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THE EFFECT OF TWELVE LESSONS
IN FOOD AND NUTRITION ON THE
FOOD HABITS OF CERTAIN WOMEN
PATIENTS AT INGHAM COUNTY
TUBERCULOSIS SANATORIUM

Thesis for the Degree of M. S.
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Blanche Fearing Erkel
1945

THESIS

This is to certify that the

thesis entitled

The Effect of Twelve Lessons in
Food and Nutrition on the Food Habits
of Certain Women Patients at Ingham
County Tuberculosis Sanatorium.

presented by

Blanche Fearing Erkel

has been accepted towards fulfilment
of the requirements for

M. S. degree in Food and Nutrition

Margaret T. Olson
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THE EFFECT OF TWELVE LESSONS IN FOOD AND NUTRITION
ON THE FOOD HABITS OF CERTAIN WOMEN
PATIENTS AT INGHAM COUNTY
TUBERCULOSIS SANATORIUM

by

BLANCHE FEARING ERKEL

A THESIS

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INTRODUCTION

INTRODUCTION

The results of the examination of selectees during the war showed that many of them had had poor nutrition practices and indicated that large groups of the population had been inadequately fed. Nutrition surveys have suggested the same thing; consequently, large sums of money have been spent to carry on nutrition programs in all parts of the country for the purpose of teaching the people the importance of a balanced diet. Knowledge of nutrition has without a doubt increased, but it has been very difficult to measure the effectiveness of the program in terms of changed food habits. Some information has been obtained, however, by means of interviews or questionnaires or, better yet, by checking individual food consumption.

In the present study, it was possible to work with a selected group of patients in the Ingham County Tuberculosis Sanatorium. It is especially important that these patients realize the value of proper eating habits, because adequate food is necessary not only in the treatment of the initial infection, but in the prevention of recurrences. The patients received a series of lessons on food and nutrition. Since they had the food served in the institution, it was possible to make food consumption studies before, during, and after the lessons. These studies, as well as some other tests, indicated the changes in food habits.

THEORY OF THE CASE

1. The defendant, [Name], is charged with the crime of [Crime].
2. The prosecution alleges that on [Date], at [Location], the defendant committed the crime of [Crime] by [Description of the crime].
3. The defendant denies the charge and claims that [Description of the defense].
4. The defense argues that the prosecution has failed to prove its case beyond a reasonable doubt.
5. The defense further argues that the defendant is innocent and should be acquitted.
6. The defense requests that the court find the defendant not guilty.
7. The defense requests that the court award costs to the defendant.
8. The defense requests that the court award damages to the defendant.
9. The defense requests that the court award interest on the damages.
10. The defense requests that the court award a new trial.
11. The defense requests that the court award a new trial with costs.
12. The defense requests that the court award a new trial with damages.
13. The defense requests that the court award a new trial with interest.
14. The defense requests that the court award a new trial with costs, damages, and interest.
15. The defense requests that the court award a new trial with costs, damages, and interest, and a new trial.
16. The defense requests that the court award a new trial with costs, damages, and interest, and a new trial with costs.
17. The defense requests that the court award a new trial with costs, damages, and interest, and a new trial with costs and damages.
18. The defense requests that the court award a new trial with costs, damages, and interest, and a new trial with costs, damages, and interest.
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20. The defense requests that the court award a new trial with costs, damages, and interest, and a new trial with costs, damages, and interest, and a new trial with costs, damages, and interest.

There were several reasons for conducting this study; first, to find out if an increased knowledge of nutrition changed the eating habits of the sanatorium patients; second, to find the relationship of their likes and dislikes to the amount of food eaten; third, to give the patients some useful information that they might be prepared to guide their families' food habits when discharged from the sanatorium; fourth, to increase the total food and kind of food consumed by the patients in the hospital; fifth, to decrease the amount of food refused or wasted; and sixth, to evaluate the available teaching materials for the purpose of developing a set of twelve popular lessons for food and nutrition.

REVIEW OF THE LITERATURE

There have been few studies conducted for the purpose of determining the effect of nutrition teaching on food intake patterns and total food consumption. A few studies, however, indicate the value of nutrition education.

Workers in the New York Public Health Department carried out a study to evaluate the effect of several different teaching techniques in diffusing nutrition knowledge. The Kips Bay-Yorkville area of New York City was used for this study, because it contained various social, cultural, and educational groups. This area has within its boundaries Fifth and Madison Avenues, which is the wealthiest residential section in the city, and also a slum district containing some of New York's most inadequate homes. The investigators

studied some of the problems of nutrition as related to the low-income portion of the urban population. The upper and middle-income groups received some information, but the results of the study were based on data obtained in the low-income group.

A community organizer, a nutritionist, and a sociologist constituted the full-time staff. These three workers could not carry the entire program, if it was to be effective; so it was necessary to use volunteers. These volunteers were selected and trained to do the type of work for which they were best suited. They carried on a major part of **each** of the nutrition programs that were reported in this study.

The investigators tested several teaching devices. First, they put posters on nutrition in the grocery stores. Second, they held nutrition lectures, and third, they offered a series of classes. Fourth, they organized a food information center in a public building to answer questions and give out printed material. Fifth, they tested the ability of a mobile kitchen unit to interest people in nutrition classes. Sixth, they taught nutrition through a department store promotion campaign. Seventh, they measured the effectiveness of volunteers as teachers of the nutrition classes.

The investigators placed a poster "Hi Neighbor--Eat for Health" in 309 of the 520 stores in the district for one week and put exhibits in 112 additional grocery stores. They tested the effectiveness of the nutrition posters by a random check of the food store patrons. The results were

controversial, but the posters were probably ineffective. Koos reports that, "They did, however, appear to have a good effect upon the merchants who displayed them."

During the first six months of the Nutrition Program, volunteers gave thirty-eight lectures to more than six thousand persons. They gave eighteen lectures to low-income groups at such organizations as Parent-Teacher Associations, Day Nursery Groups, and Settlement House Groups, and interviewed fifty-four people to find the effect of the lectures. Only two people remembered specific details, but many gained general information. Therefore, they concluded that although it was not the most impressive means for teaching nutrition, the lecture method did have a positive effect and was worth utilizing. It was more effective if combined with motion pictures.

It was difficult to get the people to attend and also to hold their interest in nutrition classes. When the investigators questioned those who did not want to attend the classes, they found that 66% thought they knew enough without the course and 44% said they could not take the time. At the beginning, there were 734 persons enrolled, but at the end of the sixth lesson, only 20% of the first attendance remained. This caused the staff great concern. They questioned such factors as teaching techniques, but the people who were interviewed said that their main reason for discontinuing the course was the weather. They had been shut up in tenement houses all winter and were anxious to get outside when spring came.

The people did not respond well to the food information center which was established to provide information on the best buys on food, balanced meals, new uses of vegetables, new recipes, and so on. Although the booth was in a convenient place, the District Health Center, few people used the facilities. When interviewed, 64% of the people who did not use the food information center, did not realize the need for additional information about food.

The mobile kitchen was a demonstration type of procedure used to enlist the interests of women as they sat in parks, playgrounds, and the like. The nutritionist and trained volunteers gave short talks, distributed literature and took the names and addresses of those who would be interested in coming to nutrition classes. They distributed small whole-grain sandwiches and other foods high in nutritive value to arouse interest in nutrition classes. More than ninety women expressed a desire for nutrition lectures and gave their names and addresses. The workers mailed cards to these women, telling them the time and place of the nutrition lectures, and explained that their children would be taken care of during the classes. Nineteen women answered, indicating they would attend. Nine of these appeared. Four of them had had courses in nutrition and wanted more information, because they were interested.

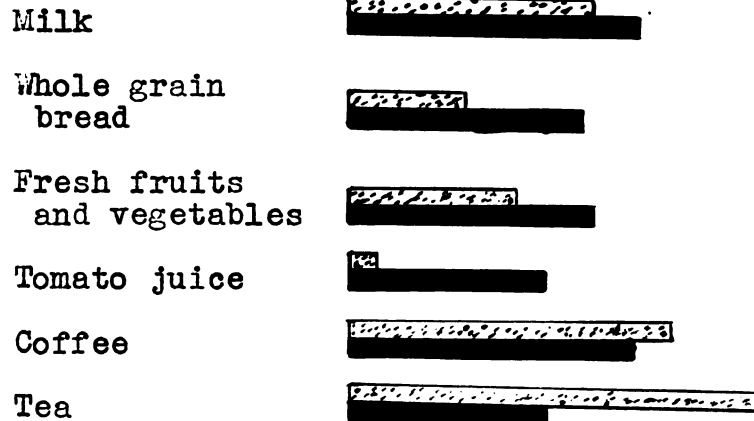
Department store promotion was more effective than other methods of teaching. Bonwitt Tellers and Saks- Fifth Avenue maintained cafeterias for their employees and wanted

them to know more about foods and their values. The method of approaching the problem was simple. The volunteers prepared and gave "minute man talks" to the cafeteria patrons. Despite the multiplicity of cultural backgrounds and of educational experience, all of the people who heard these talks accepted the nutrition information with enthusiasm. The volunteers measured the results by the change in food habits in the cafeteria. Figure 1 shows that people selected more balanced meals after they had received the nutrition talks. The investigators concluded that volunteer help was quite effective, because they usually had the ability to reach the people and could understand their problems. Teaching in connection with the actual eating situation was more effective than any other method.

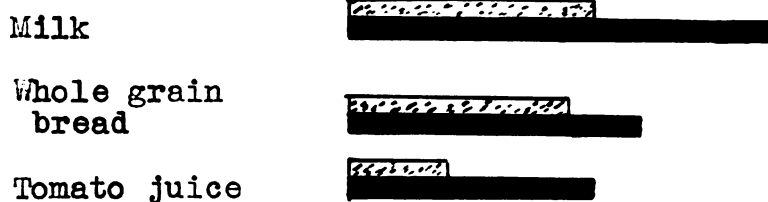
Investigators in the Division of Program Surveys of the United States Department of Agriculture also realized the necessity of determining the most effective way of teaching nutrition. Two methods had been used in a number of towns: first, a general community program; and second, a more intensive in-plant program. This division conducted a study for the purpose of measuring the effects which had been achieved by outstanding examples of each of these two types of programs.

They selected three war plants in Peoria, Illinois, and two in Evansville, Indiana, because the programs in these cities had been outstanding examples and were considered successful.

BONWITT TELLER ----



SAKS-FIFTH AVENUE ----



 Before  After

FIGURE 1

RELATIVE AMOUNTS OF CERTAIN FOODS
SOLD BEFORE AND AFTER LECTURES*

*See "Food in the Lives of Our Neighbors," issued by the Kips Bay-Yorkville District Health Committee, New York City.

Peoria had had quite an extensive community program. There had been a series of six public nutrition lectures sponsored by the manufacturer's association which was composed of fifty-six local companies. These lectures were given wide community publicity and were well attended. The local Gas and Light Company had sponsored weekly "Home-maker's clinics" for several previous years. These were public meetings primarily concerned with cooking and meal planning and were attended by as many as a thousand persons during a single month. The Gas and Light Company also sponsored a radio program on nutrition which was broadcast over the local station five times a week, and distributed free literature from the downtown office.

