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Assessment of the Nutrition Knowledge and Nutrition Practices of Crisis Pregnancy Center Clients

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SENIOR THESIS APPROVAL

This Honors thesis entitled

Assessment of the Nutrition Knowledge and Nutrition Practices of Crisis Pregnancy Center Clients

written by

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Introduction

Nutrition affects people's health. People often suffer illnesses and premature death that are largely due to poor dietary choices. Some people are aware that they are eating foods that are harmful and others eat poorly out of ignorance. Pregnancy is a time during the lifecycle when nutritional intake is of particular importance. Good choices can promote health and prevent major health problems or even death for the mother and the baby.

Many people are unaware of the benefits or consequences caused by the food they eat. Particularly low-income people may not be exposed to nutrition education. Many young people are not concerned with learning about health or they do not care. Since pregnancy is a significant time nutritionally for the mother and the child, pregnant women should be educated about nutrition. In this study, I have researched the nutrition knowledge of clients at Crisis Pregnancy Centers and have developed educational materials for these people.

Review of Literature

According to the Journal of Extension, nutritionists' expectations of nutrition education changing the diets of pregnant teens may be too high. A study conducted by the University of Georgia Cooperative Extension Service showed that although significant improvement was seen in pre-and post-education knowledge, that pre-and post-education 24-hour diet recalls did not show significant dietary improvement, although they did find that they were successful in influencing the teens to gain adequate weight during their pregnancies (Alley, McCloud-Harrison, Peisher, and Rafter 2). The authors of this article state that it is not surprising that these teenagers are not changing

their eating habits when their knowledge of nutrition is increasing because, they say, not all dietitians put their knowledge into practice (Alley, McCloud-Harrison, Peisher, and Rafter 5).

These authors refer to a study that says that there are four stages involved in behavior change and that teenagers who underwent the nutrition education only were carried through the first stage. The four stages are precontemplation, contemplation, action, and maintenance. The authors stated that low-income teens may take longer than the duration of the pregnancy to complete these stages. Another possibility that dietary changes are not being made as knowledge increases is that teenagers may not have control over what they eat. Parents or other family members might shop and make all the food choices for the family. Teenagers also need support of family members and peers if they are going to embrace habits that vary from the mainstream. Lacking this support may be one factor that hinders adoption of healthy eating habits after knowledge has increased.

The Journal of Extension article on the "Development and Evaluation of Activity-Oriented Nutrition Classes for Pregnant and Parenting Teens" points out that nutritionally for most teenagers, this time in their lives is when levels of dieting, skipping meals, consuming fast foods, and practicing other bad dietary habits, and that nutrients needed the most during pregnancy such as calcium and iron are the ones that are lacking in their diets (Owen, Kendall, and Wilken 1). The study described in this article involved requiring Women, Infants, and Children (WIC) participants to attend nutrition education classes as part of their WIC check pick up appointment every three months out of the year. This study involved pre-and post-knowledge questionnaires and 24-hour diet

recalls that reflected an increase in knowledge, yet there were no changes seen in the dietary intakes of the participants.

The Journal of Family and Consumer Sciences article "Nutrition: A Major Role in Healthy Babies of Teen Parents" states that during adolescence, nutritional requirements are already high, however, during pregnancy these nutritional requirements are even higher. Nutrition plays a major role in prevention of infant mortality. Adequate weight gain lowers the risk of low birth weight infants. This adequate weight gain is an area of concern for pregnant teens who are at a time in their lives when they are susceptible to poor food choices, fad dieting, and eating disorders (Brech 33).

Nutrition before and during pregnancy is significant to the outcome of the pregnancy. The developing baby requires a vast array of nutrients and if the mother is not getting enough of these nutrients in her diet, the baby will take them from her maternal stores. Studies show that nutrition has an impact on a child's development and ability to learn. An issue of *PTA Today* reported that not only is nutrition an important factor of pregnancy outcomes, but it also impacts a child's performance in school. The article stated that "undernutririon causes stunting, lethargy, and other symptoms" (22, 23).

The Food Guide Pyramid is a good nutrition model for pregnant women to follow. Pregnant women need about three hundred extra calories per day than non-pregnant women for the growth of the baby, placenta, and other maternal tissues. This extra calorie requirement does not start until the second trimester, with the exception of women who begin their pregnancies underweight (Hess and Hunt 103). Pregnant teenagers in particular need to get adequate energy and nutrients because if the baby is lacking in a

nutrient, the baby will take the nutrient from the mother, which can be particularly hazardous to the growing and developing teenager.

Carbohydrates are the best sources of energy. There are four calories in each gram. Whole wheat breads, rice, cereal, and pasta are healthy foods that are abundant in carbohydrates. Many people are under the misconception that adherence to calorie restricted diets are a harmless way to loose or keep off weight. Low calorie diets can be harmful to one's health (particularly to the kidneys), but extremely detrimental to the unborn child. Glucose, the form of energy from carbohydrates, is instrumental in the development of the human nervous system (Hess and Hunt 104, 105). One type of carbohydrate that is particularly important during pregnancy is fiber. Fiber helps prevent constipation and hemorrhoids. Dietary fiber is recommended over fiber supplements. Foods containing bran, whole wheat cereals and breads, and plenty of fruits and vegetables supply the diet with fiber. Increasing fiber intake should be approached carefully. Water intake should always be increased with fiber or else the fiber will cause more constipation rather than reduce the problem. Too much fiber in a person's diet can hinder the absorption of nutrients. Limited carbohydrate intake during pregnancy can cause discomfort for the mother and significant problems for the developing child.

Protein requirements are also increased during pregnancy. Protein provides four calories of energy for each gram. The protein Recommend Dietary Allowance (RDA) for pregnant women is 60 grams per day. Protein is composed of amino acids, which are known as "building blocks of protein" and are combined to make cells such as muscle tissue, ligaments, hair, and blood (Hess and Hunt 95, 96). Amino acids combine in different ways to form complexes needed for bones and brain tissue. Protein is also used

in the growth of the placenta and uterus and required for the maternal blood supply, which should expand to transport oxygen for maternal and fetal tissues (Hess and Hunt 96). Protein is particularly important for tissue growth and repair.

Fat is the most calorie-dense energy source at nine calories per gram. Sufficient fat intake is important during pregnancy. Fat's primary function during pregnancy and lactation is protection of mom and baby. Fat protects the baby before birth, during labor and delivery. Fat in the mother's breasts protects the mammary glands. Hess and Hunt stated that a layer of insulating fat under the mother's skin keeps her and her baby warm in cold weather and protects them both from injuries (114). In the absence of enough calories (particularly from carbohydrates), dietary or body fat can be used for energy, however, this kind of energy cannot be used by the brain or nerves. Fat intake should not be restricted during pregnancy in an effort to not gain weight. Proper amounts of fat can contribute to a healthier pregnancy. Once again, we see the importance of adequate weight gain during pregnancy.

