The Development and Evaluation of a Manual for Use in Community Nutrition Education Classes

Helen H. Register

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LOMA LINDA UNIVERSITY
Graduate School

THE DEVELOPMENT AND EVALUATION OF A MANUAL FOR
USE IN COMMUNITY NUTRITION EDUCATION CLASSES
by
Helen H. Register

A Thesis in Partial Fulfillment
of the Requirements for the Degree
Master of Science in the Field of Dietetics

June 1969
Each person whose signature appears below certifies that he has read this thesis and that in his opinion it is adequate, in scope and quality, as a thesis for the degree of Master of Science.

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CHAPTER I

INTRODUCTION AND PURPOSE

Nutrition is the foundation of health, and education is the cornerstone of optimum nutrition (Eppright et al., 1963). Nutrition education is the process by which beliefs and attitudes about food are directed to habits that are nutritionally sound and consistent with individual needs and available food resources (Todhunter, 1968).

The lecture-demonstration is a means of presenting educational material both visually and audibly. The average person is not so impressed with the facts which he hears that he will desire to make permanent changes in his habits. He is more easily impressed by seeing. Combining these methods of teaching should accomplish more permanent results (Allgood, 1963).

Most food demonstrations are presented for the purpose of selling a product, either food or kitchen appliance. In these demonstrations emphasis is too often placed upon presenting novel recipes and entertainment ideas with little reference to nutrition. To gain inspiration from new ideas is helpful, but the objective of food demonstrations should also be to teach the most health-promoting manner of food preparation. Such education programs should teach basic principles of nutrition and aim at improving food habits.

It was the purpose of this study to develop and evaluate a manual of nutrition education material which would include: (1) several approaches for the organization of community nutrition education
classes, (2) effective, practical techniques for demonstration of a lacto-ovo-vegetarian diet, (3) non-technical talks on nutrition principles, and (4) basic recipes for use in food demonstrations with appropriate nutrient analysis of each recipe. This material was designed for use by non-professional persons (non-professional denoting other than dietitians or nutritionists).
CHAPTER II

REVIEW OF LITERATURE

Nutrition Education

Nutrition education is a universal need (Todhunter, 1968), for education is the cornerstone of good nutrition (Eppright _et al._, 1963). Man does not get the proper nutrients each day by instinct. He must be taught to attain good nutrition by making proper food selections. People are health-minded and millions of dollars are spent for vitamin pills. Any idea which gives the promise of a magic solution with no effort on the part of the individual is very popular. But the simple idea of eating the right kind of food because it is health-giving has little popular appeal.

People are not easily impressed with the idea that good food brings future health. They understand short-term objectives; they desire benefits now. Success in nutrition education will depend on identifying with the personal aims of the public (Martin, 1967).

The food habits of a nation determine in large measure the nutritional level and health of its people (Martin, 1967). Food habits (Leverton, 1965) are the sum of our attitudes and ideas, our likes and dislikes, and our experiences and practices of choosing and eating food. Clinging to familiar and well-known foods sometimes gives a feeling of security. Emigrants to this country may forget their native language, but food habits from the "old country" are some of the last things they are willing to change (Eppright, 1947).
There is no sure way to motivate people to alter their food habits, for as Mark Twain said, "Habit is habit and not to be flung out of the window by any man, but coaxed downstairs a step at a time" (Clemens, 1924). Even when food habits are inferior, they are not all bad; but sometimes it is difficult to make the adjustments which would improve the diet.

Food habits can be altered gradually. The U. S. Department of Agriculture surveys have shown a shift in eating habits in the past fifty years. One-third of the diets in this country ranked as poor in the family food survey of the early 1930's, whereas, in the 1960's probably only one in ten diets would be thus classified. A study of these records shows that most of these gains were before 1948. Nutrition shortages, noted in 1948, still continue even though food supplies and most family incomes have increased (Martin, 1967).

There is, and probably always will be, a need for nutrition education. Teaching this subject can be exciting. It should never be dull or unimaginative. People want to be inspired and nutrition education should inspire people to form habits of eating that will promote health (Kain, 1967).

Educational Methods

For the professional nutritionist to directly reach all people is impossible. There must be assistance from those who have close association with groups of people and who have an interest in helping others (Ritchie, 1950). One of the newest approaches for reaching low-income
families with homemaking information they need and can understand has
been through the non-professional home economics aide (Monroe, 1968),
who goes into the home to teach them how to accomplish more with what
they have.

This approach has also been used in countries other than the
United States. One of the major objectives of the community develop-
ment movement in India has been to "help people to help themselves."
To this end numerous training programs have been organized. One such
program was the training of women in nutrition education to go back to
their villages to help other homemakers (Devadas et al., 1965).

Project Head Start nutritionists aimed to involve some of the
parents who showed leadership ability to organize trips to local markets.
They found that this was a very successful way of making nutrition
education come alive. Food demonstrations also helped to involve the
parents as they prepared samples for the class to taste. Nutrition
education has been recognized as one of the responsibilities of the
total enrichment program of Project Head Start (Frankle et al., 1967).

The educational process involves all the methods, techniques,
procedures and illustrative materials used to inform and to influence
individual food practices (Todhunter, 1968). Films can be valuable aids
in teaching nutrition since movies are most often seen for entertainment
and are eagerly anticipated. In this receptive frame of mind, people
can be interested and informed (Eprright et al., 1963). Radio and televi-
sion may be sources of education. Commercials using these media are
cleverly presented and influence food practices of many. Reliable nutrition
information should be as cleverly presented so that it will be as potent and lasting in its influence. Animal feeding experiments can show living evidence that foods work together to promote growth and health.

The straight lecture method has more utility and costs less than group discussions or food demonstrations (Jenkins, 1967). A combination of lecture-demonstration will create a more lasting impression and a greater desire to change, since two senses (hearing and seeing) are affected (Allgood, 1963). Lecture-demonstrations offer a practical, dramatic, and living presentation of the nutrition story. Such programs may have "eye appeal," simplify information, and fascinate the audience. Also, a lecture-demonstration can be used to stimulate group decision to accept nutrition principles as applied to family living. Through such acceptance, nutrition then becomes a way of life rather than merely something "good for you." Stories, pictures and other visual materials, exhibits, and talks can also be means of making nutrition a live subject (Eichelberger, 1950).

Young homemakers are a difficult group to reach with nutrition education programs. Spindler (1965) in interviewing young homemakers received a very negative answer when they were asked if a nutrition course on TV or radio would be of help to them. Even though it is inconvenient for them to leave home when they have young children, they preferred a series of meetings which they could attend in person to ask questions and receive information to aid in problem solving.

Evaluation

Evaluation seems to be an essential part of the teaching process
Evaluation is practiced by everyone to some extent in daily living, but educational evaluation is the estimation of the growth and progress of pupils toward objectives or values. The purpose of evaluation is to provide evidence which will show the degree to which pupils are progressing (Wrightstone et al., 1956). The process of evaluation is determining the effectiveness of the course or program of instruction (Furst, 1958).

In any satisfactory measuring instrument three qualities are indispensable. These are validity, reliability, usability. Validity: does the test really measure what it purports to measure? Reliability: on repeated usage, does the test give consistent results? Usability of a test means practicability: ease of administration, ease of scoring, ease of interpretation and application (Ross and Stanley, 1954).

Audience evaluation. Among the more common types of evaluation techniques are paper and pencil tests. Testing may be viewed as a systematic sampling (Bloom, 1963). Short-answer tests are generally superior to essay examination in their sampling of course content, reliability and ease of scoring (Wrightstone et al., 1956). Short-answer test items can take any one of a larger number of forms such as true-false, multiple-choice, completion, matching and others. According to Furst (1958), the advantages of choice-type questions are:

1. They set up a forced-choice situation.
2. They do not depend upon skill in expression or handwriting.
3. They permit a wide sampling in a relatively short period of time.

4. They permit highly objective scoring.

5. They permit rapid and easy scoring.

6. They lend themselves more readily to statistical analysis.

The multiple-choice questions have advantages over other short-answer questions such as: adaptability, freedom of response sets, greater reliability per item than the true-false type, and provision of more analytic data than the true-false test (Furst, 1958). The multiple-choice item is superior to the true-false item, which presents only two alternatives, in that it reduces the opportunity for guessing the correct answer. The multiple-choice type of question is also relatively free from "absolutes" in that the "best" statement of several that are given is to be selected as the correct answer. The correct answer, therefore, is relative to several other given statements rather than to all possible not given statements as in true-false questions. The scoring of the multiple-choice item tends to be more objective and simpler than that of the completion item (Wrightstone et al., 1956).

Ross and Stanley (1954) state that multiple-choice type of test is usually regarded as the most valuable and most generally applicable of all test forms. They further state that multiple-choice tests with fewer than four responses should be avoided, because increasing the number of plausible choices tends to reduce the guessing factor.

Examinations are not an end in themselves. The examining process must be viewed as a means of making the educational process more
effective (Bloom, 1963). This may be accomplished by motivating students to study in preparation for the examination, by encouraging them to listen and absorb facts from class presentation, and by reviewing the examination answers with the group.

**Committee and demonstration evaluation.** Rarely are evaluation instruments developed for use with but a single person. They are almost always intended for use with some defined group. Since an instrument may be appropriate for one group but not for another, it is necessary to specify the nature of the group for which the instrument is intended (Furst, 1958).

Evaluative criteria, rating scales and methods are used to evaluate teaching practices. Direct observation and recording of behavior is the basis for collecting data by means of observational techniques and anecdotal records. A useful observational technique is the structured, or controlled observation which involves recording of observations by using defined categories of activities in a running account of subject conduct (Wrightstone et al., 1956).

Checklists and rating scales are similar types of evaluation devices. The former is a list of words, phrases, sentences, or paragraphs following which an observer records a check to denote presence or absence of that which is being observed. The rating scale is a list of qualities set down on a continuum upon which a rater indicates a value or rating. There are various kinds of checklists and rating scales which may be used to evaluate both technique and
product. The principles of evaluation used in this study for the Advisory Committee Evaluation were based on studies by Wrightstone et al., (1956).
CHAPTER III

METHODOLOGY

Manual Development

In preparing the material for this manual, emphasis was placed on presenting it in a non-technical manner to be understood by the average homemaker. Factual materials were developed on eight topics either to be used as lectures or to be integrated into food demonstrations. These topics were written in an informal, personal style with the idea that this would make more of an impact on an audience than the didactic approach when presented in community nutrition education. Suggestions and examples were given for visual aid material, centerpieces for the demonstration table, and supplementary reading. Examples of recipes based on the principles set forth in the factual discussions were included along with appropriate nutrient analyses.

In Section I, Community Nutrition Education Classes, subjects discussed included (a) preplanning decisions and publicity to precede class instruction; (b) duties and qualifications of assistants; (c) the class schedule; and (d) suggestions of themes for the curriculum. Some materials were adapted from the Home Nutrition Instructor's Guide (Anonymous, 1962), and assistance was given by personal interviews with individuals (both professional and non-professional) who have had experience in conducting schools for community nutrition education and food demonstrations.
In Section II, The Food Demonstration, there were discussions of (a) qualifications of the demonstrator: clothes, posture, voice and attitude; (b) prerequisites of the demonstration, such as a thorough knowledge of the topic and background reading before presentation of the classes; (c) preliminary preparation; (d) equipment lists; (e) serving of samples; (f) the audience, large or small; and (g) presentation of the food demonstration. Some material was adapted from Food Demonstration Techniques (Allgood, 1963).

Nutrition Topics:

The eight nutrition topics were as follows:

"What's for Dinner" presented principles to be used in menu planning, and a seven-day menu plan was suggested with recipes included for a dinner menu. This seven-day menu was intended to serve as a guide in developing a menu plan suited to the nutritional requirements for each family and their food selections.

"More for the Money" discussed the fundamentals of food purchasing with emphasis on (a) planning before marketing, (b) points to recognize in the merchandising of food, and (c) guides for wise shopping. Recipes for this topic were chosen as examples of more nutrition for the food dollar.

"The Wake Up Meal" described reported studies showing the importance of breakfast to school children, to adult college students, and to factory workers. Suggestions were given for breakfast menus, for adding satiety to the meal, and for answering excuses of breakfast skippers.
Quantitative and qualitative aspects of protein nutrition were presented in "The Heart of the Meal." In the formulation of entree recipes protein supplementation was considered. Recipes were chosen to exemplify different types of entrees.

Bread, breadmaking, other uses for grains, as well as the refinement and enrichment of grains were discussed in "The Staff of Life." The use of whole grain products was emphasized because of the quantity of calories derived from grains and cereals in the diet, especially by people from low economic status. Since bread makes up a considerable portion of the total calories in the average school lunch, a discussion on this topic was included with suggestions for menus.

The section on fruits and vegetables titled "Nature's Vitamin Packages" included nutrient contributions from these foods, and the effect of storage on canned, dehydrated and frozen vegetables. Salads and vegetable cookery were presented, and the recipes given were for unusual uses of these foods.

The relationship of dietary fats to heart disease and atherosclerosis was discussed in "Nutrients Up--Calories Down." The possible etiology of obesity was proposed with suggestions for successful weight reduction. The accompanying recipes were for a dinner which was low in calories but high in nutrients.

"The Winning Smile" dealt with a discussion of the high consumption of sugar in the American diet, and suggestions for decreasing the sugar intake. Dental problems were reviewed with respect to how better eating habits could contribute to improved oral health.
Evaluation

Evaluation tools. The usefulness of the lectures and recipe demonstrations was tested by employing an incomplete block experiment. By this method three of the eight topics were each tested three times. Each topic was presented before three different audiences by a different teacher-demonstrator in each case.

The teacher-demonstrators attended an instruction class in the techniques of food demonstrations and community nutrition education organization in which the materials on these topics were discussed with them. From this class, nine individuals volunteered to participate as teacher-demonstrators in the testing of the three topics: The Wake Up Meal (Breakfast), The Heart of the Meal (Proteins), and Nature's Vitamin Packages (Fruits and Vegetables). These topics were chosen by the teacher-demonstrators as the materials which they preferred to present.

The three audiences were local Seventh-day Adventist church groups: (1) a group of homemakers largely of retirement age with an average attendance of eight, (2) a group of seventeen negro homemakers of varying ages, and (3) a group of twenty-three men and women of mixed ages.

Audience evaluation. Tests were developed to accompany the three lecture topics being studied. One purpose of testing the audience was to determine how much nutrition knowledge was gained by attending the lecture-demonstration. The tests were constructed utilizing multiple-
choice questions from which each subject was to choose the best of four responses. The test items were pre-tested on two graduate students and four homemakers to check for clarity of instructions and questions.

Before each lecture-demonstration, a pre-test was given to determine the students' general knowledge of nutrition. After the lecture-demonstration, the audience was given a post-test to determine the extent of learning from the material presented. The same test was utilized for both. Each student wrote his name on both the pre-test and post-test. These were then matched, and the difference in the two scores noted as the differential score.

The pre-test, post-test, and differential scores from the audience tests were analyzed by computer to check for significant trends.

**Teacher-demonstrator evaluation.** Each teacher-demonstrator evaluated the topic material which he studied and presented to the audience. This evaluation blank appears in Appendix I. The classification terms used were: strongly agree, agree, undecided, disagree, and strongly disagree. These words were used instead of very good, good, fair, poor, and very poor, because it was felt that a person would more quickly mark the lower classifications using the former terminology.

**Advisory committee evaluation.** Two members of the research advisory committee were present at each topic presentation. These individuals evaluated the presentation of the lecture and demonstration
on a scoring sheet (see appendix II). This evaluation sheet included both checklists and completion questions for observations.

The evaluations from the lecturer-demonstrators and from the advisory committee were reviewed and suggested changes were discussed under Results and Discussion, Chapter V.
CHAPTER IV

PREFACE

This manual is primarily for those who desire to learn and to help others learn more about practical, everyday nutrition. It does not pretend to make one an expert in the field of nutrition. It should be useful for those who know the facts of nutrition, but have had little experience in making them function for others. References and supplementary reading suggestions are presented to give background and depth to the topics in the manual. It is suggested that the entire manual be read and studied before using any part of it.

To a Seventh-day Adventist audience a judicial use of the nutrition principles as recommended by E. G. White can be effective. Topics of this type could be presented in the devotional period. Outlines of excellent devotional material are available in the Home Nutrition Instructor's Guide (Anon., 1962), and reference to other material is obtainable in Food, Health and Efficiency (Vollmer, 1964).

During the testing of the manual it was discovered that the multiple-choice tests were interest items to the audience, therefore, they have been included for each section. Two copies of the test should be available for each person in the audience each time a topic is presented. One copy of the test is given to each participant before the beginning of the lecture-demonstration, probably just after the devotional. This tests their general nutrition knowledge. Instruct
them to choose only one correct answer from the four answers listed, and put a circle around either (a), (b), (c), or (d). Tests are then collected. At the end of the lecture-demonstration (before the door prizes are distributed or the samples served), give the other copy of the test to each participant. In this way the test is used as a teaching device, to help the audience listen for the points asked on the test. The lecturer-demonstrator should then go over the test questions, giving the correct answers. The audience can either keep the second test, or the lecturer-demonstrator could collect them and use them to check on herself as to the effectiveness of her teaching. If the latter practice is followed, urge each participant to write his name on the test, so the post-test can be compared with the pre-test. The difference in the two scores should show the learning achieved.

It is the wish of the author that this manual be used in helping to teach practical, well-balanced, scientifically sound principles of nutrition.
SECTION I
COMMUNITY NUTRITION EDUCATION CLASSES

Much preplanning must take place behind the scenes before a community nutrition education class begins. Who does this planning? The planning committee should be made up of the leader of the sponsoring organization, the teacher-demonstrator, the nutrition class coordinator and any others who they feel should be included.

Decisions

For whom will the community nutrition education classes be given? They might be for the general public, for a particular or general church group, a club, for juniors—Scout or Pathfinder group, or for a particular age group—teenagers, the elderly, etc.

The classes may be sponsored by a club, a church, a school organization, or a Home and School Association. The sponsoring group must take the responsibility for financing the classes either from their funds, or by soliciting donations from local business firms and individuals. Some funds may be obtained from fees charged for admittance to the classes; however, the sponsoring organization must stand ready to underwrite any expenses not covered from this source.

Where and when will the classes be held? The "when" may be decided automatically, if the place chosen is available for a certain month or a certain day or night of the week. The sponsoring group should have some estimate of the size of the class for which to plan,
and thus the size room which would be desirable. At times the utility companies allow their demonstration kitchens to be used. A school home economics department or a dorcas hall of a church may be available.

Publicity leading up to the community classes is most important, but it should also continue during the days or weeks in which the classes are in progress. A public relations secretary should be appointed from the sponsoring group to work with the teacher several weeks in advance of the beginning of the classes. Publicity can include newspaper ads and news stories (there is a charge for ads, but no charge for news stories), radio or TV interviews or spot announcements, club papers, church announcements, posters, or telephone invitations.

**Assistants**

From the sponsoring group, assistants will be appointed or chosen. The most important of these appointments is the nutrition class coordinator who helps to organize the entire group of classes, aids in choosing and training the other assistants, works closely with the teacher in planning the formal opening of the classes, and assists in opening and closing each meeting.

The instructor's platform assistant helps the teacher in various ways. She prepares the demonstration tray set-ups if the teacher delegates this responsibility, brings the trays to the demonstration table, keeps the table neat and clean at all times, presides over the cooking process, and brings the finished products to the teacher for display.
The *kitchen supervisor* should be a competent cook and good organizer. She takes charge of preparing the samples for the demonstration and organizes her assistants to prepare and serve the samples.

A person of some artistic ability should be chosen as the *serving supervisor* as it is her responsibility to arrange the serving table and/or display table. She plans for the table covering, the centerpiece, and with the kitchen supervisor, plans for the serving dishes and utensils.

The *buyer* must be dependable, punctual, and acquainted with the markets of the area. She must be available for emergencies and have the use of a car.

To greet the audience as they arrive, choose a *hostess supervisor* and assistants who are friendly and gracious. They must be present before anyone else begins arriving. Their duties are to handle the registration for the class, distribute materials as needed during the class and bid people good-bye as they leave, inviting them to the next class. The hostess supervisor will organize her assistants and will work with the coordinator on the prizes to be given.

The *public relations secretary* should have some experience in contacting and working with the newspapers, radio and TV.

*Janitor service* and preparation of the room may be done by the regular janitor, or it may be necessary to appoint a person or a committee to take care of cleaning, arranging chairs, controlling the lighting and heating of the room.
Kitchen clean-up may be done by the kitchen supervisor and assistants, or by a clean-up committee who comes on duty after each class is over.

Class Schedule

The following is a suggested program for a two-hour class period:

20 minutes- opening exercises
devotional
introduction

20 minutes- instructional lecture

45 minutes- recipe demonstrations

15 minutes- door prizes and announcements

20 minutes- sampling of food

Curriculum

The curriculum of the community nutrition education classes may be organized around themes, holidays, seasons, special occasions, types of food, nutrients, or special problems. The number of class meetings making up the entire group of classes may decide the topics to be used. The needs of the audience should dictate somewhat the topics covered.

Three classes could be organized around breakfast, dinner and supper (or lunch). For the breakfast discussion include menu planning and/or purchasing. For the presentation on supper or lunch, combine the topics of the grains, low-sugar desserts and some of the weight reduction suggestions. For the class on dinner, combine the protein and vegetable sections.
Three classes could also be organized around the nutrients: carbohydrate--using the sections on grains, dental health and low-sugar desserts; protein--using the section on protein and including menu planning; fats--using the section on fats and weight reduction, and including breakfast.

Four classes could be organized around the basic four: protein foods, grains and cereals, vegetables and fruits, and milk (with milk, use the section on breakfast and some of the reducing ideas).

Five classes could present the basic four as discussed above with the fifth class using the sections on menu planning and purchasing.
SECTION II

THE FOOD DEMONSTRATION

The Demonstrator

Since the lecturer is the center of interest in any demonstration, she should be pleasing to the eyes, the ears and the intellect. She must be at ease in front of an audience and exhibit poise, and confidence in the material which she is presenting. For most people, poise is developed through practice. Confidence is gained through adequate preparation, knowledge and experience. Every opportunity should be taken to appear in public to gain experience. Courses in public speaking should be a benefit.

Neatness and simplicity are most important in the lecturer's appearance. To look right is to feel right, adding to one's poise. The clothing, whether a dress or a uniform, should be of a washable fabric, spotless, wrinkle-free and attractive in style and color. The color must not be too bright and should blend with any background. If wearing a white uniform, a small touch of color may be added with a dainty handkerchief or apron. For platform wear, the dress or uniform should be a modest length. Comfortable shoes, clean and suitable for the occasion, are necessary. The hair should be becoming, smooth and simple. During the demonstration, the hair or face should not be touched.

Erect posture should be so much a habit that it requires no thought. Stand on both feet, look ladylike, and do not bend over the
worktable. Make the procedures appear as simple as possible so that the audience will want to try each recipe. Be and look a good example of what you are teaching.

The voice should be low, well-modulated and pleasing. Speak in a slow, warm, conversational tone. There should be no monotone and no strained tone in the voice. Enunciation should be slow and clear, but not dragging. Make yourself heard from whatever point on the platform you are working. Practice with the public address system, if one is available, so you are sure of being heard, but not have it so loud as to be uncomfortable.

Face the audience, look directly at the persons seated at the sides as well as those in back and front. Command the attention of the audience with your eyes.

Be enthusiastic, friendly, buoyant, vivacious. This attitude cannot be forced, it must be natural. Smile, let the audience know that you enjoy what you are doing for them, and you want them to enjoy it also. Display a personal warmth and sincerity. Do not be dictatorial, but suggest and inspire. Have a sense of humor. Learn when and how to inject relevant, interesting stories and personal examples. Be yourself --not affected, but sometimes dramatic.

**Prerequisites of the Demonstration**

The lecturer must have a thorough knowledge of the material and how it is to be presented. This requires much reading and studying of the subject and other subjects related to it. Constant review and reading of up-to-date material by recognized scientists is a must.
For a successful demonstration, there must be detailed preliminary planning. Know what type of audience to expect so as to choose a subject appropriate for them and keep the food budget and recipe production within their incomes. Know the length of time to be allotted for the demonstration and lecture. Have more material prepared than you may need, but do not try to present too much. Have your notes of the main points to be covered on cards or on the recipe sheets, but do not read a lecture. Do not try to have everything written out that you plan to say. Write it out completely and practice it thoroughly, but then know it well enough that only a few notes will be needed when presenting it to the audience.