The study included a survey of three in-plant programs in Peoria. Investigators in Plant A used an in-plant education system. This centered around the cafeteria. They featured a victory lunch containing the foods necessary for a balanced meal and displayed posters showing the basic seven foods. They also took an active part in the community program by sending notices of meetings to the workers and by advertising these meetings in the plant publications. In Plant B the investigators did nothing in connection with the cafeteria, but they did distribute pamphlets on nutrition to a large number of employees. They also cooperated with the community program by sending notices to the workers. In Plant C there was no organized attempt to influence the eating habits of the workers, although occasional notices re-

lated to food were posted on the bulletin board.

Evansville did not have a community program comparable to that of Peoria. The local Office of Civilian Defense and Red Cross, in cooperation with the Gas Company sponsored a series of nutrition lectures. These were similar to the series held by the Gas Company in Peoria, but there was no special campaign to obtain publicity and business support.

Evansville was the home of a large company designated as Plant D, which prided itself on its in-plant program of nutrition education. This education centered around the victory lunch which was served in the cafeteria. Large posters over the serving counters displayed the values of the foods served in the victory lunch and the virtues of a balanced diet. On each table there was literature regarding a good diet. At intervals the company held special campaigns to increase the consumption of milk or salads. They even conducted raffles giving each worker who bought a victory lunch a chance at the prize. Plant E was comparable to Plant D in size and number of workers, but it had done almost nothing to instruct workers about nutrition. The workers of both plants were equally exposed to community programs.

The investigators chose a sample of 274 industrial workers at random from the roster of these five war plants in the two cities. Then they interviewed these people to find out the effect of the community and in-plant programs.

In Peoria only a few people from the worker's families attended the community nutrition meetings, although many had

heard something about them and thought they were a good idea. Very few had criticisms to make. Less than ten per cent of the workers said that they had changed their diets as a result of the program.

The in-plant programs in Peoria had little effect on the workers. Very few of them felt that they had changed their food habits because of the nutrition programs. Plant A had a little more success than the other plants; its program, however, had an effect only among those workers who ate in the plant cafeteria.

Four-fifths of the Evansville workers had never heard of the community program. Thus, practically none of the workers had benefited from the program.

The workers in Plant D were highly aware of an in-plant program. Almost half of them believed that they had made some changes in their diet as a result of the teaching. Most of these changes, however, were in the worker's noon meal in the plant. Nevertheless, about one-fourth of them reported that they were eating differently in their meals at home.

The community lectures were not very successful, because: (1) Many people were satisfied with their present diet and cooking methods; (2) they believed that the programs recommended an impractical diet for working people; (3) they lacked experience with public lectures, and hesitated about attending meetings with women of higher social status; and (4) the time and place was inconvenient.

Teaching through the cafeteria was much more satisfactory, because: (1) The informational stimuli were simple and direct; (2) the worker received this nutrition information while he was choosing his food; (3) the cafeteria program, particularly as it involved the victory lunch, emphasized the concept of a balanced diet rather than isolated terms about canning, cooking, or individual food elements; (4) the cafeteria utilized the important factor of social suggestion; (5) the arrangement of the food in the cafeteria counters according to the elements of a balanced diet made the selection of a nutritious meal more likely.

The same government agency interviewed housewives in Bridgeport, Connecticut and Richmond, Virginia. They chose these cities for the study, since both had experienced intensive programs of nutrition education, conducted through the radio, newspapers, magazines, booklets, pamphlets, meetings, and classes.

In each town they interviewed a representative sample of two hundred housewives. Ninety per cent of the women had had some contact with nutrition education, but their knowledge was often fragmentary. Two-fifths of the women understood the concept of a balanced diet.

Few women understood how nutrition could help them, and even war food restrictions had not aroused a feeling of need for nutrition education.

Women got more information from newspapers and magazines than from booklets and pamphlets; however, those who really read the latter, made use of the information.

A radio program which combined information with entertainment seemed much more likely to reach all women. They were not interested in a formal talk on nutrition.

Although the program was not entirely effective, Table I shows that over 20% of the housewives had made important changes in their diets as a result of the programs. Women who had had some nutrition knowledge displayed more initiative than others in obtaining nutrition information and used this information in more important ways. Therefore, it can be said that a little information goes a long way, for if the housewife has taken the first step in acquiring nutrition information, she can be trusted to increase her knowledge.

TABLE I

Changes Made as a Result of
Nutrition Programs*

<u>In</u> <u>Bridgeport</u>	:	<u>In</u> <u>Richmond</u>	
21%	:	28%	Have made some important food changes as a result of receiving nutrition information
42%	:	36%	have made minor changes
22%	:	25%	have contacted programs, but made no changes
13%	:	9%	have made no contact with programs

* See "Housewives Discuss Nutrition Programs," May 1944, issued by the Bureau of Agricultural Economics.

PROCEDURE

PROCEDURE

The Board of Control of Vocational Education and the Altrusa Club of Lansing started a series of homemaking lessons at the Ingham County Tuberculosis Sanatorium during the spring of 1944. They felt that classes in homemaking education would be especially beneficial to this group of over fifty women, many of whom will return to their homes when released from the sanatorium. Mrs. Jean Hansen, the social worker in charge of vocational rehabilitation, interviewed the women patients to find out in which phases of homemaking they were most interested. They selected interior decoration as first choice and nutrition as second choice. Miss Grace Rinard, supervisor of homemaking education in Lansing, taught interior decoration to the patients during May and June, 1944.

The nutrition unit, a part of the present study, followed the lessons in interior decoration. The instructor conferred with the patients before establishing the objectives for the course and then gave a series of twelve lessons on nutrition. The available facilities and the results of previous studies determined the teaching methods used. Since the sanatorium was equipped with a radio system having a microphone on the main floor and head phones for each patient, the instructor gave thirty-minute lessons once each week. Some of the patients were able to sit up and attend

the lecture and take part in the discussion. The women who were on the floors in bed enjoyed hearing these discussions in which members of their own group participated.

The results of previous studies were taken into consideration when planning the lessons. As it had been found that the information obtained from bulletins and pamphlets was really used, each patient received these materials and thus had time to read them. Patients frequently made such comments as, "I'm glad I have a chance to take these classes now, because I have always wanted to take them, but have never had time to before." Facilities were not available for motion pictures, but other visual aids were used to supplement the lessons. The colored graphs published by the Dairy Council of St. Louis were particularly effective. The large colored charts that showed the nutritive value of good and poor meals also were effective. The vita-min-go game was an entertaining way for the patients to measure their own food consumption. The effectiveness of general posters had been questioned and these were not used in teaching the lessons. As the cafeteria approach had been shown to be an effective way of improving food habits, the lessons were correlated whenever possible with the actual food served in the sanatorium.

Several methods have been used to organize nutrition material for teaching to lay groups. Hershey* reported that

*Personal communication with Miss Roberta Hershey, foods specialist in the Michigan State College Extension Service.

teaching nutrition from the standpoint of meal planning and food service had proved the most satisfactory method in extension classes in foods and nutrition. The Red Cross organized their nutrition program around the food constituents, such as protein, calories, vitamins, and so on. Many community programs utilized the basic seven foods and planned their lessons around these.

There was a combination of approaches in arranging the subject matter for the lessons in this study. It was hoped that this would stimulate interest in nutrition. The studies previously reviewed showed that the people were not interested in nutrition unless they felt that it was needed. The following subjects were taught in the twelve lessons: Each of the first seven lessons included one of the basic seven foods as the nucleus. Each one emphasized the amount of the foods in the group needed in the daily diet and the ways that the food could be used. The next three lessons discuss meal planning, breakfasts, lunches and dinners. Lesson XI summarized the work of Tisdall and Ebbs on prenatal diets. It pointed out the significance of food and its effect on the outcome of pregnancy and the health of the baby. The last lesson emphasized the ways and means of controlling weight with food. The patients had asked to have this subject discussed.

An outline of the lessons including the objectives and the subject matter covered is presented in the Appendix, pages 46 to 73. Although the outlines of the lessons appear

to be quite formal, the approach was informal throughout the entire program. The records of the cultural and educational backgrounds, which were available in the sanatorium files, were considered in adapting the lessons to the individual patient's needs and interests, in order to accomplish this type of personal teaching. The patients discussed their nutrition problems with the instructor. They saved newspaper clippings about nutrition and wrote letters to their families emphasizing the importance of a balanced diet.

The instructor selected teaching materials which would most nearly fulfill the objectives that had been set up for the course. These included booklets, pamphlets, and the like, from the United States Department of Agriculture, Michigan State College, the Michigan Department of Health, and various commercial companies. She distributed these bulletins and other materials to the patients on Wednesday of each week, so they could have time to look them over before the lessons on Friday. A list of the materials used is in the Appendix, pages 74 to 78. The instructor took the illustrative material to the various rooms and carried on the discussion with each patient or group of patients after broadcasting each lesson. This took three or four afternoons each week.

There were several methods used to determine the effectiveness of the nutrition lessons. The patients received a test to evaluate their basic nutrition knowledge. They were asked to check a list of foods to find out which ones they

liked and which they disliked. The amount of food eaten by the women patients who were given the lessons was checked three times. The men patients served as controls. They had no lessons, but the food intake was checked at the beginning and the end of the period.

The patients had the same tests before the lessons were taught and again after the lessons were finished. In this way the results indicated the amount of knowledge gained. Since the patients were in bed and many of them were in poor physical condition, the test was a simple one-page objective type which could be filled out while the instructor waited (Appendix, page 39). It included questions concerning facts such as the deficiency diseases caused by lack of iron, iodine, and Vitamin D, the amount of milk required in the daily diet, the uses of foods in the body and foods which are good sources of specific vitamins and minerals.

In order to find out how much the likes and dislikes of food influenced the food consumption, the patients were asked to check a list of 110 foods. They indicated whether they liked each food very well, medium well, or disliked it. In a space at the side the patients added remarks stating specific reasons for their choices or told if they had not tasted the food.

The three food checks, each of which was a record of the food the women patients consumed during the three consecutive days, were as accurate as possible. Only one floor could be checked at a time. Since almost all of the women patients were on the third floor, it was used for the food

checks. Moving the patients throughout different parts of the sanatorium made it difficult to have many of the same people for three months, but there were twenty-one patients who were on the third floor for the three consecutive checks. The trays were checked to determine the amount of food served to each patient and the amount of food eaten. Sample servings were weighed and a standard measure used to dish up the food. Second helpings and the amount of food returned were recorded. The trays were checked carefully when they were returned because of the danger of infection. The patients had choices of afternoon and evening nourishment which consisted of orangeade, lemonade, chocolate milk, whole milk, or tomato juice. These foods were included also in the checks.

In order to find out if other factors such as the time of the year and the type of food served influence the eating habits of the women patients, food checks were made on the men patients who did not receive the lessons. These were made at the beginning and end of the three-month period.

DISCUSSION AND RESULTS

DISCUSSION AND RESULTS

Forty-five women received the complete set of twelve lessons. Of this group twenty-one patients were on the third floor for the three-month period and had their food intake measured.