The presence or absence of vitamins and minerals plays a key role in pregnancy outcomes. Folic acid is an important vitamin during pregnancy. Folic acid is required for cell division, and is consequently imparitive during the early stages of pregnancy. The first four weeks of pregnancy is the most critical time to consume folic acid to prevent neural tube defects such as spina bifida and anencephaly. These birth defects cause major problems: "Babies with anencephaly die before or shortly after birth, whereas most babies born with spina bifida grow to adulthood with paralysis of the lower limbs and varying degrees of bowel and bladder incontinence" (Worthington-Roberts and Williams 88,89). The American Dietetics Association has indicated that abnormal folate

metabolism may play a role in Down syndrome, as well as neural tube defects (Kaiser and Allen 9).

The New York Academy of Sciences Conference in 1992 concluded that vitamin B6 plays a role in brain development of the baby before and after birth. A. Kirksey of West Lafayette, IN noted observations of epidemic proportions in infants who had commercial milk that lacked vitamin B6. These infants displayed neurological impairment "expressed as high-pitched shrill cries," hyperirritability, abnormal EEG patterns and "generalized convulsive seizures (Gerster 60)."

Vitamin B12 also plays a role in the process of cell division. Cases of the deficiency are rare, although women who are at high risk of this deficiency are strict vegetarians (Worthington-Roberts and Williams 92).

Riboflavin is also beneficial during pregnancy. Riboflavin is used for growth and building maternal and fetal tissues and it promotes good vision and healthy skin (Hess and Hunt 135). This vitamin helps the body convert carbohydrates, proteins, and fats into usable energy for the body. Niacin works with thiamin and riboflavin as part of the reactions that produce energy for the body, with requirements related to caloric intake. Since calorie requirements increase during pregnancy, the need for riboflavin, niacin, and thiamin also increase during pregnancy.

Minerals play a significant role in pregnancy outcomes. The calcium RDA during pregnancy is 1200 mg. Calcium is particularly important during the third trimester of pregnancy because the baby uses it in the formation of bones and teeth. The baby will draw calcium from the maternal supply, so if the mother is not getting enough calcium for the baby and herself, her body will suffer a calcium deficiency. Inadequate intake of

calcium is particularly important for women who plan to breastfeed their babies. The nursing mother needs a strong supply of calcium for her milk.

Iron is another critical mineral during the last trimester of pregnancy. During pregnancy, iron is used in the formation of maternal and fetal blood cells. Throughout the pregnancy the mother's blood volume rises, which causes an increased need for iron in the mother's body. Adequate levels of iron can make the delivery of the baby easier for the mother than if she did not have enough iron. An iron deficiency can cause the delivering mother's heart to work harder in order to maintain the necessary amount of oxygen to the fetal and placental cells. Pica, a condition where a pregnant woman experiences intense cravings for nonfood items, is associated with iron deficiencies. Women who suffer from pica crave items such as dirt, erasers, paint, mothballs, ice, laundry starch, and tire rubber. Since these items are nonfood substances, constipation poisoning, and other problems can be caused by pica.

Phosphorous works hand in hand with calcium and the two minerals share the same RDA of 1200mg. Phosphorous is available in foods and deficiency is rare. Zinc is important during pregnancy because it functions in developing organs, skeleton, and internal systems such as nerves and circulation (Hess and Hunt 184, 185). Zinc is also important in the formation of Deoxyribonucleic Acid (DNA) and Ribonucleic Acid (RNA), giving the mineral a significant factor in reproduction (Worthington-Roberts and Williams 99).

Water is the most abundant nutrient and is essential to human life. Water helps regulate temperature, transport nutrients, and serves as a solvent for vitamins, minerals, amino acids, and other small molecules within the body. Water acts as a lubricant and

cushion around joints and inside eyes, spinal cord, and in pregnancy, it composes the amniotic fluid in the sac that surrounds the baby (Whitney and Rolfes 387). Pregnant women need to consume at least the RDA of 8 glasses of water per day.

Below is a listing of amounts of nutrients pregnant women need per day compared to non-pregnant women:

Table 1

Recommended Dietary Allowances for Women of Reproductive Age

Nutrients	Age 11–14	15–18	19–24	25–50	Pregnancy
Energy (kcal)	2,200	2,200	2,200	2,200	+300*
Protein (g)	46	48	46	50	60
Vitamin A (μg RE)	800	800	800	800	800
Vitamin D (μg)	10	10	10	5	10
Vitamin E (mg α-TE)	8	8	8	8	10
Vitamin C (mg)	50	60	60	60	70
Folate (μg)	150	180	180	180	400
Niacin (mg NE)	15	15	15	15	17
Riboflavin (mg)	1.3	1.3	1.3	1.3	1.6
Thiamin (mg)	1.1	1.1	1.1	1.1	1.5
Vitamin B_6 (mg)	1.4	1.5	1.6	1.6	2.2
Vitamin B_{12} (μg)	2.0	2.0	2.0	2.0	2.2
Calcium (mg)	1,200	1,200	1,200	800	1,200
Phosphorus (mg)	1,200	1,200	1,200	800	1,200
Iodine (μg)	150	150	150	150	175
Iron (mg)	15	15	15	15	30
Magnesium (mg)	280	300	280	280	320
Zinc (mg)	12	12	12	12	15
Selenium (μg)	45	50	55	55	65

*Second and third trimesters

From Food and Nutrition Board, National Council, National Academy of Sciences. 1989. *Recommended Dietary Allowances*, 10th ed. Washington, DC: National Academy Press.

Methods

The first step in my research was to create a survey to send out to crisis pregnancy center clients. On my survey, I asked demographic questions to find out what kind of economic status the client had. Understanding the economic status of the people filling out my survey helped me to make an educated guess of what kind of food was available to the client, regardless of how much or little the client knows about healthful food choices. The next few questions of my survey dealt with nutrition practice. I found out

whether or not the client was taking any vitamin or mineral supplements, how the client's meals were prepared, how often and where the client ate outside of the home each week. I also asked some questions trying to detect any possible eating disorders. The next set of questions was designed to find out how much the clients knew about basic nutrition or what kind of fad diets they regarded seriously.

I initially sent thirty surveys to three centers in different parts of the country in May. I wanted to see if there were any trends in the nutrition knowledge and habits of the clients of a particular geographic area. I mailed sets of thirty surveys to crisis pregnancy centers in Houston, Texas, Hot Springs, Arkansas, Colorado Springs, Colorado, Cincinnati, Ohio, and Bowie, Maryland. By the end of August, I had very poor success. I had a total of four surveys from Texas, none from Maryland, and twenty-five surveys from Hot Springs had gotten lost in the mail on the way to Arkadelphia. I had to get online and find more pregnancy centers and mail out more surveys. By the end of October, I finally had received enough surveys to analyze.