Develop a central theme or purpose of the entire demonstration and have continuity in the recipes presented. Check the cooking time required for each recipe and plan to prepare the recipes in the order of time required. Plan and practice each recipe so as to be thoroughly familiar with it.

Outline the duties of the assistants, especially the one who will assist you on the platform. Explain the duties carefully and work together as a team.

Have the market order complete, including all ingredients needed to prepare the samples. Plan the door prizes--number to be given, method of deciding who receives them, method and time of distribution in the program. Responsibility should be delegated for this part of the program.
**Preliminary Preparation**

1. Market order—purchase the quality as well as the quantity needed.
2. Clean vegetables and fruits; pare, dice or chop according to recipe.
3. Prepare tray set-ups with each ingredient measured and ready for use.
   
   If an item is to be taken from the refrigerator at the last moment
   or for any reason is not available for the tray before the demonstra-
   tion, place a card on the tray with this notation to remind
   of the missing item.

4. Have equipment in position and checked. The demonstrator and
   assistant should be thoroughly familiar with the operation of all
   equipment.

5. Prepare garnishes.

6. Cook food that cannot be cooked during the demonstration.

7. Create a theme centerpiece for the demonstration table—for bread-
   making, a wooden bowl filled with whole grain; for vegetable
   cookery or salad making, a tray with beautiful shining fruits
   and vegetables attractively arranged.

8. Arrange the display table—plan for dishes, serving pieces, center-
   piece and those who will serve if the samples are to be distributed
   from this table.

9. Plan containers for taking food prizes home.

10. Check and practice with the public address system.

11. Double-check demonstration tray set-ups with the recipes and cover
    each tray.
Equipment
(all spotlessly clean)

Large equipment:
- Range or hotplate and portable oven
- Refrigerator
- Overhead mirror--regular demonstration table with overhead mirror may be available from utility companies. For a large class, this is a necessity. For a smaller audience, a mirror 2' x 4' or longer could be attached to the ceiling with hinges or wires and adjusted for good viewing.
- Sink and running water, or at least have water available at a short distance.
- Demonstration table--if the table top is not attractive, cover with white butcher's paper or plain white plastic tablecloth.
- One or two tables or cabinet behind the scenes.

Small equipment: the correct tool at the right place at the right time.
- 6-8 trays, 12" x 15" or 15" x 20"
- 4-6 mixing bowls, clear glass, 1-2-3 qt. sizes
- 2 skillets or electric frypan, 12" diam.
- 2-4 cake pans, 9" 1 grater
- 2-4 loaf pans 4 1/2" x 9" 1 tube cake pan
- 4 cookie sheets 12" x 16" 1-2 serving tongs
- 2 muffin pans, 12 muffin size 1 jello mold, 6 cup size
- 4-6 utility pans of different sizes, 9" x 13", 8" x 8", etc.
Cutlery:

5 paring knives
2 butcher knives
1 French knife
1 bread knife
2 spatulas
2 long-handled forks
2 long-handled spoons
1 long-handled split spoon
2 wooden spoons
scissors
cake turner
3-6 knives, forks and spoons

Miscellaneous:

colorful sponge for wiping table quickly
measuring cups, 2 sets of clear glass, 1 set metal
measuring spoons, 2 sets
sifter
strainer, small and large
juicer extractor
rolling pin
2-4 bread boards (18" x 22") and chopping boards
rotary beater and/or electric hand beater
colander
pitcher
food chopper
Foley fork
3-6 plate scrapers
dishpan, 8 qt.
tea kettle
2 extension cords
12 tea towels
6 dish clothes or sponges
6 hot pan-holders
paper towels
blackboard, chalk and eraser
bulletin board or flannelboard

Display and Serving Samples

In nutrition classes the old saying, "The proof of the pudding is in the eating" is quite appropriate. Tasting is an important part of learning. If finances are sufficient, serve samples of food prepared to the audience. For a group of fifty or fewer the sampling can be by buffet-style. To serve a larger group, it causes less congestion and confusion to prepare small plates and have waitresses pass them out to the seated audience.

When displaying the finished products, make them look as attractive and inviting as possible, and place in appropriate containers with edible garnishes. Show each finished product under the mirror before serving. Choose an appropriate table cover and centerpiece. The display table and buffet serving table may be combined, or the display table may be as the family dinner table with attractive place settings of china and silver. If samples are served to the seated audience, make it possible for them to view the finished products on the display table as they leave.
The Audience

The type and size of the audience will affect the type of presentation. With a larger audience, the demonstration will need to be more formal. With the smaller audience, fifty or fewer, you can feel more informal and expect more audible reaction from the audience.

The room should be well lighted, but not too bright or glaring. It should be well ventilated, so that the audience is comfortable, and not too warm and drowsy.

Invite questions. A questioning audience is an interested one. Explain when you would prefer the questions, as they arise during the demonstration or at the end of the program. You may prefer to have the questions written and placed in a question box. Then you may be able to combine questions and answer more quickly and more effectively. Repeat each question so all can hear it. Answer carefully and directly. If the answer is not known to you, do not hesitate to say "I do not know." Offer to send the information to the questioner if she will leave her name and address with the speaker.

If the audience is worried about some point, the lecturer may detect a puzzled expression or whispering. Ask what the problem is and get it settled; otherwise they will not be able to listen attentively. It is often necessary to explain what and why you are doing a particular thing differently, so they will not be concerned.

Recipes and promotional material may be distributed as the demonstration begins, as the audience arrives, or as the audience leaves. It will depend on the preference of the lecturer. During the
demonstration, the attention of the audience may be somewhat distracted if they have the recipes before them, but they can make notes on the recipes and become more familiar with them.

**Presentation of the Demonstration**

Make a smooth presentation performed easily and enjoyably with continuity.

The demonstrator is usually introduced by a representative of the sponsoring organization; however, she may introduce herself to the audience. Look right at the audience, smile, act naturally, stand squarely on both feet and do not lean on the table. Before beginning to speak, allow them to look you over for a few seconds, giving them time to become acquainted with you. "An audience never listens harder than when there is a pause in a speech or in action on the stage." (Allgood, 1959) Action should take place within three minutes after the lecturer appears. This means that her opening remarks must be short and to the point, yet accomplishing the following:

- **Getting attention**
- **Unfolding the major purpose of the lecture**
- **Getting the audience to follow the speaker's ideas**

During the presentation, the demonstrator must work easily and quickly, but not so fast that the audience is unable to follow the movements. The audience has come to see, but also to hear a lecture, and they expect the demonstrator to talk as she works. This is sometimes
called "chatter;" however, it must not be idle chatter. It must be instructive, and be related to what the demonstrator is showing. When the demonstrator ceases to talk, the audience begins to talk, and it may be difficult to recapture their attention. So, the manipulation must become almost automatic to permit you to think of what you are teaching. Practice is most important in learning to combine the action and chatter into a smooth presentation. This practice should not be in front of an audience, but in your own kitchen.

Accidents will happen occasionally. Have a sense of humor, but do not try to ignore the mistake. Give an explanation that will help the audience understand the reason for the problem, and continue.

Techniques which will help to make a good presentation are:

1. Place ingredients for a recipe on the tray in the order of use.
2. Place the trays in numbered order so that they can be easily located.
3. Remove a used tray from the table before the new one is put in place.
4. Have additional small equipment in the table drawer or on a utensil tray nearby.
5. Work in full view of the audience, using clear glass bowls.
6. Keep the space on the front of the work-table clear. Do not allow the table to become cluttered.
7. Keep the table clean at all times—wipe clean after each recipe is prepared and tray is removed.
8. When using a mixing bowl, leave it on the table. A damp cloth placed under the bowl will eliminate slipping and noise.
9. To pour ingredients from a bowl, do not pick it up by the top edge. Hold the bowl on the palm of the hand, allowing the fingers to spread up the side, and tip it forward so audience can see the inside.

10. Scrape all bowls clean with a rubber scraper, do not waste food.

11. Food spilled on the table should not be returned to the bowl or dish.

12. Never strike a spoon, spatula, or beater on a utensil. Give it a firm shake against the palm of the hand or use a plastic scraper.

13. As each container or piece of equipment is used, replace it on the tray, not on the table.

14. As a lid is lifted from a hot pan, shake off condensed moisture and place it upside down on the table or range.

15. If eggs are to be removed from the shell, have extra eggs on hand in case they are needed.

16. Use a damp tea towel under a breadboard or cutting board to avoid slipping.

17. When spreading sandwiches, leave the bread on the breadboard, lined up quite close together and proceed on an assembly-line method.

18. Have a waste basket beside or under the table and know exactly where it is located.

19. Finish the demonstration leaving a perfectly clean work-table. Replace the theme centerpiece.

20. Do not get possessive about the food and equipment: "my beans," "our teakettle," and "your flour" sound strange. Use "the."
21. Think of interesting transitions from one operation to the next.
   Avoid: "Now I am going to..." or "The next thing on the program."
   Do not make "I" the subject, but use the recipe or the ingredients
   as the subject of the sentence: "the eggs are added," or include
   the demonstration team in the operation, "We would like you to
   enjoy preparing...," or "You will enjoy this recipe."

22. Complete a sentence or a thought before turning to another point.
   Stop talking while handling noisy equipment.
   The lecturer must not "let down" until the entire demonstration
   is completed. Do not lose the interest of the audience until the summary
   has been given. In the summary repeat the main points of the lecture in
   very few words. This can be given while the food display and the food
   sample table are being prepared.

   The audience might enjoy and benefit from a short question period
   after the summary. This can be done more easily and satisfactorily
   with a small group.

   If giving door prizes, it is desirable to delegate this responsi-
   bility to someone else, while the lecturer checks the display table and
   helps in the preparation for sampling. The demonstrator then thanks the
   audience and gives the subject for the next lecture-demonstration. She
   dismisses the audience after giving the menu of samples, and instructing
   them where to proceed for the samples.

   While the audience is sampling the prepared food, the demonstrator
   should mingle with them in a friendly fashion. There will surely be other
   questions which someone was hesitant to bring before the entire audience.
SECTION III

WHAT'S FOR DINNER
(Menu Planning)

Objective:
1. To demonstrate that menu planning can be made easier by following the recommended servings of the Basic Four Food Groups.
2. To impress with the importance of variety in meals.
3. To give specific points for consideration in menu planning.

Variety

One of the most important factors in any meal is variety. There are so many beautiful, delicious and even exotic foods, that should be tried. Each can be prepared in different ways. No menu is so desirable that it should be used day after day. Any food loses its savor if used to excess, and yet some homemakers continue using the same five entrees, six vegetables, and two salads they have been serving for years. Why not give the family an entirely new dish, at least once a week. It can be a new salad, an entree recipe prepared a little differently or a vegetable which they have never tasted.

The best kind of variety is that which is built into balanced preplanned meals even though the meals may be quite simple. It is not a window dressing of frills and fanciness which is added as an after thought. Despite the importance of variety, however, it is no substitute for quality. Food must taste good, smell good and look good to be
acceptable. Plan and prepare the meal so the family will enjoy eating the food which is most nutritious for them.

**Food Habits**

The aim of every homemaker should be to help each member of the family develop good food habits. Food habits, according to Leverton (1965) of the U.S. Department of Agriculture, are the sum of one's attitudes, ideas, likes and dislikes. Good food habits mean that one is willing to eat the foods which will build good health. This does not mean one will enjoy all foods equally well. Poor habits mean that one eats only what he likes regardless of what he needs--a closed-door policy toward change. So, Mrs. Homemaker, make it easy for the family to enjoy forming good food habits by the beautiful, delicious, well-planned meals which are served.

Always consider the three meals for each day as a complete unit. Unless breakfast is ranked as the most important since it gives an excellent start for the day, no one meal should be more important than the others.

**Basic Four Food Groups**

The foundation for effective menu planning is the Basic Four Food Groups which have been called the Guide to Good Eating. To help simplify menu planning for the homemaker, this Guide classifies foods into easy-to-remember groups. It can act as a check list so as to know that the family is well fed. These four groups include the foundation foods, which should be provided in each person's daily diet:
### Recommended Serving Per Day

<table>
<thead>
<tr>
<th>Food Category</th>
<th>Serving Per Day</th>
<th>Approximate Calories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milk and milk products</td>
<td>2-4 cups</td>
<td>330</td>
</tr>
<tr>
<td>(skim milk would be 170 calories)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vegetables and fruits (without butter or sauce)</td>
<td>4 or more</td>
<td>250</td>
</tr>
<tr>
<td>one bright green-leafy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>one high vitamin C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>one raw</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protein foods</td>
<td>2 or more</td>
<td>400</td>
</tr>
<tr>
<td>legumes, meat, meat substitutes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bread and cereals</td>
<td>4 or more</td>
<td>250</td>
</tr>
<tr>
<td>whole grain or enriched</td>
<td></td>
<td>1230</td>
</tr>
</tbody>
</table>

These basic foods will give at least 1200 calories per day, but notice that ice cream, pie, candy, or any type of dessert has not been listed. In the calorie figures given, there is no allowance for butter or sauce on vegetables, or butter on bread. If skim milk is used the calorie count would be less. Although some individuals need no more than the 1200 calories, most people do need more. Calories can be added first by larger servings of these basic foods. If additional calories are required, they can be furnished by desserts, salad dressings, butter or margarine, gravy and sauces. But these are the calories which carry few vitamins, minerals and very little protein, so be careful about including many calories from these sources. Be certain that the basic or foundation foods have their place in the daily menus in the amount of servings suggested before other items are added.

Bogert (1966) has stated that every meal should include:

1. One food with staying quality—these will be the proteins and fats which digest more slowly.
2. One food which requires chewing--for the exercise of teeth and gums.
3. One food which contains roughage--to prevent constipation.
4. Some hot food or drink.
5. Not at every meal, but at least once per day have some raw food.

Bread and cereals should be either whole grain or enriched. Whole grain will contain more nutrients than the enriched, but if for any reason someone in the family cannot eat the whole grain, use enriched products.

Now that the three meals of one day have been considered as a complete unit, think of planning meals for a week at a time. By this practice the homemaker can market more efficiently, take advantage of the weekend bargains, and plan ahead.

Menu Making Pointers

Plan the menus according to the season. In the hot weather, select meals which do not require much work over a hot range. Cool foods such as cottage cheese and salads have more appeal during the summer. In cold, winter weather, serve hearty dishes such as stew, chili and soup.

In menu making, consider these pointers:
1. Serve one type of food only once at the same meal--if serving tomato soup, then do not serve tomato sauce on the entree or a tomato salad.
2. Do not repeat the same kind of foodstuff in the same meal--potatoes, rice, corn--all high carbohydrate foods.
3. Avoid repetition of the same style of preparation in the same meal--creamed soup, creamed vegetable, custard dessert.
4. Serve only one strong-flavored food in a meal--onions, cabbage, cauliflower, turnips, etc.

5. Have balance between soft and solid foods--with a casserole for the entree, serve crisp, chewy salad.

6. Serve both hot and cold foods at each meal--even in the summer, one hot dish is desirable.

7. Offer a variety of flavor between acid or sweet. Acids sharpen the appetite and should be served at the beginning of the meal. Sweets deaden the appetite and should be served at the end of the meal. A fruit appetizer should be tart and served without whipped cream.

8. Use highly seasoned food very sparingly. The French say that if a flavor can be distinguished, an excess of seasoning has been used.

9. Avoid too much food at one meal or too great a variety at one meal. It may result in many leftovers and limit the variety for the next meal or the next day.

10. Serve leftovers in a new form, preferably with a lapse of time before their reappearance. Buttered peas can next appear as creamed peas, or combined with carrots, or added to a tossed salad.

11. Have pleasing food color combinations. The sight of food starts the flow of digestive juices. A table set for a meal should present a picture in balance and color harmony. This does not refer to just well chosen china and table cloth, but it means a harmonious blend of food colors. Serving cranberry sauce, beets, purple cabbage and cherry pie at the same meal, obviously does not offer exciting variety.
12. Each meal should offer a pleasing variety: variety in nutrients, variety in texture, variety in color, variety in flavor.

Summary

Never let flavor suffer for the sake of art. Palatable cooking is always a prerequisite—cooked the right length of time, and flavored just right. Then serve hot foods hot; and serve cold foods cold. Food must taste even better than it looks.

Don't save the best always for the guests. It is nice to put your best foot forward for company, but what about the ones you love the most—they deserve the best! They will be the severest critics, but they will also give much encouragement in your efforts to protect their health.

The health of a family is the reward of well chosen meals. Wise selection furnishes the necessary elements for health. Proper cooking develops the flavors. Attractive service tempts the appetite. All are essential.

REFERENCES


Circle the choice which best answers each question below:

1. One of the most important factors in meal planning is:
   a. garnishing of menu items
   b. having variety
   c. using new salad recipes
   d. having at least 5 entree recipes

2. Basic Four food groups include all the following except:
   a. desserts and fats
   b. milk and milk products
   c. bread and cereals
   d. vegetable and fruits

3. Every meal should include all the following except:
   a. one food with staying quality
   b. one food which is high in fat
   c. one food which requires chewing
   d. one food which contains roughage

4. Good food habits mean that we:
   a. are willing to eat foods which build good health
   b. must like all foods equally well
   c. must eat spinach at least once per week
   d. eat only what we like

5. The following are all important menu planning pointers except:
   a. serve one type of food once at the same meal
   b. avoid repetition of same style of preparation
   c. have balance between soft and solid food
   d. have a dessert at least once per day

6. The best food color combination would be:
   a. tomato soup, purple cabbage, cherry pie
   b. peas, spinach, green salad
   c. macaroni & cheese, cauliflower, cheese cake
   d. lentil roast, broccoli, carrot salad

7. Palatable cooking would include all the following except:
   a. cooking the right length of time
   b. using liberal amounts of herbs
   c. flavoring just right
   d. serving hot foods hot

8. Each meal should have all except:
   a. variety in texture
   b. variety in nutrients
   c. large variety in each meal
   d. wide variety in color

9. All the following are examples of the same kind of food stuff except:
   a. potatoes
   b. spaghetti
   c. dried beans
   d. corn

10. If more calories are needed, the best way to add them to a meal is to:
    a. have more bread or gravy
    b. have larger servings of dessert
    c. have more butter on bread or vegetables
    d. have larger servings of basic foods
SUGGESTED MENUS FOR SEVEN DAYS
*recipes are given in the manual

1. Breakfast
orange juice
*granola with raisins
milk
toast with *apricot sauce

Lunch
*pizza
tossed salad with
  Italian dressing
  olives and radishes
  milk

Dinner
*savory patties
baked potato
turnip greens with lemon slices
sliced tomatoes
milk
*peach puff

2. Breakfast
grapefruit half
*creamed chipped beef-like on toast
sliced peaches
*oatmeal breakfast treats
hot postum

Lunch
tomato soup
nuteena salad
zwieback
milk

Dinner
*black beans on rice
*carrots a la zucchini
tossed green salad with lemon juice
toasted garlic bread
milk
*apricot scallop

3. Breakfast
strawberries
scrambled eggs
toast
canned or fresh plums
milk

Lunch
creamed asparagus with pimiento on toast
waldorf salad
mixed nuts
milk

Dinner
*mushroom roast with gravy
beets
buttered okra
cucumbers, green peppers, radishes, olives
*coconut bubbles
apple
hot drink

4. Breakfast
orange wedges
oatmeal with dates
toast
melon
milk

Lunch
cream of mushroom soup
*tropical salad
*batterway rolls
hot postum

Dinner
*barley casserole
  green peas
  tomato and cottage cheese salad
  Ry-krisp crackers
  milk
*cashew coconut chews
5. **Breakfast**
   - tomato juice
   - waffles
   - hot apple sauce
   - braised Prosage, or Proteena, etc.
   - milk

   **Lunch**
   - vegetable soup
   - weiners on a stick
   - celery, olives, radishes
   - milk

   **Dinner**
   - *Danish meat balls*
   - *corn ring with broccoli*
   - grated carrot salad
   - bread and margarine
   - milk
   - *fruit medley*

6. **Breakfast**
   - grapefruit juice
   - assorted ready-to-eat cereals
   - *cinnamon rolls*
   - milk

   **Lunch**
   - *goo-losh*
   - cole slaw
   - toasted onion bread
   - milk

   **Dinner**
   - *cottage cheese loaf with cranberry sauce*
   - yellow crook-neck squash
   - *ala pilaf*
   - lettuce wedges with thousand island dressing
   - *prune tarts*
   - hot drink

7. **Breakfast**
   - orange slices
   - hashed-brown potatoes
   - 1/2 slice of Proteena, or Not-Meat or some meat alternate (1/2" thick)
   - apple sauce
   - toast
   - milk or hot drink

   **Lunch**
   - *split-pea soup*
   - egg salad sandwich
   - zucchini sticks and olives
   - apple
   - milk

   **Dinner**
   - *a la king supreme on rice*
   - *green beans with basil*
   - *glazed carrots*
   - *Tony's salad*
   - milk
   - *savarin chantilly*
Suggestion for Bulletin Board

PER CENT OF RECOMMENDED DIETARY ALLOWANCES *
(Women, Aged 25 years)

Illustration 1. Per Cent of Recommended Dietary Allowances in Each Food Group.

Suggestion for visual aid to go with discussion on page 37.

Food Habits

GOOD FOOD HABITS: willing to eat foods which we know will build health

POOR FOOD HABITS: eat only what we like--closed door policy toward change

Our food habits ARE THE SUM of our attitudes and ideas--likes and dislikes

Illustration 2. Developing Food Habits.

Suggestion for centerpiece for demonstration table:

Display of foods divided into the basic four food groups with the recommended servings of actual foods.

Demonstrate:

A la King Supreme on Rice
Green Beans with Basil
Glazed Carrots
Tony's Salad
Savarin Chantilly
Recipes for Dinner Menu:

A LA KING SUPREME

1/4 cup oil
8 oz. can mushrooms, drained
1/4 cup green pepper, chopped
3 tablespoons flour
2 cups milk
mushroom liquid
1 tablespoon chicken-style seasoning
2 c. diced frozen chicken-style soyameat
2 tablespoons finely cut pimiento

Lightly brown mushrooms and green pepper in oil. Add flour and blend. Add liquids and seasonings and cook until thick, stirring constantly. Add soyameat and pimiento. Serve on hot rice.

Serves: 6-8

Per serving: 193 calories
8.2 gm protein
1.4 mg iron

GREEN BEANS WITH BASIL

1 pound fresh green beans, cut in 1 inch lengths (about 3 cups)
2 tablespoons margarine
1/2 cup chopped onion
1/4 cup chopped celery
1 clove garlic, minced
1/2 teaspoon dried rosemary
1/2 teaspoon dried basil
onion rings for garnish

Cook beans, covered, in small amount of salted water until almost tender, about 10 minutes; Stir in remaining ingredients. Cover and continue cooking 10 min. or until beans are tender. Garnish with onion rings.

Serves: 4-6

Per serving: 71 calories
1.7 gm protein
.7 mg iron
798 I.U. vitamin A
15 mg vitamin C
GLAZED CARROTS

Slice carrots 1/4 inch thick and cook in boiling, salted water until barely tender. Add other ingredients, stirring gently and simmer 5 minutes, or until carrots are glazed.

1/2 cup water
1/2 teaspoon salt
6 carrots
2 tablespoons margarine
3 tablespoons brown sugar
juice of 1 lemon
1 apple, diced (unpeeled)

Serves: 4-6

Per serving: 96 calories
.8 gm protein
.6 mg iron
6173 I.U. vitamin A
9 mg ascorbic acid

TONY’S SALAD

Shred lettuce into 4-6 salad bowls. Slice cucumber and divide between bowls. Drain beets well, and arrange on top of each salad bowl. Garnish with olives and serve with oil-lemon dressing.

1 medium head of lettuce
1 cucumber, sliced
1 can shoestring beets
black olives
oil-lemon dressing:
    juice of 1 lemon
    3 tablespoons oil

Serves: 4-6

Per serving: 114 calories
1.6 gm protein
.8 mg iron
423 I.U. vitamin A
17 mg ascorbic acid
SAVARIN CHANTILLY

1 tablespoon dry yeast
1/4 cup warm water
1/2 cup milk, scalded
1/3 cup soft margarine
1/4 cup sugar
1/2 teaspoon salt
2 cups sifted all purpose flour
1 egg
2 cups apricot nectar

Apricot Glaze

Creme Chantilly

Serves: 12

Per serving: 235 calories
4.6 gm protein
.4 mg iron
877 I.U. vitamin A

Approximately 2 teaspoons sugar per serving.