Result of Test Scores

Table II presents the scores which the twenty-one patients obtained on the tests. These indicated that there was a marked increase in knowledge of nutrition over the three-month period. It will be noted that with a total score of 20.0, the average score on the pretest was 13.9. It increased to 19.7 on the final test. The scores on the pretest showed that the amount of nutrition knowledge that the patients had at the beginning of the classes varied. One person had a score of zero and one had a perfect score. Four people had less than half of the questions right, while three had all but one correct. There was no question that everyone answered correctly, but some questions were better understood than others. Only two people missed questions number one, five, and six. Question eighteen was missed by fifteen patients and questions twelve and fifteen were missed by more than half of the women. Even those who had low scores in the beginning had high scores in the end. In the final test, seventeen patients had a perfect score. No one

TABLE II

SCORES ON THE TEST TAKEN BY
PATIENTS BEFORE AND AFTER THE LESSONS IN NUTRITION

Patient	Pretest Score	Final Score
E.H.	12	19
B.T.	16	20
M.D.	17	20
V.T.	0	20
J.B.	14	20
L.D.	12	20
M.G.	18	20
A.G.	18	20
L.F.	19	20
E.H.	16	20
Y.H.	20	20
H.M.	7	18
J.R.	6	20
E.S.	8	20
G.S.	16	18
W.S.	19	20
C.R.	17	20
F.M.	14	19
E.P.	19	20
L.J.	14	20
P.P.	11	20
Total Scores	293	414
Average Score	13.9	19.7

missed more than two questions. Only six questions were missed by the entire group and no question was missed by more than one person. This test may not have been difficult enough for the most intelligent persons and could have been longer and more inclusive; however, it did indicate the trend of increase in knowledge and did not tire the patients.

Foods Most Liked or Disliked

Table III lists those food that were well liked by ten or more people, those medium well liked by eight or more people, and those which were disliked by five or more people. A sample of the check list used is found in the Appendix. Some foods appear in both the very well liked and disliked columns. In general, the patients liked the foods which they had been served at home and those with which they were most familiar. For example, the patients liked ham and beef, but disliked roast mutton, variety meats, and canned fish. They liked potatoes, bread, and eggs, prepared in any way, and fruits. Grapes were the only fruit that was not well liked by ten or more people. Chicken and strawberries were the only two foods that all people liked. Five or more patients disliked cold meats. This may have been because of the frequency with which they have been served since the shortage of other meats. The vegetables which the patients disliked were those such as broccoli and parsnips, which they were not accustomed to eating. Several foods were never served in the sanatorium, because food administrators

TABLE III

FOOD THE SANATORIUM PATIENTS LIKED VERY WELL,
MEDIUM WELL, OR DISLIKED

Foods Very Well Liked by Ten or More People		Foods Medium Well Liked by Eight or More People	Foods Disliked by Five or More People
Roast Beef	Mashed	Meat Loaf	Corned Beef
Pork Liver	Potatoes	Meat Balls	*Heart
Sirloin Steak	Creamed	Corned Beef	*Kidney
Cured Ham	Potatoes	Dried Beef	*Tongue
Round Steak	Baked Potatoes	Beef Liver	*Pork Liver
Bacon	French Fried	Pork Sausage	*Salt Pork
Beef Stew	Potatoes	Cured Ham	*Roast Mutton
Roast Veal	Scalloped	Salt Pork	Bologna
Roast Pork	Potatoes	Roast Mutton	Salmon
Lamb Chops	Cabbage	Bologna	Tuna Fish
Pork Chops	Lettuce	Wieners	*Calf Liver
Veal Chops	Asparagus	Cold Meats	*Sweetbreads
Chicken	Carrots	Grapes	*Brains
Salmon	Beets	Sweet Rolls	Sardines
Calf Liver	Celery	Corn Bread	*Oysters
Tomatoes	String Beans	Rice	*Canned Milk
Navy Beans	Peas	Dry Cereal	Buttermilk
Lima Beans	Onions	Cooked Cereal	*Endive
Radishes	Corn	Macaroni and	*Turnips
White Bread	Squash	Tomatoes	*Rutabegas
Whole Wheat	Cucumbers	Macaroni and	*Egg Plant
Bréad	Cauliflower	Cheese	*Broccoli
Rye Bread	Oranges	Chili Con Carne	*Brussel
Sweet Rolls	Grapefruit	Sweet Pickles	Sprouts
Corn Bæad	Cherries	Cabbage	*Beet Greens
Chili Con	Apples	Spinach	Swiss Chard
Carne	Strawberries	Beet Greens	*Parsnips
Chow Mein	Raspberries	Swiss Chard	Cottage Cheese
Olives	Blueberries	Asparagus	Wieners
Sweet Pickles	Cantaloupe	Beets	Cold Meats
Dill Pickles	Watermelon	Turnips	
Fried Eggs	Peaches	String Beans	
Boiled Eggs	Pears	Onions	
Whole Milk	Pineapple	Parsnips	
Cottage Cheese			

* Foods that are never served in the sanatorium.

had learned by the "trial and error method" that the patients would not eat these foods.

Likes and Dislikes and the Consumption of Beets

It happened that beets appeared on the menu for all checks. Thus, table IV presents the average number of grams of beets eaten each time. There was an increase in the amount of beets consumed, even though some patients disliked them. The patients who liked beets very well ate an average of 82 grams per serving at the first check. Seven of the ten people ate the complete servings. They consumed the same amount at the second check, but at the third check they ate an average of 105 grams, and all except one person ate the total serving and two asked for second helpings. Those who liked beets medium well ate an average of 25 grams at the first check. Only one person ate the complete serving, and four people did not eat any. At the second check four of the people ate the complete serving and all of the patients ate at least half of the beets. The average amount eaten was 81 grams at the second check and decreased to 56 grams at the third check. Two people ate the complete serving at the third check, and two did not eat any. This shows that changes in food habits may be just transitory and the result of momentary enthusiasm fading out as time passes. Those who disliked beets did not eat any at the first check. At the second check two of the patients ate part of their servings, making an average of 33 grams. At the third

TABLE IV

AVERAGE GRAMS OF BEETS EATEN BY THE PATIENTS
BEFORE, DURING, AND AFTER THE NUTRITION LESSONS

	Patients	Checks		
		<u>1</u>	<u>2</u>	<u>3</u>
		<u>gm.</u>	<u>gm.</u>	<u>gm.</u>
Very Well Liked	10	82	82	105
Medium Well Liked	8	25	81	56
Disliked	3	none	33	50

check, one patient still did not eat any, but one had eaten the whole serving, which brought the average to 50 grams. This shows that, on the whole, all patients tried to eat more vegetables, whether they liked them or not.

Relation of Food Likes and Dislikes to Food Consumption

That the amount of food consumed was directly related to the likes and dislikes is shown in table V. This table does not include a complete list of foods, but only enough to point out this relationship. The patients ate a much larger portion of the food which they liked very well than of the food which they disliked. People who liked milk medium well drank about three times as much (749 grams) as those who disliked it (253 grams). Those who liked milk very well drank about four times as much (915 grams). Those who liked beets medium well ate two times as much and those who liked beets very well ate three times as much as those who disliked them. Those who liked cabbage, cold meats, corned beef, and cooked cereal very well ate about twice as much as did the ones who disliked these foods. Grapefruit, a strong-flavored food, was an exception, with the one patient who disliked grapefruit refusing it completely. Thus, in spite of the fact that increased food knowledge seemed to increase the consumption of a food such as beets, the likes or dislikes of the patients had a decided influence.

TABLE V

FOOD LIKES AND DISLIKES OF THE PATIENTS
AND THE NUMBER OF GRAMS OF FOOD CONSUMED

Food	Average Amount Served	Very Well Liked		Medium Well Liked		Disliked	
		People	Average Amount Eaten	People	Average Amount Eaten	People	Average Amount Eaten
		no.	gms.	no.	gms.	no.	gms.
Milk	1000	11	915	7	749	3	253
Beets	100	10	90	8	55	3	27
Cabbage	100	11	83	9	66	1	50
Grape- fruit	100	14	91	6	41	1	0
Cold Meats	50	5	34	11	24	5	15
Corned Beef	75	2	75	10	54	9	32
Cooked Cereal	100	4	78	5	64	1	40

Changes in Food Consumption of Individual Patients

Table VI shows the total amount of food consumed by six individual patients on the three diet checks. These patients were selected because of the differences in their eating habits. Those designated as patients 1, 2, and 3 had good food habits at the beginning of the study and did not show much change in food consumption during the study. Patients 4, 5, and 6 had poor food habits at the beginning and showed some increase. Patients 1, 2, and 3 could show little improvement, for they ate almost all of the food served. However, in some instances they did show improvement. Patient 1 ate more meat and green and yellow vegetables after the lessons were taught. Patient 2 ate more cereal, less bread but more toast, and slightly more milk. Patient 3 ate more cereal and showed some increase in the consumption of citrus fruits and tomatoes and other vegetables. The other three patients showed marked improvement in eating some foods. Patient 4 showed an increase in the consumption of all foods except bread and milk. During the first check she ate none of the cereal, vegetables, or meat. At the final check she ate 300 grams of cereal, 120 grams of vegetables, and 120 grams of meat. Although this is still a small amount of food to eat over a three-day period, it does show improvement. Patient 5 ate an increased amount of cereal, other vegetables, fruit, meat, and green and yellow vegetables. Patient 6 ate more cereal, other vegetables, toast, potatoes, fruit, meat, and green and yellow vegetables. Those with

TABLE VI

AMOUNT OF FOOD CONSUMED

BY SIX INDIVIDUAL PATIENTS AT THREE PERIODS

Food Served	Diet Check	Size of Serving gms.	Patients			Patients		
			1	2	3	4	5	6
			gms.	gms.	gms.	gms.	gms.	gms.
Cereal	I	300	300	200	200	none	none	100
	II	300	300	300	300	250	250	300
	III	300	300	300	300	300	250	300
Citrus or Tomatoes	I	400	400	400	200	250	400	350
	II	300	300	300	100	100	200	250
	III	330	330	330	230	330	330	330
Other Vegetables	I	100	100	100	100	none	none	50
	II	250	250	250	250	none	none	250
	III	220	220	220	220	120	170	170
Toast	I	90	65	45	45	57	65	10
	II	90	60	75	90	75	45	75
	III	90	75	75	75	75	60	50
Bread	I	180	140	150	170	160	170	175
	II	180	150	150	135	150	145	150
	III	180	135	120	120	160	120	165
Potatoes	I	600	475	575	500	250	375	350
	II	400	325	400	400	250	375	400
	III	400	400	400	400	400	350	400
Fruit	I	350	337	325	350	212	262	275
	II	350	350	312	300	275	250	350
	III	450	450	450	350	450	450	450
Milk	I	3000	3200	1700	1300	2200	2300	2800
	II	3000	3200	1700	1700	1800	2200	2400
	III	3000	3200	1800	1500	1900	2400	2600
Meat	I	345	295	320	270	none	170	220
	II	365	280	340	340	65	210	340
	III	315	315	315	315	120	315	315
Green and Yellow Vegetables	I	280	112	280	180	70	110	155
	II	360	275	360	360	65	305	360
	III	340	340	340	240	140	340	340

poor eating habits did improve, while those with good eating habits did not change much. The greatest improvement was shown in cereal, vegetables, and meat, which undoubtedly would improve the nutritive content of the diets.