After I obtained my surveys, I entered the results into Microsoft Excel and looked for percentages and patterns. For instance, I found that many of the people who filled out my surveys were on Women, Infants, and Children so I contacted WIC to learn more about their program.

Results and Discussion

The results I found were in some ways congruent with what I expected and other results surprised me with unexpected findings. The best nutritional status was in the location I predicted. At least one client reported skipping meals due to a lack of money. The results were informative, reaffirming, and eye-opening.

I had thirty-one surveys returned to me. I was surprised to find that the overwhelming majority of the pregnancy center clients who filled out my survey were adults. The average age of the people was twenty-two and only three were under eighteen.

Survey respondents were not well educated. Sixteen percent of the women had completed some high school. However, there was one client in Colorado and two clients in Texas who were over eighteen and had not completed high school.

The majority of those surveyed, or fifty-five percent reported that they had completed high school. (The creditability of these clients may be questionable – one of the respondents who claimed to have graduated from high school was fifteen.) The percentage of people who reported being older than eighteen and not having completed any college was seventy-six percent, or thirteen out of seventeen. Four of these thirteen people were twenty-five or older. Forty-one percent of the people in this survey were eighteen or over and had a high school education. The site in Texas had the highest average age (twenty-four). Seven of the eight people who reported having only a high school education were over eighteen. Seven of the people (twenty-three percent) surveyed had completed some college. Four of these seven are over twenty-four. Only two people out of the thirty-one people surveyed report having graduated from college. Both people who stated they have graduated from college are from the Ohio pregnancy center.

The majority of the people reported that they needed governmental financial assistance to cover the expenses of food. Twenty of the thirty-one surveys (sixty-five percent) indicated that the person receives food and nutrition assistance. Fourteen people

(forty-five percent) reported being on WIC. Two people (six percent) reported being on Food Stamps. Another five people answered "yes" that they receive food and nutrition assistance, but failed to specify what kind of help they get.

I asked some questions to see if this was the clients' first pregnancy. I had several motives for asking these questions. One reason I asked about other pregnancies was to find out more about the client's economic status and another reason was to find out how the woman's nutritional needs may be at risk from the demands of back-to-back pregnancies. Sixteen people responded yes to the question "Is this your first pregnancy?" and fourteen people answered no. The average reported previous pregnancies were 1.4 per client who answered yes, although seven of the fourteen women reported having one prior pregnancy. Three women answered simply no, and did not put any other information on how old the child was or the outcome of the pregnancy. Four women reported having had one miscarriage and one reported having had an abortion, but did not (and were not asked) to report how long ago the pregnancies that did not result in a live birth had taken place. Of the surveys in Colorado, all four participants reported that they had had previous pregnancies reporting a total of nine, in Maryland one of five reported a previous pregnancy, but did not elaborate on which pregnancy she was on. In Ohio two of eight participants reported two previous pregnancies and in Texas seven of fourteen reported nine. The average number of children per client reporting previous pregnancies was 2.5 for Colorado, no information for Maryland, 0.25 for Ohio, and 1.29 for Colorado. This data showed that Colorado is completely concentrated in this area, there are far more previous pregnancies in Colorado than there are in any of the other states. Colorado is the state with the fewest surveys and Texas is the state with the most surveys (Texas has

over three times more surveys than Colorado) and the two states reported an equal number of previous pregnancies. In most cases, malnutrition due to back-to-back pregnancies did not appear to be a problem. Most of the clients who already had other children had spaced them at least two years. There were only two that appeared to be at risk. One client had a nine-month-old and was perhaps pregnant again (because she was at the pregnancy center) and another client who again may or may not have been pregnant already had a one and a two-year-old. This woman would be at risk from the pregnancies, but particularly if she had breast-fed any or all of these children. Although I make the generalization that there do not appear to be too many closely spaced pregnancies, I should mention again that those reporting previous miscarriages or abortions did not indicate how long ago those pregnancies took place.

Table 2 - Basic Client Profiles

Place	Age	Education Completed	Dependent/Independent	Employment	Annual Income	Food Assista
Texas	24	64% High School	57% Dependent	21% Employed	57% Less than $20,000	64% W
Colorado	24	50% High School	75% Independent	50% Employed	25% Less than $20,000, 25% $20,000-$30,000, 25%$31,000-$40,000, 25% No Indication	0%
Ohio	19	38% High School	63% Independent	37% Employed	63% Less than $20,000	100% Primar WIC
Maryland	20	80% High School	60% Dependent	60% Employed	60% less than $20,000	60% Primar WIC

The combined average for the nutrition knowledge section of the survey was 77%. There were some questions that the vast majority of the clients answered wrong. The first question in this part of the survey was one that was missed often, and unfortunately covered a very basic tenant of the American Dietetics Association. "Most of the food one consumes should be carbohydrates" was the question whose answer is true and 65% people answered incorrectly. Another question that many people missed was the question that stated "Three servings of fruits and vegetables per day is adequate in a nutritious diet." The answer to this question is false, but 77% responded true. More than a quarter (29%) of the survey participants answered true to the question that stated "Sodium (salt) is a *prominent* part of a balanced diet." This finding is disturbing because diets that are high in sodium cause high blood pressure. Another question that many people answered incorrectly was the one that stated, "Milk contains carbohydrates." The answer is yes, however 71% answered no. This was not a problem that concerned me very much because I asked that question out of curiosity to see how many people knew that piece of nutrition trivia.

A high percentage of clients (97%) correctly answered true to the question "Calcium is particularly important in a woman's diet." If these women are acting on this knowledge then they are on the road to good health. The clients surveyed correctly indicated that cooking methods have an effect on the nutritional value of the food. The overwhelming majority of the survey participants also understood that white bread and whole wheat bread have unequal nutritional value and that there is a difference in the fat content between skim and whole milk. I was also pleased to find that 93% of the clients

correctly answered false to the statement that "Weight is a matter of looks, being under or overweight has no effect on a person's body."

