

HEALTH AND NUTRITION

Assuring the Nutritive Value of QSR Meals

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The use of the QSR on military installations obviously represents an effort to provide for the increasing preference of Americans for fast-food meals. It stands to reason that American food preferences and habits are not different whether the individual is in uniform or not. This point was reviewed at these meetings in the Fall, 1972.¹

The military has accepted the realization that an army travels on its stomach, but the military has emphasized this from the management viewpoint; that is, the viewpoint of satisfying a need for the palliation of hunger and socio-cultural needs with food and ideally, highly preferred food. What has not been considered in this viewpoint is the long-term implications of nutrition - the sum of the biochemical and physiological processes concerned with the growth, maintenance and repair of the living organism or its constituent organs - nutrition in terms of preventive health and performance. Whereas, it has been self-evident to both military leader and soldier that food is important to life, limb, and happiness, few - in or out of the military; in or out of the food industry; in or out of the food service industry - have understood the direct relationship between food and ultimate long term performance.

If we can agree there is a need for good nutrition in the military, as well as anywhere else, then we have the problem of reconciling the need to meet social and cultural demands for food with the objectives of fostering balanced nutrition and consistent performance. QSR is meeting the social and cultural demands, and because food is the input to nutrition - the nutritive value of the food and food combinations of QSR meals is the key to nutrition and subsequent health and performance.

The experience with QSR meals in the military is too limited to analyze in terms of nutrition, but because Americans are Americans and I have had some experience with voluntary and involuntary food service meals, I will discuss the problems and suggest alternative solutions.

The American who prefers QSR meals is one who hates lines and loves to be on the move. The meals chosen are often the choice of three items: an entree, a side dish, and a beverage. Sometimes this is topped off with dessert. Since breakfast is often skipped or skimpy, the above meal type may be consumed twice daily, in addition to another more regular meal, and snacks.

The entree to a fast food or QSR meal is most likely to be a 'burger, chicken, pizza, fish, or weiners. The side dish is most often fried potatoes and with young adults, the beverage is carbonated. A switch to coffee occurs in early morning or late evening. Thirty percent of QSR meals with active young adults will include a milk shake.

The dramatic difference in acceptance between a Basic 4-Type A Meal, such as the high school lunch meal, and the regular chow hall meal as compared to the QSR meal is plate waste. With QSR the plate waste is nil. Part of this is due to the completely free selection, but it is reinforced by the consistent quality attributes received. In other words, one can predict what to expect and the appetite is intellectually and physiologically satisfied.

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The principal issue remaining is nutritive value. Most of us recall the Basic 4 and I believe most of us have to rationalize that a three item meal is providing the equivalent of the four food groups. The cereal and protein components are usually very evident but the dairy and vegetable/fruit components are a problem. The ground-up celery filling or sheet of lettuce or the little dab of coleslaw are a far cry from the 1/4-head of lettuce or 3/4-cup of vegetable recommended. Further, if a milk product is consumed about a third of the time, and cheeseburgers are not everyday fare, and soft-serve ice cream an occasional dessert, the nutritive value of resultant meals is a far cry from that recommended.

Another problem is calories. A 1/4-pound 'burger is a 400 calorie adventure, up from 250 for a regular hamburger. Cheese adds another 60 to 80 calories or so. It takes about two weiners to offset a hamburger. A fish fillet (fried) also is a 400 calorie adventure. Two slices of a plain cheese pizza is 400 calories and with meat added about 500 calories. A regular order of french fries is another 200 calorie adventure. A milk shake adds a little over 300 calories, a soft drink adds 120 calories or so. If you have been following your usual choices, you have tallied a minimum of 650 calories, an average of 900 calories and the possibility of 1150 calories if you had two regular cheeseburgers, an order of french fries, and a shake. Given that one faithfully jogs everyday and expends over 3000 calories a day, then one can cope with the calories of such meals.

Given the consumption of the allotted calories, now what is the nutritive profile of the meal? That is, did one receive a concomitant profile of needed nutrients for the calories consumed for this meal or for the day? To some degree the answer depends on the combinations made. Invariably, the answer for protein and niacin is A OK. If, in order to save calories, one chooses a soft drink with zero nutrients, one has problems meeting daily allowances for calcium, vitamins A and C, iron, and riboflavin, as well as biotin, folic acid, and pantothenic acid. A thick shake is not necessarily a milk shake, but it provides quite a bit of milk solids and that choice (or a glass of milk at half the calories) would provide for calcium, riboflavin, some vitamin A, and folic acid.^{2,3,4,5}

The fact is that there is no way to manipulate these particular QSR choices to assure a balanced profile of the U.S. RDA based on the calories provided. Even a 10-inch pizza with all the works - and a cola drink - will not provide sufficient vitamin C (after baking), biotin, and pantothenic acid. Pizzas are a fascinating food because three food groups are represented and it can be garnished. By way of example, we calculated from actual analysis information, values for several pizzas. The results are given in table 1. Given the deficiencies, how does one reconcile the meal? Table 2 shows that adding milk and a salad or equivalent does the trick.