Apricot Glaze: Gradually add 2/3 cup apricot nectar to 2 tablespoons cornstarch, pinch of salt, and 3 tablespoons sugar. Cook over low heat, stirring vigorously until thick and clear. Cool 5 minutes before brushing on Savarin.

Creme Chantilly: Whip 2 packages of Dream Whip according to directions.

Soften yeast in warm water. To hot milk, add margarine, sugar, and salt; stir until margarine melts. Cool to lukewarm. Stir in 1/2 cup flour.

Beat in egg and yeast. Add remaining flour. Beat dough vigorously 5-7 minutes. Cover and let rise in warm place until double (about 1½ hours).

Stir down batter and spoon into well-greased 6-cup ring mold. Cover and let rise until almost double (about 45 minutes). Bake in 350° F. oven about 35 minutes or until done and nicely browned. Cool 5 minutes and remove from mold. Prick top of Savarin in several places with toothpick and gradually drizzle with apricot nectar. Let stand about 30 minutes, basting frequently to soak well. Brush entire surface with warm Apricot Glaze. Trim with blanched almonds and candied cherries. At serving time, fill center with Creme Chantilly.
The following can be used as chatter with the recipes for "What's for Dinner?"

A la king supreme on rice—A la king supreme can be prepared very quickly. If you buy mushrooms in the form of "Stems and Pieces", they are already chopped. Drain them and add them with the green pepper to the oil. While these ingredients are browning, you can dice the soyameat so that it is ready to add at the proper time. After the mushrooms and green peppers have browned enough, then add the flour, liquids and seasoning to make a gravy. When this has thickened sufficiently while you stir it, then add the soyameat and pimiento. The green pepper and pimiento make this a very colorful dish, and it is most delicious served on steaming hot rice.

Green beans with basil—Frozen or canned green beans can be used for the green beans with basil, but they will not equal the flavor of fresh green beans. While the green beans are cooking, you can chop the onion and celery and mince the clove of garlic. Then add these with the margarine and herbs and allow to cook ten minutes longer. If you have not tried rosemary or basil, then you will enjoy this new taste treat. Be sure to experiment with other herbs in vegetable dishes, entrees and salads. Use them with a light touch. It is better to use too little than too much when using herbs. When the green beans are cooked, garnish them with onion rings.

Glazed carrots—This recipe for carrots is quite simple and easy to do, but it gives a different taste and appearance to a common vegetable. Be
sure not to overcook the carrots before adding the other ingredients. It is suggested that you use a red-skinned apple, so that you have the interesting color combination of the apple with the carrots. This vegetable dish will really need no other garnish, except a sprig of parsley.

Tony's salad--When tomatoes are out of season, expensive and really haven't much flavor, then use this recipe for a colorful salad. You can either cut the lettuce or break it into the salad bowls. The cucumber can be just sliced, or you can flute the sides with the tines of a fork before slicing. Arrange the drained shoestring beets very casually on top of the lettuce bed and garnish with shiny black olives.

Savarin chantilly--This is a glamorous French dessert, which is really not difficult. When using milk with yeast, the milk is always scalded first so that bacteria in the milk cannot compete with the yeast. Be sure to cool the milk before adding the yeast because if it is too hot, the yeast will be killed. This is a yeast batter which will not require kneading. The preparation of this recipe does not require very much time, but you will need to allow time for the savarin to rise both before and after placing it in the ring mold. The ring mold should be greased thoroughly with a solid fat. Do not use oil for this purpose as it will not prevent sticking as well as vegetable shortening.

The basting of the savarin with the apricot nectar will make it moist and flavorful. Then the coating of the apricot glaze will prevent it drying out before serving. When it is garnished with the almonds
and cherries and the center filled with the creme chantilly, it is a sensational dessert to serve at the table.
SECTION IV

MORE FOR THE MONEY
(Food Purchasing)

Objective: To teach the principles of wise planning and intelligent shopping.

Super Market Confusion

These days shoppers touring food markets are faced with 8000 items, five times more than were on the shelves twenty years ago (Anonymous, 1966). The art of selecting wisely is becoming more and more important. Food bills do not pinch now and then, they hang on and squeeze!

According to the U. S. Department of Agriculture in 1966, 20% of the disposable income (what was left after taxes) was spent for food, compared with 29% in England, 30% in France, 47% in Japan, 53% in Russia and in some underdeveloped countries it was as high as 90% (Weston, 1964). This 20% of the income should be spent on food, not tooth brushes, school supplies, cosmetics and cleaning supplies which are usually put into the market basket with the food. Do not cheat your family by spending food money for these other items even though they are essential. Food money should be spent for the best nutrition you can purchase.

Planned Purchasing

The most important rule for economical and wise food purchasing is to plan before you shop. Do your homework first. Do not drift down
the super market aisle wondering where your money goes. Plan menus for the entire week, seven days or twenty-one meals. When meals are planned in advance, they should be better balanced and the principles of meal-planning can be considered. If you shop only once a week and follow a planned market list, many unnecessary items will not be purchased. Buy food items when the weekend specials are in effect.

Markets often advertize "new, low prices." Many of their prices are not new, and most of them are not low. You must remember or keep a record of what you have been paying so you will recognize really special buys, and can take advantage of real savings.

You must be able to recognize what is a good buy and what is not. Bananas at half price, but so overripe that many must be discarded are not a wise purchase. However, if you plan to make banana bread, fully ripe bananas must be used for the finished product to have a real banana flavor.

Buy groceries in quantity only if adequate storage is available and only if the foods will store well without loss of nutrient content. People who pride themselves on keeping the food costs minimal can waste enough food through careless storage to offset all the economies realized. Be especially careful when buying perishables not to purchase too large a quantity at one time. It is poor economy to throw away half a lug (or bushel) of apples or tomatoes, or to be constantly using food which is on the brink of spoiling.

Go alone when you shop. It is best not to have the distraction of children advising you to buy the products which they have learned
about from the TV commercials, or a husband who, according to market
managers, is more likely to pick up appealing high-priced extras, which
may not mix well with the other foods in the week's menus.

Beware of the Magic Nines, 49¢, 2 for 69¢, 3 for 89¢. Take time
to figure the cost per item even if it is advertised at 7 for $1.00. It
may cost less to purchase the item at the individual price listed.
Compare with other brands.

Do not spend the greater part of your food budget for entertaining
others. Your own family deserves the best. They are the ones you love
the most and it is their health you want to protect. We are all inclined
to put the best foot forward for company or for a party, but candlelight
and gay accessories add much to vegetable stew or some simple menu for
company. Never forego the pleasure of having friends join you for a
meal because of the budget. Split-pea soup served on a checked table
cloth can taste delicious, if someone has thoughtfully prepared it.

**Purchasing Built-In Service**

During the last decade money spent for meals and snacks consumed
away from home has greatly increased. These all include services which
you must pay someone else to do for you. In some cases it may be worth
the price, but be aware of what you are buying. In the ten year period,
1955-1965, prices for food at home rose 13% and food purchased away
from home rose 28% (Clark, 1965).

There is yet another way of reducing food costs. How much pre-
preparation do you want to pay someone else to do for you? The use of
convenience foods is increasing greatly. According to a study done by the U. S. Department of Agriculture the use of convenience foods by low-income groups had increased 47 per cent during the years 1955 to 1965, and the increase during the same time by high-income groups was about 28 per cent (Leonard and McDavid, 1968). As just two examples, consider:

pre-cooked rice, 7 oz./29¢ = 5¢ per 2/3 cup serving
unprocessed rice, 16 oz./19¢ = 2¢ per 2/3 cup serving

and

pre-cooked oatmeal, 10 oz./41¢ = 4.0¢ per 3/4 cup serving
ready-to-cook oats, 18 oz./31¢ = 1.7¢ per 3/4 cup serving

For the mother who cannot possibly cook oatmeal three minutes to be sure her child has a hot food for breakfast, pre-cooked oatmeal is all right, but old fashioned oatmeal (which tastes best if dropped into boiling water and simmered just three minutes) is much less expensive.

Some services are paid for without realizing it. In 1898, bread was wrapped for the first time, and in 1920, bread was sliced for the first time (people said it would never sell). In 1941 bread was enriched (Bogert et al., 1966), yet these services are expected when a loaf of bread is purchased today. A good loaf of homemade bread tastes best of all, and often it can be baked at a considerable saving. The problem might be that when you begin baking your bread at home, you will have a job forever.

In every topic there are always two sides to consider. In a recent survey of thirty convenience foods (Harp and Dunham, 1963), ten
were less expensive than doing all the work yourself. These were such items as frozen green beans, frozen orange juice, frozen peas, biscuits, frozen strawberries. There may be others in this category and comparisons should be made. You might prefer to start from scratch on some menu items because of better flavor or in some cases better nutrition even though it is more expensive.

It is those last-minute heat and eat items, delicatessen salads and ready-made sweets that take greedy bites out of the food dollar. How can these be avoided? Plan ahead. Plan menus for the week, shop for a whole week, plan the food preparation time schedule so that there is time to follow through on the menus which have been planned.

**Impulse Spending**

It is recognized that we can save food dollars by using powdered non-fat milk in place of fluid milk, buying day-old bread instead of fresh, and purchasing fruits canned in light syrup rather than heavy syrup. Are we aware of the psychology which is used by the market manager to tempt customers to buy a few items not on their market list? He calls them "impulse items" and places them near the check-out counter so they can be seen easily from the check-out line. Then if there is 50¢ or $1 left after paying for the basket of groceries, one can quickly reach for those tempting, near-at-hand items.

Be aware also of the beautiful display of merchandise which has not been selling in its usual place on the shelf. It is rearranged at the end of an aisle with an eye-catching "special" sign. The price may
be the same as when it was on the shelf, or it might even have been marked up. Because the merchandise has changed places, is attractively arranged, and marked "special," many people will not stop to compare prices, but will fill the market basket.

**Buy for the Intended Use**

No specific rules can be given as to which item is the best buy. It depends on the intended use. If you are planning to serve canned tomatoes as a vegetable, you may want to use solid pack. For a casserole or spaghetti sauce tomatoes labeled "stewed" will do as well and cost less. Read the labels. Know what ingredients are in the package or can, and compare the price per serving.

There is no substitute for your own experience in choosing the right quality of fresh fruit and vegetables for different uses. Check the characteristic signs of freshness such as bright, lively color and crispness. Quality is usually higher and prices more reasonable for fresh produce purchased in season. Through newspapers, radio, and television the U. S. Department of Agriculture endeavors to inform the public which fresh produce are in greatest supply each month. Such plentiful foods are usually good choices and reasonably priced. The largest item is not always the best. A medium size is often a better buy and could have better flavor (Smith, 1967). If produce is sold by both weight and count, compare the prices per item. The lowest-priced item is not always the most economical (Groppe and Ferree, 1965).
Shopping Rules

Some rules for wise shopping:

1. Go alone
2. Buy when you are not hungry
3. Plan ahead, menu plan and shopping list
4. Buy seasonal foods
5. Buy for the intended use
6. Figure cost per serving, not cost per unit (how much waste, etc.)
7. Buy quantity only when there is proper storage
8. Know grades and brands of food
9. Know what is a good buy
10. Read the label, compare weights and prices
11. Store foods properly to avoid spoilage and loss of nutrients
12. Buy for your satisfaction

Are you paying too much for convenience items, fancy containers, impulse purchases, or out-of-season foodstuffs? Resolve that on the next trip to the super market, you will get your money's worth.

REFERENCES


**Supplementary Reading Suggestions:**


Purchasing

Circle the choice which best answers each question below:

1. The most economical buy in produce is:
   a. the lowest priced item always
   b. the foods in plentiful supply
   c. the largest item
   d. the items showing signs of wilting

2. The most important rule for economical and wise food purchasing is:
   a. to buy in quantity
   b. to go to any supermarket
   c. to plan before you shop
   d. to shop daily

3. Most of your food budget should be spent for:
   a. entertaining guests
   b. giving parties
   c. feeding the family
   d. buying meat and potatoes

4. When you go shopping, you should:
   a. go alone
   b. take your husband to help select foods
   c. take your children to help carry foods
   d. go with your neighbor who is an expert on purchasing

5. A convenience food that is cheaper than doing the work yourself is:
   a. frozen green beans
   b. delicatessen salads
   c. precooked rice
   d. instant oatmeal

6. Good tips for shopping include all the following, except:
   a. prepare menu for one week
   b. do most of shopping once a week
   c. purchase foods when weekend specials are on
   d. save pennies by purchasing the "magic nine" items

7. Tempting foods nicely displayed near the cash register are:
   a. leaders
   b. eye-catchers
   c. impulse items
   d. bargains

8. The portion of our disposable income spent for food is:
   a. 10%
   b. 20%
   c. 30%
   d. 40%

9. Good shopping rules include all except:
   a. buy foods in season
   b. buy when you are hungry
   c. read labels, compare weights and prices
   d. know grades and brands of foods

10. During the last ten years the relative increase in the use of convenience food by low-income groups as compared with the high-income groups is:
    a. slightly greater
    b. slightly less
    c. the same
    d. almost twice as great
Suggested visual aid:

Two market baskets: one filled with wise purchases of nutritious foods; the other filled with pre-prepared mixes, soft drinks, potato chips, etc. The total bill for each basket should be approximately the same. The following is a suggested list:

<table>
<thead>
<tr>
<th>Basket I</th>
<th>Basket II</th>
</tr>
</thead>
<tbody>
<tr>
<td>small box oatmeal</td>
<td>sweet rolls</td>
</tr>
<tr>
<td>powdered nonfat milk 1.99</td>
<td>instant oatmeal</td>
</tr>
<tr>
<td>(makes 25 quarts)</td>
<td>cornflakes with strawberries .59</td>
</tr>
<tr>
<td>cottage cheese, 1 qt. .61</td>
<td>Half &amp; Half, 2 pints .62</td>
</tr>
<tr>
<td>potatoes, 10 pounds .49</td>
<td>catsup .31</td>
</tr>
<tr>
<td>frozen orange juice, 2 (12 oz.)</td>
<td>cream cheese .40</td>
</tr>
<tr>
<td>flour, 5 pounds .50</td>
<td>cracker barrel cheese, 1 lb. .89</td>
</tr>
<tr>
<td>eggs, 1 dozen .47</td>
<td>soft drink, 3 quarts 1.00</td>
</tr>
<tr>
<td>pinto beans, 2 pounds .61</td>
<td>potato chips .69</td>
</tr>
<tr>
<td>brown rice, 2 pounds .42</td>
<td>cake from bakery 1.29</td>
</tr>
<tr>
<td>peanuts, 1 pound roasted .57</td>
<td>Daisys, or Whistles .39</td>
</tr>
<tr>
<td>apples, 2 pounds .58</td>
<td>snacks</td>
</tr>
<tr>
<td>bananas, 2 pounds .29</td>
<td>Tang .99</td>
</tr>
<tr>
<td>celery .29</td>
<td>white bread, 1g. loaf .29</td>
</tr>
<tr>
<td>cabbage .24</td>
<td>jam, 1 quart .65</td>
</tr>
<tr>
<td>carrots, 2 bags .25</td>
<td>ice cream, 1/2 gallon .65</td>
</tr>
<tr>
<td>onions, 3 pounds .25</td>
<td>sugar, 5 pounds .59</td>
</tr>
<tr>
<td>whole grain bread, 2 loaves .98</td>
<td></td>
</tr>
<tr>
<td>frozen peas, 1 1/2 pounds .39</td>
<td>$10.25</td>
</tr>
</tbody>
</table>

$10.07

Illustration 3. Comparison of Types of Food Items Purchased. Suggestion for centerpiece for the demonstration table:

A bowl full of cash register tapes from the super market.

Demonstrate:

Split Pea Soup, cost 50¢ for 20 servings
Cottage Cheese Soup, cost 80¢ for six servings
Savory Patties, cost 40¢ for the entree for 8 servings
Goo-Losh, cost $1.50 for ten servings
SAVORY PATTIES

3 cups water
2 cups soaked soybeans (2/3 cup dry)
1 1/2 cups water
1-1/3 cup rolled oats
1 teaspoon onion powder
1 teaspoon Italian seasoning
2 tablespoons soy sauce
1/2 teaspoon salt
2 tablespoons oil

Soak soybeans overnight in 3 cups water, then drain. Grind soybeans or blend in 1 1/2 cups water until quite fine. Add seasonings and rolled oats. Allow to stand 10 minutes for rolled oats to absorb moisture. Stir again and drop by rounded tablespoon into lightly oiled skillet on moderate heat (350° in electric skillet). Cover and cook for about ten minutes until medium brown. Turn, cover and cook until lightly browned. Reduce heat and allow to cook ten minutes longer. Serve with Tomato Sauce.

**Tomato Sauce:**
1 large onion chopped fine
1 tablespoon oil
2 cans condensed tomato soup (undiluted)
1/2 teaspoon oregano

Simmer onion in oil, do not brown. Add tomato soup and oregano. Heat until bubbly and serve on warm patties.

Serves: 8 (2 patties per serving)
Cost: 4¢ per 3 oz. serving

Per serving: 250 calories
11 gm protein
3.5 mg iron

Compared with hamburger patty:
Cost: 10¢ per 3 oz. serving

Per serving: 260 calories
19 gm protein
2.4 mg iron

GOO-LOSH

2 medium onions, chopped
3 tablespoons oil
20 oz. can glutenburger
1 medium can small red beans
14 oz. can tomatoes
8 oz. can tomato sauce
1 cup spaghetti (uncooked)
1/2 cup cheese, grated (optional)

Braise onions in oil 10 minutes. Add glutenburger, continue to braise about 15 minutes until browned. Add beans, tomatoes, tomato sauce, cumin, and spaghetti; and simmer another 15 minutes. Place in oiled casserole 8" x 12" or bean pot. Cover with grated cheese if desired. Bake at 350° for 30 minutes.

Serves: 10

Per serving: 190 calories
10 gm protein
1 mg iron
SPLIT PEA SOUP

4 tablespoons oil
1 medium onion, chopped
1 pound green split peas
3 quarts water
2 bay leaves
1 clove garlic
3 tablespoons soy sauce
3 cups diced potatoes
1 cup chopped celery (add few leaves)
2 cups chopped parsley

Simmer onion in oil until golden. Soak peas in water for several hours. Bring to boil and cook, adding onions, oil and seasonings. Cook until peas are done. Add vegetables and cook slowly until tender, about 20 minutes.

Serves: 20
Cost: 50¢ for twenty 1 cup servings

Per serving: 124 calories
5 gm protein
1.5 mg iron

COTTAGE CHEESE SOUP

1 teaspoon celery seed
1 quart milk
1/4 cup oil
1 tablespoon minced onion
2 tablespoons flour
1-3/4 teaspoon salt
1/8 teaspoon paprika
2 cups cottage cheese
2 tablespoons minced pimiento
Minced parsley or water cress

Put celery seed in milk, bring to scalding point and let stand for 15 minutes, then strain. Heat oil and simmer onion in it until soft but not brown. Blend in flour and gradually add milk and seasonings. Cook, stirring until thickened. Rub the cottage cheese through a sieve and add slowly to thickened milk. Stir until soup is hot, but not boiling. Add pimiento. Garnish with parsley or water cress.

Serves: 6
Cost: 80¢ for six 1 cup servings

Per serving: 268 calories
21 gm protein
.5 mg iron
Suggested "chatter" to accompany recipes in More for the Money:

**Savory patties**—At a cost of 4¢, each serving (which weighs about 3 oz.) contains 11 grams of protein. Compare this with an equivalent patty made from ground beef which would cost approximately 10¢ and contain 19 grams of protein. This recipe is a simple entree recipe, containing very few ingredients, and can be made even when "the cupboard is bare," almost. It can be varied by baking it in a casserole as a roast, or by using different seasonings. By adding fat and smoke flavor to the recipe, it can become a sausage-like product. By adding chicken-style seasoning and serving it with a chicken-like gravy, or adding beef-like seasoning and serving it with a beef-like gravy, it becomes a new recipe.

**Goo-Losh**—This is a variation on the chili idea, and is almost a meal-in-one-dish. Even though many children do not like mixtures or casserole dishes, they will be tempted to try this one because of the spaghetti which it contains. Most children do like spaghetti. Goo-Losh is a convenient hot dish to take on a picnic. Bake it in a bean pot and it will remain hot a long time. Serve it with garlic bread and a crisp, tossed salad.

**Split pea soup**—You have probably made split pea soup many times, but make it once more and use this recipe. A bowl of this soup contains the whole meal: protein, potatoes and vegetables. Serve it with crackers and crispy carrot and green pepper sticks. This recipe is enough to serve a small army, but it is more delicious warmed over, so don't be afraid to make this much.
Cottage cheese soup--A one cup serving of this soup will contain as much protein as a 3 ounce serving of meat. Be careful not to allow it to boil after adding the cottage cheese as this will cause it to precipitate or curdle. This would not change the nutritive value or the taste, but most people do not care for the appearance. Soup seems to be very important in our menus on a blustery, wintry day. A steaming bowl of soup warms the heart as well as the body.
SECTION V

THE WAKE UP MEAL
(Breakfast)

Objectives: 1. To teach the importance of breakfast
2. To discuss common excuses often given for not eating breakfast
3. To suggest menus for breakfast, satiety from a nutritionally adequate meal
4. To point out high sugar content often found in breakfast and give some suggestions for replacing sugar

Break a fast

What is so grim about getting up in the morning? After prying open your eyes this morning, did you hop up happy and thankful for another day in which to serve the Lord? Finally making it to your feet, still tired, did the breakfast table look appetizing, or was the thought of the old routine a little distasteful?

The real meaning of the word breakfast is "break a fast." If you did not indulge in TV snacks the evening before, fourteen hours would have elapsed since last you ate. Breakfast should be made the most interesting meal of the day. This meal does not necessarily mean "cereal and milk," even though almost all of us grew up thinking so. Breakfast can be exciting, colorful, adventuresome, and should not only get you going, but keep you going for the whole day.
The Breakfast Menu

If you do not like eggs and toast in the morning, are tired of cereal and milk, and orange juice first on the menu gives you a stomach ache, then have something different and really enjoyable. The breakfast menu should not be stereotyped. Have a burger patty on a buttered bun half with sliced tomatoes, a chicken-style sandwich with tomato juice, or turn your meal schedule upside-down and have supper for breakfast, if you like it better that way. Do hot beans on toast with a sour creamed-baked potato sound better? Whatever type breakfast you eat, it should supply from 1/4 to 1/3 of the daily nutrient needs.

Importance of Breakfast

In view of the fact that breakfast is the meal most frequently skipped by children and also adults, it warrants special emphasis. If not omitted entirely, it is apt to be scanty and hurried. The breakfast problem is not new. In the early 1900's Roberts, surveying the dietary habits of 6000 preschool children in Gary, Indiana, found one-third of them to have eaten no breakfast, or one that was wholly inadequate (Martin, 1954). Since that time there have been many breakfast studies, many of which have shown that about one-half of the subjects were eating no breakfast or at best an inadequate one. "It has been shown that without a good morning meal only one child in five takes enough food in the other meals of the day to make up the deficit and provide the recommended food allowances" (Bogert et al., 1966).

Students at Montana State University who omitted breakfast or ate one that failed to meet the nutritional value of a meal pattern con-
taining fruit, a cereal, egg and/or meat had a less than adequate total nutrient content in the day's diet. As a result of no morning meal, or a poor one, the missing nutrients were not made up in the later meals of the day (Odland, Page, and Guild, 1955).

In many of the breakfast studies, those subjects who had an inadequate morning meal were fatigued and inattentive to school work in the latter part of the morning. Their attitude toward school work and scholastic achievement was poor, their reaction time was slower, and there was a greater tremor magnitude, and decreased work output. In Iowa studies a cup of black coffee proved to be more detrimental to physical and mental efficiency than no breakfast at all (Wilson, 1966).

A recent test on industrial workers on the effect of the coffee break on efficiency again emphasized the importance of breakfast. All of the subjects did significantly more work in the late morning hours when they had a good breakfast than when it was omitted. If they had a good breakfast, a midmorning snack added nothing to their productiveness. A midmorning snack that replaced breakfast compensated for lack of breakfast in only about half of the subjects (Tuttle, 1960).