Table 3 – Percentage of Correct Responses

Question	Percentage of Right Answers
Most of the food one consumes should be carbohydrates (True).	35%
Frozen (pre-cooked) food has equal nutritional value of food cooked from scratch (False).	78%
Three servings of fruits and vegetables per day is adequate in a nutritious diet (False).	23%
Calcium is particularly important in a woman's diet (True)	97%
Cooking methods (roasting, baking, broiling, frying, boiling, or steaming) has no effect on the nutritional value of the final product (False).	93%
White bread has equal nutritive value as whole wheat bread (False).	93%
There is not much difference in fat content of whole and skim milk (False).	93%
Meat is a good source of Protein (True).	94%
Milk is a good source of calcium (True)	100%
Sodium (salt) is a *prominent* part of a balanced diet (False).	71%
Weight is a matter of looks, being under or overweight has n effect on a person's body (False).	93%
Variety in foods eaten	93%

contributes to the over-all health of a person (True).	
It is ok to skip breakfast as long as one eats a good lunch (False).	97%
Milk contains carbohydrate (True).	29%

The majority of the Texas center's clients had only high school education and were dependents. Most were unemployed, made less than $20,000 per year, and were on WIC. The average age of this center's clients was 24.43. These women scored an average of 74% on the survey. Below are the statistics on the Texas clients:

Table 4 - Clients' Completed Education

Some High School	14%
High School	64%
Some College	21%
College	0%
Graduate School	0%

Table 5 - Dependent or Independent

Dependent	57%
Independent	43%

Table 6 - Clients' Employment Status

Employed	21%
Unemployed	79%

Table 7 - Clients' Annual Income

Less than $20,000	57%
$20,000-$30,000	7%
$31,000-$40,000	7%
$41,000-$50,000	7%
More than $50,000	0 %
No Indication	21%

Table 8 - Food Assistance

Yes	64%
No	0%
No Indication	36%

Most of the Colorado Pregnancy Center's clients had completed high school, were not dependent, half were employed and none were on any kind of food assistance. This center's clients average age was 23.75 and these women averaged an 81% on the survey. Below is a breakdown of their statistics.

Table 9 - Clients' Completed Education

Some High School	25%
High School	50%
Some College	25%
College	0 %
Graduate School	0 %

Table 10 - Dependent or Independent

Dependent	25%
Independent	75%

Table 11 - Clients' Employment Status

Employed	50%
Unemployed	50%

Table 12 - Clients' Annual Income

Less than $20,000	25%
$20,000-$30,000	25%
$31,000-$40,000	25%
$41,000-$50,000	0 %
More than $50,000	0%
No Indication	25%

Table 13- Food Assistance

Yes	64%
No	0%
No Indication	36%

The average age of the Ohio clients was 19.88. There was more of a variety in educational categories in this group than in the other categories. Thirty-eight percent of the women had completed only high school. Ohio had the largest percentage (37%) of clients who had some degree of education beyond high school. Most of these women were dependent as well as employed. Most of these women made under $20,000 and all of them were on some form of food assistance. Below are the results of the Ohio clients' surveys:

Table 14- Clients' Completed Education

Some High School	25%
High School	38%
Some College	12%
College	25%
Graduate School	0 %

Table 15 - Dependent or Independent

Dependent	25%
Independent	62%
No Indication	13%

Table 16- Clients' Employment Status

Employed	37%
Unemployed	63%

Table 17 - Clients' Annual Income

Less than $20,000	63%
$20,000-$30,000	12%
$31,000-$40,000	0 %
$41,000-$50,000	0 %
More than $50,000	0 %
No Indication	25%

Table 18 - Food Assistance

Yes	100%
No	0 %

Most of the Maryland clients had completed high school and most indicated that they were dependent. More than half of these clients were employed and made less than $20,000 annually. The majority of these survey participants reported that they were on some kind of food assistance. Overall this group of clients and at 83% had the highest education of all the other groups. Below are the statistics from the Maryland participants:

Table 19 - Clients' Completed Education

Some High School	0%
High School	80%
Some College	20%
College	0%
Graduate School	0%

Table 20 - Dependent or Independent

Dependent	20%
Independent	60%
No Indication	20%

Table 21 - Clients' Employment Status

Employed	60%
Unemployed	40%

Table 22 - Clients' Annual Income

Less than $20,000	60%
$20,000-$30,000	20%
$31,000-$40,000	0%
$41,000-$50,000	0%
More than $50,000	0%
No Indication	20%

Table 23 - Food Assistance

Yes	60%
No	40 %

Application

While conducting my research, the importance of proper nutrition habits during pregnancy was integrated into my mind. I gathered useful information about the nutrition knowledge of Crisis Pregnancy Center clients and other pregnant teenagers. There is a tremendous need for nutrition education. I believe that public schools should emphasize nutrition education as part of their curriculum. Dietitians and dietetics students should frequently visit schools and give information. One goal in nutrition education should be to make eating right "cool." By nature, if children and teenagers feel that a particular habit would make them different, they are less likely to start the habit. If attitudes about nutrition could be shaped from a young age, life long habits may be formed. Also if positive nutrition habits begin at a young age, life long habits may be formed. If positive nutrition habits begin at a young age and are carried throughout adulthood, then people will be healthier and costs of medical treatments due to problems that could be prevented by good nutrition practice would be reduced. Stressing the importance of eating right would be a worthy and profitable goal for educators and the US government.

It is my hope that in the near future more people, pregnant women and others will learn about nutrition and begin to practice a healthier lifestyle.

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APPENDIX A

Survey of Nutritional Intake and Knowledge

The information in this survey is confidential. Please DO NOT include your name.

1. Age

2. Please indicate the highest level of education you have completed:
    a. Some High School
    b. High School
    c. Some College
    d. College
    e. Graduate School

3. Are you a dependent?
    a. Yes
    b. No

4. Are you currently employed?
    a. Yes
    b. No

If yes, what is your job?

5. What is your approximate annual income?
    a. Less than $20,000
    b. $20,000-$30,000
    c. $31,000-$40,000
    d. $41,000-$50,000
    e. More than $50,000

6. Do you receive any food and nutrition assistance such as WIC or Food Stamps?
    a. Yes
    b. No

If yes, please indicate what kind (WIC, Food Stamps…)

7. Is this your first pregnancy?
    a. Yes
    b. No

If no, how many other children do you have and what are their ages?

8. Are you currently taking any vitamin and or mineral supplements?
    a. Yes
    b. No

If yes, what are you taking and has it been prescribed by a doctor?

9. Who prepares most of the meals that are cooked in your home (Yourself, mother, spouse, roommate)?

10. About how many meals do you eat outside of the home per week?

11. Where do you typically eat when you eat outside of the home?

12. Do you know how to cook?
    a. Yes
    b. No

13. Do you typically skip meals?
    a. Yes
    b. No

If yes, please indicate which meal/meals you skip:
    a. Breakfast
    b. Lunch
    c. Dinner

What is the typical reason for skipping this/these meals?

Please list the foods you eat on a *typical* day:

Do you feel that you are currently eating nutritionally?

