu			
				þ					
Breakfast	ac jer	670.4	2134	328	0.78 0.06	1.46 0.07	7.4 0.	7 37 .	~
Weekends	1 20 20		) I	)				0 51 10	_
Lunch	07 <b>7</b> 01		2231	261	0.65 0.11	1.02 0.20	10.6 0.		_
Weekdays	40 L/H							с <del>-</del>	-
Supper			1828	159	0.62 0.14	0.97 0.09	0°3 0.		<b>T</b> 0
Weekdays	462 89	0.5 J.0	1050	810	0.61 0.00	0.98 0.02	12.1 0.		<b>n</b> (
Weekends	430 13	8.0 0.0	2025		0.61 0.10	0.97 0.06	10.4 1.	24 45	n
AU	149 66	2-1 0-1	6.202	r n					
						()			

\* Less than one-third of men's and women's daily allowances (1667 IU of vita min A).

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TABLE 13. Average Caloric Distributions and Nutrient Pensities of Meals Consumed - (-Surgers and Meaturg Place

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ŀ: eai	Percei Protei	nt cf Calo r. Fat Car	ries From bohydrate	Ca:P Fatio	Vitamin A IU/koal	Thia min	Killigra ms Riboflavin	per 1000 Nizoir A	kcalories scortio Ac	non bi
			S.	-Burgers	/Short-crder	menu				
Lunch Weekdavs	13.6	45.52	40.6	0 <b>.</b> 68	1.35	0.475	0.72	6.77		5.227
Weekends	15.2	45.62	39.2	C.70	<b>0.</b> 91	0.56	0 • K 3	7.86	33.53	5.79 <sup>6</sup>
АП	14.2	45 • 5 <sup>2</sup>	46.2	0.69	1.164	0.51	C.76	7.20	<b>33.</b> 20	.т. 2
Supper	r u f		بر د	C 4 C	1 L7 <sup>4</sup>	0 405	ŭ. 73	8.20	म भा गा (1	5.48 <sup>5</sup>
N eekends N eekends	15.0	46.3 <sup>5</sup>	38.7	0.0 0.62	1.42	0.50	0.70	7.64	31.50	5.72 <sup>7</sup>
АЛ	15.	N ۲۰۰۱ ۲۰۰۱	39.7	0.62	1.45	0.49 <sup>2</sup>	C.71	8°C3	33.06	5.58
			Mea	iting Plac	e/Steak hou	se menu				
Breakfast Weekends	15.5	46.9 <sup>2</sup>	37.5	0.87	1.83 <sup>3</sup>	0.67	1.25	6.33 <sup>6</sup>	31.50	5.767
Lunch Weekdays	15.1	38.7	46.1	0.62	1.723	0.50	0.79	8.20	39.52	5.41 <sup>8</sup>
Supper Bookdans	с Ц	41 22 25	1 S H	n, hh	1.5.73	0.53	0.83	8.01	35.92	5.428 128
Meekends Meekends	15.7	42.32		0.56	1.703	0.440	0.72	8.86	31.00	5.86
ALL	15.3	41.85	42.9	0.62	1.63 <sup>3</sup>	<sup>6</sup> 40°	0.78	8.39	33.76	5.63
<pre>&lt; 14.5% requ rexircum that</pre>	ired by w is recom	omen to o mended in	btain prote A H 40 <sub>c</sub> - 25	in allowa	nces without .27 IU/kcal :	exceeding trandard fo	caloric ne r wcтеn.	ed <b>s</b> . 2	• 40 % 6 IU Acal	
standard for m < 6.56 and 6.	en, as ке 82 т g/10	ll as 3 abc gC kcal ctu	ve. ′< C andards for	.5 mg/10 ren and	00 kcal stan( women, resp	dard for bo ectively.	th <sub>7</sub> men and < 8.18	1 women. mg/10001	keal	
standard for we	omen.	с < 5.62 п	1g/1000 kca	l standan	d for men, as	s well 7 as	above.			

TABLE 14. Average Macronutrient Consumptions From Meals Served in the Pasta Palace and Sports Circle

Xeal	No. of Heals	A VG	SU	Ener	20	<u>A V G</u>	ន	AVG	10	AVG	SD
		Pasta Pa	lace/F	kca thnic (I	l talian)	Em Esta		11 100		8 8	
cfast	7	682	14	1012#	. 26	35.1	1.7	46.7	9•9	115.2	11.3
ekcays olonds	r (\	50 tr 10 tr	21	1266	108	46.4	0°8	57.9	2.2	143.2	20.0
	9	639	70	1096	141	38.8	6.0	50.4	6.6	124.5	19.2
h ekdays	7	263	28	1648	124	61.5	5.0	80.3	7.9	173.6	7.3
er Abdave	4	186	75	1623	165	55.2	9.3	77.2	16.3	181.4	5.8
crudy o chards	2	294	100	1479	38 3	49.7	4.2	67.8	5.0	170.7	
	Q	222	92	1575	155	53.4	8.0	74.0	13.7	177.8	7.3
		Sport	s Circl	le/A-rat	ion me	nu					
ch sekerds	61	154	80	1582	69	45.5	6.1	70.4	6.4	198.2	24.8
h ekdays	4	463	68	1249	177	50.4	11.1	55.7	3.9	139.9	25.1
er •ekda∵s	1	366	31	1126	യ -1	44.6	<b>6</b>	51.5	ε. 	123.6	5.9
	N	384	161	1237	127	48.1	с. С	53.2	6.2	140.2	2•1
	9	385	76	1163	101	45.8	8.4	52.1	<b>ი</b> . ო	129.1	6.7

\* Less than one-third of men's daily needs.

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TAFUE 15. Average Micronutrient Consumptions From Meals Served in the Fasta Falace and Sports Circle

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Иеал	Calci A VG	F n G G	A V G	a S G	Titami AVG	s A S D	<u>Thuarin</u> AVG SD	<u> Hitorlavin</u> AVG SD	A VG SD	<u>Ascorbic</u> AVG SD
	Ē		Past	Pala Pala	10/01/01	din (Tto	mg Nan) menu	T. R	60 E	ຍ E
Break fact			•							
Weekdays	546	é s Cy	<b>*</b> ភេ ហ	ت• ہ	1371*	165	0.59 0.07	1.10 0.10		42 11
Weekends	682	32		0.6	2042	469	0.79 0.11	1.49 0.16	7.9.0.5	45 3
АЛ	591	11-	* • •	0.	1595#	4,25	0.66 0.13	1.23 0.23	6.2 <sup>T</sup> 1.7	4 j 9
Lunch										
Weekdays	709	34	8 <b>.</b> 2	0.7	3136	568	0.77 0.04	1.28 0.04	10.9 1.0	49 6
Supper										
Weekdays	720 1	SC	7.9	1.5	4147	606	0.77 0.12	1.20 0.13	3.8 2.0	46 7
Weekends	682	39	7.1	0.3	4035	270	0.71 0.05	1.17 0.03	8.2 0.2	52 5
A 11	708 1	03	7.6	1.2	4110	488	C.75 D.1C	1.19 0.10	9.2 1.7	48 E
			Š	orts C	ircle/A	- rati	on menu			
Brunch			•							
<b>W</b> eekend	508	28	7.6	2.4	1947	129	0.81 0.21	1.13 0.12	9.9 2.9	84 16
Lunch							Ŧ			
Weekdays	460		7.3	1.4	1447*	264	0.52 0.03	0.55 0.11	5.6 1.8	25 á
Supper										
W eekdays	134 1	07	6.3	0.6	1813	864	0.69 0.27	0.90 0.16	8.2 1.5	26 12
is rekende	525	59	7.4	1.5	2267	314	0.74 0.Cč	1.04 0.06	3.9 3.1	32 5
ALL	465	66	6.7	1.0	1965	723	0.70 0.21	0.95 0.15	S.8 2.0	28 1C
			•			Ľ				
T Less than one-third of	men's and	E O M	รัญนอ	ie ylte	- UMANCE		ig of iron; Tu	r' II of vitami	r h).	
Less than one-third of	men's dail	y allo	wance	s (0.5	3 mg of	thian	in;7 mg of n	iacin).		

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TABLE 16. Average Caloric Distributions and Nutrient Lensities of Meals -Pasta Palace and Sports Circle

.

	Percent	t of Calo	ries From	Ca:P	Vitamin A		MiDigram.	5 per 1,000	kcalories	
Meal	Protein	Fat Car	bohydrate	Ratio	IU/kcal	Thia min	Riboflavi	n Niacin A:	scorbic Aci	d Iron
			Pasta	Palace/	Ethnic (Italia	an) menu				
Breakfast	F	ç			Π			Ŷ		σ
w eekdays	13.7	41.25	45.1	C.82	1.367	0.59	1.08	5.240	41.09	5.340
Weekends	14.5,	40.75	44.8	0.63	1.61	0.62	1.18	6.27	35.70	5.617
ALL	14.0	41.0 <sup>2</sup>	45.0	ũ.63	1.45	0.60	1.12	5.640	39.02	5.36
Lunch		C			r	Ľ				0
Weekdays	14.8	43.5	41.7	0.74	1.90	0.47	0.77	6.60	29.99	4°-98'
Supper	F	ç				Ľ		, J		
Weekdays	13.5,	42.3 <sup>5</sup>	44.2	0.80	2.56	0.485	0.74	6.02 <u>5</u>	28,25	4.870
w eekends	13.3,	40.95	45.8	0.85	2.73	0.485	0.79	5.55	34.85	4.607
All	13.4	41.9 <sup>c</sup>	7.44	0.61	2.61	0.48	0.76	5.87	30.31	4.83
			Sp	orts Circ	cle/A-ration	menu				
Prunch					17			ي ب		o ,
Weekend	11.3	3 <b>6.</b> 4	49.3	0.67	1.23	0.51	0.71	6.25 <sup>°</sup>	53.16	4.807
Lunch					Π	Ľ			7	œ
W eekdays	16.0	39.7	44.3	0.60	1.16	0.41	0.76	6.89	19.87	5.840
Supper		C			6				7	0
Weekdays	15.7	40.85	43.5	0.63	1.613	0.61	0.80	7.31	23.247	5.60 <sup>°</sup>
<b>Weekends</b>	15.6	38.9_	10 • 11 11	0.65	1.833	0.59	0.54	1.97	25,597	5.58°
АП	15.7	40.1	44.2	0.64	1.69	0.60	0.62	7.55	24.07	5.76
< 14.5% requir	ed by wo	men to o	ptain protei	n allowar	nces without	exceeding	caloric n	eds. 2 >	40%	
es recommended	in AB 40	<u>-</u> 25. <sup>3</sup>	2.27 IUA	scal stan	dard for won	ien. ' <	1.56_IUA	cal standar	d men,	

<sup>C</sup> < 6.56 and 6.82 mg/1000 

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