Excuses

Many reasons are given for breakfast skipping: not hungry in the morning, no time to eat, don't like to cook meals and then eat alone, must cut down on calories, don't like breakfast foods. Each of these reasons should be examined.

Not hungry in the morning may mean that the person ate too late at night, either had dinner too late or too many TV snacks after
dinner; or it may be that he has formed a habit of not eating until almost noon.

No time to eat indicates that the rising hour should be earlier so that the whole family can sit down together for a carefully planned morning meal. This means a better start for the day than for those whose breakfast is chaotic and helter-skelter.

Don't like to cook a meal and eat it alone is the cry of many. So many families with working mothers are left to fend for themselves for the morning meal. Everyone leaves home for work or school with a much better feeling if the morning duties and the morning meal have been well organized and enjoyed together.

Must cut down on calories is another common excuse. Most people who skip breakfast to save calories more than make up for their "savings" with later snacks or increased intake at other meals. They experience great hunger in addition to being physiologically inefficient (Robinson, 1968). Extreme self-denial during the first half of the day rarely leads to a decreased overall daily caloric intake. Individuals who have a microscopic breakfast and lunch almost invariably compensate for their earlier rigorous self-discipline at dinner and during the TV snack period before bedtime (Burton, 1965). Eating heavily late in the day only increases the weight losing problem, because these calories are not used for exercise and can more readily form body fat.

Don't like breakfast food has previously been discussed. A good breakfast should consist of fruit, vegetable, or juice to supply vitamin C, some protein food (to supply amino acids and satiety), and sufficient
other foods to make up the energy and other essential nutrients to one-third of the daily recommended allowance. The foods included can depend on the family's preferences.

Satiety

The protein and fat in breakfast are important in giving lasting satiety to the meal. Protein helps ward off fatigue because part of the protein is gradually converted to glucose and keeps the blood sugar up to normal much longer than a carbohydrate-rich meal (Bogert, et al.1966). It helps prevent that hungry feeling and mid-morning "let down," or feeling of weakness associated with low blood sugar levels. A breakfast containing about 400 calories and 20-25 grams of protein has been shown to allay hunger and hold the blood glucose level above the fasting value for four hours (Clayton and Wing, 1955). The presence of fat in the diet has the effect of slowing the emptying of the stomach and giving a person a satisfied feeling for a longer period of time.

If one really must "gulp and go" some mornings, then drink juice while dressing and take an ounce of nuts in a sandwich bag with an apple or banana to eat on the way to the bus or while driving to work. What could be quicker than that menu?

Sweet Meal

The American breakfast in many homes has become a very sweet meal with sugar added to the hot drink, to the cereal, and jam, jelly, syrup, doughnuts and sweet rolls being eaten. Sugar's main contribution is plenty of calories. The public generally has become so accustomed to a
super-sweet diet, that they fail to taste the flavors in foods. This is a matter of habit and they could easily enjoy the same food with only half as much sugar (or none).

The habit of adding sweetening to ready-to-eat breakfast cereal is quite unnecessary because the cereal was made with sufficient sugar. On the label of most cereal packages, sugar is the second item listed in the contents meaning that it is present in the second largest percentage of all the ingredients. Milk added to cereal does not need sweetening. In place of adding more sugar to cereal, try bananas, raisins, or some other fruit. The cereal which is ready to cook does not usually contain sugar. In a bowl of hot cereal try one-half teaspoon of sugar, unless it is satisfactory to taste to add only dried fruit.

Instead of the very sweet jam, jelly or syrup on toast or waffles, try applesauce, hot or cold, and other fruit sauces which are only slightly sweetened. These substitutions will contribute varied nutrients to the meal instead of adding only calories.

Summary

Better breakfast habits mean planning simple, easy-to-prepare, but varied menus; arising early enough so that there is time to prepare and enjoy eating breakfast; eating with the family group so that breakfast, like other meals, has pleasant social associations (Robinson, 1968).
REFERENCES


Supplementary Reading Suggestions:


BREAKFAST

Circle the choice which best answers each question below.

1. The most important meal of the day should be:
   a. dinner  
   b. lunch  
   c. breakfast  
   d. coffee break

2. In research studies it has been shown that people who do not eat breakfast have:
   a. headaches  
   b. poor attitude toward school work  
   c. constipation  
   d. low blood pressure

3. On a box of ready-to-eat cereal (not sugar-coated), sugar is usually listed as:
   a. the most important ingredient  
   b. second in the list meaning it is contained in second largest percentage by weight  
   c. first in the list of ingredients  
   d. contained in the smallest percentage of the ingredients

4. The satiety in the breakfast would be improved the most by the addition of:
   a. nuts  
   b. sweet rolls  
   c. toast  
   d. fruits

5. When a person skips breakfast he has:
   a. an increased work output  
   b. a decreased tremor magnitude  
   c. a decreased alertness  
   d. a decreased reaction time

6. A good breakfast should contain in grams of protein:
   a. 5  
   b. 10  
   c. 20  
   d. 30

7. The approximate part of the total daily nutrient intake supplied by the breakfast should be:
   a. 1/5-1/3  
   b. 1/4-1/3  
   c. 1/2-2/3  
   d. 1/3-2/3

8. Without an adequate breakfast the number of children who later in day make up the missed nutrients is:
   a. 1 in 20  
   b. 1 in 5  
   c. 1 in 10  
   d. 1 in 2

9. In a test on industrial workers it was shown that:
   a. they did more work if they had coffee at breakfast  
   b. they did more work if they had breakfast  
   c. they did more work if they had a mid-morning snack  
   d. they did more work if they had a rest period

10. Some breakfasts are called sweet meals because they may contain liberal amounts of all the following except:
    a. doughnuts  
    b. cinnamon rolls  
    c. coffee cake  
    d. milk
Suggestions for visual aids for "The Wake Up Meal." These could be posters, used on flannel-board, or printed on the blackboard.

Symptoms of an inadequate or no breakfast
- Fatigue latter part of morning
- Decreased attention span
- Inattention to school work
- Poor attitude toward scholastic achievement
- Slower reaction time
- Greater tremor magnitude
- Decreased work output

Excuses for breakfast skipping
- Not hungry in the morning
- No time to eat
- Don't like to cook alone and eat alone
- Cut down on calories
- Don't like breakfast foods
Comparison of calories of good breakfast with snack:

<table>
<thead>
<tr>
<th>Breakfast</th>
<th>calories</th>
<th>protein</th>
<th>Snack</th>
<th>calories</th>
<th>protein</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2 grapefruit</td>
<td>50</td>
<td>0.6</td>
<td>soft drink (6 oz.)</td>
<td>80</td>
<td>0</td>
</tr>
<tr>
<td>egg</td>
<td>80</td>
<td>6.1</td>
<td>candy bar (1-3/4 oz.)</td>
<td>265</td>
<td>2.3</td>
</tr>
<tr>
<td>toast, 2 slices</td>
<td>120</td>
<td>5.0</td>
<td>oz. chocolate almond</td>
<td></td>
<td></td>
</tr>
<tr>
<td>margarine, 1 pat</td>
<td>50</td>
<td>0</td>
<td>potato chips,</td>
<td>108</td>
<td>1.3</td>
</tr>
<tr>
<td>applesauce, 1/3 cup</td>
<td>60</td>
<td>0.2</td>
<td>10 med.</td>
<td>453</td>
<td>3.6</td>
</tr>
<tr>
<td>skim milk, 1 cup</td>
<td>85</td>
<td>8.6</td>
<td></td>
<td>445</td>
<td>20.5</td>
</tr>
</tbody>
</table>

Illustration 4. Comparison of Calories.

Bulletin Board Suggestion:

SUCCESSFUL PEOPLE START THE DAY WITH

Illustration 5. Breakfast Bulletin Board.
Suggestion for poster:

**AVOID MID-MORNING HUNGER PANGS**

**EAT MORE PROTEIN AT BREAKFAST**

--- blood sugar level after eating breakfast which has high protein content

--- blood sugar level after eating a breakfast which was high in carbohydrates

Illustration 6. Breakfast Protein.

(from Reader's Digest June 1953, p. 108.)
(included in article in Collier's Feb. 28, 1953, "Eat a Bigger Breakfast --- and Be Thin" by Frederick J. Stare and Julia A. Shea.)
Suggestion for demonstration table centerpiece: Lazy susan as shown below containing the complete breakfast ready to serve with the addition of milk.


Demonstration:
- Granola
- Apricot Sauce
- Creamed Chipped Beef-like
- Oatmeal Breakfast Treats
GRANOLA

3 cups whole wheat flour
1 cup soy flour
2 cups oatmeal
2 cups wheat germ
2 cups corn meal
1 1/2 cups unsweetened coconut
2 cups nut meal
1/4 cup sesame seed
1/2 cup brown sugar
1 tablespoon salt
1 cup oil
1 to 1 1/2 cup water

Combine all dry ingredients. Combine oil and water. Pour liquid ingredients into dry ingredients and mix thoroughly. Rub between hands until completely mixed and granules are the size you want. Bake in slow oven 250° for one hour or until lightly browned, stirring often (especially stir from the edges of pan). Serve with bananas and/or raisins and milk.

Makes: 3 1/2 quarts of Grapenuts-like cereal

1/3 cup serving = 152 calories
   4.0 gm protein
   1.3 mg iron
   .16 mg thiamine

APRICOT SAUCE

1 pound dried apricots
2 cups water
1/3 cup sugar
3/4-1 cup pineapple juice

Bring to boil and simmer slowly the apricots and water. Remove from heat. Mash with potato masher until of desired consistency while slowly adding pineapple juice. Delicious on toast, waffles or pancakes. Use in place of jelly, jam, or concentrated sweets.

Makes: 1 quart

1/3 cup serving = 131 calories
   2.0 gm protein
   2.0 mg iron
   2661 I.U. vitamin A
CREAMED CHIPPED BEEF-LIKE

4 ounces smoked beef-like frozen soyameat
4 tablespoons oil
3 tablespoons flour
2-2 1/2 cups milk
1/8 teaspoon salt
1/8 teaspoon Bakon Yeast

Serves: 4-6

Per serving: 251 calories
10.5 gm protein
1.5 mg iron

Cut or tear soyameat into small pieces. Saute in the oil until lightly browned. Add flour and mix well. Add milk gradually, stirring constantly. Add seasonings and cook while stirring over medium heat until thickened. Serve over toast cups, toast slices, pancakes, waffles or other hot bread.

OATMEAL BREAKFAST TREATS

1/2 cup oil
3/4 cup brown sugar
2 eggs
1 teaspoon vanilla
1/2 cup whole wheat flour
1/2 cup white flour
1/2 t. salt
2 1/2 cups oatmeal
3/4 cup raisins
1/2 cup nuts
1/4 c. evaporated milk

Makes: 36 large cookies

Per cooky: 103 calories
2.1 gm protein
2.0 mg iron
.06 mg thiamine

Place oil, sugar, eggs and vanilla in mixing bowl; beat thoroughly. Sift together flour and salt; add to oil mixture, mixing well. Blend in oats, raisins, and nuts and evaporated milk. Drop by spoon onto greased cooky sheet, spreading dough to generous size. Bake in moderate oven 350° F., until delicately browned.
Granola--Granola is a homemade "ready-to-eat" cereal which resembles the texture of Grape-Nuts. It really "sticks to your ribs." The protein in the flours together with the oats, wheat germ, nuts and the fat give it much satiety. It is high in protein because a serving of only 1/3 cup will furnish 4 grams of protein to the meal, whereas it takes a whole cup of most dry cereals to give that amount of protein. If there is some grain in the recipe which is difficult for you to find in your market, you may substitute another, but be sure to keep the proportion of dry to wet ingredients the same as in this recipe. The process of rubbing the mixed cereal between your hands is necessary to make the granules smaller like Grape-Nuts. As it is baking stir it away from the edges of the pan because it browns more easily there. Allow it to get only lightly browned as cereal which becomes too brown will have a decreased protein quality.

Apricot sauce--Apricot sauce is a delightful as well as a nutritious replacement for jelly or jam. You may be thinking, "Yes, and an expensive one." The cost of 1/2 pound of dried apricots is about 60¢, and to make one pint of the apricot sauce would cost about 65¢. One pint of good quality apricot jam would cost approximately the same, but the nutrients would not be the same. In the apricot sauce we have iron where the jam has practically none, and there is a significant amount of vitamin A.
Creamed chipped beef-like--The aroma of creamed chipped beef-like will bring your family scurrying to the breakfast table. You will enjoy it served over toast or waffles. Toast cups may be made by carefully fitting into a muffin pan bread slices from which you have trimmed the crusts, and bake in the oven until crisp. The family will appreciate this special dish for breakfast. Complete the menu with grapefruit halves or orange wedges and milk.

Oatmeal breakfast treats--If you have someone in your family who does not like cereal for breakfast, they will surely enjoy these cereal cookies. Serve them in place of sweet rolls. They will furnish more iron and B vitamins to the meal. If someone in the family must eat on the run, tuck two of these treats in a sandwich bag; it will help him to wait for the next meal.
SECTION VI

THE HEART OF THE MEAL
(Proteins)

Objectives: 1. To consider the importance of protein to the body.
2. To explain protein supplementation.
3. To show that a lacto-vegetarian diet provides optimum nutrition.
4. To discuss points to consider in the formulation of entree recipes.

Need for Proteins

Protein is a popular word with many people. In fact the taking of protein pills or capsules of protein concentrates are quite the fad recently. But is there a problem in getting enough of this nutrient in your daily food? Is it necessary to eat certain foods or take supplements in order to meet the protein needs of the body? Must the homemaker be a dietitian or have a college degree in nutrition in order to properly feed her family?

Proteins are most important in body functions. Proteins build, repair, regulate body processes, and are a part of all living tissues. For this reason G. J. Mulder, a Dutch chemist, in 1839, felt they were so important that he coined the word "Protein" which in the Greek means to take first place or have pre-eminence.

Just about 100 years ago it was thought that protein was the source of energy and that the hard-working farmer or logger needed more
protein than the businessman who sat behind a desk. Now it is known that protein requirements are not based on energy used, but on body size, age, and sex which means that most adults require about the same amount of protein. Children require protein according to their body size and rapidity of growth as shown in Table 1.

<table>
<thead>
<tr>
<th>TABLE 1. RECOMMENDED DIETARY ALLOWANCES FOR PROTEIN</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Children</strong></td>
</tr>
<tr>
<td>Age (years)</td>
</tr>
<tr>
<td>Protein (gm)</td>
</tr>
</tbody>
</table>

The human body can adapt to different levels of protein intake and be maintained in good health within certain ranges. Protein balance studies, which measure very carefully all the protein eaten and its waste products excreted by the body, have shown that men can live without apparent harm on intakes of 30-40 grams of protein per day from vegetable foods (Bogert et al., 1966). This does not mean that one should try to live within this small amount. There should be a margin of safety to allow for stresses and emergencies. The average adult American diet contains about 94 grams of protein, which is well above what is recommended for good health (Albanese and Orto, 1968).

Although most foods contain some protein, some are considerably higher in protein content such as meat, legumes, some nuts, eggs, milk and milk products. There are other foods which make important contributions to the protein intake such as breads, cereals, and vegetables --not because they are high in protein content, but because of the
quantity of these foods usually included in the average diet. Some foods should be included that are fairly concentrated sources of protein along with dilute sources (Bogert et al., 1966).

It is easy to obtain the amount of protein which is recommended every day. A list of foods commonly eaten and the amount of protein furnished by an average serving is given in Table 2. From this, one can quickly determine how much protein has been eaten in a given day.

### Table 2. The Protein Content of Common Foods*

<table>
<thead>
<tr>
<th>Food</th>
<th>Size of Portion</th>
<th>Protein (gm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milk</td>
<td>1 cup</td>
<td>8</td>
</tr>
<tr>
<td>Egg</td>
<td>1 medium</td>
<td>6</td>
</tr>
<tr>
<td>Meat, lean</td>
<td>2 oz.</td>
<td>12</td>
</tr>
<tr>
<td>Gluten steak</td>
<td>1 (2 oz.)</td>
<td>8</td>
</tr>
<tr>
<td>Nuteena, Numete, Not Meat</td>
<td>1/2&quot; slice (2 oz.)</td>
<td>6</td>
</tr>
<tr>
<td>Ground gluten</td>
<td>1/3 cup, 2 oz.</td>
<td>10</td>
</tr>
<tr>
<td>Proast, Proteena</td>
<td>1/2&quot; slice (2 oz.)</td>
<td>10</td>
</tr>
<tr>
<td>Soybeans, cooked</td>
<td>2/3 cup</td>
<td>18</td>
</tr>
<tr>
<td>Legumes: dried beans, peas, lentils, etc., cooked</td>
<td>2/3 cup</td>
<td>10</td>
</tr>
<tr>
<td>Cottage cheese</td>
<td>1/3 cup</td>
<td>14</td>
</tr>
<tr>
<td>Peanut butter</td>
<td>1 tablespoon</td>
<td>5</td>
</tr>
<tr>
<td>Peanuts</td>
<td>1 oz. (approximately 30 nuts)</td>
<td>8</td>
</tr>
<tr>
<td>Nuts (other than peanuts)</td>
<td>1 oz.</td>
<td>4-6</td>
</tr>
<tr>
<td>Bread, enriched</td>
<td>1 slice</td>
<td>2</td>
</tr>
<tr>
<td>Cereal, cooked</td>
<td>1/2 cup</td>
<td>2-3</td>
</tr>
<tr>
<td>Cereal, dry</td>
<td>1 cup</td>
<td>2</td>
</tr>
<tr>
<td>Potato</td>
<td>1 medium</td>
<td>3</td>
</tr>
<tr>
<td>Peas, green</td>
<td>1/2 cup</td>
<td>7</td>
</tr>
<tr>
<td>Vegetables, green and leafy</td>
<td>1/2 cup</td>
<td>3-4</td>
</tr>
<tr>
<td>(kale, broccoli, turnip greens)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vegetables, other</td>
<td>1/2 cup</td>
<td>2</td>
</tr>
<tr>
<td>Fruits</td>
<td>1 piece fresh, 1 cup canned</td>
<td>0.5-1</td>
</tr>
</tbody>
</table>

* Values taken from Handbook No. 8, Department of Agriculture, and publications by Loma Linda Foods and Worthington Foods.
Essential Amino Acids

Almost everyone eats a mixture of protein foods every day. Proteins are composed of a variety of the amino acids. During the digestion process the body breaks down into the separate amino acids the different proteins eaten. The amino acids are then reassembled in the cells to form the particular proteins needed by each cell. Some of the amino acids required for protein synthesis must be supplied by the food, while others can be produced in the body. Those amino acids which must be supplied in food are called essential. It must be understood that the other amino acids are no less important. This distinction of essential means that these must come from sources outside the body (Albanese and Orto, 1968).

Protein Supplementation

Meat, fish, milk, egg, and soybean proteins, due to their complete amino acid composition and good digestibility, have a high biological value. Most of the vegetable or grain proteins are low in some essential amino acid, therefore would not promote satisfactory growth when eaten alone. These are sometimes referred to as incomplete proteins. However, meals are made up of several foods and each of those foods will contain several different proteins, and each of these proteins will contain a different combination of amino acids. When a variety of foods is used, one food tends to make up for the amino acid deficiencies of another. This is called protein supplementation. The amino acid content of a single protein source is not as important as the total supply of amino acids which a whole meal supplies.
Think of the proteins which one might have had for breakfast. There may have been cereal and milk. Both of these foods contain proteins. However, if one had only cereal and toast, these foods would not supplement one another as well since they are both from the same food group. The addition of milk to the cereal group provides amino acids which were lacking in the cereal. This is another reason not to limit the diet to only a few foods, but to include a wide variety in meeting the recommendations of the Basic Four Food groups.

Native diets of some countries and some regions contain foods which are a good example of protein supplementation. Important staples in the Mexican diet are beans and corn tortillas. Legumes (beans), a good source of the amino acid, lysine, are low in the sulfur amino acids. On the other hand, grains (corn, wheat, rye, etc.), low in lysine, are good sources of sulfur amino acids. So, the combination of beans and corn tortillas provides protein which is better than either food alone. The use of soybeans and rice by Orientals is another good protein combination.

**Supplementing Recipes**

There are several ways of supplementing certain favorite family recipes to improve the protein quality:

1. Wheat germ added to entrees, bread, hot cakes, or cooked cereals (gives a delightful nutty flavor)

2. Skim milk powder added to baked dishes (economical way of adding both protein quality and quantity)
3. Brewer's yeast added to casseroles, gravy, or soup (gives a meat-like flavor)

4. Soybean flour added to wheat flour (two tablespoons soy to 1 cup of wheat flour)

These supplements also add other nutrients such as B vitamins, calcium, and iron. A word of caution--the above supplements are concentrated foods and too much added at one time will lower the palatability of the food.

Vegetarian Diet

Many scientists agree that a vegetarian diet can provide adequate protein, if there is a variety of vegetable proteins to supplement each other (to furnish adequate amounts of all essential amino acids), and if a sufficient quantity of such foods is eaten to meet protein requirements (Bogert, 1966). In developing countries where protein deficiencies are common, a well-planned vegetarian diet seems to be the logical solution to the protein problem. This has been the basis of low-cost, protein-rich mixtures such as Incaparina which was developed in Central America (Scrimshaw, 1969). Thus, the old nutritional belief that diets containing meat proteins are necessarily superior to those composed entirely of vegetable proteins can be questioned today. This idea was based on animal studies in which the animals grew better if the vegetarian diet was supplemented with small amounts of animal protein. This factor was called the "animal protein factor" and was later identified as vitamin B₁₂. Many vegetable foods have been analyzed for this vitamin, but it seems to be found almost exclusively in animal foods.
Therefore, a person who includes no animal foods must have some supplement of this vitamin such as a vitamin tablet or concentrate from sea algae (Ellis and Wokes, 1967).

**Entrees**

Peas, beans, and lentils are higher in protein content than vegetables. They are sometimes called the poor man's meat. A pot of beans, seasoned well and served steaming hot, is a welcome entree for any meal. Sometimes, however, one likes to have an entree which might be considered a special or "company" entree. Some of these recipes will be given later.

**Eye appeal.** Every entree, just as every menu item should have eye appeal, should look so tempting that the family will want to "eat it up." A casserole usually looks creamy and moist. Cutlets, if fried, should look crisp. A roast should unmold on a platter and have adequate binding quality for slicing. Patties or croquettes may take a different shape occasionally. Some entrees will need special garnishing, while others will be improved by an accompanying gravy or sauce.

**Seasoning.** The flavor of entrees is most important. Do not be satisfied by using sage and onion only for seasoning. Try other herbs for seasoning agents including:

- oregano in Italian or Spanish dishes, especially tasty in those containing tomato
- cumin in legumes, cheese dishes, Mexican dishes
- Rosemary or sweet basil in chicken-like dishes and stews
bay leaves in legumes
chervil in fish-like, chicken-like and egg dishes
savory in roasts and chicken-like dishes
tarragon in egg, tomato and chicken-like dishes
thyme in fish-like dishes, croquettes or tomato dishes

Other seasonings are Savorex, Tastex or Sovex for use in beef-like dishes. G. Washington Broth in both brown and golden can be used as beef-like or chicken-like seasoning.

Gravy mixes are available in several flavors for quick seasoning addition to most any entree as well as containing the ingredients for gravy when needed. Accent or mono-sodium glutamate seems to enhance many flavors. Brewers' yeast adds much flavor to roasts or breading meal as well as being a nutritious supplement. Pimiento, mushrooms, green pepper, tomato and parsley not only add flavoring and nutrition, but add texture and eye appeal.

Fillers. Many recipes require fillers such as bread crumbs. Entrees which are made principally of nuts may be too concentrated in fat and will need carbohydrate to dilute this richness. Instead of always using bread crumbs for this purpose, try raw oats for a lighter texture. Leftover breakfast cereal or cooked rice can also be used as fillers. These will give more variety to the texture of recipes and at the same time use a variety of grains.

Texture. Texture, an important consideration in entree recipes, is one which is often neglected. A roast which consists of bread soaked with eggs and baked, has little appeal. There should be a chewy, crisp
texture. Chopped onions, celery, parsley, or nuts can add this chewiness. Gluten, either cut into small bite-size pieces or ground, also adds texture and prevents heaviness. Mastication of the entree should give the teeth and gums exercise.