Please circle "T" for true and "F" for false:

14. T F Most of the food one consumes should be carbohydrates.

15. T F Frozen (pre-cooked) food has equal nutritional value of food cooked from Scratch.

16. T F Three servings of fruits and vegetables per day is adequate in a nutritious diet.

17. T F Calcium is particularly important in a woman's diet.

18. T F Cooking methods (roasting, baking, broiling frying, boiling, or steaming) have no effect on the final product.

19. T F White bread has equal nutritive value as whole wheat bread.

20. T F There is not much difference in fat content of whole and skim milk.

21. T F Meat is a good source of protein.

22. T F Milk is a good source of calcium

23. T F Sodium (salt) is a *prominent* part of a balanced diet.

24. T F Weight is a matter of looks, being under or overweight has no effect on a person's body.

25. T F Variety in foods eaten contributes to the over-all health of a person.

26. T F It is OK to skip breakfast as long as one eats a good lunch.

27. T F Milk contains carbohydrate.

Thank you for your participation in this survey. The information gained in it will be used for a study on nutrition intake and knowledge of pregnancy center clients and for the production of educational materials for the centers' use.

APPENDIX B

Nutrition for a Lifetime!

The human body relies on food for growth and fuel to perform its necessary functions. If we did not have food the human race would die off rather quickly and if a sudden disaster struck and all that was left to eat was corn then people would get sick and not experience optimal health. People need a variety of foods and the right proportions of the different types of foods in order to grow and be healthy.

Many sickness or malfunctions in the body are caused by a shortage or lack of a vitamin or mineral that is normally supplied to the body by the food that a person eats. Many foods are rich in these nutrients, but if the person does not eat foods that supply these nutrients then the person may develop poor health. Some genetic diseases can be prevented or their onset delayed several years by the person having a nutritious diet and adequate exercise.

Pregnancy is a time when women should pay particular attention to their eating habits. The presence and amounts of certain nutrients in the mother's body during pregnancy can make a difference in her health and in the baby's health. What a mother eats during this time can determine the health of the child and prevent some defects that can cause the baby to die before or shortly after birth.

A nutrient is a chemical substance that is used by the body for growth, reproduction, and maintenance of health. Nutrients are present in foods, powders, and pills. There are six essential nutrients. Essential in this context means that the human body does not produce the nutrient or sufficient quantities of the nutrient, so it needs to be
supplied by food or nutritional supplements. The essential nutrients include carbohydrates, lipids, proteins vitamins, minerals, and water.

Carbohydrates provide the body with energy. Carbohydrates include grain products such as bread, cereal, pasta, and rice. Carbohydrates are also present in dairy products in the form of lactose. Fruits also contain carbohydrates.

Carbohydrates are very important during pregnancy. The job of "baby building" and growth of accessory tissues such as the placenta requires much energy. Glucose is needed in the development of the human nervous system. Carbohydrate-based foods are rich in vitamins and minerals.

Many people are under the misconception that low-carbohydrate diets are a harmless way to lose weight or to keep from gaining weight. This type of diet can harm the mother's health, but should absolutely never be tried when she is pregnant at the risk of depriving the baby of the glucose that he so desperately needs. Carbohydrates also supply the body with fiber, which also has advantages for the expectant mother. Calorie requirements for pregnant women are 2,500 per day as opposed to 2,200 per day for non-pregnant women.

Lipids are the nutrients that are made up of fat or fat-related compounds. Fats, oils, waxes, and other related compounds compose this group. The triglyceride is the main form of fat in food.

Fat serves as a protection for the mother and baby. The insulating fat protects the baby during the second and third trimesters and also during labor and delivery. Fat in the mother's breasts protect her mammary glands for milk production. A layer of insulating fat under the mother's skin keeps her and her baby warm in cold weather in addition to these other roles. In the absence of sufficient calories (particularly from carbohydrates), dietary or body fat can be used for energy .This kind of energy is not ideal for the developing baby because it cannot be used by the brain or the nerves which are still developing. Fat intake should not be restricted during pregnancy in an attempt to keep from gaining weight. Proper amounts of fat can lead to a healthier pregnancy.

Protein is a nutrient that is necessary for tissue growth and repair. Proteins also have other functions in the body. In addition to being used for structural purposes, they signal hormones (there are more than thirty hormones involved in pregnancy), they transport molecules through certain barriers, and they serve as enzymes. The best sources of protein are meat, poultry, fish, eggs, nuts, and dry beans, or peas. Vegetarians should take special care to eat plenty of dry beans, peas, or nuts to ensure adequate protein intake.

Pregnancy is a time when mothers-to-be need to consume extra protein (a total of 60 grams per day is recommended). Protein is composed of complex amino acids that are combined to make cells such as muscle tissue, ligaments, hair, and blood. Amino acids also combine in different ways to form complexes needed for bones and brain tissue. Protein is also required in the growth of the placenta and the uterus.

Vitamins are organic compounds that start and sustain many biochemical reactions in the body. (Vitamins do not provide energy.) These nutrients are abundant in fruits and vegetables as well as animal sources. The best source of vitamins for the body is food.

Pregnant women often take prenatal supplements which provide these nutrients, however no one, especially pregnant women should start a supplementation routine without consulting a doctor or a dietitian. The consequences of a self-prescribed vitamin routine could be deadly. Just as a lack of nutrients can cause harm to a body, an excess of nutrients can also hurt a person.

One of the most important vitamins during pregnancy is folic acid (also called folate). Folic acid (along with Vitamin B12) is involved in cell division. The first four weeks of pregnancy (before most women are aware of their pregnancy) are when the baby's spinal cord is developing. If these vitamins are not present when cells divide then neural tube defects such as spina bifida and anencephaly can occur. These birth defects cause serious problems: Babies with anencephaly die before or shortly after birth, whereas babies with spina bifida grow into adulthood with paralysis of the lower limbs and varying degrees of bladder incontinence. To reduce the incidence of these tragic

defects, the Public Health Service recommends that all women of childbearing age who are capable of becoming pregnant should take 0.4 milligrams of folic acid per day. The American Dietetic Association's website reports that there is some research that indicates that "abnormal folate metabolism may also playa role in Down's syndrome. .." Green leafy vegetables, broccoli, and legumes (dry beans), orange juice, and potatoes are excellent sources of folate.

Vitamin B6 is used during pregnancy for the development of fetal brain and nerve tissue. The vitamin also helps in protein and fat absorption and in energy production. Thiamin is an invaluable vitamin during pregnancy because it is necessary for the breakdown of carbohydrates in the body before the mother's or the baby's body can use them. Riboflavin is also beneficial during pregnancy. Riboflavin is used for the growth and building of maternal and fetal tissues and it promotes good vision and healthy skin. This vitamin helps the body convert carbohydrates, proteins and fats into usable energy for the body. Niacin works with thiamin and riboflavin as part of the reactions that produce energy in the body, with requirements related to caloric intake. Since calorie needs increase during pregnancy, the need for these three vitamins also increases during pregnancy.