The physical condition of the patients did not seem to have any effect on their habits. Patient 1 has a far advanced case of tuberculosis and has to lie flat on her back in bed all of the time, but her eating habits are much better than those of patient 4 who has only a minimal case of tuberculosis.

Food Consumed by the Women Patients

Table VII shows the total number of grams served, the grams eaten, and the percentage eaten by the twenty-one patients during the three food checks. This indicates that there was a change in the amount of food consumed as a result of the lessons. The total food consumption increased from an average of 4,155 grams per person or 68% of the food served at the first check to 4,760 grams or 85% of the total food served at the last check. Foods showing the highest percentage of increase in consumption were the dry and cooked cereals, which increased over 35%. The consumption of butter, green and yellow vegetables, and other vegetables were next with increases of over 25%. Citrous fruits or tomatoes and meats showed an increased consumption of 20%. The grams of potatoes, fruits, desserts, and milk consumed were approximately the same. The lesson on milk was, unfor-

TABLE VII

TOTAL GRAMS OF FOOD CONSUMED
BY THE TWENTY-ONE WOMEN PATIENTS AT THREE PERIODS

Food Served	Check I			Check II			Check III		
	Amount Served	Amount Eaten	Pro-portion Eaten	Amount Served	Amount Eaten	Pro-portion Eaten	Amount Served	Amount Eaten	Pro-portion Eaten
	gms.	gms.	%	gms.	gms.	%	gms.	gms.	%
Dry Cereal	330	140	42	300	260	83	300	245	81
Cooked Cereal	3000	1525	50	3300	2950	89	3300	2750	85
Pota-toes	12600	10250	80	8400	7450	88	8400	7095	84
Fruits	7350	6442	87	7350	6062	82	9450	8850	93
Citrus or To-matoes	8400	6350	75	6300	4925	78	6930	6530	94
Other Veg.	2100	1000	47	5250	3820	72	4620	3870	83
Meat	7245	4950	68	7665	6195	80	6615	6045	90
Butter	1260	865	68	1050	777	74	1050	1005	95
Dessert	3150	2913	92	6300	5550	88	6300	5559	88
Green & Yellow Veg.	5880	3515	59	7560	6112	80	7140	6190	86
Milk	63000	45325	72	63000	45800	72	63000	47250	76
Toast	1890	1255	66	1890	1410	74	1890	1495	79
Bread	3780	2725	72	3780	2900	77	3780	3075	81
Average Amount	5709	4155	68	5816	4486	79	5846	4759	85

tunately, taught before the first food check was made; so this study did not measure its consumption. The results of ~~these~~ food checks show that the patients were willing to cooperate, if they knew the importance of food.

The method of serving does influence the amount of food eaten. The lesson on citrous fruits, which was taught just before the second food check, was enthusiastically received by the patients, and it was expected that there would be a decided increase in the consumption of citrous fruits. When whole oranges were served, however, there were seven returned on the third floor. The patients were asked why they had not eaten the oranges, and in every case they said that they would have eaten them if they had had a knife on their tray with which to cut them. When knives were placed on the tray during the next food check, all of the oranges were eaten. Shortage of kitchen help under wartime conditions made quantify food service very difficult. The patients complained that the toast was cold and that foods such as cream and sugar were omitted from their trays. The shortage of registered nurses and the employment of untrained nurses' aides was not conducive to good eating habits. They made comments about the food to the patients and also made unkind remarks which upset the patients emotionally during meal-time. The shortage of food no doubt made the patients realize the importance of eating the amount served and of preventing waste.

Food Consumption of Men Patients

Table VIII presents the data that was obtained by checking the food consumption of the men patients who had had no lessons. The total consumption of food did not increase as it did for the women. There was little change in the amount of food consumed, except in the case of citrous fruits and tomatoes, which increased 16%, and cooked cereal, which decreased 16%. The percentage of vegetables consumed was higher than at the first check on the women patients; however, they showed no increase when the last check was made. With the exception of toast and bread, the last check showed that the women patients were eating a much larger percentage of the food that was served to them than were the men patients. Although the men were eating an average serving of 4,176 grams or 76% of the food served to them at the time of the first check, they ate 75% or an average serving of 4,079 grams compared to 85% of the food eaten by the women at the last check. This shows that the lessons did have a positive effect upon the eating habits of the women patients. It is suggested that nutrition lessons would be beneficial to the men patients, not only to improve their own eating habits, but because of the influence they might have upon the eating habits of their families when released from the sanatorium.

TABLE VIII

GRAMS OF FOOD CONSUMED BY THE CONTROL GROUP
BEFORE AND AFTER THE LESSONS WERE GIVEN

Food Served	Before			After		
	Grams Served	Grams Eaten	Per Cent	Grams Served	Grams Eaten	Per Cent
Fruit	11200	9350	83	8400	6600	78
Green and Yellow Vegetables	7840	5190	66	8960	5435	60
Desserts	10500	8730	83	11760	9975	83
Dry Cereal	650	554	83	650	515	79
Cooked Cereal	900	800	88	900	650	72
Potatoes	14500	10325	71	11200	8355	74
Other Vegetables	3920	2515	64	6160	3835	62
Citrus Fruit or Tomatoes	5600	3500	62	8400	6550	78
Milk	84000	60425	72	84000	59035	70
Meat	9660	7300	75	7280	5605	77
Butter	1680	1176	70	1680	1215	72
Toast	2520	2005	79	2520	2015	80
Bread	5980	5075	88	5040	4435	88
Average Amount	5676	4176	76	5606	4079	75

Adequacy of the Diets

Table IX presents the data on the adequacy of the diets served, when compared to the dietary allowances that have been set up by the National Research Council. The amount of food served to the sanatorium patients exceeded the amounts recommended for each constituent with the exception of riboflavin.

Although the amount of food served was adequate, the diets of many patients were inadequate, because they did not eat all of the food. At the time of the first check, the diets were adequate in calcium, vitamin A, and thiamin, and inadequate in protein, iron, riboflavin, and ascorbic acid. The amount of riboflavin probably is high; so the amount consumed may have been adequate. The consumption of iron was still not adequate, although it did increase from 8.5 to 10.9 milligrams per person per day. More emphasis should have been placed on foods containing iron. Ascorbic acid, which is important for tubercular patients, increased to 72 milligrams. This may have been due to the increased emphasis on the consumption of citrous fruit and tomatoes. The protein consumption increased from 53.7 grams, which was inadequate, to 70.2 grams, which was adequate. The consumption of all protein foods had been emphasized in the lessons. The adequacy of calcium in both checks shows the effect of the general propaganda on milk consumption.

The control group did not show the amount of improvement that was shown with the group that had the nutrition

TABLE IX

ADEQUACY OF THE DIETS
SERVED AND EATEN BY THE PATIENTS

<u>Recommended Amounts of National Re- search Council</u>	<u>Calo- ries</u>	<u>Pro- tein</u>	<u>Cal- cium</u>	<u>Iron</u>	<u>Vita- min A</u>	<u>Thia- min</u>	<u>Ribo- flavin</u>	<u>As- corbic Acid</u>
Women	2100	60.00	0.8	12.0	5000	1.2	2.2	70
Men	2500	70.0	0.8	12.0	5000	1.5	2.2	75
Total Average Amount Served	2433	82.05	1.549	12.92	7979	1.785	1.575	80.9
<u>Food Checks for Women</u>								
Check I	1748	53.74	1.144	8.47	5244	1.230	1.136	59.0
Check II	1919	59.56	1.151	10.29	6439	1.396	1.202	63.7
Check III	2040	70.18	1.274	10.90	6707	1.500	1.276	72.4
<u>Food Checks for Men</u>								
Check I	1862	64.09	1.166	9.79	5623	1.349	1.151	52.9
Check II	1888	58.75	1.225	10.24	6222	1.387	1.208	61.9

classes. Their diet was inadequate in protein, iron, riboflavin, ascorbic acid, and thiamin at both checks.

The lessons on food and nutrition improved the eating habits of the women patients in the sanatorium. The amount of food which they consumed increased and their diets were more adequate. These lessons apparently were responsible for this change, because there was no similar change in the food habits of the men patients.

All patients in the sanatorium, men as well as women, should have this nutrition information and have the opportunity to improve their own health, to influence the food habits of their families, and to prevent food waste.

SUMMARY

SUMMARY

1. This study presents the results of twelve lessons in nutrition upon the eating habits of women patients with active tuberculosis.
2. An increase in the knowledge of nutrition was shown by an objective test. The average scores increased from 13.9 at the beginning to 19.7 at the end of the lessons.
3. The likes and dislikes of the patients influenced the amount of food consumed. They ate larger portions of the foods that they liked well.
4. The women patients increased their consumption of food after they had had the nutrition classes. There was a variation in the amount of food eaten by the individual patients. Those who had poor food habits at the beginning of the study showed more increase in food consumption than those with good eating habits.
5. The men patients, who did not have nutrition classes, did not increase their food consumption during the three-month period.
6. These classes seem to have had a favorable effect on the patients who were included in the study.
7. It is suggested that classes of this type be adopted by the sanatorium for both the men and women patients.

APPENDIX

Name _____

Questions about Food and Nutrition

- 1-4. Milk is an important source of calcium. The 1 _____
amount of milk required in each day's diet 2 _____
for a child is 1, for an adult 2, 3 _____
for a pregnant woman 3, for a convales- 4 _____
cent 4.
5. Michigan does not have much sunshine. For
this reason 5 should be included in the
diet for each child. 5 _____
6. Tomatoes, oranges, grapefruit, and raw cabbage
are all important sources of 6. 6 _____
7. Many women are anemic. This is because of in-
adequate 7. 7 _____
- 8-10. Of these five foods the three which are good 8 _____
sources of phosphorus are 8, 9, and 9 _____
10. (Rice, fish, potatoes, milk, lean meats) 10 _____
11. Whole wheat or enriched bread should be in-
cluded in the diet each day. The vitamin
which is most important in these foods is 11. 11 _____
12. Michigan is in the Great Lakes region where
there is little ocean food. For this region
12 should be included in the diet. 12 _____
- 13-15. High calorie foods are necessary for an active 13 _____
person. Three high calorie foods are 13, 14 _____
14, 15. 15 _____

Questions about Food and Nutrition
(Cont.)

- 16-18. Three main purposes for food in the body are 16_____
- for 16, 17, and 18. 17_____
- 18_____
- 19-20. Vegetables in the diet are the main sources
- of two of the following: energy, vitamins, 19_____
- calories, minerals, or calcium — 19 and 20_____
- 20.

Name _____

A STUDY OF THE FOOD LIKES AND DISLIKES OF SANATORIUM PATIENTS

Food	Very Well Liked	Medium Well Liked	Disliked	Remarks
Roast Beef				
Sirloin Steak				
Round Steak				
Meat Loaf				
Meat Balls				
Corned Beef				
Dried Beef				
Beef Liver				
Beef Stew				
Heart				
Kidney				
Tongue				
Roast Pork				
Pork Chops				
Pork Liver				
Pork Sausage				
Cured Ham				
Bacon				
Salt Pork				
Roast Mutton				
Roast Veal				
Lamb Chops				
Veal Chops				

1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes the need for transparency and accountability in financial reporting.