**Protein Dish.** The entree is considered the main protein dish and should not become another carbohydrate dish. In using fillers, as mentioned above, in entrees which contain a large percentage of nuts, do not use so much filler that the entree becomes mainly starch. The entree may be a casserole in which the protein and carbohydrate foods such as spaghetti and nut balls are combined, or spaghetti marzetti in which gluten bits and/or cheese are added to increase the protein content. In this case another dish high in carbohydrate would not be served at the same meal. As an example, if the entree contains macaroni, potatoes, or noodles, then do not serve rice at the same meal.

**Summary**

In evaluating entree recipes, review these facts: Do they provide B vitamins and minerals, especially iron, as protein foods are expected to contribute? Do they have eye appeal, flavor and texture? The entree is considered the "heart of the meal," and around it the menu is planned. Give special consideration and care in preparing this important part of the meal.
REFERENCES


Supplementary Reading Suggestions:


Name ____________________________

PROTEINS

Circle the choice which best answers each question below.

1. In the body protein functions principally:
   a. as the most important energy nutrient
   b. as the body builder and repairer
   c. to lower blood pressure
   d. to improve eye sight

2. A recommended level of protein intake each day for adults is:
   a. 120 grams
   b. 30-40 grams
   c. 15 grams
   d. 55-65 grams

3. All the following are important in entree recipes except:
   a. texture
   b. protein content
   c. flavor
   d. vitamin A content

4. Protein supplementation means that:
   a. you must eat certain foods to supplement the proteins
   b. the amino acids in one food tends to make up the amino acid deficiencies of another
   c. you add protein pills to the diet
   d. protein supplements carbohydrate

5. A pure-vegetarian diet may supply all the essential nutrients except:
   a. thiamine
   b. essential amino acids
   c. vitamin A
   d. vitamin P₁₂

6. To obtain enough protein for health:
   a. is relatively easy if you eat a variety as recommended from the Basic Four Food Groups
   b. it is necessary to receive 30% of the protein from animal products
   c. one must drink at least a quart of milk per day
   d. one must eat at least 2000 calories daily

7. The food having the highest amount of protein per gram is:
   a. fruit
   b. egg
   c. bread
   d. mayonnaise

8. Beans and other legumes are good sources of the essential amino acid:
   a. methionine
   b. lysine
   c. alanine
   d. valine

9. Cereals and breads are usually low in the essential amino acid:
   a. lysine
   b. phenylalanine
   c. valine
   d. glutamic acid

10. The requirement of protein is based upon:
    a. body size
    b. physical work
    c. mental work
    d. body fatness
Suggestion for centerpiece for demonstration table:

An arrangement of concentrated protein foods such as commercial protein products, carton of cottage cheese, packages of legumes and nuts scattered artistically in the arrangement.

Demonstration:

Danish Meat Balls with Sauce
Cottage Cheese Loaf
Black Beans
Mushroom Roast with Golden Gravy

Compare the analyses of the recipes with:

Chuck Roast (no bones) 3 ounces: 265 calories
22 gm. protein
2.6 mg. iron
.04 mg. thiamine
.17 mg. riboflavin
3.5 mg. niacin
BLACK BEANS ON RICE

1 lb. black beans
1/4 cup olive oil
1 large onion, chopped
2 green peppers, chopped
1/2 pod garlic
1 bay leaf
2 teaspoons salt
1 lb. brown rice, cooked
green onions, chopped

Wash beans, cover with 6 c. boiling water and cook 1 hour. Braise onions, green pepper, and garlic in oil. Combine with beans, add other seasonings and cook until beans are tender and liquid is thick. Serve over brown rice, and sprinkle green onions on top of beans.

Serves: 10

Per serving: 380 calories
14 gm protein
4.2 mg iron

.45 mg thiamine
.14 mg riboflavin
5.1 mg niacin

MUSHROOM ROAST

1/4 cup oil
2 cups onions, chopped
20-oz. can glutenburger
1 cup sliced mushrooms, drained
2 cups shredded raw potatoes
1-3/4 cup evaporated milk
4 eggs, slightly beaten
2 teaspoons sage
4 pkg. G. Washington Broth, golden
Liquid from mushrooms

Braise onions and glutenburger and mushrooms in oil until burger is browned. Shred potatoes and cover immediately with milk. Mix all ingredients together thoroughly and pour into greased 8" x 12" casserole. Bake at 350° for 45 minutes to 1 hour. Serve with Golden Gravy.

Golden Gravy:
3 tablespoons oil
3 tablespoons flour
2 1/2 cups potato or vegetable water
2 tablespoons chicken-style seasoning
1/2 cup sliced mushrooms (optional)

Heat oil, add flour, and brown slightly while stirring. Add all liquid at once, and stir until smooth. Add seasonings and mushrooms. Cook until thickened.

Serves: 12

Per serving: 293 calories
15 gm protein
2.5 mg iron

.16 mg thiamine
.37 mg riboflavin
4.5 mg niacin
DANISH MEAT BALLS

1 14-oz. can Proteena or Proast
1 cup tomato pulp
2 eggs
1 teaspoon sage
2 tablespoons parsley, chopped
1 teaspoon Savorex, Tastex or Sovex
1 medium onion, grated
1/4 cup oil
1/2 medium green pepper, chopped
breakfast cereal flakes

Mash Proteena fine, and add other ingredients. Add sufficient cereal to make medium soft ball. Form balls the size of walnut, and place in greased 6" x 10" casserole. Bake at 350° for 30 minutes. Before removing from oven baste with Danish Sauce.

Danish Sauce:
1 1/2 tablespoons oil
2 teaspoons Savorex, Tastex or Sovex
1/4 cup evaporated milk
1 teaspoon cornstarch
1/2 cup water

Add Savorex to oil and brown. Add milk and cook until it curdles. Add water in which the cornstarch has been blended. Cook 5 minutes. This should be a thin sauce.

Serves: 6

Per serving: 300 calories
19 gm protein
2.9 mg iron
.17 mg thiamine
.63 mg riboflavin
6.2 mg niacin

COTTAGE CHEESE LOAF

3 cups cottage cheese
1 1/2 cups raw oatmeal
1 cup nuts, chopped fine
1 tablespoon Accent
2 teaspoons sage
1/2 teaspoon salt
2 tablespoons brewers' yeast
1 large onion, chopped
1/2 cup wheat germ
1 tablespoon oil
3-4 eggs
1/3 cup tomato sauce

Combine all ingredients thoroughly. Bake in greased 8" x 12" casserole (do not bake in loaf pan), at 350° for 45 minutes to 1 hour. Serve with gravy or cranberry sauce.

Serves: 10

Per serving: 274 calories
22 gm protein
2.5 mg iron
.37 mg thiamine
.50 mg riboflavin
4.6 mg niacin
Suggested "chatter" to accompany recipes for The Heart of the Meal:

**Black beans on rice**—This is a recipe from Cuba which was brought to Miami. It is now on the menu of one of the larger hotels in Miami as a gourmet dish. If it is impossible to find black beans, then pinto beans could be used. The black beans are smaller and seem less starchy than the pinto, and they give a more striking contrast in color with the rice. **Brown rice** in addition to containing more vitamins and minerals than white rice, also has more flavor and more chewy texture. When chopping the green onions, be sure to include the onion tops for their color as well as texture. If someone in the family does not like onions, you might try thinly sliced radishes.

**Mushroom roast**—Mushroom roast can be considered a company entree although it is not difficult to prepare. The shredded raw potatoes provide an interesting texture as well as adding to the nutrient content. There is no filling such as bread crumbs needed even though the mixture is quite thin when poured into the casserole. It thickens as it bakes, so that servings can be cut and arranged artistically on a platter with garnish, or it can be served from the casserole. This recipe illustrates supplementation of protein with the combination of glutenburger, potatoes, milk and eggs.

**Danish meat balls**—These meatless meat balls have a very tantalizing flavor and are colorful with the tomato pulp and green pepper in them.
These could be Swedish, Spanish or Italian meat balls, but we thought to be different we would call them Danish. What makes them Danish is the sauce which precipitates or curdles as it cooks. The Danes as well as the other Scandinavians use sour milk or clabbered milk very often. They eat it plain or with sugar and cinnamon for dessert, and they like it for any meal. It is a real delicacy.

Cottage cheese loaf--Several proteins are combined in this recipe to give a supplemented protein of good quality. There is protein in the cottage cheese, oatmeal, brewer's yeast and eggs which combine to give 22 grams of protein per serving (approximately 1/2 cup per serving). This is the same amount of protein which would be in a 3 oz. serving of chuck roast. It also has the same amount of iron, but is much higher in the B vitamins than the chuck roast. In recipes of this type, the directions often specify to braise the onions in the oil before adding to the other ingredients. You may do that in this loaf recipe also, if you prefer. Notice in these directions that you are not to bake this in a loaf pan. The reason for that is that it does not seem to get done if it is placed too thickly in a pan. Spread it out in the casserole as directed and cut into servings. It will need either gravy or cranberry sauce as garnish and also to enhance the flavor.
SECTION VII

THE STAFF OF LIFE
(Grains and School Lunches)

Objectives: 1. To emphasize the importance of grains in the diet.
2. To explain the difference between whole grains, enriched and unenriched grains.
3. To show that the school lunch should be a well-planned part of the menu.

Homemade bread baking in the oven! What could be more tempting or exciting to the appetite as the family arrives home on a blustery winter day? Recalling nostalgic memories of your mother's breadmaking, you will certainly want your children to have such pleasant memories also.

Importance of Grains

Today in nearly every part of the world some type of cereal grain is regarded as "the staff of life." Grain is used more widely than any other food material, because it has high yield per acre, low production cost, and excellent keeping qualities (Robinson, 1968). The main cereals used are wheat, rice, maize, millets, oats and rye. All of these cereals can be ground and made into cakes or porridge, but only wheat and rye can be used for leavened bread. In temperate or dry climates of the world wheat is the grain most widely grown, and in most damp tropical climates rice is the grain grown (Davidson and Passmore, 1963).

In the highly populated areas of the world grains provide more than 70 per cent of the calories in most diets. In the more highly developed
countries, the grains, providing about 25 per cent of the calories, are still the most important single food item. They can usually be eaten in liberal amounts without digestive difficulty. Almost all whole grains have a similar chemical constitution and nutritive value. They provide B vitamins, some calcium and iron; and the moderate amount of protein, which they furnish, is of good biological value (Davidson and Passmore, 1963).

Although in the United States corn is the grain raised more extensively, it is used largely for animal food. Wheat is the main grain used for human food. Too often people eat predominantly of one grain to the exclusion of others. It is wise to use a variety of grains such as wheat, corn, and rye for breads and any of the grains for cereals.

Structure of Grains

Fortunately, several of the grains such as oats, barley, and millets are used as whole grains with only a light outer husk removed; however, rice and wheat usually go through some degree of milling. The cereal grain kernel is divided into four parts:

1. The brown outer layers, the bran, contain B vitamins and minerals, especially iron; it is the bran which contributes bulk to the diet to help prevent constipation.

2. The aleurone layers, which are located just under the bran, are rich in proteins and phosphorus.

3. The endosperm, the white center, is the largest portion of the kernel and is mainly carbohydrates and protein. This part
Figure 1. Whole Wheat—Cross Section of Grain.

The Bran. The brown outer layers. This part contains:
1. Bulk-forming carbohydrates.
2. B vitamins.
3. Minerals, especially iron.

The Aleurone Layers. The layers located right under the bran.
They are rich in:
1. Proteins.
2. Phosphorus, a mineral.

The Endosperm. The white center. This is mainly:
1. Carbohydrates (starches and sugars).
2. Protein.
This is the part used in highly refined white flours. Less refined flours and refined cereals are made from this part and varying amounts of the aleurone layer.

The Germ. The heart of wheat (embryo). It is this part that sprouts and makes a new plant when put into the ground. It contains:
1. Thiamine (vitamin B₁). Wheat germ is one of the best food sources of thiamine.
2. Protein. This protein is of value comparable to the proteins of meat, milk, and cheese.
3. Other B vitamins.
4. Fat and the fat-soluble vitamin E.
5. Minerals, especially iron.
6. Carbohydrates.

is used in highly refined white flours. The less refined flours have varying amounts of the aleurone layer mixed with the endosperm.

4. The germ is very rich in thiamine, containing a very good quality of protein and having other B vitamins, vitamin E, and minerals, especially iron.

**Milling Process**

During the middle ages, milling of the wheat grain was done between two large stones. Since white flour was very expensive, it could be enjoyed only by the wealthy. This seemed to make it something to be desired by the poor people who could not buy it. Industrial developments during the eighteenth century made technical improvements, and by 1870, the roller mill process came into use making milled flour much less expensive. Since highly milled white flour contains less fat, it can be stored for longer periods of time, and does not become rancid as quickly. Because of lower nutrient content, it is not as liable as whole grain flour to insect infestation.

After white bread and white flour became staples for all classes of people, various conditions due to low-grade dietary deficiencies became more common among western nations. About 1940, to help stem possible deficiencies, the United States began a program to enrich white bread by adding thiamine, riboflavin, niacin and iron. Soon afterwards manufacturers of breakfast cereals also began restoring certain nutrients to their highly milled products (Bogert et al., 1966). This enrichment program
has done much to improve the nutritive levels in the American diet of these three B vitamins and iron; however, many other nutrients such as pyridoxine, pantothenic acid, biotin, and folic acid, which have very important biological actions, are removed in the milling process and are not added for enrichment.

Since so many people prefer white bread and some cannot eat whole wheat bread because of the roughage, a recipe has been given for bread to be made from half white and half whole wheat flours. It is enriched with other ingredients so that it approximates the nutritive value of whole wheat bread.

Breads which are usually bland in flavor do not become tiresome to the appetite. They are present in some form in almost every meal (Martin, 1967). Their blandness lends to pleasing combinations with other foods such as in sandwiches.

School Lunches

School lunches should not be hastily thrown together items. They should be well-balanced meals for growing children for whom optimum nutrition is so important. Since the school lunch should contain one-third of the day's requirement of protein, calories, minerals and vitamins, it is suggested that it contain:

- milk (or substitute comparable in nutritive content)
- a high protein food (probably in the sandwich)
- fruit and/or vegetable (preferably raw)
- a simple dessert
Many other foods can be included such as a hearty soup, dried fruits, baked beans, olives, or nuts. The practice of including snacks such as potato chips or corn chips may not be such a desirable one. Many children will eat these foods first, and since they are high in calories and are quite satisfying the child will not be hungry for the other foods in the lunch. For a crunchy, chewy food use carrot, celery, cucumber, or zucchini sticks which would be more nourishing than the chips.

Providing variety in the lunch box menu is essential. Do not let the child eat only peanut butter sandwiches or insist that the fruit always be an apple. Help him learn to like many foods and include a surprise quite often. Why not write him a note on the paper napkin so he will know his mother is thinking of him as he enjoys his lunch.

Packed Lunch Ideas

1. Hot vegetable soup
   Egg salad sandwich
   Zucchini and carrot sticks
   Brazil nuts, 6
   Pitted prunes and dates
   Milk

2. Hot split-pea soup
   Vegeburger sandwich
   Celery and green pepper sticks
   Apple (remove core and replace with rolled up note from Mother)
   Oatmeal cookies, 2
   Milk

Avoid the morning rush by having all lunch supplies on one section of the kitchen. Plan ahead by having sandwich fillings prepared and ready to spread, or having some of the lunch-box items frozen in advance. They can be thawed and ready to eat by lunchtime.

Remember, the school lunch is a meal--not just a snack!
REFERENCES


Supplementary Reading Suggestions:


Poster-size copies of Figure 1, p. 101 may be obtained from: El Molino Mills, Alhambra, California.
BREADS & GRAINS

Circle the choice which best answers each question below:

1. In highly populated areas of the world the percentage of total calories in the diet from grains may be as high as:
   a. 20%
   b. 30%
   c. 50%
   d. 70%

2. The reasons grain is used more widely than any other food material include all the following except:
   a. has high yield per acre
   b. low production cost
   c. excellent keeping qualities
   d. high in calories

3. All of the following are added to white flour in the enrichment process except:
   a. thiamine
   b. pyridoxine
   c. niacin
   d. iron

4. White flour does not become rancid as quickly as whole wheat flour because it contains:
   a. more saturated fat
   b. less B vitamins
   c. less fat
   d. more antioxidants

5. In the U.S. and other highly developed countries the percentage of calories in the diet as cereal grains is about:
   a. 10%
   b. 25%
   c. 40%
   d. 55%

6. The reasons enrichment of white bread was begun by the government include all the following except:
   a. the bread tasted better
   b. more people were eating white bread
   c. to help stem possible deficiencies
   d. white flour had become a staple of all classes of people

7. Cereals supply significant amounts of the following nutrients except:
   a. vitamin A
   b. protein
   c. iron
   d. B vitamins

8. The following foods are recommended for a good school lunch except:
   a. dried fruits
   b. baked beans
   c. nuts
   d. potato chips

9. Tips for a good lunch program include the following except:
   a. variety of fruits
   b. surprise quite often
   c. peanut butter sandwich each day
   d. something hot or cold

10. The proportion of the day's requirements (protein, calories, vitamins, minerals) that should be supplied in the school lunch is:
    a. 1/5
    b. 1/4
    c. 1/3
    d. 1/2
PACKED LUNCH

Jelly Sandwiches
Soft Drink
Candy Bar

100% 100% Daily Food Needs of an Adult
67% 67%

33% 33%

Calories Protein Calcium Iron Vitamin A Thiamine, Riboflavin, Vitamin B1, Vitamin C

Ascorbic acid, Vitamin B2

PACKED LUNCH

Peanut Butter Sandwich
Cheese Sandwich
Raw Carrots
Cookies
Orange Milk

100% 100% Daily Food Needs of an Adult
67% 67%

33% 33%

Calories Protein Calcium Iron Vitamin A Thiamine, Riboflavin, Vitamin B1, Vitamin C

Ascorbic acid, Vitamin B2


Suggestion to the lecturer-demonstrator:

A school lunch skit is always interesting and convincing. Have two children about 10 years of age, one with a nutritious lunch, and one with a lunch such as:

- jelly sandwich (doesn't like anything else)
- potato chips
- candy bar
- soft drink

The one with the inferior lunch will be too tired to play at recess even though he has eaten part of his candy bar. He probably will get a very poor grade in spelling. He doesn't like any vegetables. His mother never makes delicious homemade cookies. He doesn't like milk unless it is chocolate milk, etc.

The other child can have a lunch such as suggested on the preceding page. He is full of pep and vigor because he had a good breakfast and doesn't need to use any recess time for snacking. He thinks such things as carrot sticks and dried prunes taste better than candy. Plain milk tastes much better than that sweet stuff they call chocolate milk!

Let the children dialogue. With a little practice, they will give a good performance.
Suggestion for centerpiece for the demonstration table:

Wooden salad bowl filled with whole grain wheat and a small loaf of home-made bread on top with one corner of the loaf pushed down into the grain. Attractive lunch box could be sitting beside the bowl to show one of the newer ideas in lunch boxes.
ENRICHED BREAD

3 cups warm water
4 tablespoons dry yeast
6 tablespoons brown sugar or honey
4 teaspoons salt
1/4 cup oil
1/2 cup soy flour
2/3 cup wheat germ
1/3 cup food yeast flakes
3-1/2 cups whole wheat flour
3-1/2 cups white flour

Analysis:
1 slice bread: 75 calories
2.6 gm protein
.8 mg iron
.16 mg thiamine

1 slice commercial bread:
55 calories
2.1 gm protein
.5 mg iron
.07 mg thiamine

Yield: 3 loaves per recipe
18 slices per loaf

For variety, replace soy flour, wheat germ, and food yeast flakes with:
1 cup rye flour
1/2 cup oats or 1/2 cup cornmeal
1/4 cup cracked wheat cereal
3/4 cup oats

Loaf of Bread (1/3 of dough makes 1 large loaf, 4½" x 9" loaf pan)
Roll to get all the bubbles out and form into loaf. Place in greased loaf pan. Let rise until doubled. Loaves should be baked 10 minutes in oven preheated to 400°, then turn oven to 350° and bake until done, 30-40 minutes.

Cinnamon Rolls (1/3 of dough fills pan 9" x 13")
Roll dough into rectangle about 1/4 inch thick. Spread with 2 tablespoons softened margarine, then sprinkle with 1½ teaspoons cinnamon and 1/2 cup brown sugar, and 2/3 cup raisins. Roll as for jelly roll and slice into 20 rings (about 1½ inches long). Grease pan and sprinkle lightly with brown sugar. Place rolls cut side down in the brown sugar. Let rise until doubled, and bake at 350° for 25-30 minutes. If desired drizzle top of baked and cooled rolls with: 1/2 cup powdered sugar mixed with 2 tablespoons cream, small pinch of salt, and 1/2 teaspoon vanilla.
**Coconut Bubbles** (1/4 of dough fills 6-cup ring mold)
Pinch off balls of dough about the size of large walnut. Smooth and roll in macaroon coconut. Place in greased ring mold, making two layers. Let rise until doubled and bake at 350° for 25-30 minutes.

**Pizza** (1/4 dough makes 12" pizza, 1/3 dough makes large cookie sheet)
Roll dough quite thin to fit pan. Spread with mixture of: 7½ ounce can of tomato sauce, 1/4 teaspoon salt, 1/4 teaspoon oregano, 1/8 teaspoon garlic powder, then sprinkle over pizza 10 ounces of grated jack cheese. Bake at 400° for 15 minutes. Do not allow to rise before baking.
The following can be used for chatter as the ingredients are put together:

3 cups of warm water—If the water is too hot, what happens? That's right, it kills the yeast. If the water is too cold? It slows down the growth of the yeast, and thus slows down the bread making. Because yeast is a living plant, it likes a warm, even temperature. Use water that is comfortably warm on the inside of your wrist.

4 tablespoons of dry yeast—Yeast is a living plant which makes the dough rise. Compressed yeast comes in a cake and must be refrigerated. If compressed yeast is bought fresh, it will keep about two weeks. Dry yeast which comes in several forms will keep several months without special care. The amount used in this recipe is probably more yeast than is found in most recipes. I have found that adding this much yeast does not seem to affect the bread in any way, but makes it rise more quickly so that it can be baked and enjoyed as soon as possible.

6 tablespoons brown sugar or honey—This sweetening could be white sugar or molasses. The sugar gives the yeast food so that it grows rapidly. It adds flavor to the bread, making it more palatable and helping the crust brown beautifully.

4 teaspoons salt—This also makes the bread more palatable and helps to regulate the growth of the yeast.
1/4 cup oil--The fat helps make the bread tender and moist. Using an unsaturated fat is better than the saturated or hard fat which has been implicated in heart conditions as raising cholesterol.

1/2 cup soy flour, 2/3 cup wheat germ, 1/3 cup food yeast--These are the enrichment ingredients which bring the nutritional value of the bread to approximate 100% whole wheat bread.

3 1/2 cups whole wheat flour and 3 1/2 cups white flour--Measure out the full amount of the flours and mix together. Stir in approximately half of the flour, blending and beating until smooth. Now add enough of the remaining flour to make a rough looking dough which pulls away from the sides of the bowl. There will be about 1/2 cup of flour left which will be used in kneading the bread.

Sprinkle some of the remaining flour on the bread board and turn the bread dough out on it. Kneading is an important step and one that is the most fun. This makes the dough "come alive" and change from a rough, sticky, unresponsive mass into a smooth, non-sticky, elastic ball.

Kneading is quite easy. With the palms of the hands, press the dough into a flat ball. Then fold it over toward you, and with the heels of your hands push down and away. Turn it one-quarter of the way around and repeat. Keep folding, pushing and turning until the dough looks very smooth and no longer feels sticky. This will require three to five minutes of kneading. As you knead, sprinkle extra flour until the dough no longer sticks to the board or your hands.
After quickly washing out the mixing bowl with warm water, dry it and pour in about one tablespoon of oil. Press the ball of dough into the bowl, turn the dough over so that it is greased all over. This keeps it from drying out as it rises. Cover with a clean cloth and set it in a warm place, out of drafts, until doubled in bulk.

When it has doubled, test it by pressing the tip of your fingers into the dough. If the dent disappears, let it rise a little longer. If the dent remains, the dough has risen enough. Push the dough down in the center, folding the edges toward the center and turning the ball of dough over completely. After punching it down, it is ready to shape into loaves, rolls, or whatever you choose to make.