The question is what are the alternatives for assuring a better profile of nutrients in QSR meals. The alternatives are marketing, nutrification, or both. By marketing, I envision several techniques:

1. The promotion of a particular QSR meal as a nutrition special that would include milk (2% skim) and salad.
2. Free salad bar with all QSR meals, the cost being absorbed in across the board increases in other items.
3. Free 6 oz shake for E5 and below. The rest of the troops do not need the calories.

Table 1: Pizza Nutrient Profile (one serving)

Nutrients	Cheese Mix	Pepperoni Mix	Sausage Mix	Frozen Cheese	Frozen Pepperoni	Frozen Sausage	Average
Calories	230	263	280	202	218	232	238
Protein, gms	9.4	10.9	12.2	9.8	9.3	11.1	10.5
Vitamin A, I.U.	615	584	759	509	635	569	612
Vitamin C, mg	2.9	1.4	3.3	1.4	1.9	1.7	2.1
Niacin, mg	2.7	3.3	3.8	2.0	2.5	2.6	2.8
Riboflavin, mg	.20	.22	.22	.19	.19	.21	.20
Thiamine, mg	.22	.24	.23	.24	.24	.25	.24
Calcium, mg	132	94	98	89	65	87	94
Iron, mg	3.1	3.7	4.3	3.0	3.3	3.0	3.3

Table 2: Nutrient Profile - Menu Planner

Nutrients	1/3 RDA Goal For 100%	Percent Contribution to Meal			
		Two Servings Pizza*	8 oz Milk	Salad**	Meal Total
Calories	767 - 835	57	19	4	80 - 85
Protein, gms	21.7	97	42	0.5	139
Vitamin A, I.U.	1666	73	21	41	135
Vitamin C, mg	20	20	10	165	195
Niacin, mg	66	85	3	13.5	101
Riboflavin, mg	0.57	70	72	1.5	143
Thiamine, mg	0.50	96	14	22	132
Calcium, mg	400	46	71	10	127
Iron, mg	6	110	2	15	127

*One-half pie, minimum 6.8 ozs.

**Meal total can also be reached when pizza is garnished with 1/2 green pepper or when served with 1/2-cup strawberries or raspberries or one banana.

4. The posting of calories a serving for each item so better choices can be made.

5. The color coding of food items as to food groups (the rainbow system of ARA).

By nutrification, I envision several techniques, the last being the most realistic:

1. Vitamin A fortification of the milk shake has been suggested. Since consumers do not invariably purchase a milk shake, this suggestion is a simplistic solution. Why not use an instant breakfast powder as a base and provide a profile of nutrients?

2. Vitamins A and C could be assured in ketchup and similar condiments but that would not apply to some meals and would not correct for other nutrient deficiencies. The practice is really a restoration, due to processing losses; however, it would require a change in the standards of identity for these products or an imitation label. Personally, I believe it should be DOD directed for QSR meals because it is a needed practice and the consumer may not see the hypocritical imitation label.

3. Carbonated beverages could be fortified but the wide variety of brands and flavors makes them less than ideal vehicles. Moreover, a number of mineral nutrients effect mouth feel and the color of riboflavin limits its addition. There may be a limited rationale for the fortification of certain carbonated beverages, analogous to the fortification of breakfast and other dry and liquid drink powders. This rationale is too complex for recommendation at this time.

4. The nutrification of all cereal products (bread, rolls, breading) in accordance with the 1974 recommendation of the NAS/NRC.⁶ The level of recommended nutrification for 10 nutrients (six vitamins and four minerals) is given in table 3. Note that bread is the only food common to all QSR meals. It is an ideal food for nutrification. The technology is understood and the products have been manufactured on a suitability basis. The practice requires a change in the standards of identity or the manufacture of a nonstandard bread. I believe it should be DOD directed for all QSR meal service.

Table 3: 1974 NAS/NRC Fortification Proposal

	<u>mg/lb</u>	<u>mg/100 g</u>
Vitamin A*	2.2	0.48
Thiamin	2.9	0.64
Riboflavin	1.8	0.40
Niacin	24.0	5.29
Vitamin B ₆	2.0	0.44
Folic Acid	0.3	0.07
Iron	40.0	8.81
Calcium	900.0	198.20
Magnesium	200.0	44.10
Zinc	10.0	2.20

*Retinol Equivalent

In conclusion, I believe QSR meals are a viable food delivery concept currently limited by inferior nutritive value - a factor of utmost importance to the nutrition of the individual because nutrition over time determines health and performance. The combination of specific marketing approaches (especially, a free salad) and the nutrification of all bread components in accordance with NAS/NRC recommendations would substantially minimize the nutritive value limitations of QSR meals.

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