2. The second part of the document outlines the various methods and techniques used to collect and analyze data. It includes a detailed description of the experimental procedures and the statistical analysis performed.

3. The third part of the document presents the results of the study. It includes a series of tables and graphs that illustrate the findings of the research. The data shows a clear trend of increasing activity over time.

4. The fourth part of the document discusses the implications of the findings. It suggests that the results have significant implications for the field of study and may lead to further research in this area.

5. The fifth part of the document concludes the study. It summarizes the key findings and provides a final statement on the importance of the research.

A STUDY OF THE FOOD LIKES AND DISLIKES OF SANATORIUM PATIENTS
(cont.)

Food	Very Well Liked	Medium Well Liked	Disliked	Remarks
Roast Lamb				
Bologna				
Wiener				
Cold Meats				
Chicken				
Salmon				
Tuna Fish				
Calf Liver				
Sweetbreads				
Brains				
Tomatoes				
Navy Beans				
Lima Beans				
Radishes				
Oranges				
Grapefruit				
Cherries				
Apples				
Strawberries				
Raspberries				
Blueberries				
Cantaloupe				
Watermelon				

A STUDY OF THE FOOD **LIKES** AND **DISLIKES** OF SANATORIUM PATIENTS
(cont.)

Food	Very Well Liked	Medium Well Liked	Disliked	Remarks
Peaches				
Pears				
Pineapple				
Concord Grapes				
Green Grapes				
Apricots				
Prunes				
Rhubarb				
Raisins				
White Bread				
Whole Wheat Bread				
Rye Bread				
Sweet Rolls				
Corn Bread				
Rice				
Dry Cereal				
Cooked Cereal				
Macaroni & Cheese				
Macaroni & Tomatoes				
Chili Con Carne				
Chow Mein				
Olives				
Sweet Pickles				

A STUDY OF THE FOOD LIKES AND DISLIKES OF SANATORIUM PATIENTS
(cont.)

Food	Very Well Liked	Medium Well Liked	Disliked	Remarks
Dill Pickles				
Sardines			/	
Fresh Fish				
Oysters				
Fried Eggs				
Scrambled Eggs				
Boiled Eggs				
Whole Milk				
Buttermilk				
Canned Milk				
Cheddar Cheese				
Cottage Cheese				
Mashed Potatoes				
Creamed Potatoes				
Baked Potatoes				
French Fried Potatoes				
Scalloped Potatoes				
Cabbage				
Lettuce				
Endive				
Watercress				
Spinach				
Beet Greens				

A STUDY OF THE FOOD LIKES AND DISLIKES OF SANATORIUM PATIENTS
(cont.)

Food	Very Well Liked	Medium Well Liked	Disliked	Remarks
Swiss Chard				
Asparagus				
Carrots				
Beets				
Turnips				
Celery				
Rutabagas				
String Beans				
Peas				
Onions				
Corn				
Parsnips				
Egg Plant				
Squash				
Cucumbers				
Cauliflower				
Broccoli				
Brussels Sprouts				

LESSON I -- THE BASIC SEVEN AND MILK

I. Objectives

- A. To know the foods required in the daily diet.
- B. To know the three uses of food in the body.
- C. To know how milk contributes to the three uses of food in the body.
- D. To know the amount of milk needed in the diets of the various members of the family.
- E. To know the different kinds of milk and the other dairy products that are alternates for milk.
- F. To know how to use milk in various ways.

II. Lecture and discussion (Reference Material, Appendix, p. 74)

- A. The wheel of good health is made up of seven spokes. Each of these must be present in the daily diet if one is to have good health. These spokes include:
 - 1. Green and yellow vegetables
 - 2. Oranges, tomatoes, and grapefruit
 - 3. Potatoes and other vegetables or fruits
 - 4. Milk and milk products
 - 5. Meat, poultry, fish, or eggs
 - 6. Bread, flour, and cereals
 - 7. Butter or fortified margarine
- B. These foods have three uses in the body:
 - 1. To furnish energy.
 - 2. To build and repair the body.
 - 3. To regulate body processes and protect against disease.
- C. Milk contributes to each of these uses.
 - 1. It supplies energy.

- a. Milk contains fat and lactose or milk sugar which is burned.
2. It supplies protein to build and repair the body.
 - a. One quart of milk furnishes the same amount of protein as 5 eggs, 5 1/2 oz. liver, 6 1/3 oz. fish, 5 oz. dried beans, 5 3/4 oz. beef, 4 oz. peanut butter, 4 oz. cheese, or 16 slices of bread.
3. It contains minerals and vitamins to regulate body processes and protect against disease.
 - a. Milk is a good source of all minerals and an excellent source of calcium. One quart furnishes the same amount of calcium as 6 3/4 lbs. cabbage, 27 lbs. potatoes, 28 oranges, 39 eggs, 7 1/4 lbs. carrots.
 - b. Milk has many vitamins and contains the same amount of riboflavin as 3 1/4 oz. liver, 12 eggs, 1 1/2 lbs. dried beans, 2 1/3 lbs. beef, 14 oz. cheese, or 1 1/3 lbs. greens.
- D. The amount of milk needed in the diet varies with different individuals.
 1. Milk supplies food material needed for growth, therefore children need from 3/4 to one quart a day to furnish the calcium and phosphorus for bones and teeth.
 2. Milk furnishes the food material for tissue repair, therefore convalescents need one quart daily.
 3. Adults in order to maintain normal body functions should have a pint of milk daily.
- E. Forms of milk other than whole fluid milk may be used.
 1. Skim milk and buttermilk are the most usual forms.
 - a. Skim milk has the fat removed so it has a low calorie and Vitamin A content, but is an excellent source of calcium and riboflavin.
 - b. Buttermilk may or may not have the fat removed, depending upon the method of processing.
 2. Milk may also be obtained as condensed, evaporated, or dried milk powder.

- a. Evaporated milk has about 60% of the water removed.
 - b. Condensed milk is a similar product which has sugar added.
 - c. Dried milk powder is gaining popularity because of the convenience and conservation of shipping space.
 - d. These products with the exception of condensed milk have approximately the same composition as whole milk when reconstituted by the addition of water.
3. Cheese is a product made from milk which is a good alternate.
- a. Cheddar cheese which is made from whole milk and cottage cheese which is made from skim milk are both good milk products to include in our daily meals.
- F. Milk may be used in many ways to fulfill the daily quota for the various members of the family.
1. There is an abundance of recipes that may be used to introduce milk into the daily diet.
 - a. Cream soups, creamed vegetable dishes, desserts, and milk drinks may all be used.

LESSON II -- CEREALS IN THE DIET

I. Objectives

- A. To know the kinds of cereals that are used for food.
- B. To know the parts of the cereal grains and their importance as food.
- C. To know the difference in refined, enriched, and whole grain cereals.
- D. To know attractive and palatable ways to serve cereals.
- E. To know how to cook cereals to save the nutritive value.

II. Lecture and Discussion (Reference Material, Appendix, p. 74)

A. Several kinds of cereal grains are used for food.

- 1. Wheat, oats, and corn are the cereals that are used most in the United States.
- 2. Buckwheat and rye are used in lesser amounts.
- 3. Rice is a very common food in the Orient.

B. All parts of the cereal grain are used for food.

- 1. The endosperm is the white part of the kernel.
 - a. This contains starch and protein.
- 2. The bran is the outer layer of the kernel.
 - a. This is rich in the B vitamins, phosphorus, calcium, and iron.
- 3. The wheat germ or embryo constitutes a small part of the kernel.
 - a. This is rich in the B vitamins.

C. Cereals may be obtained in three forms.

- 1. Whole grain cereal is milled to contain 100% of the kernel.
- 2. Refined cereal contains only the endosperm or starch portion of the kernel.

3. Enriched cereal is refined cereal to which significant amounts of the B vitamins and minerals have been added.
- D. Cereals may be served so they are attractive and palatable.
1. Cereals that must be cooked before eating are often referred to as "cooked cereals."
 - a. To be most palatable these must be a smooth, semi-solid consistency and served piping hot.
 - b. They may be whole grain, refined, or enriched.
 2. Ready prepared cereals are often referred to as "dry cereals."
 - a. These may be served with various kinds of fruits.
 - b. They may be whole grain, refined, or enriched.
 3. Whole grain or enriched cereals should be used whenever possible because of the vitamin and mineral content.
 - a. Oatmeal or other cereals may be added to meat loaf or meat patties.
 - b. Stuffing may be made with whole grain or enriched bread.
 - c. Cereals may be added to cookies.
 - d. Waffles, cakes, griddle cakes, biscuits, and baked or steamed puddings may be made with whole grain or enriched flour.
- E. Cereals must be cooked cautiously to preserve the B vitamins.
1. Thiamine is destroyed by heat or soda.
 - a. Cereal should be cooked no longer than necessary.
 2. Cooking makes digestion ~~more~~ rapid.

LESSON III -- CITRUS, FRUITS, TOMATOES AND DRIED FRUITS

I. Objectives

- A. To know why vitamin C is needed in the body.
- B. To know the comparative values of foods that are good sources of vitamin C.
- C. To know how tomatoes can be used in various ways.
- D. To know the value of dried fruits and how they may be served.
- E. To know how to prepare fruits to preserve the nutrients.

II. Lecture and discussion (Reference Material, Appendix, p. 74) - }

- A. Vitamin C is needed for healthy tissues -- teeth, bones, and gums.
 - 1. A study by the New York State Health Dept. showed that although people appear to be well and healthy many of them had vitamin C deficiencies that caused lesions of the gums of which they were unaware.
 - 2. Mrs. Scoville, nurse supervisor at Ingham County Sanatorium, because of a shortage of vitamin C had a tendency to have tissues that bruised easily. This condition was corrected by the administration of vitamin C.
- B. Citrous fruits and tomatoes will best fulfill the requirements of vitamin C.
 - 1. One orange will furnish the average daily requirements of vitamin C.
 - 2. A glass of tomato juice will furnish about two-thirds of the daily requirements of vitamin C.
 - 3. Other fruits may furnish liberal amounts of vitamin C while they are in season.
 - a. Strawberries
 - b. Cantaloupe
 - 4. Apples furnish relatively small amounts of vitamin C.

- a. If one has a limited amount of money to spend oranges are a better buy than apples.
5. Vitamin C as well as the other vitamins in the diet can be checked by playing the vita-min-go game.
- C. Tomatoes are an important source of vitamin C, because they retain a large share of vitamin C even when they are cooked and canned and they are available in Michigan.
 1. Tomatoes should be peeled and cut just before serving.
 2. They may be cooked in different ways.
 - a. Stewed
 - b. Fried
 - c. Broiled
 - d. Scalloped
 - e. Baked
 3. Tomatoes may be added to main dishes.
 - a. Chili
 - b. Macaroni
 4. Salads may be made with tomatoes
 - a. Stuffed tomato salad
 - b. Jellied salads
 - c. Sliced tomatoes
 5. Tomato juice may be used in many different ways
 - a. Cocktail
 - b. Soup
 - c. Sauces
 6. Green as well as ripe tomatoes can be used
 - a. Catsup
 - b. Relishes
 - c. Chili sauce
 7. Desserts may be prepared with tomatoes
 - a. Mincemeat
 - b. Sauce
- D. Dried fruits are valuable in the diet and may be used in various ways.
 1. Dried fruits are a good source of iron and bulk.