After it is shaped and placed in baking pans, it must rise again until it is doubled. Then put it into a preheated oven and bake according to directions.
BATTERWAY ROLLS

1½ cup warm water (110-115°F.)
2 packages active dry yeast
3 cups sifted all-purpose flour
1/2 cup soy flour
1/2 cup cracked wheat flour
Sesame seed or poppy seed
1/4 cup sugar
1/3 cup soft shortening or oil
1 egg

Pour the warm water into a large mixing bowl. Add the yeast. Let stand a few minutes until yeast is dissolved. Stir to dissolve. Add half the flour, sugar, salt, soft shortening and the egg. Use mixer on medium speed, or beat by hand until smooth--1½ to 3 minutes. Stop mixer. Add remaining flour and stir by hand until flour disappears--1 to 1½ minutes. Scrape down batter from sides of bowl. Cover and let rise in warm place until doubled--about 30 minutes.

Meanwhile, grease 1½ dozen large muffin cups. When risen, stir batter 20 to 25 strokes. Spoon into muffin cups, filling 1/2 full. Let rise in warm place until batter reaches tops of muffin cups--20-30 minutes. Bake 10-15 minutes or until well browned on sides and tops in hot oven, 425°F. Remove from pans and cool on racks. If a soft crust is desired, brush tops with butter as soon as they are removed from the oven.

If sesame or poppy seed is used, place small amount of seed in bottoms of muffin tins after greasing. Also sprinkle a few seeds on top of batter after spooning into muffin tins.

For variety--bake this batterway bread in round greased cans. Excellent for variety in sandwich making.

Yield: 1½ dozen rolls

Per roll: 131 calories
3.3 gm protein
1.0 mg iron
.11 mg thiamine
CASHEW COCONUT CHEWS
(Lunch box treat)

1/2 cup oil
1/2 cup brown sugar
1/2 cup whole wheat flour
1 cup unsweetened coconut
1/2 cup raw cashew nuts, broken
1/2 cup honey
1/2 cup milk
1 1/2 cups oatmeal
1/2 teaspoon salt
2 teaspoon vanilla

Combine oil and brown sugar. Sift dry ingredients and add to sugar-oil mixture with the honey, milk and vanilla. Add coconut, oatmeal and cashews. Drop by teaspoonful on slightly greased cookie sheet. (Serve warm for breakfast or use as lunch box treat.) Bake at 350° F. 15 minutes.

Yield: 50 cookies

Per cookie: 72 calories
1.0 gm protein
.4 mg iron
.04 mg thiamine
Other types of recipes using grains:

BARLEY CASSEROLE

1/4 lb. margarine Melt half of margarine in skillet
1-3/4 cup pearl barley and brown barley, stirring con-
stantly. Sauté onion and mushrooms in remaining margarine. Combine hot
water and broth from packages.
2 onions, chopped fine Blend all ingredients together except
1 can (4 oz.) mushrooms, chopped nuts and cheese. Pour into casserole
5 cups hot water and bake in a 350° oven for 1 1/2 hours.
6 packages G. Washington Broth, Sprinkle nuts on top and bake 30
golden minutes longer. Before serving, cover top with grated cheese and
1/2 cup toasted, slivered or place in oven until melted.
chopped almonds
1/2 cup grated cheese (optional)

(Delicious served with fruit salad, or excellent accompaniment with any
kind of meat balls, etc.)

Serves: 10-12

Per serving: 255 calories 1.6 mg iron
5.6 gm protein .11 mg thiamine

ALA PILAF (Bulgur wheat)

Melt margarine in skillet; add Ala,
1 cup Fisher's Ala, uncooked onion, and green pepper. Stir and
2 tablespoons melted margarine cook until onion is golden. Add
1 tablespoon minced onion broth and seasonings. Cover, bring
to boil, reduce heat, simmer 15
2 packages G. Washington Broth minutes.
(or chicken-style seasoning) dissolved in 2 cups hot water
1/4 teaspoon oregano
1/2 teaspoon salt
1/2 cup chopped green pepper

Serve with protein entree or a salad meal. Ala Pilaf is unique, somewhat
like rice, with nut-like flavor and chewy texture.

Serves: 4

Per serving: 132 calories .3 mg iron
2.6 gm protein 1.07 mg thiamine
Sandwich Filling Suggestions:

CHEESE-NUTS-OLIVES: 1 pound cottage cheese or soy cheese, 2 stalks celery chopped fine, 1/2 cup almonds chopped fine, 1/2 can ripe olives chopped fine, dash onion salt. Mix with milk, cream or mayonnaise for spreading consistency.

OLIVE-NUT: 2 small cans chopped olives, 1 cup chopped nuts, 2 stalks celery chopped fine, 2 to 3 tablespoons mayonnaise.

MOCK TUNA: 1 cup Nuteena, Not-Meat or Numete mashed, 1 tablespoon chopped pimiento, 2 tablespoons dillpickle chopped fine, 1 tablespoon chives, 1/2 teaspoon salt, 3 tablespoons mayonnaise.

TOMATO-PEANUT BUTTER: 1 small onion chopped fine and cooked in oil until soft (not brown), 1/2 cup tomato juice, 1/2 cup peanut butter, salt to taste, 1 tablespoon food yeast.

CARROT-APPLE-NUT: Put through blender 2 small carrots, 1 apple, 1 stalk celery. Add 1/2 cup ground nuts, 2 tablespoons mayonnaise and lemon juice to taste.

CHICKEN-STYLE SALAD: 1 pound chicken-style soyameat put through food chopper, 1/2 cup finely diced celery, 3 tablespoons finely chopped pimiento, and mayonnaise to make of spreading consistency.

SAVORY GARBANZO: Heat 2 tablespoons oil and 1/4 teaspoon Vegex in frying pan. Add 3 eggs and scramble until dry and crumbly. Add 1 cup cooked, ground garbanzos and 1 small onion chopped finely, and 3-4 tablespoons mayonnaise and salt to taste.
SECTION VIII

NATURE'S VITAMIN PACKAGES
(Fruits and Vegetables)

Objectives: 1. To develop an appreciation for the important contributions fruits and vegetables make to the diet.

2. To demonstrate how fruits and vegetables add nutrients, color, variety, and interest to otherwise drab meals.

3. To stress the importance of conserving the nutrients which fruits and vegetables contribute.

Nutrient Contributions.

How long has it been since you tried a new fruit or vegetable? a really new and different one which you and your family had never seen before? This can be real adventure. There are new fruits and vegetables appearing in the markets from time to time. They may come from Mexico or from farther distances, and they can give new taste sensations. There are vegetables available in the markets every day which you may unconsciously overlook because you are not in the habit of serving them. How often do you serve eggplant, rutabagas, chard or okra? A little research to find an appetizing recipe for one of these not-so-popular foods can inject new interest in your meal planning, cooking, and homemaking.

No group of foods lends greater variety to the diet than the fruit-vegetable group. It gives variety in color, flavor and texture. This group is the major source of both ascorbic acid and vitamin A,
makes a good contribution of iron and is a fair source of other minerals and B-complex vitamins (Robinson, 1968).

Fruits and vegetables are available the year round either fresh, canned, frozen or dehydrated. When purchasing fresh produce, select crisp, ripe, but not overmature fruits and vegetables that are firm in texture and free from blemishes. They are usually less expensive in season, but it is well to compare edible portions of the fresh produce with the cost of processed ones. Fresh fruits and vegetables are very perishable and they will deteriorate in palatability and nutritive value unless properly stored and eaten within a short time.

Storage is also important for the processed products. Because ascorbic acid is more easily destroyed than most other nutrients, it is used as an index for the retention of nutrients. Table 3 gives a report (Cain, 1967) of a study on canned, dehydrated, and frozen products.

| TABLE 3. THE EFFECT OF TEMPERATURE AND TIME ON THE LOSS OF ASCORBIC ACID DURING STORAGE |
|---------------------------------------------|-----|-----|-----|
| Product                     | Temperature | Storage Loss of Ascorbic Acid |
|                             |              | 6 months | 12 months |
| canned tomato juice         | 30°          | 8%      |
|                             | 80°          | 60%     |
|                             | 110°         | 80%     |
| dehydrated vegetables       | 40-50°       | 20%     |
|                             | 95-105°      | 50-80%  |
| frozen vegetables           | -20°         | 5%      |
|                             | 0°           | 25%     |
|                             | 10°          | 95%     |
From this table it is evident that there is more destruction of ascorbic acid at higher storage temperatures, and possibly more loss of other easily destroyed nutrients.

Frozen products can be equal to the fresh fruits and vegetables, or they may be superior if the frozen products were packed immediately after harvest and properly stored, because fresh foods might have been improperly handled before they reach the consumer. After these frozen foods are thawed, however, they are subject to losses of ascorbic acid. For this reason they should be consumed within a short time after thawing.

Some of the best sources of ascorbic acid are citrus fruits, fresh strawberries, melons, green peppers, and dark-green leafy vegetables. Although potatoes and sweet potatoes contain lesser concentrations of ascorbic acid, they may be eaten in daily amounts to make a significant contribution. Since ascorbic acid is easily lost in handling and cooking, these foods should be prepared with the idea of preserving this vitamin. Foods that are wilted have lost much of their ascorbic acid content, as have foods which are over-cooked or have stood uncovered.

The dark-green leafy vegetables are good sources of iron as are raisins, prunes, dates, figs, peaches, berries, and fresh and dried apricots. Fruits and vegetables are also good sources of potassium.

One of the major dietary contributions coming from fruits and vegetables is vitamin A. In the plant kingdom vitamin A, as such, is not found. The provitamins A, known as carotenes, which can be converted in the body to vitamin A are found in plants. In general the foods
which are the richest in the carotenes are those deepest in color, the orange and yellow fruits and vegetables and the dark green-leafy vegetables.

**Fruits**

Fruits appeal to the appetite. Their shape, color, aroma, and delicious flavors make them popular. Serving fruit twice a day, for breakfast and at some other meal, is good nutrition practice (Mitchell et al., 1968). They can be used for dessert, either raw or cooked. If used fresh, fruit should be washed thoroughly to remove dirt, sprays and insect contamination. Berries should not be washed until just before they are served.

**Vegetables**

The term vegetable includes almost every part of edible plants—leaves, stems, seeds, flower, roots, tubers and fruits. Vegetables are valued for their nutritive quality and also for the variety which they furnish in the diet, such as texture, flavor, odor, and color. A well-planned menu will include potatoes and one or two other servings of vegetables each day. Potatoes have been much maligned as being a fattening food and containing only starch. They do contain some starch, but they also make their contribution of other nutrients and can be a fairly good source of ascorbic acid when baked whole or boiled in the skin. Potatoes when prepared by mashing or cutting in small pieces and frying have very little ascorbic acid left by the time they are served.
Especially important are the dark-green leafy vegetables because the plant concentrates the nutrients in the leaves. These are good sources of calcium and riboflavin as well as iron. They can be served in many ways, raw as well as cooked (Mitchell et al., 1968).

**Vegetable Cookery**

According to Keyes (1963), vegetable cookery is a better test of a good cook than fancy desserts. The best method of preparation is the most simple: choose the freshest vegetables at just the right maturity, and cook in the shortest cooking time in a small amount of water. Many vegetables such as tomatoes, celery, asparagus, and salad greens contain only about 20 calories per serving; potatoes, lima beans, fresh corn, and bananas are about 100 calories per serving; and most other vegetables and fruits will be about 40-80 calories per serving if served without the addition of butter or sauce. It is difficult to overeat of these foods.

Vegetables are more colorful and more palatable, and will retain more nutrients if these rules are followed in cooking:

1. **Cook in as short a time as possible.**
2. **Cook in a small amount of water.** Drop the raw vegetables into boiling water, then reduce the heat when boiling resumes. Do not discard the remaining liquid. It will contain water soluble vitamins and can be used in soup, sauces or gravy. Refrigerate the liquid quickly in an airtight container.
3. Cook vegetables whole or in large pieces as more nutrients are lost when more surface area is exposed.

4. Cook only until crispy-tender.

5. Never use soda in the cooking water as it causes destruction of some of the vitamins—mainly thiamine and ascorbic acid.

Salads

Salads are versatile. They can be made of cooked or raw vegetables or fruits. They can be served before the meal, with the meal, after the meal, or as a complete meal. The salad should be planned to complement the textures, flavors, and color of the other parts of the meal. Appropriate combinations of food in the salad, together with a suitable dressing, are essential. Simple, rather than elaborate, arrangements of food are to be desired, as too precise or too exact arrangement suggests unnecessary handling of the food.

Lettuce and other ingredients of green salads deteriorate rapidly when broken up and exposed to the air. Most salads should be prepared just before serving, and the dressing added at the last moment; however, in some recipes the ingredients are marinated in the dressing for an hour or more to develop the flavor. Salad greens should be separated and thoroughly washed under cold running water, then allowed to drain or be dried with a clean towel. Placing them in a plastic bag in the refrigerator will help to keep them crisp.

Simple salad dressings allow one to enjoy the real flavor of the salad. Such dressings are:
1. just salt
2. lemon juice
3. lemon juice, same amount of oil, salt
4. sour cream and lemon juice
5. mayonnaise
6. French dressing
7. cooked dressing
8. fruit juice, lemon juice, honey
REFERENCES


Supplementary Reading Suggestions:


FRUITS-VEGETABLES

Circle the choice which best answers each question below:

1. A most important nutrient contribution of the fruit-vegetable group is:
   a. thiamine
   b. protein
   c. vitamin D
   d. ascorbic acid

2. The use of soda in cooking green peas destroys a significant amount of:
   a. thiamine
   b. vitamin A
   c. iron
   d. niacin

3. All of the foods below are good sources of iron except:
   a. leafy vegetables
   b. milk
   c. dried apricots
   d. raisins

4. Substances in fruits and vegetables that can be converted to vitamin A in the body are:
   a. fats
   b. steroids
   c. ferritins
   d. carotenes

5. A poor source of vitamin A is:
   a. sweet potato
   b. white head lettuce
   c. spinach
   d. carrots

6. One of the best tests of a cook is the ability to prepare:
   a. meat
   b. potatoes
   c. vegetables
   d. desserts

7. The number of calories in a serving of most vegetables (without butter or a sauce) is:
   a. 10-20
   b. 20-80
   c. 80-150
   d. 150-250

8. All of the following are excellent sources of ascorbic acid except:
   a. fresh strawberries
   b. mashed potatoes
   c. melons
   d. green peppers

9. The vegetable making the greatest contribution of calcium and riboflavin is:
   a. cucumber
   b. celery
   c. tomatoes
   d. turnip greens

10. A poor practice when cooking vegetables is:
    a. cooking only until crispy tender
    b. cooking in small pieces
    c. using a small amount of water
    d. using the freshest vegetables
Suggestion for centerpiece for the demonstration table:

Large platter, tray or wooden bowl with colorful, polished fresh fruits and vegetables attractively arranged.

Demonstrations:

Corn Ring with Buttered Broccoli
Carrots a la Zucchini
Cauliflower Salad
Tropical Protein Salad
VEGETABLES

CORN RING WITH BUTTERED BROCCOLI

1/4 cup boiling water
1 pkg. frozen cut corn
3 tablespoons margarine
3 tablespoons flour
1 teaspoon salt
1 cup hot milk
3 eggs (separated)
2 pkg. frozen broccoli

Cook frozen corn in boiling water 2 minutes. In another pan melt margarine, mix in flour and salt. Add heated milk and stir until thickened. Remove from heat; add beaten egg yolks and corn and mix thoroughly. Fold in stiffly beaten egg whites. Pour into greased ring mold. Place mold in hot water. Bake at 325° for 25 minutes. Turn mold on plate and fill center with broccoli which has been cooked until crispy done.

Serves: 8

Per serving: 148 calories
7.4 gm protein
2.4 mg iron
4558 I.U. vitamin A
41 mg vitamin A

CARROTS A LA ZUCCHINI

1/2 cup water
3 medium carrots
4 zucchini squash
1/2 teaspoon salt

Scrub the carrots and cut in rings. Add to the boiling water and cook ten minutes. Scrub the zucchini and cut in rings. Add zucchini and salt to the carrots and cook an additional 3-4 minutes until the vegetables are crispy-tender.

Serves: 6

Per serving: 22 calories
1 gm protein
.4 mg iron
3183 I.U. vitamin A
9 mg vitamin C
CAULIFLOWER SALAD

1 medium cauliflower
2 tomatoes, medium
1/2 cup mayonnaise
1 carrot grated (optional)

Serves: 6

Per serving: 147 calories
1.8 gm protein
1.1 mg iron
1627 I.U. vitamin A
47 mg vitamin C

Wash, trim, and dry cauliflower. Dice tomatoes and mix with the mayonnaise. Put cauliflower through large side of grater (pieces should be chewy—not too fine). Toss cauliflower lightly in the mayonnaise.

TROPICAL SALAD

2 tablespoons lemon juice
1 cup diced frozen chicken-style soyameat
1/2 cup mayonnaise
1/3 cup toasted, slivered almonds
1/2 cup crushed pineapple, drained

Serves: 4

Per serving: 267 calories
5.8 gm protein
1.6 mg iron
80 I.U. vitamin A
6 mg vitamin C

Combine all ingredients. Serve in lettuce cups. Garnish with pimiento strips.
Suggested "chatter" to accompany recipes in Nature's Vitamin Packages:

**Corn ring with buttered broccoli**—The corn ring for this recipe may be baking in the oven while the salad and other last minute menu items are being prepared. This is a souffle-type of recipe, and it must be handled fairly gently. Be especially careful not to remove it from the oven until it is completely baked. It may not be necessary to place the ring mold in hot water, but it is more desirable if the corn ring is only delicately browned. An important point is to grease the ring mold very well with solid fat such as Crisco or Spry and then sprinkle with fine bread crumbs.

**Carrots a la zucchini**—The combination of these vegetables is delightfully colorful and surprisingly tasty. As the carrots are cooking, have the heat turned low and check occasionally to be sure the water has not boiled away. There is a minimum of water given in this recipe so that there will be none left to dispose of and thus lose any water-soluble vitamins. Do not peel the zucchini because the dark green color is just the garnish needed.

**Cauliflower salad**—If you have never eaten raw cauliflower, you have a wonderful surprise awaiting you. This is a very quick and easy salad to prepare and is something a little different to appeal to the gourmet who has "tried everything." Prepare this salad just before it is to be served to conserve the vitamin C. You will notice from the analysis
that it contains 47 mg. of vitamin C per serving, and that is about the same amount as found in one small orange. The grated carrot can be mixed into the salad, but it makes a very attractive garnish when sprinkled around the edge of the creamy white cauliflower.

Tropical salad--This salad can be the main dish of the meal as it contains almost 6 grams of protein or about the same amount as in an egg. Boston red leaf lettuce makes a beautiful frame on the salad plate for this picture-pretty salad. To complete a delightful luncheon menu, serve hot rolls, carrot and zucchini sticks and tomato juice.
SECTION IX

NUTRIENTS UP--CALORIES DOWN
(Fats and Weight Reduction)

Objectives: 1. To show that some fat is essential in the diet.
2. To consider the relationship of fats to health.
3. To discuss methods of reducing.

In this age of pushbuttons, our way of life has changed. We are no longer big calorie spenders and for this reason we should not be big calorie eaters. When the need for calories declines, then a larger proportion of the calories must be in the protective foods or the Basic Four Foods, for these are the nutrient carriers. It takes good food habits to keep nutrients up and calories controlled. On poor food habits, we are likely to be overfed, but not well nourished. Good eating should not mean overeating.

Need for Fat

In the Basic Four Food Guide there is no specific recommendation for fats. However, in eating of these recommended foods there will be some fat included in the diet such as fat in milk, fat in protein foods, and even some fat in the fruits and vegetables. Fats represent the chief form in which animals store extra energy for future use. Fats and fat-rich foods serve five main purposes in the diet according to Bogert (1966):

1. To supply a concentrated source of energy (9 calories per gm as compared with 4 calories per gm of protein or carbohydrate)
2. To provide flavor
3. To give satiety value
4. To act as carriers of fat-soluble vitamins
5. To provide essential fatty acids

Fats are made up of a combination of glycerol and three fatty acids.

\[
\begin{align*}
H & \quad \text{O} & \quad \text{H} & \quad \text{H} & \quad \text{H} & \quad \text{H} & \quad \text{H} & \quad \text{H} & \quad \text{H} & \quad \text{H} & \quad \text{H} & \quad \text{H} & \quad \text{H} & \quad \text{H} & \quad \text{H} \\
\text{H-C-O—C-C-C-C-C-C-C-C-C-C-C-C-C-C-C-C-C-C-C-C-C-C-H} & \text{(stearic acid)}
\end{align*}
\]

\[
\begin{align*}
H & \quad \text{H} & \quad \text{H} & \quad \text{H} & \quad \text{H} & \quad \text{H} & \quad \text{H} & \quad \text{H} & \quad \text{H} & \quad \text{H} & \quad \text{H} & \quad \text{H} & \quad \text{H} & \quad \text{H} & \quad \text{H} & \quad \text{H} \\
\text{H-C-O—C-C-C-C-C-C-C-C-C-C-C-C-C-C-C-C-C-C-C-C-C-C-H} & \text{(stearic acid)}
\end{align*}
\]

\[
\begin{align*}
H & \quad \text{H} & \quad \text{H} & \quad \text{H} & \quad \text{H} & \quad \text{H} & \quad \text{H} & \quad \text{H} & \quad \text{H} & \quad \text{H} & \quad \text{H} & \quad \text{H} & \quad \text{H} & \quad \text{H} & \quad \text{H} & \quad \text{H} & \quad \text{H} & \quad \text{H} & \quad \text{H} & \quad \text{H} & \quad \text{H} & \quad \text{H} & \quad \text{H} \\
\text{H-C-O—C-C-C-C-C-C-C-C-C-C-C-C-C-C-C-C-C-C-C-C-C-C-H} & \text{(stearic acid)}
\end{align*}
\]

Glycerol

Figure 2. Example of a Fatty Acid

Some fatty acids can be synthesized in the body. There are some called the "essential" fatty acids which must be supplied in the food. Linoleic acid is the main essential fatty acid and it is abundant in the polyunsaturated fats.

**Types of Fatty Acids**

The general types of fatty acids found in foods are classified according to their degree of saturation or unsaturation.
1. The saturated fatty acids contain all the hydrogen which
the carbon chain can hold.

\[ \text{O H H H H H H H H H H H H H H H H H} \]
\[ \text{H O-C-C-C-C-C-C-C-C-C-C-C-C-C-C-C-C-H} \]
\[ \text{H H H H H H H H H H H H H H H H H H} \]

Figure 3. Stearic acid

2. The monounsaturated fatty acids have only one "double-bond"

with the hydrogens missing.

\[ \text{O H H H H H H H} \]
\[ \text{H H H H H H H H H H H H H H H} \]
\[ \text{H O-C-C-C-C-C-C-C-C-C-C-C-C-C-C-C-C-C-C-C-C-C} \]
\[ \text{H H H H H H H H H H H H H H H H} \]

Figure 4. Oleic acid

3. The polyunsaturated fatty acids can have two or more double
bonds with the hydrogens missing.

\[ \text{O H H H H H H H} \]
\[ \text{H H H H H H H H} \]
\[ \text{H O-C-C-C-C-C-C-C-C-C-C-C-C-C-C-C-C-C-C-C-C-C} \]
\[ \text{H H H H H H H H H H H H H H H H} \]

Figure 5. Linoleic acid

About forty per cent of the fatty acids contained in the average
American diet are saturated fatty acids and these are concentrated in
foods from animal sources. Chocolate and coconut also contain saturated
fatty acids. Another forty per cent of the fats in the American diet
are made up of the mono-unsaturated fatty acids, as found in olive oil and peanut oil. The polyunsaturated fatty acids which comprise much less of the average American diet come mainly from vegetable sources, such as corn oil, cottonseed oil and safflower oil (Wilson, 1966).

Hydrogenation

Hydrogenation is a process of hardening oil from plants and increasing the melting point of "soft" fats. In this process hydrogen enters the double-bond linkages of the unsaturated fatty acids to make them more saturated. Previously in the hydrogenation process, all the oil or fat was partially hydrogenated to increase the firmness. Today, because of the interest in unsaturated fat products, a processing method has been developed in which only a fraction of the oil is partially hydrogenated and then mixed with the other fat to obtain the desired consistency. This results in a greater amount of polyunsaturated fatty acids in the fat than by the old hydrogenation method (Anonymous, 1967).