Vitamin C is essential to the functioning of all cells and in the formation of bones, teeth, and blood vessels. Vitamin C is also needed for the formation of collagen, which holds skin and bones together- sometimes called "cell cement."

The fat-soluble vitamins are A,D,E, and K. Excess amounts of vitamin A can cause major birth defects, in which many cases have a deadly outcome. Vitamin D is responsible for calcium balance during pregnancy. Vitamin D plays an essential role in cell structure and maintenance. Vitamin E is an antioxidant. As an antioxidant, Vitamin E protects vitamins A and C and fats from destruction in the body by oxygen. Vitamin E also helps form normal red blood cells, muscle cells, and other tissues. Little is known about the needs for Vitamin K during pregnancy.

Minerals are inorganic elements that playa role in the metabolic actions and serve as structural components in body tissues, such as calcium in the bones. Calcium is a very important mineral during pregnancy. Calcium is needed for the baby because it is used in bone and teeth formation and contributes to bone health. The baby takes calcium from the maternal blood stream and if the mother is not providing enough in her blood, the baby will begin to get the mineral from the maternal stores. The mother needs calcium for her own health and if she is planning on breastfeeding her baby, she needs to be building up a store for the milk she will need to produce. The baby's calcium needs will be met first and if anyone suffers, it will be the mother. The Recommended Dietary Allowances (RDA) for pregnant women is 1,200 milligrams per day. Adherence to the RDA during the last trimester is particularly important because that is when the baby acquires most of its calcium. Calcium is abundant in milk, cheese, whole grains, dry beans, nuts, and green leafy vegetables.

Iron is another critical mineral during the last trimester of pregnancy. During

pregnancy iron is used in the formation of maternal and fetal red blood cells. During pregnancy, the mother's blood volume rises, which causes an increased need for iron in the mother's body. Adequate levels of iron can make the delivery of the baby easier for the mother than if she did not have enough iron. A lack of iron can cause a delivering mother's heart to have to work harder in order to maintain the right amount of oxygen needed for the fetal and placental cells. Pica, a condition where the mother experiences intense cravings for nonfood items, is associated with iron deficiencies. Women who suffer from pica crave items such as dirt, erasers, paint, mothballs, ice, laundry starch, and tire rubber. These items are not intended for human consumption and can have a harmful effect on the mother and baby. Pregnant women should follow their doctor's advice on iron supplementation.

Phosphorous works hand in hand with calcium and the two minerals share the same RDA for pregnancy. Phosphorous is widely available in foods and deficiency is rare. Zinc is important during pregnancy because it plays a large role in developing organs, skeleton, and internal systems such as nerves and circulation. Zinc is also important in the formation of DNA and RNA, giving the mineral a significant factor in reproduction. People get most of their zinc from animal foods.

Water is the most abundant nutrient. Ninety-eight percent of the human body is composed of water. Water is essential to human life. Water helps regulate body temperature, transport nutrients, and serves as a solvent for minerals, vitamins, amino acids, and other small molecules. It acts as a lubricant and cushion around joints and inside eyes, spinal cord, and in pregnancy it composes the amniotic fluid in the sac that surrounds the baby. The RDA for water is at least 8 cups per day. Most foods and vegetables contain up to 90 percent water and many meats and cheeses are composed of at least 50 percent water.

Variety truly is the key to healthy eating. If I were to list the foods that provided each nutrient, there would be tremendous overlapping. If a person's diet consists of the following foods and the person were to practice variety in fruits and vegetables eaten (not only consuming three bananas for one day's fruit) that person would not lack any of the nutrients mentioned above: Whole grains, barley, brown rice, pasta, leafy green and yellow vegetables, legumes (dry beans), garbanzo beans, milk, cheese, yogurt, liver, fish, turkey, poultry, (lean) meat, nuts, seeds, citrus fruit juices, and a wide variety of fruits and vegetables.

Food Guide Pyramids

All the nutrients are essential to human life. Each nutrient is needed in varying amounts. For example, a person who was trying to eat nutritionally would not eat as much fat as they do carbohydrates. Food scientists have devised a very useful and easy tool to help people get the correct proportions of nutrients that their bodies need. This tool is the Food Guide Pyramid. There is one standard pyramid, however, there are variations that reflect populations with specific nutritional needs such as the Food Guide Pyramid for the Elderly Population and one for pregnant or lactating women.

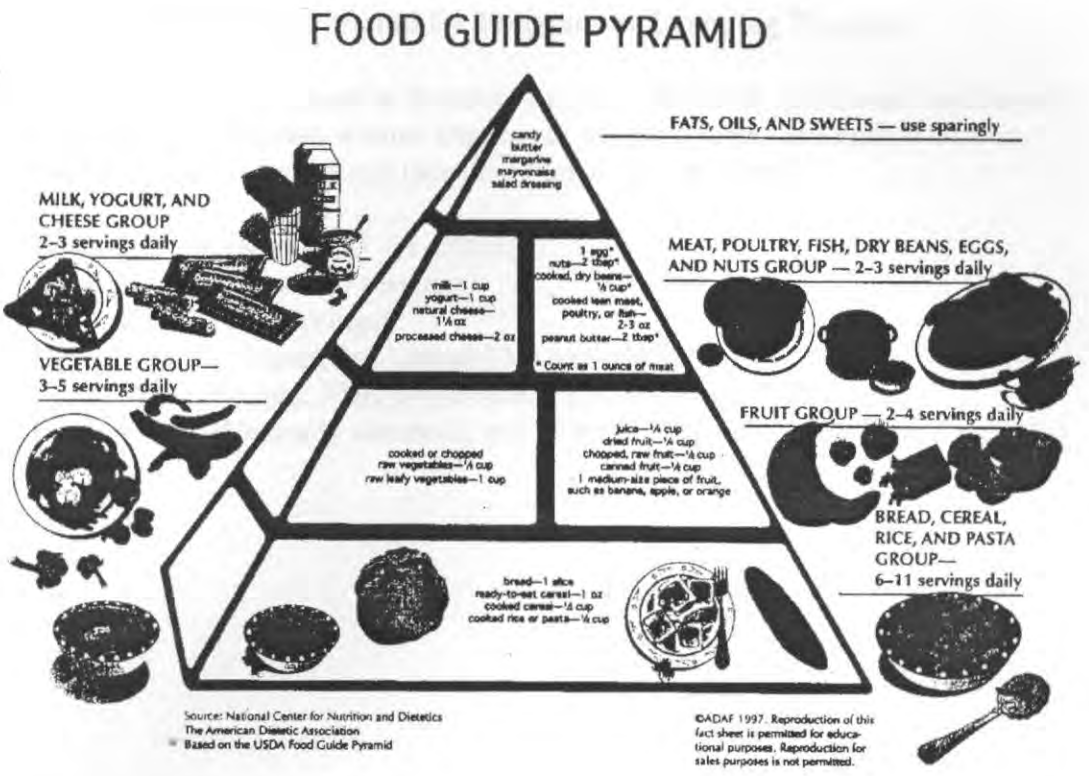
The standard Food Guide Pyramid for most people without any special nutritional needs is an excellent tool for the vast majority of the population to follow in order to eat a balanced diet.

At the bottom level of the food guide pyramids are the foods that people need in higher quantities per day. As you go up the pyramid (starting at level), or the base of the pyramid) the requirements per day become smaller and smaller.

For the regular pyramid, the daily requirements are as follows:

Level 1 -Breads, cereals, pastas, (6-11 servings)
Level 2 -Vegetables (3-5 servings), and
Fruits (2-4 servings)
Level 3 -Milk, Yogurt, and Cheese (2-3 servings), and
Meat, Poultry, Fish, Dry Beans, Eggs, Nuts (2-4 servings)
Level 4 -Fats (naturally occurring, and added), Oils, and Sweets (Use sparingly)

These serving sizes are small and can realistically be eaten in one day. For example, if you eat a sandwich then you get 2 servings of carbohydrates. Each slice of bread is one serving. One large banana is 2 servings of fruit. A cup of fruit juices also count as a serving, if, and only if, the drink is 100% juice, as indicated on the drink's packaging.



"5 a Day"

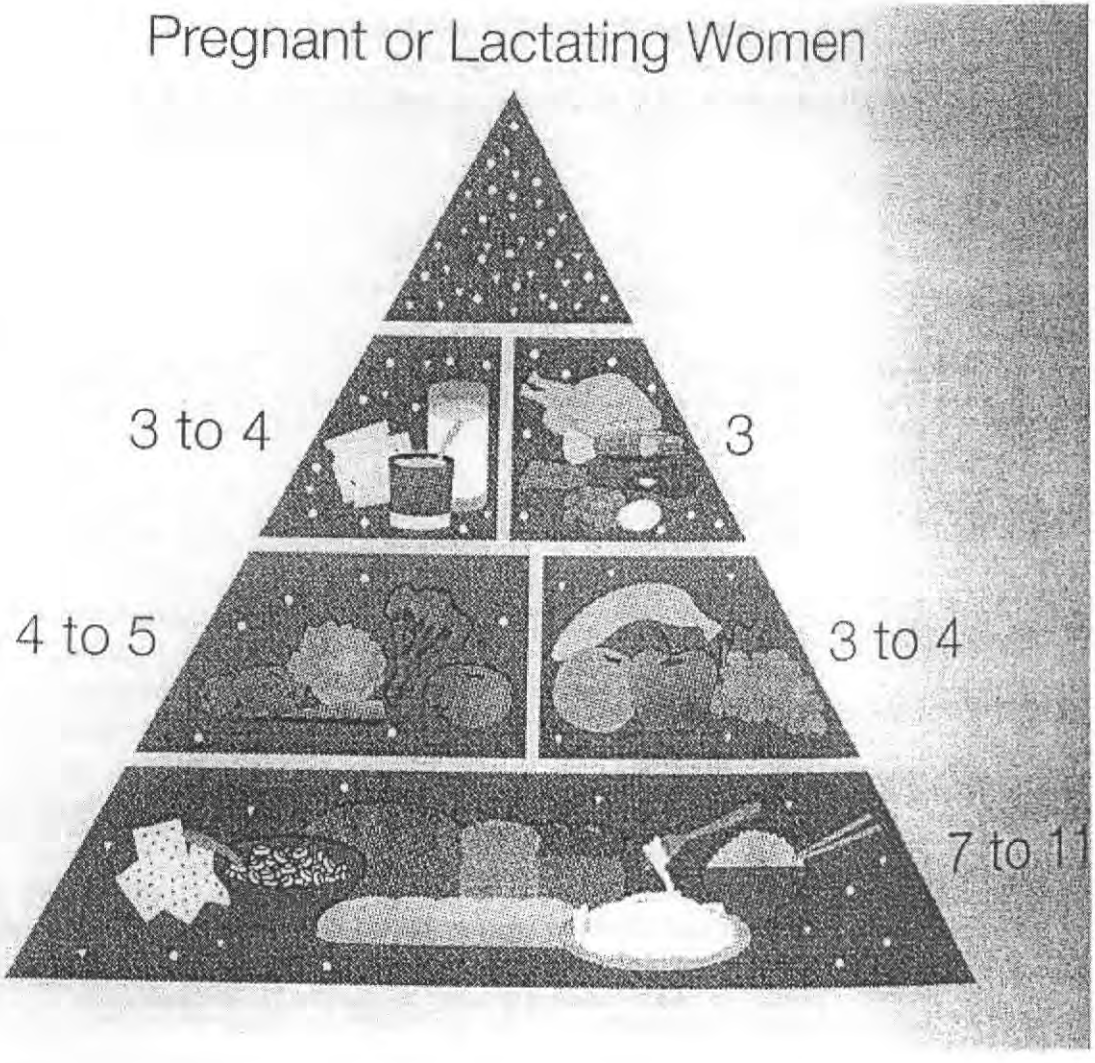
A good rule of thumb to ensure you get the recommended amount of fruits and vegetables to satisfy the Food Guide Pyramid each day is to follow the "5 a day" saying. Five a day means that between fruits and vegetables (in any combination), you get five servings. For example, if you get 3 servings of vegetables and 2 servings of fruit one day and 2 servings of vegetables and 3 servings of fruit the next day you will consume enough fruits and vegetables to get adequate nutrients.

Avoid fad diets. They destroy the balance of nutrients recommended by food scientists and cause strain (that could lead to failure) of different organs in the body. Follow the Food Guide Pyramid for safe eating habits.

Food Guide Pyramid for Pregnant or Lactating Women

Women who are pregnant or breastfeeding have different nutritional requirements than the average non-pregnant woman because of the extra roles their bodies take on. The daily servings for pregnant and lactating women are as follows:

Level 1 -Carbohydrates (7 -11 servings)
Level 2 -Vegetables (4-5 servings)
Fruits (3-4 servings)
Level 3 -Milk, Yogurt, and Cheese (3-4 servings)
Meat, Poultry, Fish, Dry Beans, Eggs, and Nuts (3 servings)
Level 4 -Fats (Naturally occurring and added), Oils, and Sweets (Use Sparingly)


Pregnant or Lactating Women
3 to 4
3
4 to 5
3 to 4
7 to 11

Nutritional Needs During Pregnancy

During pregnancy women need increased amounts of nutrients. Below is a list of these nutrients.

- Energy
- Protein
- Vitamin A
- Vitamin D
- Vitamin E
- Vitamin C
- Folate
- Niacin
- Riboflavin
- Thiamin
- Vitamin B6
- Vitamin B12
- Calcium
- Phosphorus
- Iodine
- Iron
- Magnesium
- Zinc
- Selenium

The increased amounts of nutrients women need during pregnancy are below:

Recommended Dietary Allowances for Women of Reproductive Age

Nutrients	Age 11–14	15–18	19–24	25–50	Pregnancy
Energy (kcal)	2,200	2,200	2,200	2,200	+300*
Protein (g)	46	48	46	50	60
Vitamin A (μg RE)	800	800	800	800	800
Vitamin D (μg)	10	10	10	5	10
Vitamin E (mg α-TE)	8	8	8	8	10
Vitamin C (mg)	50	60	60	60	70
Folate (μg)	150	180	180	180	400
Niacin (mg NE)	15	15	15	15	17
Riboflavin (mg)	1.3	1.3	1.3	1.3	1.6
Thiamin (mg)	1.1	1.1	1.1	1.1	1.5
Vitamin B_6 (mg)	1.4	1.5	1.6	1.6	2.2
Vitamin B_{12} (μg)	2.0	2.0	2.0	2.0	2.2
Calcium (mg)	1,200	1,200	1,200	800	1,200
Phosphorus (mg)	1,200	1,200	1,200	800	1,200
Iodine (μg)	150	150	150	150	175
Iron (mg)	15	15	15	15	30
Magnesium (mg)	280	300	280	280	320
Zinc (mg)	12	12	12	12	15
Selenium (μg)	45	50	55	55	65

*Second and third trimesters

From Food and Nutrition Board, National Council, National Academy of Sciences. 1989. *Recommended Dietary Allowances*, 10th ed. Washington, DC: National Academy Press.

Eating a balanced diet low in fat, sugars, and oils should provide the mother with

Most of these vitamins, but many women take prenatal supplements prescribed by their doctor. Again, do not start a vitamin or mineral supplementation routine without consulting your doctor, especially during pregnancy.

Weight Gain During Pregnancy

Proper weight gain is very important during pregnancy. Gaining too much or too little weight can put the mother and the baby at risk for multiple problems. Too much weight gain can increase the risk of the mother developing Gestational Diabetes (which could lead to a permanent condition after the pregnancy) and not enough weight gain can cause low birth weight for the baby. Low birth weight is dangerous for the baby and can lead to higher death rates for the baby than death rates of babies whose mothers have gained adequate weight during pregnancy. The amount of weight a woman needs to gain during a pregnancy varies from woman to woman and from pregnancy to pregnancy and depends largely on her pre-pregnancy weight. The average amount of weight a woman should gain is between 25-35 pounds. Weight gain plans should be advised by and monitored by a doctor .

Inadequate weight gain is particularly a problem with teenagers. Teenagers are more likely than older mothers to be overly concerned with maintaining body image and trying to gain as little weight as possible so that they can quickly lose their pregnancy weight.

Fiber and Water

Fiber is another important nutrient for the body that is of particular importance to pregnant women. Adequate intake of fiber helps prevent constipation and hemorrhoids, both common problems associated with pregnancy. The RDA for fiber is 20 grams per day, however pregnant women might want to consume extra dietary fiber. Too much fiber can hinder the body's absorption of nutrients, so consult your doctor before you add a significant amount of fiber to your diet.

Adding fiber alone to one's diet can cause further constipation.
added proportionally with fiber in order to achieve the desired goal.

Foods that are Good Sources of Fiber:
Carbohydrates - Whole grain breads bran cereals and muffins. Any food that is made with whole grain flour rather than white flour is high in fiber.
Fruits -grapes, pears, and apples
Vegetables -celery, broccoli, and potatoes
Other Sources -Nuts, seeds, and dry beans (legumes).

Legumes are high in fiber as well as protein. The use of legumes as a source of protein is very important for vegetarians. Eating legumes as a source of protein and fiber is a wonderful idea for people on limited budgets.

Smoking During Pregnancy

Maternal smoking during pregnancy is not healthy for the mother or the baby. Studies have shown a correlation between a mother smoking during pregnancy and the growth and brain development of her children. Children who are born to mothers who smoked during pregnancy are more likely to have decreased Apar scores at birth and to be smaller. In childhood, these children tend to be shorter and have increased learning difficulties, increased hyperactivity, and behavioral problems. Smoking is not a recommended habit for anyone, but a woman who is pregnant or is thinking about becoming pregnant needs to stop smoking immediately. There will never be an easy time to quit, but perhaps pregnancy or preparation for a pregnancy is a unique time of high motivation to quit smoking.

Alcohol During Pregnancy

Do not drink any alcohol during pregnancy or even if you think you might be pregnant. Drinking during pregnancy causes fetal Alcohol Syndrome (PAS). PAS can cause physical and mental abnormalities. Physical anomalies are evident on the eyes, nose, mouth, ears, heart, and central nervous system. Mental problems such as growth retardation, small head circumference, and mental retardation are also problems associated with FAS.

Some problems that FAS cause are tragic and include growth deficiency for height and weight result in a small head circumference. Physical abnormalities cause poor coordination can cause problems in learning to walk and lower average IQ. Central nervous system dysfunction can cause hyperactivity, attention problems, learning difficulties, developmental delays, and motor problems.

Exercise for Non-Pregnant Women

Exercise is very important to health promotion and maintenance for all ages. Research studies have found thirty minute workouts three days a week is the minimum to get the benefits of exercise. Exercise. ..

1) Prevents heart disease (Build-up of plaque in the heart, heart attack)
2) Prevents the risk of stroke
3) Prevents or delay the onset of genetic diseases such as diabetes
4) Provides the body with extra energy
5) Prevents sleeping disorders
6) Prevents obesity and health risks associated with obesity

Getting into a habit of regular exercise can be a challenge. Regular exercise is a lifestyle choice. Exercise can be as simple as a brisk walk, bike riding, swimming, or doing a work-out video. If you are an athlete, the chances are that you are getting proper exercise and do not need to set aside separate time slots to workout. Cross-country practice, basketball practice, swim practice, football practice, soccer practice, etc. each provide ample exercise for an athlete. Even little things such as taking the stairs to a second, third, or fourth floor instead of the elevator and walking instead of circling the parking lot looking for the closest space at the mall can increase your exercise.

Exercise for Pregnant Women

The American Dietetics Association's position on exercise during pregnancy is that only healthy women with uncomplicated pregnancies should consider any form of exercise. Pregnant women (particularly those who did not exercise prior to pregnancy) should not begin an exercise routine without consulting their doctor and getting approval. Women who are at risk of early labor should absolutely not exercise. Pregnant women who exercise need to consume adequate amounts of water and other nutrients. