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NUTRITIONAL STANDARDS

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DEPARTMENTS OF THE ARMY, THE NAVY, AND THE AIR FORCE

CORRECTED COPY

THIS CORRECTED COPY AMENDS ALLOWANCES ASSIGNED IN TABLE 1 AND DELETES TABLE 2

*AR 40–25
*BUMEDINST 10110.3E
*AFR 160–95

ARMY REGULATION
No. 40–25
BUMED INSTRUCTION
No. 10110.3E
AIR FORCE REGULATION
No. 160–95

DEPARTMENTS OF THE ARMY, THE NAVY AND THE AIR FORCE
WASHINGTON, DC, *30 August 1976*

MEDICAL SERVICES

NUTRITIONAL STANDARDS

This revision is the result of the required biannual review. For Army users, local supplementation of this regulation is prohibited except upon approval of The Surgeon General.

1. Purpose and applicability. This regulation defines nutrition responsibilities of The Surgeons General of the Departments of the Army, Navy, and Air Force and establishes nutritional standards of the Daily Food Allowance as prescribed in DOD Manual 1338.10–M. It applied to all US Army activities including the Army National Guard and the Army Reserve.

2. Responsibilities. The Surgeons General of the Departments of the Army, Navy, and Air Force are responsible for the following functions within their respective services:

a. Establishing appropriate nutritional and dietary standards for personnel subsisted under normal and special operating conditions such as are encountered in arctic, desert, and tropic climates; in preflight, flight, and aerospace; on and under the sea; and in other special situations.

b. Providing guidance to commanders relative to individual ideal weight, and methods for achieving this weight.

c. Providing qualified representatives to—

(1) Advise and serve as liaison with food procurement and food service personnel, and local menu boards (when applicable) to secure and maintain nutritional adequacy and palatability of food served under various conditions of operation.

(2) Recommend adjustments in dietary standards to meet variations in age, sex, body size, physical activity, climate, or other conditions which may influence nutritional requirements.

(3) Assist in nutritional education programs. Personnel must be educated to select food to insure an adequate diet and maintenance of desirable weight. Today there are more opportunities to make improper food choices because of the innovative feeding systems and the array of new food items available.

(4) Perform additional duties in the area of nutrition as directed.

d. Making periodic surveys to determine the nutritional adequacy of the Armed Services diet and recommending indicated corrections, adjustments, and other actions. (See AR 70–3/OPNAV INST 3900.26B/AFR 80–52/MCO 3900.9B/DSAR 3200.4.)

e. Reviewing requests and making appropriate recommendations for deviation from established nutritional standards.

f. Supervising studies made for determining nutritional status of personnel and reporting nutritional deficiencies or excesses.

3. Recommended nutrient allowances. *a.* Table 1 prescribes recommended daily dietary nutrient allowances for military personnel based on the National Academy of Sciences/National Research Council publication, "Recommended Dietary Allowances," Eighth Revised Edition, 1974, with

*This regulation supersedes AR 40–25/BUMEDINST 10110.3D/AFR 160–95, 10 August 1972.

adjustments to meet the needs of military personnel.

b. These recommendations are estimates of the quantity of nutrients which should be consumed for a daily average to meet the physiological needs of most healthy military personnel under normal conditions. Losses of nutrients that occur during the processing and preparation of foods must be taken into account when acquisition of food supplies to meet these recommendations is based on tables describing the nutrient composition of foods. These recommendations are not amounts necessarily required by an individual, but are goals at which to aim in meeting nutritional needs of groups or individuals.

c. Dietary nutrient allowances for personnel subsisted under special operating conditions will be recommended by The Surgeon General responsible for the health of the command.

4. Factors affecting calorie requirements. *a. Age.* The military nutritional standard is intended for men and women in the age range of 17–25 years. Adults whose growth is complete usually will have lower energy requirements because of decreased activity and metabolic rates.

b. Body size. The caloric allowances are established for individuals of average height and weight. (Men 68–70 in., 146–170 lbs; women 63–64 in., 120–130 lbs.) Caloric intake must be adjusted for the variations in energy requirements which result from differences in body size. Individuals of greater body size will need increased calories while those of smaller size will need fewer.

c. Physical activity. The recommendations are established for military personnel moderately active and living in a temperate environment. Individuals engaged in heavy labor for extended periods of time may increase their energy requirements by more than 25 percent. In rare instances, where troops are undergoing sustained vigorous physical activity, the daily calories expenditure may exceed 4,800 k calories. More often, personnel will have reduced requirements because of lessened physical activity. The correct caloric allowance for an individual maintains his body weight at a level consistent with his well-being and physical efficiency.

d. Climate. The recommendations are established for personnel in a temperate climate. When there is prolonged exposure to cold or heat, energy allowances may need adjustment. In a cold climate there is little reason to increase caloric allowances for activity out-of-doors providing personnel are adequately clothed, except to compensate for the relatively small 2–5 percent increase in energy expenditure associated with carrying or wearing extra weight of cold weather clothing and heavy footgear and in maneuvering on frozen or snow covered terrain. In a hot climate, loss of appetite may cause a voluntary but undesirable reduction of caloric intake below the level of need, especially when troops have recently been introduced into the hot environment and before the process of acclimatization is completed. When personnel are required to perform the same amount of work in a hot environment as in a temperate environment, their caloric expenditure will be increased. While little adjustment appears to be necessary for a change in environmental temperature between 20° and 30° C, it is desirable, under conditions of increased physical activity (rate of energy expenditure over 3,000 kcal/day), to increase caloric allowance by at least 0.7 percent for every degree Centigrade of rise in ambient temperature above 30° C. Appreciable loss of water and sodium through sweat may occur. Additional water should be made available to individuals experiencing excessive sweating during heavy heat stress. Additional salt also should be made available, preferably by using more salt on food at mealtime.

5. Other nutrients. A well-balanced diet must provide about fifty nutrients including essential amino acids, essential fatty acids, carbohydrates, vitamins, and minerals. The reference cited in paragraph 3*a* recommends daily dietary allowances for essential nutrients for which requirement information is available. Table 1 reflects some of these recommendations. Other essential nutrients not listed in table 1 are identified below. These have been omitted from the table since information relative to their content in foods is too limited to permit military menu planners to assure that prescribed levels are being achieved.

a. Vitamins.

(1) Recommended levels of vitamins cited in (2) below are the same for men and women unless otherwise specified.

(2) These levels are as follows: Vitamin D, 400 International Unit (IU); Folacin, 400 micrograms; Vitamin B_6, 2.0 milligram (mg.); Vitamin

B_{12}, 3 micrograms; and Vitamin E, 15 IU and 12 IU for men and women respectively.

b. Minerals.

(1) *Magnesium.* Recommended daily magnesium intake is 400 mg. for men and 300 mg. for women.

(2) *Phosphorus (allowances are the same as for calcium).* Because the amount of phosphorus in ordinary diets equals or exceeds the amount of calcium, it can be assumed that phosphorus intake will be adequate when the calcium intake is adequate.

(3) *Iodine.* Great variation occurs in the amount of iodine present in food and water. All table and cooking salt used in the military dining facilities will be iodized to insure an adequate intake.

(4) *Zinc.* Recommended daily zinc intake is 15 mg. for men and women.

6. Nutrients of current interest. *a. Fat.* Fats are important in the diet to provide essential fatty acids, transport the fat soluble vitamins and aid in their absorption, furnish energy, increase palatability, and give a feeling of satiety. However, evidence is accumulating that some fats, or too great an amount of fat, may be harmful and may lead to increased risk of coronary heart and blood vessel disease. For this reason, a moderate total fat intake with substitution of polyunsaturated for saturated fats, when possible, is recommended. Emphasis should be placed on the use of food preparation methods that prevent excessive amounts of fat in the foods served.

b. Fluoride. Fluoride is an essential nutrient which is incorporated into the structure of teeth and bone. This nutrient is an important factor in reducing tooth decay and its value in the treatment of osteoporrosis and Paget's disease is under investigation. Fluoride is found in small amounts in most foods and in many water supplies. The maintenance of optimal fluoride concentrations of about 1 milligram per liter (mg/1) in water supplies has proven to be safe, economical, and efficient.

Table 1. Daily Dietary Nutrient Allowances*

	Amount	*Men*	*Women*
Calories**	kcal	3,200	2,200
Protein	gm	100	80
Fat	gm	(***)	(***)
Calcium	mg	800	800
Iron	mg	18	****18
Vitamin B_1 (Thiamin)	mg	1.6	1.1
Vitamin B_2 (Riboflavin)	mg	2.0	1.4
Niacin	mg	21	15
Vitamin C (Ascorbic Acid)	mg	60	60
Vitamin A	IU	5,000	5,000

*To insure that possibly unrecognized nutrient needs are met, these recommendations should be provided from as varied a selection of foods as is practicable.

**Calorie intakes may need to be reduced for sedentary individuals and increased for individuals participating in strenuous physical activity (paragraph 4c). Calorie recommendations are for the ration during peacetime. During mobilization, additional food supplements may be needed for combat forces.

***Desirable proportion of total caloric intake from fat sources is *less* than 40 per cent, therefore, every effort should be made to achieve this in menu planning and in troop feeding. Carbohydrates will provide those calories not furnished by protein and fat.

****For women, it may be necessary to use a supplement to assure adequate iron intake.

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