Relationship of Fats to Health

In recent years there has been considerable interest in the relationship of fats to health. During World War II it was found that in the countries where the fat content of the diet was markedly reduced, the incidence of atherosclerosis was also greatly decreased. This is a disease in which the walls of the arteries thicken with deposits of fats and mineral salts. It is believed that this condition in man makes him more susceptible to heart attacks and strokes. The incidence of atherosclerosis is associated with high cholesterol levels in the blood.
Cholesterol is a white, waxy, fat-like substance which is synthesized by the body. It is found in eggs, butter, and other animal fats.

Cholesterol levels can be raised by the intake of more saturated fat in the diet. Factors such as lack of exercise, overeating, and stress decidedly affect the incidence of high blood pressure and heart disease. Total caloric value of the diet is also a factor. Life insurance figures show that people who are obese are more prone to develop diseased conditions of the heart and blood vessels (Bogert, 1966).

**Fat Deposits**

Moderate fat deposits in the human body may be advantageous. Some deposition of fat serves as a reserve store of fuel to be drawn on in time of need, to support organs and protect them from injury, and to prevent undue loss of heat from the body surface. But a person who overeats continues storing fat which he may never need to burn as body fuel. Such excessive fat deposits place undue strain on the heart and other vital organs. Insurance figures show that overweight persons have a lower life expectancy than those who maintain normal weight for their height and age (Bogert, 1966).

Obesity results when the energy intake exceeds the body's energy expenditure. Yet to attribute it to overeating per se is an oversimplification, for obesity may be a symptom having many causes. Practically every social and business function includes food and
beverage, usually of high caloric value. Those who refuse to eat at such functions are often looked upon as being antisocial. Probably most instances of obesity are accounted for by gradual reductions in basal metabolism, social and cultural patterns that encourage excessive food intake or psychologic or emotional problems.

The number of persons having metabolic defects which cause obesity is probably a very small percentage of the total obese population. Gradual reductions in basal metabolism and in voluntary activity occur throughout adult life, and to maintain weight there must also be a gradual reduction in calories ingested. A daily excess of only fifty calories will result in an annual weight gain of five pounds (Robinson, 1968). Our energy-saving devices only increase the problem of maintaining normal weight. For example a secretary who has been accustomed to typing on a manual typewriter five hours per day can conserve ninety calories by using an electric typewriter for five hours, and may add nearly ten pounds per year to her weight.

Obese boys and girls do not always eat more than their more slender counterparts, but research has shown that they are less active. Instead of becoming involved in the active sports, they are more apt to watch the others playing (Mayer, 1965).

Weight Reduction

People who are considerably overweight should always consult a physician for a reducing regimen. Those who are only 5 to 10 pounds overweight are constantly initiating self-prescribed programs of weight
loss, and many of them succeed. Many people, however, attempt a crash program and succeed only in gaining more weight as soon as they terminate the diet. Prolonged periods of starvation have been used on an experimental basis as a means of bringing about weight loss in the extremely obese. Weight losses can be dramatic, but they include not only adipose tissue but significant amounts of lean tissue. This method requires the constant supervision of a physician (Robinson, 1968). Neither the crash diets nor the starvation method help to retrain the appetite to a balanced program. Both reducing and weight control depend on everyday eating habits. If a person follows the Basic Four Food Guide and includes the number of servings recommended for each food group, the calories would total 1200 to 1300. He would be assured of including the nutrients necessary for health and should be able to lose weight at a satisfactory rate.

A moderate rate of weight loss, one to two pounds per week, is much more satisfactory than a crash program which may be nutritionally inadequate. Usually reducing diets for women range between 1200 and 1500 calories, and those for men may range between 1200 and 1800 calories. The meal plan of the diet should be adapted to the individual's likes and dislikes and to his pattern of eating as much as possible. The reducing diet should serve as the basis for the lifetime diet once the desirable weight has been achieved (Robinson, 1968).

Many people find that a liberal protein intake, 80 to 100 grams daily, and a lowered intake of carbohydrate provides a more satisfying diet with less feeling of hunger between meals (Wohl and Goodhart, 1968).
A food that is low to moderate in its caloric content can become high calorie with the addition of fats, sugars, sauces, cream or salad dressing. It is these "empty calories," refined sugars and fats that provide only calories without giving other nutrient values, which may make the difference between weight losing or weight gaining (Keys, 1963). The individual who has been accustomed to foods dressed with these high calorie additions needs to retrain his food tastes. Herbs, seasonings, and lemon juice help to lend variety to food preparation without increasing calories. An extreme restriction of fat is not suggested, but one should remember that it is a highly concentrated food.

**Exercise**

Too often in weight control the role of diet is emphasized while that of exercise is underestimated. Increasing the energy expenditure (exercise) by 100 calories has the same weight-losing effect as decreasing the diet by 100 calories. Exercise is beneficial in many ways as it improves muscle tone and gives a sense of well-being.

Losing weight is far easier than maintaining the weight loss. Many people go on diets with the thought of all the good things they can eat as soon as the dieting period is over. These people are forever on a see-saw of gaining-losing. Individuals trying to lose weight or those trying to maintain weight which they have lost, may find the following points practical:

1. Weigh on the same scale once a week. Take corrective measures immediately if the weight goes up 2-3 pounds.
2. Include in three regular, carefully planned meals daily the Basic Four Food Groups. Eliminate or significantly decrease the "empty calorie foods" (foods which supply a high amount of calories, but very few other essential nutrients).

3. Eat balanced meals at regular times; do not skip meals (other than perhaps supper); do not snack between meals; eat slowly for greater satisfaction; use smaller portions.

4. Be aware of how much you eat, do not try to fool yourself.

REFERENCES


Supplementary Reading Suggestions:


Circle the choice which best answers each question below:

1. The number of calories in one gram of fat is:
   a. 1 calorie
   b. 4 calories
   c. 9 calories
   d. 13 calories

2. The most essential fatty acid is:
   a. stearic acid
   b. linoleic acid
   c. palmitic acid
   d. oleic acid

3. One important function of fat is:
   a. provide a source of low calorie foods
   b. decrease satiety value of food
   c. provide nonessential fatty acids
   d. act as carriers of fat soluble vitamins

4. A polyunsaturated fatty acid has:
   a. no double bonds
   b. one double bond
   c. two or more double bonds
   d. all the hydrogen it can hold

5. A food containing a high amount of polyunsaturated fatty acid is:
   a. corn oil
   b. butter
   c. coconut oil
   d. beef

6. Blood cholesterol levels may be raised by:
   a. exercise
   b. eating more saturated fat
   c. following a less stressful life
   d. undereating

7. A daily excess of 50 calories will result in an annual weight gain of about:
   a. 1 pound
   b. 2 pounds
   c. 5 pounds
   d. 10 pounds

8. A satisfactory weight loss per week in pounds is:
   a. 1-2 pounds
   b. 3-4 pounds
   c. 5-6 pounds
   d. 7-8 pounds

9. A reducing diet that provides little feeling of hunger is:
   a. high in carbohydrate
   b. low in fat
   c. adequate in protein
   d. slightly restricted in carbohydrate

10. A good tip for effective weight reduction is:
    a. weigh every evening
    b. decrease empty calories
    c. eat all day
    d. use "calories don't count" diet
Bulletin Board Suggestion:

Effect of added fats and sugars on the caloric value of a dinner:

<table>
<thead>
<tr>
<th>Item</th>
<th>Calories</th>
<th>Total Calories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lettuce and tomato salad</td>
<td>20 +</td>
<td>120</td>
</tr>
<tr>
<td></td>
<td>mayonnaise, 1 tbsp.</td>
<td></td>
</tr>
<tr>
<td>Bread</td>
<td>60 +</td>
<td>110</td>
</tr>
<tr>
<td></td>
<td>butter, 1/2 tbsp.</td>
<td></td>
</tr>
<tr>
<td>Peas, 1/2 cup</td>
<td>55 +</td>
<td>105</td>
</tr>
<tr>
<td></td>
<td>butter, 1/2 tbsp.</td>
<td></td>
</tr>
<tr>
<td>Baked potato</td>
<td>100 +</td>
<td>150</td>
</tr>
<tr>
<td></td>
<td>butter, 1/2 tbsp.</td>
<td></td>
</tr>
<tr>
<td>Entree</td>
<td>200 +</td>
<td>250</td>
</tr>
<tr>
<td></td>
<td>gravy, 2 tbsp.</td>
<td></td>
</tr>
<tr>
<td>Skimmed milk</td>
<td>80</td>
<td>160</td>
</tr>
<tr>
<td></td>
<td>whole milk</td>
<td></td>
</tr>
<tr>
<td>Baked apple</td>
<td>100</td>
<td>350</td>
</tr>
<tr>
<td></td>
<td>apple pie       (1/6 of pie)</td>
<td>1245</td>
</tr>
</tbody>
</table>

Illustration 9. Caloric Comparison of Two Dinner Menus.
HOW TO DROP 100 CALORIES BY FOOD OR EXERCISE*

Food equivalent to 100 calories:

1 inch sector of angel cake (1/12 of 8 in. diam.)
1 3-inch diameter cooky
1/3 chocolate eclair
1 tablespoon butter or margarine
1 1/2 tablespoons of commercial mayonnaise
2 chocolate creams (35 to pound)
1/6 pint of chocolate ice cream
1 inch square of plain fudge

Food substitutions to drop 100 calories or more:

Replace high calorie food:                   With lower calorie food:

French fries (10 pieces, 197 calories)       1 baked potato (2 1/2 in. diam., 98 calories)
Macaroni and mayonnaise salad (1 cup 335 cal.) Fresh fruit salad (1 cup, 174 calories)
Ice cream with plain chocolate sauce (1/6 qt., 245 calories) 1 cup raw blueberries with 1 oz. table cream (141 calories)
Iced coffee cake (4 1/2 in. diam., 196 calories) 5 inch cantaloup (74 calories)

Exercise of 100 calories for 180 lb. person: (these are approximations)

Walking at 2.6 mph for 26 minutes.
Bicycling, moderate speed, 21 minutes.
Walking upstairs, 4.6 minutes.
Horseback riding, trot, 14 minutes.
Swimming, 10 minutes.

Illustration 10. One Hundred Calorie Equivalents in Food or Exercise.
* from Nutrition Notes, United Fresh Fruit and Vegetable Assn., Oct., 1963.
Suggestion for demonstration table centerpiece:

(1) 2 trays set up with the two meals outlined on page 144, one with 605 calories and one with 1245 calories.

or

(2) clean (shiny and new if possible) bathroom scales.

Demonstrate low calorie dinner menu to serve six:

Pepper Steaklets
Greek Style Green Beans
Garden Patch Salad with Cottage Cheese Dip
Peach Puff

Total calories per person  327
Total protein per person  32 grams
PEPPER STEAKLETS

1 cup water
1/4 cup garbanzos, dry
6 large gluten steaks
1/2 cup flake food yeast
2 tablespoons oil
1/3 large green pepper
1/3 large red pepper
1/2 package Lipton's dehydrated onion soup
2 teaspoons flour

Serves: 6

Per serving: 150 calories
19 gm protein
2.4 mg iron

Soak garbanzos overnight in the water. Drain and grind. Cut gluten steaks into 1/2-inch strips. Roll strips in flake yeast and then in garbanzos. Heat oil in a flat 6x9" casserole. Place steaks in one layer and sprinkle remaining yeast and garbanzos over top. Bake at 350° 30 minutes. Dissolve 1/2 package onion soup in 2 cups hot water. Slice peppers in lengthwise strips and add to liquid. Cover and let simmer 5 minutes. Mix flour with enough water to moisten well, add to boiling soup mix and stir until thickened. Pour over gluten steaks and return to oven for 15 minutes.

GREEK STYLE GREEN BEANS

1 pound fresh green beans, sliced French style
2 teaspoons oil
1 medium onion, chopped
1/2 cup tomatoes
1 tablespoon fresh dill, chopped; or 1 teaspoon dry dill
Salt

Serves: 6

Per serving: 50 calories
2 gm protein
.9 mg iron
648 I.U. vitamin A
18 mg vitamin C

Prepare green beans. Saute onions in oil. Add tomatoes and simmer 5 minutes. Add green beans, seasonings and a few tablespoons of water. Cover and cook on low heat until beans are tender.
GARDEN PATCH SALAD

1/2 cup raw cauliflower flowerets
3 zucchini, unpeeled cut in sticks
1/2 cup raw broccoli flowers
1 carrot cut in thin sticks
1 medium green pepper cut in lengthwise strips
2 medium tomatoes, cut in wedges

Cottage Cheese Dip:
1/2 cup cottage cheese
2 tablespoons milk
Seasoning such as Gravy Quik or onion dip.

Serves: 6

Per serving: 49 calories
5.7 gm protein
.9 mg iron

Arrange raw vegetables in contrasting colors on a large plate around a bowl of Cottage Cheese Dip.

Place cottage cheese in blender with milk and seasoning. Blend until smooth.

2188 I.U. vitamin A
53 mg vitamin C

PEACH PUFF

1/2 cup cold water
3/4 cup nonfat dry milk
3 tablespoons lemon juice
3 tablespoons sugar
1/8 teaspoon salt
1 teaspoon vanilla
1 cup fresh peaches, cut in small pieces
(Other fresh, dried or well-drained canned fruit may be used.)

Serves: 6

Per serving: 78 calories
5.5 gm protein
.2 mg iron

In cold quart bowl beat water and dry milk at high speed until mixture stands in soft peaks. Gradually beat in lemon juice, sugar, salt, and vanilla until mixture is stiff. Fold in peaches. Spoon into dessert dishes. Chill 30 minutes.

247 I.U. vitamin A
11 mg vitamin C
Suggested "chatter" to accompany recipes in Nutrients Up--Calories Down:

**Pepper steaklets**--You will enjoy this flavorful, colorful recipe for gluten steaks. Notice in the analysis of this recipe that there are only 150 calories per serving and 19 grams of protein. For a low-calorie entree, we would say this one has "all the trimmings," since it is served in its own gravy and needs no further garnishing than the colorful peppers.

**Greek style green beans**--In many countries vegetables are not merely poured into a bowl and served. They are well seasoned and garnished if a garnish is needed. This delightful recipe gives a different touch to fresh green beans which are delicious most any way they are served. Zucchini or immature pea pods are also delicious prepared this way. This recipe suggests dill as a seasoning. Do more experimenting with herbs in cooked vegetables. There are many herbs which will greatly enhance the flavor of vegetables if only a very small amount is added.

**Garden patch salad with dip**--The raw vegetables suggested in this recipe make a splash of color on the dinner table when arranged around the Cottage Cheese Dip. If someone in the family does not like some of the vegetables suggested here, then substitute others such as celery, turnips, red peppers, etc. Be sure to have it colorful and arrange the colors so that they contrast with one another. If you have never eaten cauliflower, broccoli or zucchini raw, don't be afraid to try them. The peppers left from the Pepper Steaklets could be used in this salad.
Peach puff—For such a delightful dessert to be so high in nutrients and so low in calories is somewhat unusual. When fresh peaches are not available, other fresh fruit, dried fruit or well-drained canned fruit can be used. This is dessert which is quick to prepare when company arrives unexpectedly and all the ingredients could be available on the pantry shelf if you make it with canned fruit. With this recipe "up your sleeve" you can be prepared for emergencies.
SECTION X

A WINNING SMILE
(Desserts and Dental Health)

Objectives: 1. To teach the important relationship between dietary habits and dental health.
2. To show that desserts can be nutritious and low in sugar content.
3. To explain the dental conditions of periodontal disease and dental caries.

American Diet

Brush your teeth after every meal and see the dentist twice a year. Is this all that is necessary for beautiful and healthy teeth? The teeth are the hardest tissues in the body and should last a lifetime, yet few people enjoy this degree of dental health. Often the attitude is, "My grandfather had dentures at the age of thirty-five, and so did my father, so I expect to have the same thing happen to me." Studies in animals and epidemiologic studies of various population groups support the theory that modifications of eating habits can influence dental health (Robinson, 1968).

The diet in this country is palatable and plentiful. Classical deficiency diseases are rare, but the dental diseases of dental caries and periodontal disease are becoming increasingly common. These are due not to inadequate nutrition, but to faulty eating habits. Periodontal disease leads to approximately the same amount of tooth loss as
caries (Anon., 1965). In a three year, nationwide sample survey of adults completed in 1962, it was estimated that 20 million of a total of 111 million Americans, or 18 of each 100, had lost all 32 permanent teeth. The proportion of toothless persons increased drastically with advancing age (Anon., 1966).

Desserts

Americans enjoy desserts so much that as a nation we annually consume more sweets than any other country in the world. In many countries of Europe, the favorite dessert is a beautiful piece of fresh fruit. Fruits are usually sweet enough, requiring little, if any, sugar. However, in this country prepared desserts are more popular, such as pie, cake, puddings or cookies.

Sugar consumption in the United States amounts to more than 100 pounds per person yearly, or about one-fourth pound each day. The annual candy bill is over a billion dollars and has increased 1000 percent in the last 65 years (Bogert et al., 1966). These concentrated sweets furnish energy in relatively inexpensive and readily digested form, but they are almost devoid of protein, minerals, and vitamins. Since sugar is such a one-sided food, furnishing only energy, there will be a shortage of the essential nutrients if it is allowed too prominent a place in the diet.

There is very little nutritional difference in the different kinds of sugars. Honey, brown sugar, raw sugar, and so-called natural sugar contain only small amounts of minerals; therefore, a differentiation between these and table sugar is unrealistic (Robinson, 1968).
The amount of sugar specified in dessert recipes is not always necessary for a satisfactory product. Extremely sweet desserts can become a habit. The sugar in the desserts covers the flavors of other ingredients, so that the only taste is extreme sweetness. In many dessert recipes the sugar content could be changed to one-half or less of the original amount specified, and still give good results. This is a way of retraining habits of taste to appreciate other flavors.

A successful dessert is one that completes the meal, but does not dominate it. A successful dessert should also make its contribution of nutrients. Serve your family beautiful fresh fruits such as strawberries, melons, pineapple, nectarines when they are in season. Apples, oranges and bananas are available the year around. An apple raw or baked can be just as desirable a treat as a serving of apple pie.

**Dental Caries**

Dental caries is recognized as an irreversible disease caused by a specific group of bacteria, the cariogenic streptococci. These bacteria act upon specific carbohydrates. The most highly cariogenic carbohydrate is sucrose, ordinary table sugar. Starch has very low cariogenicity and produces very little or no decay in experimental animals and in man (Massler, 1968).

During the tooth developmental period, the diet should be well balanced and should include foods from all the Basic Four Food Groups. The same diet needed for the general health of the body is required for optimum oral health (Burton, 1965).
**Detergent Foods.** Tooth decay can be reduced by altering the diet to include more detergent foods and less sticky, tooth-adhering carbohydrates; by reducing the time the teeth are exposed to carbohydrates, especially sugar; and by a suitable program of tooth cleansing and regular attention by a dentist (Shaw, 1961).

Dentists refer to the crisp, crunchy or juicy foods as detergent because they help to remove other food particles from the teeth. Detergent foods would include celery, carrots, radishes, raw cabbage, cantaloup, other melons, citrus fruits, pears, fresh pineapple, peaches, lettuce, fresh strawberries, tomatoes, raw cauliflower and others (White, 1961).

**Frequency of Eating.** A study done in Tennessee on preschool children showed a direct and consistent relationship between high amounts of caries and the frequency of eating between meals items of high sugar content, or high degree of adhesiveness, (Weiss and Trithart, 1960). This was confirmed by Steinman (1964), who found that children with a higher caries index tend to eat between meals more frequently than those with less decay. In the classic Vipeholm study in Sweden (Gustaffson, 1954), it was found in human subjects that bread containing 50 gm of sugar eaten once a day produced no caries increase, but when this amount was distributed over four meals, a definite increase of caries resulted.

**Whole Grains.** Steinman (1964), in a study of two hundred and seventy-eight children found that those who had no decay ate less frequently of white bread and packaged cold cereal. They also ate
more frequently of whole grain cereals than those who had decay. This is in harmony with the work of Schoenthal and Brodsky (1933).

Periodontal Disease

Periodontal disease does not receive as much publicity as dental caries. The word periodontal means literally "around the tooth." This disease condition comes on without pain, slowly and insidiously affecting the tissues and membranes around the teeth. It is a collective range of problems starting with inflammation of the gums and progressing to resorption of the bone and loss of teeth (Arnold, 1964). Upon examination the dentist can diagnose and treat this condition if it has not gone beyond the irreversible stage. This is a very important reason to see the dentist regularly.

In the United States 67 million adults suffer from this disease (Savara, 1968), and 65 per cent of those 75 years of age are edentulous (without teeth) primarily from the ravages of periodontal disease. Age, however, is not necessarily a prime factor in itself, but rather it is the length of time that the disease process has been active (Stallard, 1967).

Anything that irritates the gums, weakens their resistance to infection or places unusual stress on the supporting structures of the teeth, helps periodontal disease to develop. Among such causes are poor oral hygiene permitting collection of food at the gum margins, bad alignment of teeth, loss of teeth, and nervous habits such as clenching, clamping or grinding the teeth. Prevention of periodontal
disease is more important than cure, because prevention is still the only known completely successful treatment. Once the disease has progressed beyond simple gingivitis, lost tissue cannot be completely restored (Arnold, 1964).

Oral tissues may act as the first indicators of a poor state of nutrition. The modern diet tends to be overcooked, soft, sticky, and designed for a nation with ill-fitting dentures. Even though a diet is adequate from the nutritional point of view, soft diets can lead to periodontal disease. Much of this condition could be prevented if people would eat foods which require chewing (Anon., 1965). These, of course, are largely fresh fruits and vegetables and some protein foods. Calculus is generally accepted as the most important factor in the cause of periodontal disease. Calculus begins as a soft, non-calci- fied plaque which adheres to the teeth just below the gum margins, and it undergoes progressive calcification which causes irritation of the gums (Kreshover, 1967). In animals, diets of a fine physical consistency with a relatively high caloric content precipitated calculus deposition in a short time. Cleaning and scaling the teeth and a change to a hard, tough diet caused significant reductions in the gingival pocket bacteria (Driezen, 1963).

**Good Health Rules**

The following rules are offered as a summation for dental health, as well as general health:
1. Eat three well-balanced meals per day, including the recommended servings from the Basic Four Food Groups with nothing between meals.

2. Include in every meal a detergent food and a crisp, chewy food, preferably at the end of the meal.

3. Use a minimum intake of sugars, honey, etc.

4. Use mainly whole grain cereals and breads.

REFERENCES


Name

DENTAL AND DESSERTS

Circle the choice which best answers each question below:

1. Concentrated sweets such as sugar, and honey are called one-sided foods because they furnish only:
   a. protein
   b. minerals
   c. calories
   d. vitamins

2. Causes of periodontal disease could be all the following except:
   a. bad alignment of teeth
   b. nervous habits such as clenching the teeth
   c. too many raw fruits and vegetables
   d. poor oral hygiene

3. The most highly cariogenic carbohydrate is:
   a. sucrose
   b. lactose
   c. dextrin
   d. starch

4. The sugar consumption per person per year in the U.S. is approximately:
   a. 10 pounds
   b. 25 pounds
   c. 50 pounds
   d. 100 pounds

5. All the following are characteristic of a successful dessert except:
   a. completes the meal without dominating it
   b. makes its contribution of nutrients
   c. has sugar for the dominant flavor
   d. is relatively low in calories

6. The dentist recommends for dessert:
   a. apple pie
   b. ice cream
   c. chocolate cake
   d. fresh fruit

7. When sugar is eaten at one meal and compared with the same amount of sugar distributed over four meals, the incidence of caries is:
   a. greater
   b. less
   c. equal
   d. none of these

8. A good health rule to prevent dental caries is to:
   a. snack frequently
   b. use all honey and no sugar
   c. eat more soft foods
   d. use more whole grain breads and cereals

9. The factor generally accepted as the most important in the development of periodontal disease is:
   a. too much coarse food
   b. calculus formation
   c. lack of thiamine
   d. too frequent brushing of teeth

10. A good detergent food is:
    a. milk
    b. cream of wheat
    c. carrots
    d. pudding
Suggestions for visual aids:

From the School of Public Health
Health Education Media
Loma Linda University

you may order slides or plastic models which may be used in
the discussion of Dental Caries and Periodontal Disease.

Suggestion for centerpiece for the demonstration table:

A bowl or tray of beautifully polished assorted fresh fruit.

OR: If a very small barrel or basket shaped like a bushel basket is
available, it could be filled with different varieties of polished
apples, especially attractive with contrasting colors such as red
delicious and golden delicious.

Demonstrate:

German Apple Torte
Prune Tarts
Apricot Scallop
Fruit Medley
GERMAN APPLE TORTE

Cut apples into thin slices. Beat the egg; add all other ingredients and mix thoroughly. Put apple slices in mixture and let stand two hours. Place in pastry-lined pan. Sprinkle top with chopped almonds and bake at 375° for 30 minutes.

Pastry-lined cake or pie pan
1 pound apples
1 egg
4 tablespoons sugar
1/2 teaspoon cinnamon
1/2 cup milk
2 tablespoons melted margarine
1 tablespoon lemon juice
4 tablespoons chopped almonds

Serves: 6-8
2 teaspoons of sugar per serving

Per serving: 266 calories
2 grams protein
.7 mg iron
PRUNE TARTS

1 cup all-purpose flour
1 cup whole wheat flour
1/2 cup sugar
1 1/2 teaspoons baking powder
1/2 teaspoon salt
3/4 cup soft margarine
1 egg
1/2 cup creamed cottage cheese
(small curd)
1 teaspoon grated lemon rind

Prune Filling

Mix together flour, sugar, baking powder and salt. Make a well in the center and add margarine, egg, cottage cheese and lemon rind. Blend ingredients together, then knead dough about 2 or 3 minutes on lightly floured board. Shape into a ball. Wrap in waxed paper and chill 1 hour. Cut dough in half and roll each portion to 1/8 inch thickness on lightly floured board. Cut with a round 3-inch cookie cutter. Place 1 level teaspoon of Prune Filling in center of each round. Pinch 3 edges of the dough together to form a slight seam or ridge, but leave a small opening in the center. Bake at 350° for 15-20 minutes or until delicately browned on top.

Prune Filling:
1 cup pitted, finely chopped prunes
1/3 cup sugar
1/2 cup orange juice
1/4 teaspoon grated lemon rind
1/2 teaspoon cinnamon
1/4 cup finely sliced toasted almonds, pecans or walnuts

Combine prunes, sugar, orange juice and lemon rind in small saucepan. Simmer, uncovered, over low heat until prunes are soft and liquid has evaporated--about 12-15 minutes, stirring occasionally. When cool, stir in cinnamon and almonds.

Makes: 33 tarts
1-1/5 teaspoons sugar per serving

Per serving: 108 calories
2 gm protein
.5 mg iron
APRICOT SCALLOP

3/4 cup water
2 cups dried apricots
1/4 cup brown sugar
2 tablespoons flour
6 tablespoons nonfat dry milk
1/2 teaspoon cinnamon
3 tablespoons margarine
2 tablespoons water

Cook apricots in the water 15 minutes, and cool. Combine brown sugar, flour, nonfat dry milk and cinnamon. Add margarine. Cut in with pastry blender to make crumbs. Alternate layers of apricots with layers of crumbs (finishing with crumbs) in a 1-quart casserole. Sprinkle the water on top. Bake at 350° F. until lightly browned, about 30 minutes. Serve plain or with whipped topping.

Serves: 6
2 teaspoons sugar per serving

Per serving: 131 calories
2.7 gm protein
1.6 mg iron

FRUIT MEDLEY

1 cup sour cream
1 cup pineapple tidbits
1 cup diced pears
1 cup mandarin oranges
1 cup unsweetened coconut

Drain well all canned fruits. Combine all ingredients, tossing lightly. Serve in sherbet dishes and garnish with toasted coconut.

Serves: 6
Approximately 1 teaspoon sugar per serving

Per serving: 195 calories
1.9 gm protein
.5 mg iron
Suggested "chatter" to accompany recipes for The Winning Smile.

**German apple torte**--For a different type of apple pie try this German torte. In Europe it is almost impossible to buy a pie pan as we use. They use a torte pan which is much like our cake pans. Notice in this apple pie recipe that only 4 tablespoons of sugar are listed. Most apple pies list one cup of sugar, so do not expect it to be as sweet as the usual pie. As it bakes the almonds form a thin crust on top which gives a delightful appearance and different from either the two-crust pie or the streusel topping.

**Apricot scallop**--This is a dessert which can be put together in a short time. Notice that the crumbs are enriched with nonfat dry milk which increases the protein content. Other dried, well-drained canned, or fresh fruits could be substituted for part or all of the apricots. This is very good served warm from the oven.

**Prune tarts**--Doesn't this recipe sound interesting with the cottage cheese in it? This is an example of how desserts may add nutrients to the meal. They can contain ingredients other than just flour, sugar, and fat. This originally was a Jewish recipe with an unpronounceable name. It is quite attractive as an addition to an assortment of desserts. Actually it is an easy way to make filled cookies.

**Fruit medley**--This delightful sweet-sour flavor combination is a real quickie. All these ingredients could be on the pantry shelf for the emergency of unexpected visitors, but don't save it for only those times.
It is a recipe which can be enjoyed often. No sugar is added in the recipe but we must realize that the canned fruits will contain some sugar. Made from fresh fruits, it would be even more delicious.
### KEY TO TESTS

**Menu Planning, p.42**

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**Grains and School Lunches, p.106**

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**Purchasing, p.61**

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**Fruits-Vegetables, p.127**

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**Breakfast, p.74**

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**Fats and Reducing, p.143**

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**Protein, p.93**

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**Dental and Desserts, p.159**

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CHAPTER V

FINDINGS AND DISCUSSION

Manual Development and Nutrition Topics

A manual was developed for use in Community Nutrition Education classes. Section I gave details of organization, preplanning, assistants, class schedule and curriculum. Section II discussed the food demonstration including the demonstrator and techniques. Section III through X included eight nutrition topics which were written in a non-technical, informal style for an audience who has had little previous training in nutrition.

To determine if this manual was useable for its purpose, an evaluation was conducted as described in detail in Chapter III.

Evaluation

Evaluation tools. In evaluation, three of the eight topics were each tested before three different audiences by a different teacher-demonstrator in each case. The lecture-demonstrations were evaluated by the audience as the differential score between pre-tests and post-tests of audience knowledge, by the teacher-demonstrators on a check sheet, and by the advisory committee on evaluation sheets which consisted of both checklists and completion questions on observations of the lecture demonstrations.

Audience evaluation. The three audiences were (1) largely retirement age homemakers, (2) negro homemakers of varying ages, and (3) a
group of men and women of mixed ages. It is appropriate to suggest that these three audience groups were representative in some sense, although these were not randomly selected. It is reasonable to expect that the conclusions drawn in this study would carry over to similar groups. There appear to be some differences in the scores which could be attributed to the difference in effectiveness of the lecturers, or to differences between groups.

Each audience was pre-tested and post-tested regarding the lecture-demonstration, and the differential scores were calculated. The scores are shown in Table 4. On the analysis of the audience test scores, we can say specifically for these three audiences and for these nine particular lecturers, that most differential test figures showed a significant increase in nutrition knowledge. Exceptions were Protein, Group I, and Fruit and Vegetables, Group I; and these two figures changed in the right direction. It should be noted that Group I is a small group consisting of an average of eight individuals. A larger sampling from these two audiences might have shown the differences to be significant.

Pre-scores would not measure the lecturer, but would be a measure of the knowledge of the audience. Breakfast pre-scores were significantly different ($P<.1$). Fruit-Vegetable pre-scores were also significantly different ($P<.05$). Apparently these values demonstrated differences between groups.
TABLE 4. MEAN AUDIENCE TEST SCORES WITH 95% CONFIDENCE INTERVALS

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<td>Group II</td>
<td>3.94±1.07</td>
<td>7.18± .99</td>
<td>3.24± .96</td>
</tr>
<tr>
<td>Group III</td>
<td>4.08± .73</td>
<td>7.53± .68</td>
<td>3.44± .66</td>
</tr>
<tr>
<td><strong>Breakfast</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group I</td>
<td>6.86±1.18</td>
<td>8.71±1.15</td>
<td>1.86±1.09</td>
</tr>
<tr>
<td>Group II</td>
<td>5.12± .76</td>
<td>6.94± .74</td>
<td>1.82± .70</td>
</tr>
<tr>
<td>Group III</td>
<td>5.69± .78</td>
<td>6.75± .76</td>
<td>1.06± .72</td>
</tr>
<tr>
<td><strong>Fruit-Vegetable</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group I</td>
<td>7.56±1.34</td>
<td>7.89±1.18</td>
<td>.33±1.16</td>
</tr>
<tr>
<td>Group II</td>
<td>5.39± .94</td>
<td>6.89± .83</td>
<td>1.50± .82</td>
</tr>
<tr>
<td>Group III</td>
<td>5.68± .85</td>
<td>7.59± .75</td>
<td>1.91± .74</td>
</tr>
</tbody>
</table>
To appreciate these increases in the post-tests, the differences can be expressed in terms of standard deviation. This was done in Table 5.

**TABLE 5. MEAN INCREASES OF TEST SCORES EXPRESSED IN STANDARD DEVIATIONS**

<table>
<thead>
<tr>
<th></th>
<th>Protein</th>
<th>Breakfast</th>
<th>Fruit-Vegetable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Deviation</td>
<td>2.20</td>
<td>1.54</td>
<td>1.97</td>
</tr>
<tr>
<td>Group I</td>
<td>.57</td>
<td>1.21</td>
<td>.17</td>
</tr>
<tr>
<td>Group II</td>
<td>1.47</td>
<td>1.18</td>
<td>.76</td>
</tr>
<tr>
<td>Group III</td>
<td>1.56</td>
<td>.69</td>
<td>.97</td>
</tr>
</tbody>
</table>

These results may be interpreted by referring to a normal distribution table. For example in Protein, Group I, there is an increase of .57 standard deviation which would correspond to 71st percentile on the pre-test, and Protein, Group II score of 1.47 would correspond to the 93rd percentile score. The mean increases were approximately one standard deviation with a high of 1.56 and a low of .17.

It is conceivable that the order in which these topics were presented made a difference in the post-scores. By the time of the second lecture, the audience would have been conditioned to expect the post-test to be the same as the pre-test. However, the post-test scores did not show that they were affected in this manner.

**Teacher-demonstrator evaluation.** The teacher-demonstrators indicated that the material was interesting, well organized, easy to
outline, and helped to give them confidence and hold the attention of the audience. Several stated that there should be more chatter given for use with the recipe demonstrations. This chatter was added to the untested topics as well as to those which were tested. (See Table 6).

The introductory paragraph in the topic "The Wake Up Meal" was judged by at least one of the teacher-demonstrators as being too "grim." The following was suggested as an alternate for the first paragraph:

Remember when you were "just married?" As you looked forward to the wedding and to becoming a homemaker, you chose the china, silverware, and necessary items for the kitchen with great care. Did you also plan the first menus with as much inspiration and care? The first breakfast which you served should have been a masterpiece, and, of course, the bride and cook looked fresh, well coiffured and ready to serve this delicious meal. Now, a few years later, is the breakfast given as much importance in the menu planning? Is it the meal for which your family enjoys awakening?

Committee evaluation. The committee agreed that the teacher-demonstrators followed the instructional material, and held the attention of the audience in most cases. They also agreed that for untrained personnel, their demonstration techniques were acceptable. It was urged that the teacher-demonstrator should read the entire manual before presenting any topic. One or two of the teacher-demonstrators lectured too long without use of visual aids or recipe demonstrations to add interest to the talk. (See Table 7)
TABLE 6. SUMMARY OF DEMONSTRATOR EVALUATIONS

Legend:  # Protein  
  x Breakfast  
  * Fruits and Vegetables

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>#</td>
<td>xx</td>
<td></td>
<td></td>
<td>#</td>
<td>#</td>
</tr>
<tr>
<td>x</td>
<td>xx</td>
<td></td>
<td></td>
<td>x</td>
<td>**</td>
</tr>
<tr>
<td>**</td>
<td>*</td>
<td></td>
<td></td>
<td>#</td>
<td>#</td>
</tr>
<tr>
<td>#</td>
<td>xx</td>
<td></td>
<td></td>
<td>*</td>
<td>**</td>
</tr>
<tr>
<td>x</td>
<td>xx</td>
<td></td>
<td></td>
<td>**</td>
<td></td>
</tr>
<tr>
<td>*</td>
<td>**</td>
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<td>#</td>
<td>***</td>
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<tr>
<td>#</td>
<td>xx</td>
<td></td>
<td></td>
<td>**</td>
<td></td>
</tr>
<tr>
<td>xx</td>
<td>x</td>
<td></td>
<td></td>
<td>#</td>
<td>#</td>
</tr>
<tr>
<td>**</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The lesson was interesting.

The organization of the material could be improved.

The lesson was easy for me to outline.

My previous ideas on nutrition were not the same as some in this lesson.

Many facts presented in the lesson were new to me.

The lesson helped to give me confidence in the presentation before my audience.

The lecture held the attention of the audience.

There was not enough background information given for the ideas expressed.

Much of the material was already familiar to me.

Demonstration of the recipes did not hold the attention of the audience.

There should be more information given to use for "chatter" during the recipe demonstration.

The lesson enabled me to answer the questions asked by the audience.

The supplementary reading suggestions were helpful in my preparation.
TABLE 7. SUMMARY OF COMMITTEE EVALUATIONS

Legend: # Protein
* Breakfast
* Fruit and Vegetables

<table>
<thead>
<tr>
<th></th>
<th>hesitant</th>
<th>surprised</th>
<th>confused</th>
<th>cooperative</th>
<th>eager</th>
</tr>
</thead>
<tbody>
<tr>
<td>The reaction of the audience to the pre-test was</td>
<td></td>
<td></td>
<td></td>
<td>#</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>xxxxxx</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>#</td>
<td></td>
</tr>
<tr>
<td>The demonstrator followed the instructional material.</td>
<td>#</td>
<td>#</td>
<td>#</td>
<td>#</td>
<td></td>
</tr>
<tr>
<td></td>
<td>x</td>
<td>xx</td>
<td>xxx</td>
<td>#</td>
<td>#</td>
</tr>
<tr>
<td></td>
<td>*</td>
<td>**</td>
<td>**</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>There was information given which might be misunderstood.</td>
<td>#</td>
<td>#</td>
<td>#</td>
<td>#</td>
<td>#</td>
</tr>
<tr>
<td></td>
<td>xx</td>
<td>**</td>
<td>**</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>#</td>
<td>#</td>
<td>#</td>
<td>#</td>
<td>#</td>
</tr>
<tr>
<td>The presentation was nutritionally accurate.</td>
<td>#</td>
<td>#</td>
<td>#</td>
<td>#</td>
<td></td>
</tr>
<tr>
<td></td>
<td>**</td>
<td>x</td>
<td>xxxxx</td>
<td>#</td>
<td>#</td>
</tr>
<tr>
<td>The demonstrator held the attention of the audience well.</td>
<td>#</td>
<td>#</td>
<td>#</td>
<td>#</td>
<td>#</td>
</tr>
<tr>
<td></td>
<td>*</td>
<td>xx</td>
<td>***</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>The demonstration techniques were acceptable.</td>
<td>#</td>
<td>#</td>
<td>#</td>
<td>#</td>
<td>#</td>
</tr>
<tr>
<td></td>
<td>x</td>
<td>xxxxx</td>
<td>x</td>
<td>***</td>
<td>***</td>
</tr>
<tr>
<td>The samples were attractive.</td>
<td>#</td>
<td>#</td>
<td>#</td>
<td>#</td>
<td>#</td>
</tr>
<tr>
<td></td>
<td>xx</td>
<td>***</td>
<td>x</td>
<td>***</td>
<td>***</td>
</tr>
<tr>
<td>There was a smooth transition from one recipe to another.</td>
<td>#</td>
<td>#</td>
<td>#</td>
<td>#</td>
<td>#</td>
</tr>
<tr>
<td></td>
<td>*</td>
<td>xx</td>
<td>***</td>
<td>#</td>
<td>#</td>
</tr>
<tr>
<td>The samples were tasty.</td>
<td>#</td>
<td>#</td>
<td>#</td>
<td>#</td>
<td>#</td>
</tr>
<tr>
<td></td>
<td>xx</td>
<td>***</td>
<td>#</td>
<td>#</td>
<td>#</td>
</tr>
</tbody>
</table>
There was general agreement that there were smooth transitions from one recipe to another and that the recipe samples seemed to be uniformly successful in the hands of the various demonstrators. It was felt that recipe handouts should always be given to the audience before any recipe demonstration was begun. This would enable the audience to know what was being done and to make notes on their personal copies of the recipes.

For the most part the information presented was nutritionally accurate. There were some statements such as: "eat a larger quantity of incomplete proteins to get enough protein," "there are no B vitamins in white bread," and "potassium is the same as vitamin K." This seems to be the hazard with non-professional personnel who have only a small amount of training and limited knowledge of the subject. It is hoped that the benefit from their teaching will outweigh the minor errors which they may introduce. The teacher-demonstrators were instructed that when they could not answer the audience questions from the material which they had studied, they should offer to mail the information to the questioner if she would leave her name and address. As long as they followed these instructions, they had less difficulty with the giving of information which was nutritionally inaccurate.

It was felt that there would be two additions made to Section II, "The Food Demonstrator" under section (g) on demonstration techniques: Do not measure ingredients while holding over other ingredients. In technique 15 on eggs, add: Break each egg into a small dish and inspect it before adding it to the other ingredients.
Another committee suggestion was to use as a visual aid or a handout the list of seasonings for use in entrees which was given in "The Heart of the Meal." Whenever there was a long list of things to discuss, it would have been better to use a visual aid or blackboard to clarify the points.

For Section III, "The Wake Up Meal," it was suggested that the demonstrator have a box of sugar-coated cereal with sugar listed first in the ingredients, and another box of cereal with sugar listed second as it usually is. It was suggested that the recipe for apricot sauce be cut in half because of the expense of dried apricots, and the cost compared with the same amount of preserves. Several questions were asked from the audience about substituting canned apricots in preparing the sauce. It could be explained that if canned apricots are used, it would probably be advisable to add some lemon juice to bring out more tartness. The recipe did not indicate when the sugar should be added. It would read as amended:

APRICOT SAUCE

1/2 pound dried apricots
1 cup water
2-3 tablespoons sugar
1/3-1/2 cup pineapple juice

Makes: 2 cups sauce

Bring to boil and slowly simmer the dried apricots and water. Remove from heat. Add sugar and mash with potato masher until of desired consistency while slowly adding pineapple juice. Delicious on toast, waffles, or pancakes. Use in place of jelly, jam or other concentrated sweets.

Cost of apricot sauce: 65¢
Analysis: 1/3 c. serving=131 cal.
2.0 grams protein
2.0 mg iron
2661 I.U. vitamin A
6 mg vitamin C

Cost of 1 pint of preserves: 50¢
Analysis: 1/3 c. serving=250 cal.
.1 gram protein
.1 mg iron
trace vitamin A
1 mg vitamin C
There were suggested changes for a recipe in Section VI. This amended recipe would be:

**TROPICAL SALAD**

2 tablespoons lemon juice
1/4 cup mayonnaise
1/2 cup crushed pineapple, drained
1 cup diced frozen chicken-style soyameat
1/3 cup toasted, slivered almonds
1/2 cup mandarin oranges, drained (optional)

Mix together lemon juice, mayonnaise and drained pineapple. Add all other ingredients and toss lightly. Serve in lettuce cups. Garnish with pimiento strips.

Serves: 4

Per serving: 267 calories
5.8 gm protein
1.6 mg iron
80 I.U. vitamin A
6 mg vitamin C

There seemed to be considerable interest by the audience in the tests on each topic. The committee felt that the tests could be used as a teaching tool and suggested that tests be written for each topic. Tests have been added to the five topics for which they were not originally prepared.

On the basis of the evaluation it appeared that the three topics studied could be used to advantage by non-professional personnel in improving community nutrition education.
CHAPTER VI

SUMMARY

A manual was developed for use in nutrition education by non-professional personnel. Instructions and suggestions were given for organizing Community Nutrition Education classes and techniques were outlined for food demonstrations. Discussions on eight nutrition topics were written in non-technical language which could be understood by the average homemaker. Tests were written on each topic to be used as a teaching aid. Recipes appropriate for each topic were included with suggestions for "chatter" to be used during the recipe demonstrations and each recipe was analyzed for appropriate nutrients.

An evaluation of this manual was conducted by testing three of the eight nutrition topics. These three topics were presented before three separate audiences by nine different volunteer teacher-demonstrators. The audiences were pre-tested and post-tested and the calculation of differences in their scores showed a significant increase in nutrition knowledge. The mean increases in scores represented one standard deviation.

The teacher-demonstrators completed an evaluation blank which gave their opinions on the material they studied and presented. They all indicated that the material was interesting, well organized, easy to outline, and helped to give them confidence and hold the attention of the audience.
At each lecture-demonstration two members of the Research Advisory Committee evaluated the presentation. There was agreement that the teacher-demonstrators followed the instructional material, held the attention of the audience and that for untrained personnel, their demonstration techniques were acceptable.

On the basis of the evaluation it appeared that the three topics studied could be used to advantage by non-professional personnel in improving community nutrition education.
LIST OF REFERENCES CITED


APPENDIX I

DEMONSTRATOR EVALUATION: Lesson Topic

Please evaluate the lesson which was given as the assignment on the above mentioned topic. Make a check in the appropriate column expressing your views. Make other comments or suggestions below or on the reverse side.

The lesson was interesting.

The organization of the material could be improved.

The lesson was easy for me to outline.

My previous ideas on nutrition were not the same as some in this lesson.

Many facts presented in the lesson were new to me.

The lesson helped to give me confidence in the presentation before my audience.

The lecture held the attention of the audience.

There was not enough background information given for the ideas expressed.

Much of the material was already familiar to me.

Demonstration of the recipes did not hold the attention of the audience.

There should be more information given to use for "chatter" during the recipe demonstration.

The lesson enabled me to answer the questions asked by the audience.

The supplementary reading suggestions were helpful in my preparation.

In which aspects do you feel this lesson needed improvement:

In which aspects do you feel this lesson excelled:
APPENDIX II
COMMITTEE EVALUATION

Topic

1. The reaction of the audience to the pre-test was:

/ / / / / / / / / / /
hesitant surprised confused cooperative eager
They seemed to have difficulty understanding the questions.
They needed to ask questions.

2. Comments made by the demonstrator concerning the material were:

3. The audience asked questions during the demonstration.

/ / / / / / / / / / / /
never seldom often very often
Type of questions?

4. The demonstrator presented most of the factual material separate from the recipe demonstration.

The demonstrator gave a short introduction and then used most of the material during the recipe demonstration.

5. The demonstrator followed the instructional material.

/ / / / / / / / / / / /
very well well fairly well poorly very poorly
She (he) did ad libbing.
She (he) had personal ideas and comments to add.

6. There was information given which might be misunderstood.

/ / / / / / / / / / / /
very much much some little very little
What was the information?

7. The presentation was nutritionally accurate.

/ / / / / / / / / / / /
strongly disagree disagree undecided agree strongly agree
8. The demonstrator held the attention of the audience well.
   / strongly disagree disagree undecided agree strongly agree

9. The demonstration techniques were acceptable.
   / strongly disagree disagree undecided agree strongly agree

10. The samples were attractive.
    / strongly disagree disagree undecided agree strongly agree

11. There was a smooth transition from one recipe demonstration to another.
    / strongly disagree disagree undecided agree strongly agree

12. The samples were tasty.
    / strongly disagree disagree undecided agree strongly agree
LOMA LINDA UNIVERSITY
Graduate School

THE DEVELOPMENT AND EVALUATION OF A MANUAL FOR USE IN COMMUNITY NUTRITION EDUCATION CLASSES

by
Helen H. Register

An Abstract of a Thesis in Partial Fulfillment of the Requirements for the Degree of Master of Science in the Field of Dietetics

June 1969
ABSTRACT

A manual was prepared and evaluated for use by non-professional personnel in community nutrition education. Instruction and suggestions were given for organizing these classes and techniques outlined for food demonstrations. Material was written for lectures and tests on eight nutrition topics, with visual aid suggestions, recipes and "chatter" to accompany the recipes.

The material was tested by presenting three of the eight topics before audiences. Volunteer non-professional teacher-demonstrators gave the presentations which were evaluated by test scores from the audiences, by score forms from each teacher-demonstrator, and by evaluation sheets from the advisory committee.

On the basis of the evaluation, it appeared that the three topics studied could be used to advantage by non-professional personnel in improving community nutrition education.