2. They may be used for sauce and for many other ways.

- a. Added to cereals
- b. Scalloped with meat or vegetables
- c. Added to muffins, cake, cookies, or plain breads
- d. Added to stuffings
- e. Candies

E. Fruits should be prepared to preserve the vitamin C.

1. Vitamin C is destroyed by heat and air.

- a. If fruit has to stand, it should be kept cold.
- b. Fruit should be prepared just before serving.

LESSON IV -- GREEN AND YELLOW VEGETABLES

I. Objectives

- A. To know the importance of green and yellow vegetables in the diet.
- B. To know some of the less common green and yellow vegetables.
- C. To know how to cook vegetables to preserve the nutritive value.
- D. To know various ways to serve green and yellow vegetables.

II. Lecture and Discussion (Ref. Mat., Appendix, pp.75)

- A. Green and yellow vegetables are a good source of vitamin A, the B vitamins, and vitamin C.
 - 1. Spinach and other greens are a good source of vitamin A and vitamin C.
 - 2. One serving of cabbage will furnish over one-third of the daily requirement of vitamin C.
 - 3. Carrots and squash will give more than two-thirds of the daily requirement of vitamin A.
- B. Many vegetables that are not commonly used are excellent sources of vitamins.
 - 1. Brussels sprouts and broccoli contain large amounts of vitamin A and vitamin C.
 - 2. Many wild greens that grow in Michigan are edible and many are good sources of vitamins.
- C. Vegetables must be cooked properly to retain their nutritive value.
 - 1. Vegetables should be washed quickly and not allowed to soak.
 - 2. They should be kept cool and nature's covering until ready to cook.
 - 3. They should be cooked as quickly as possible with a small amount of water.
 - 4. Cooking liquors should be saved and used.

- a. Gravies, soups, and vegetable juice cocktails are ways of using the cooking water.

5. Vegetables should not be overcooked.

6. The water should always be boiling when vegetables are added.

D. Vegetables may be served in appealing and attractive ways.

1. Raw vegetables should be used as much as possible.

- a. A salad a day is a good rule to follow.

- b. Salads should always be cold and crisp and the salad dressing should be added **at the** last minute.

2. Cream soups and creamed vegetables have a two-way purpose, as they also add milk to the diet.

3. Boiled vegetables, seasoned with butter or meat drippings, are always a favorite.

4. Cabbage and other strong-flavored vegetables are best if cooked in a moderate amount of boiling water in an uncovered pan.

LESSON V -- POTATOES AND OTHER VEGETABLES

I. Objectives

- A. To know how potatoes and other vegetables contribute to the daily requirements.
- B. To know how to serve dried beans and peas.
- C. To know how to prepare root vegetables so they are most palatable.
- D. To know various ways to serve potatoes.

II. Lecture and discussion (Ref. Mat., Appendix, p..75)--

- A. Potatoes and other vegetables are good sources of vitamins, minerals, and calories.
 - 1. Dried beans and peas are good sources of iron, one serving furnishing more than one-third of the daily requirement of iron.
 - 2. Potatoes in moderate amounts will furnish from one-fourth to one-third of the daily requirements of vitamin C.
 - 3. The vitamin C in potatoes is lost after long storage.
 - 4. One medium-sized potato has about one hundred calories.
 - 5. One serving of carrots will furnish about ~~two~~-thirds of the daily requirements of vitamin A.
 - 6. Rutabagas will furnish about one-third of the daily requirements of vitamin A.
- B. Dried beans and peas may be served as an alternate for other protein foods.
 - 1. Main dishes such as baked beans, stew, and chowder are favorite dishes.
 - 2. They may be combined with other foods in salads.
 - 3. Onion relish or catsup may be ~~mixed~~ with peas or beans for sandwich fillings.
- C. Root vegetables offer appealing variety to all meals.

1. Carrots, onions, turnips, and potatoes may be cooked and served with a pot roast.
 2. Root vegetables may be mixed in stew, soup, chowder, or pie.
 3. Raw relishes and salads are good ways to serve all of the root vegetables.
- D. Potatoes may offer variety even though they are served every day.
1. Potatoes may be baked or boiled in their skins.
 2. Scalloped potatoes, mashed potatoes, and creamed potatoes are also ways to include milk in the diet.
 3. Hashed browned, fried, and French fried potatoes offer variety.
 4. Potato pancakes, potato soup, and potato salad are useful variations.

LESSON VI -- EGGS, CHEESE, AND SOY PRODUCTS

I. Objectives

- A. To know why butter is important in the diet.
- B. To know why eggs are important in the diet.
- C. To know how to tell high quality eggs and how to keep their high quality.
- D. To know how to cook eggs.
- E. To know ways to serve **cheese**.
- F. To know the food constituents soy beans furnish and how to use products that are made from soy beans.

II. Lecture and discussion (Ref. Mat., Appendix, pp.75-76)

- A. Butter is a good source of vitamin A.
 - 1. It is important that butter be included in each day's diet, because it has high vitamin A content.
 - 2. Much butter is wasted in the sanatorium, because it is not eaten but left on the trays to be destroyed.
- B. Eggs contain the necessary nutrients for the three functions of food.
 - 1. Eggs are a high protein food and may be used as an alternate for meat.
 - 2. Eggs are a good protective food, because they supply liberal amounts of vitamins A, B, and D.
 - 3. Iron, which is **deficient** in many women's diets is abundant in egg **yolks**.
 - 4. Children should have one egg in their diets each day and adults should have not less than three or four eggs each week.
- C. Eggs of high quality, often referred to as "fresh" eggs are preferred by consumers.
 - 1. The color of the shell has no effect upon the quality of the egg.
 - 2. Eggs will deteriorate when kept at room temperature.

3. Eggs of high quality will have a firm, well-centered yolk, a small air space, and a thick white.
- D. Eggs may be cooked in many ways, but should always be cooked slowly.
1. Eggs cooked in the shell should be simmered, not boiled.
 2. Eggs may be scrambled, fried, poached, baked, or creamed.
 3. Many variations of omelets may be prepared.
 4. Eggs with vegetables make many nutritious dishes.
 5. Cereals may be prepared with eggs and served as a main dish.
 6. Salads and salad dressings are made with eggs.
 7. Appetizing sandwich fillings may be made with eggs.
 8. Custards and other desserts contain eggs.
- E. Cheese offers interesting variety to our meals and is an alternate for meat.
1. Cheese may be added to white sauce and served with toast and vegetables.
 2. Toasted cheese sandwiches are always favorites.
 3. Cheese gets tough and stringy when it is cooked at too high a temperature.
- F. Soy products are valuable foods because of their protein and other nutrients.
1. Soy protein has almost the same quality as that in meat, fish, eggs, milk, and cheese.
 2. Soya can take the place of twenty to twenty-five per cent of the meat in most recipes.
- G. Soy bean products may be used in different ways.
1. Soya may be used to make meat, fish, eggs, and cheese go further.
 2. Vegetables and cereals are made more nutritious by the addition of soya products.

3. Soya may also be used in sandwich spreads, sauces, soups, and desserts.
4. Bread, quick breads, and cakes may be made with part soya flour.

LESSON VII -- MEAT IN OUR MEALS

I. Objectives

- A. To know the nutritive value of various kinds of meats.
- B. To know the cuts of meat that may be served.
- C. To know how to cook various meats.
- D. To know how to cook liver and the variety meats.
- E. To know the ways of extending meats.

II. Lecture and discussion (Ref. Mat., Appendix, p. 76) -

A. Meat is an important source of several nutrients.

- 1. Meat is one of the best sources of protein for body building and repair.
- 2. Iron is supplied in liberal amounts by all meats.
- 3. Pork is high in thiamine, the "morale" vitamin.
- 4. Liver is an excellent source of iron, vitamin A, and riboflavin.
- 5. Glandular meats build red blood.

B. Many cuts of meat that are good to eat are unpopular, because homemakers are not acquainted with the methods of preparing them.

- 1. Popular cuts of meat total thirty per cent of the beef carcass.

- | | |
|---------------------|-----------------------|
| a. Sirloin steak | e. Porterhouse steak |
| b. T-bone Steak | f. Club steak |
| c. Rolled rib roast | g. Standing rib roast |
| d. Round steak | |

- 2. The following cuts are just as nutritious and delicious but less popular, even though they constitute sixty per cent of all beef.

- | | |
|--------------------|-----------------------------|
| a. Heel pot roast | g. Brisket |
| b. Flank steak | h. Cross-cut shank |
| c. Plate | i. Pinbone sheak |
| d. Arm pot roast | j. Short ribs |
| e. Rump roast | k. Blade pot roast |
| f. Blade rib roast | l. Boneless neck |

3. There are similar cuts for lamb and pork, as well as for beef.
4. If homemakers would take advantage of the less popular meat cuts, they could reduce their meat budgets and yet have more variety in their meals.

C. Meat is grouped in two main classes for cooking.

1. Tender cuts that are cooked by dry heat methods.

- a. Tender cuts of meat are those from the loin, a muscle which is not exercised much by the animal.
- b. Dry heat methods are broiling, pan-broiling (sometimes called frying), and roasting.

2. Moist heat methods are braising or cooking in water.

- a. Braising is a most popular method of cooking meat, as it is used for swiss steak, pot roasts, and breaded veal and pork steak.
3. The most important thing to remember when cooking is always to cook at a low temperature.
- a. Meat should never be boiled, just simmered.
 - b. The oven temperature should be from 300° F. to 325° F.
4. Liver, heart, and other variety meats should be served often, because of their high nutritive value.
- a. These meats may be cooked by braising.
 - (1) Heart may be stuffed with dressing and then braised.
 - (2) Liver may be braised like swiss steak with tomatoes and onions added.
 - (3) Sweetbreads and kidneys may be breaded.
 - (4) Tongue may be cooked in water, smoked, or pickled.

D. Meat extenders may be used when there is a meat shortage.

1. Soy products or cereals may be added to meat loaf or meat dishes.
2. Dressings may be served with roast pork, flank steak, and many kinds of meat.

LESSON VIII -- BETTER BREAKFASTS

I. Objectives

- A. To know why it is important to eat breakfast
- B. To know how to plan adequate breakfasts.
- C. To know the characteristics of a good breakfast.
- D. To know how to plan breakfast on a low income.

II. Lecture and discussion (Ref. Mat., Appendix, pp. 76-77)

- A. Breakfasts should supply from one-third to one-fourth of the daily food requirement.

- 1. Workers who miss breakfast work less efficiently during the morning hours.
- 2. It is difficult to have an adequate daily diet if breakfast is omitted.
- 3. There is a twelve to fourteen-hour stretch between supper and breakfast.

- B. Breakfast patterns may vary from light to heavy, depending upon the person's physical activities.

- 1. Light breakfasts may include fruit, cereal, or bread and beverage.
- 2. Medium breakfasts include fruit, cereal, bread, and beverage.
- 3. Heavy breakfasts may include fruit, bread, cereal, protein food such as sausage, bacon or eggs, pancakes and syrup, and beverage.

- C. Good breakfasts should supply foods from several of the basic food groups.

- 1. A sweet roll and coffee is an inadequate breakfast because it does not supply enough of the daily requirements.

- a. Many foods could be added to this menu to raise the nutritive value.

- 2. Two good breakfast menus are:

Fruit	
Whole-Grain Cereal	
Toast and Butter	
Milk	Coffee

Fruit	
Scrambled Egg	
Whole Wheat Toast	Butter
Milk	Coffee

LESSON IX -- PLANNING LUNCHES AND SUPPERS

II. Objectives

- A. To know how to plan food for the family on low and moderate incomes.
- B. To know how to obtain variety in lunch and supper menus.
- C. To know how to plan well-balanced lunch and supper menus.
- D. To know how to plan good packed lunches.

II. Lecture and discussion (Ref. Mat., Appendix, p. 77) -

- A. Adequate meals may be planned at low or moderate costs.
 - 1. Home-grown foods should be used whenever possible.
 - 2. Foods that are in season should be used.
 - 3. Potatoes, dry beans and grain products are used more abundantly in low cost menu plans.
 - 4. Moderate cost menus include larger quantities of meat, eggs, fruits, and vegetables.
 - 5. Basic management principles should be considered for both low and moderate cost plans.
 - a. Buy carefully and buy no more than you can use.
 - b. Store foods properly so they will not spoil.
 - c. Prepare foods so as to get the most benefit from them.
 - d. Use all leftovers.
- B. Packed lunches should be planned so they contain the basic seven foods.
 - 1. Examples of poor and good packed lunches are:

<u>Poor Lunch</u>	<u>Good Lunch</u>
Jelly Sandwiches	Peanut Butter Sandwich
Soft Drink	Cheese Sandwich
Candy Bar	Raw Carrots Orange
	Cookies Milk
 - a. The poor lunch contains only one of the basic seven groups.

- b. The good lunch includes food from most of the basic seven groups.

C. Lunch (if served at noon) or supper (if served in the evening) should be well balanced.

1. Vegetables, milk and fruit should be included in the lunch menu.
2. It should contain about one-third of the day's requirements.
3. Examples of good and poor lunch menus are:

<u>Poor Lunch</u>		<u>Good Lunch</u>	
Rice	and Tomatoes	Macaroni	and Cheese
Beets		Stewed Tomatoes	
Bread and Butter		Whole Wheat Muffins and	
Doughnuts	Coffee	Butter	
		Apples	Cookies Milk

D. Interesting lunch or supper menus may be obtained with skillful planning.

1. Supper should not be just a warmed-over edition of the dinner.

LESSON X -- DINNER AND THE FAMILY MEALS

I. Objectives

- A. To know how to plan dinner so that the day's meals will be adequate.
- B. To know the things to consider when planning, preparing, and serving meals.
- C. To know how to obtain variety in meals using Michigan foods.
- D. To know how to plan meals for low or moderate cost.

II. Lecture and discussion (Ref. Mat., Appendix, p. 77)-

- A. Meals should be checked to see if they contain the basic seven foods.
 1. "Guide to Modern Meals" can be hung in the kitchen and used to check the daily meals.
 2. Dinner patterns may be followed to assure adequate dinners.
 - a. Meat, fish, eggs, cheese, or beans.
 - b. Potatoes or other starchy vegetable.
 - c. A vegetable besides potato (a green or leafy vegetable at least three times a week).
 - d. Bread and butter.
 - e. Salad (fruit or vegetable).
 - f. Dessert (fruit and milk desserts often).
 3. Examples of poor and good menus are:

<u>Poor Dinner</u>		<u>Good Dinners</u>	
Meat Patty		Baked Beans	Meat Stew
Mashed Potatoes		Brown Bread	with Vegetables
Bread and Butter		Butter	Cole Slaw
Jam		Cabbage Salad	Whole Wheat Bread
Cupcake	Tea	Baked Apple	Butter Jam
		Milk	Coffee
			Ice Cream
			Milk Coffee

- B. Many things are important for the family meals.
 1. The dietary needs of the family should be given consideration.
 2. Meals should be planned in advance.
 3. Foods should be cooked properly.

4. Mealtime should be pleasant.

C. Variety may be obtained with Michigan foods.

1. Eggs, fruit, and vegetables should be used in abundance.

a. Beans are plentiful and should be used whenever possible.

b. Apples and cherries are abundant fruits.

LESSON XI -- DIET IN PREGNANCY AND CHILDREN'S DIETS

I. Objectives

- A. To know what foods are needed during pregnancy.
- B. To know the effect of the prenatal diet on the outcome of pregnancy.
- C. To know the effect of the prenatal diet upon the condition of the infant during the first few weeks of life.
- D. To know the important things to consider in developing children's food habits.
- E. To know where to obtain reliable advice on infant and prenatal care.

II. Lecture and discussion (Ref. Mat., Appendix, pp. 77-78)

- A. Food must be adequate for the mother and the growing baby.
 1. At least one quart of milk daily.
 2. Two servings of vegetable besides potato.
 - a. One green or yellow and one raw.
 3. Citrus fruit or tomatoes daily.
 4. One egg each day.
 5. Meat and butter in liberal amounts.
 6. Two teaspoons of standard cod liver oil.
 7. Whole wheat or enriched breads and cereal.
 8. Iodized salt.
 9. Wheat germ and additional iron.
- B. Studies in Toronto, Canada, show the results of good and poor prenatal diets on the condition of the women during pregnancy.

		<u>Poor Diet</u>	<u>Good Diet</u>
1. Obstetricians rating	Good	66%	94%
during the whole course			
of pregnancy.	Poor	34%	6%

2. There were six times more miscarriages in the poor diet group.
 3. There were six times more premature births and three times more stillbirths in the poor diet group.
 4. There were twice as many infections of the breast and uterus, and toxemia and anemia in the poor diet group.
- C. The babies of both diet groups were rated during the first six months of life.
1. More mothers on the good diet nursed their babies.
 2. There were five times more babies of the poor diet group with frequent colds, pneumonia, bronchitis, and rickets.
 3. The babies did not show much difference in birth weight, but those on the good prenatal diets showed a much greater increase in growth after birth.
- D. Food for children should be carefully planned, prepared, and served.
1. Children should have proper food.
 2. Meals should be served at regular times.
 3. Food should not be given between meals if the child does not eat his food at mealtime.
 4. Sweets should be given in small amounts and only at the end of the meal as dessert.
 5. Children's food habits are affected by several factors.
 - a. Too much attention at mealtime.
 - b. Attitude of other members of the family towards food.
 - c. Too much excitement and lack of rest.
 - d. Too large servings.
 - e. Ease of handling of food.

f. New foods which are given in too large amounts.

E. Information on prenatal and infant care may be obtained without charge.

1. Much material is available from the State Dept. of Health.

LESSON XII -- CONTROLLING WEIGHT BY DIET

I. Objectives

- A. To know the relationship of calories to weight.
- B. To know what foods to eat to gain weight.
- C. To know how to adjust diets to lose weight.
- D. To know the effect of improper dieting.

II. Lecture and discussion (Ref. Mat., Appendix, p. 78)-

A. The calorie is a measure of the fuel value of foods and the energy produced by their combustion in the body.

- 1. Calories are not a measure of body-building or protective qualities of foods.
- 2. Diets may be high in calories and yet inadequate.
- 3. High calorie foods are those containing sugars, starches, and fats.

B. High calorie diets are necessary to gain weight.

- 1. More calories than the daily requirement should be included in the diet.
- 2. Foods containing large amounts of concentrated sugars, fats, and starches should be eaten.
- 3. The diet must include the basic seven foods as well as high calories.

C. Low calorie diets are needed to lose weight.

- 1. If the calorie intake is lower than the daily requirement, the body will draw from the fat supply stored in the body.
- 2. Diets that have low calorie value must contain foods that have bulk and that are satisfying, so the person will not be hungry all of the time.
- 3. Diets must be nutritionally adequate.

D. Improper dieting is harmful to the body.

- 1. It will cause loss of strength and wrinkles.

2. In severe cases it will cause deficiency diseases.
3. Improper dieting will cause a lack of resistance to disease.

MATERIALS USED IN THE FOODS AND NUTRITION LESSONS

<u>Lesson</u>	<u>Material</u>	<u>Publisher</u>
I	National Wartime Food Guide NFC-4 Rev.	U.S. Department of Agriculture War Food Administration Office of Distribution Washington, D.C.
I	Milk in Modern Meals Extension Course Notes 129	Michigan State College Extension Division East Lansing, Michigan
I	8x11 charts Protein Equivalents Riboflavin Equivalents Foods Furnishing the Same Amount of Calcium	National Dairy Council 111 North Canal St. Chicago 6, Illinois
I	8x12 charts American Cheese Cottage Cheese Whole Milk Skim milk	Dairy Council of St. Louis St. Louis, Missouri
II	The Wheat Kernel	Mimeographed material, p.
II	Breads and Cereals Help Replace Rationed Foods	Mimeographed material, p.
II	8x12 charts Whole Wheat Flour Rolled Oats White Flour Enriched Flour	Dairy Council of St. Louis St. Louis, Missouri
III	Tomatoes for Your Table AWI-104	U.S. Department of Agriculture Bureau of Human Nutrition and Home Economics Washington, D.C.
III	Dried Fruits in Low Cost Meals	U.S. Department of Agriculture Agricultural Marketing Adminis- tration Washington, D.C.
III	8x12 charts Apples Oranges Strawberries Tomato Juice Dried Prunes	Dairy Council of St. Louis St. Louis, Missouri

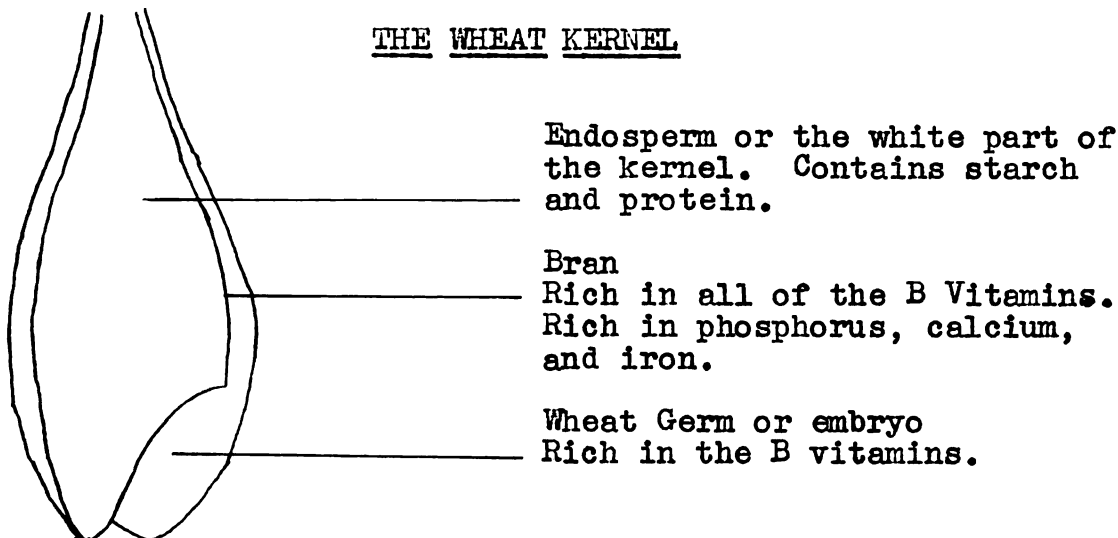
<u>Lesson</u>	<u>Material</u>	<u>Publisher</u>
IV	Vita-Min-Go Game	Vita-Min-Go, Inc. 175 Varick St. New York City, N.Y.
IV	Vitamins from Farm to You AWI-2	U.S. Department of Agriculture Bureau of Human Nutrition and Home Economics Washington, D.C.
IV	Green Vegetables in War- time Meals AWI-54	U.S. Department of Agriculture Bureau of Human Nutrition and Home Economics Washington, D.C.
IV	8x12 charts Spinach Cabbage	Dairy Council of St. Louis St. Louis, Missouri
IV	Get the Good from Fruit	Mimeographed material, p.
IV	Nutritive Values of Fruits and Vegetables	Mimeographed material, p.
IV	Set of 10 charts	U.S. Department of Agriculture Bureau of Home Economics Washington, D.C.
V	Dried Beans and Peas in Wartime Meals AWI-47	U.S. Department of Agriculture Bureau of Human Nutrition and Home Economics Washington, D.C.
V	Root Vegetables in Wartime Meals AWI-39	U.S. Department of Agriculture Bureau of Human Nutrition and Home Economics Washington, D.C.
V	Potatoes in Popular Ways AWI-85	U.S. Department of Agriculture Bureau of Human Nutrition and Home Economics Washington, D.C.
V	8x12 chart Navy Beans	Dairy Council of St. Louis St. Louis, Missouri
VI	Egg Dishes in Any Meal AWI-89	U.S. Department of Agriculture Bureau of Human Nutrition and Home Economics Washington, D.C.

<u>Lesson</u>	<u>Material</u>	<u>Publisher</u>
VI	Cheese in Your Meals AWI-16	U.S. Department of Agriculture Bureau of Human Nutrition and Home Economics Washington, D.C.
VI	Eggs a Protective Food	Poultry and Egg National Board 308 West Washington St. Chicago, Illinois
VI	Chart Eggs Retail Grades and Uses	Poultry and Egg National Board 308 West Washington St. Chicago, Illinois
VI	Cooking with Soya Flour and Grits	U.S. Department of Agriculture Bureau of Human Nutrition and Home Economics Washington, D.C.
VI	8x12 Egg	Dairy Council of St. Louis St. Louis, Missouri
VII	Meat and Romance	National Livestock and Meat Board 407 South Dearborn St. Chicago, Illinois
VII	Lamb or Goodness Sake	National Livestock and Meat Board 407 South Dearborn St. Chicago, Illinois
VII	All about Pork	National Livestock and Meat Board 407 South Dearborn St. Chicago, Illinois
VII	8x12 charts Egg Butter Pork Chop Beef Chicken Fried Liver	Dairy Council of St. Louis St. Louis, Missouri
VIII	Eat a Good Breakfast AWI-107	U.S. Department of Agriculture Bureau of Human Nutrition and Home Economics Washington, D.C.
VIII	Better Breakfasts Extension Course Notes 137	Michigan State College Extension Division East Lansing, Michigan

<u>Lesson</u>	<u>Material</u>	<u>Publisher</u>
VIII	Colored Graphs A Poor Breakfast A Good Breakfast	National Dairy Council 111 North Canal St. Chicago, 6, Illinois
VIII	Our Family's Breakfast Menus	Cereal Institute 135 South Lasalle Street Chicago, 3, Illinois
VIII	Why the Nutritionally Ade- quate Breakfast is the Better Breakfast	Cereal Institute 135 South Lasalle Street Chicago 3, Illinois
IX	Family Food Plans AWI-78	U.S. Department of Agriculture Bureau of Human Nutrition and Home Economics Washington, D.C.
IX	Streamlined Suppers Ext. Course Notes 140	Michigan State College Extension Service East Lansing, Michigan
IX	Colored Graphs A Poor Lunch A Good Lunch A Poor Packed Lunch A Good Packed Lunch	National Dairy Council 111 North Canal Street Chicago 6, Illinois
X	Eat Right to Work and Win	Swift and Company Department A Chicago, Illinois
X	Different Dinners Ext. Course Notes 141	Michigan State College Extension Division East Lansing, Michigan
X	Everyday Meals for Michi- gan Homes Ext. Course Notes 82	Michigan State College Extension Division East Lansing, Michigan
X	Guide to Modern Meals Ext. Course Notes 139	Michigan State College Extension Division East Lansing, Michigan
X	Colored Graphs A Poor Dinner A Good Dinner A Good Dinner	National Dairy Council 111 North Canal Street Chicago 6, Illinois
XI	What to Eat Before the Baby Comes	Michigan Department of Health Lansing, Michigan

<u>Lesson</u>	<u>Material</u>	<u>Publisher</u>
XI	One Meal for All	Merrill-Palmer School 71 East Ferry Avenue Detroit, Michigan
XI	Exhibit of Available Materials for Prenatal and Infant Care	Michigan Department of Health Lansing, Michigan
XII	Your Food and Your Figure	Michigan Department of Health Lansing, Michigan
XII	Calories in Food	Kellogg Company Battle Creek, Michigan
XII	Your Weight and How to Control It Weight Reduction with Safety and Comfort	National Livestock and Meat Board 407 South Dearborn Street Chicago, Illinois

THE WHEAT KERNEL



CEREAL FOODS--ONE OF THE BASIC SEVEN

Cereals

Many breakfast foods are made from the cereal grains, the usual ones being oats, corn, wheat, and rye. These may be obtained in ready-prepared forms which are usually called "dry cereals" or in forms which must be cooked before eating which are often referred to as "cooked cereals."

Breads

Breads may be made from wheat, corn or rye flours. Most breads are made from wheat flours. These flours are of three types, whole wheat flour, white flour or enriched flour.

Whole wheat flour is milled to contain 100% of the wheat kernel. It has all the important nutritive values of the entire grain. This includes important vitamins and minerals.

White flour contains only that part of the wheat kernel called the "endosperm" because the sifting processes remove the "bran" and the "wheat germ" portions. Thus, while white flour contains abundant energy and some body building material it is very low in the important "B Vitamins" and minerals.

Enriched flour is white flour to which is added a significant amount of the B vitamins and minerals.

BREAD AND CEREALS HELP REPLACE RATIONED FOODS

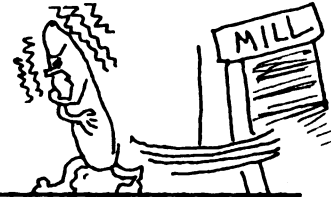


This is a WHOLE GRAIN

The outer coats of the grains have necessary VITAMINS and MINERALS.

WHOLE GRAIN FLOUR AND CEREALS:

Oatmeal Whole Wheat Rye
Buckwheat Cracked Wheat
Brown Rice Graham



This is a REFINED (white) GRAIN

If their coats are removed in milling, the vitamins and minerals are LOST.

REFINED FLOUR AND CEREALS:

Wheat Rice White Flour
Farina Cornmeal Hominy

* * *

BREAD and CEREALS give ENERGY for work and play.

BREAD and CEREALS contain PROTEIN for GROWTH and REBUILDING of body structure like muscles, tissues and blood.

ENRICHED bread, cereal and flours contain certain VITAMINS and MINERALS that are necessary for life... Ordinary white unenriched bread, cereals and flour do not supply as much of these vitamins and minerals.

The vitamins in enriched products are B₁ and NIACIN.

The mineral added to enriched products is IRON and sometimes CALCIUM and PHOSPHORUS.

BUT WHOLE GRAIN as well as whole wheat contains these and other necessary vitamins and minerals.

Oatmeal, brown rice or any cereal can be used in meat loaf or meat patties.

Prepare a stuffing from whole grain or enriched bread. Use with such meats as flank steak, shoulder of lamb, veal or other meats.

CEREALS can be used as thickening in gravy, together with or in place of flour.

USE whole grain or enriched flours in griddle cakes, waffles, cakes, biscuits, baked or steamed puddings, and cookies.

The vitamin thiamin can be destroyed by HEAT and by SODA. Do NOT cook cereal any longer than necessary.

GET THE GOOD FROM FRUIT

1. Use fruit fresh...if it has to stand, keep covered and cold.
2. Cook in the peel if you can...if you must peel, make it thin.
3. Spread berries and keep dry and cold; That's the way to prevent mold.
4. Don't pinch bruise or break the skin, You'll let the enemy "rot" come in.
5. Wash and cap berries just before using.
6. Spread fruits to keep them from bruising.
7. Keep ripe fruit cold.
8. Let under-ripe fruit ripen at room temperature to bring out the flavor.

GET THE GOOD FROM VEGETABLES

1. Wash quickly...don't soak.
2. Keep cool...keep in nature's covering until ready to cook.
3. Cut just before serving.
4. Boiled or baked...nature's jacket holds in the good.
5. Heat canned foods quickly...they're already cooked... use all the juices.
6. Start cooking frozen vegetables while still frozen... don't thaw first.
7. Wash salad green...drain...store in vegetable pan... keep cold.
8. Trim non-edible parts from tender roots or cooking greens, then wash, drain, put in a covered pan and keep cold.
9. Keep corn, peas and lima beans cold to keep their sweet, delicate flavor.

NUTRITIVE VALUE OF FRUITS AND VEGETABLES

Vitamin A

One serving of the following vegetables furnish at least two-thirds of the average adult's daily requirement.

Carrots	Squash, Winter
Greens (all cooked kinds)	Sweet Potatoes

One serving of the following vegetables and fruits furnish at least one-third of the average adult's daily requirement.

Apricots	Peaches
Green Pepper	Pumpkin
Broccoli	Tomatoes

Vitamin C

One serving of these vegetables and fruits furnish at least two-thirds of the average adult's requirement.

Orange (at least 4 oz. of juice)
Grapefruit (at least 4 oz. of juice)
Strawberries
Tomatoes (at least 8 oz. of juice)

Additional fruits and vegetables furnish at least one-third of the average adult's requirements.

Asparagus	Greens
Broccoli	Kale
Brussels sprouts	Green pepper
Cabbage	Pineapple juice
Cantaloupe or muskmelon	Rutabaga
Cauliflower	

Potatoes are a good source of Vitamin C in the amounts usually eaten. Two or three potatoes will furnish about one-third of the day's requirements.

None of these vegetables will furnish vitamin C if they are not properly cooked.



DROWNED BY LOTS
OF WATER



SUFFERS FROM
HEAT EXPOSURE



STRANGLLED BY
TOO MUCH AIR

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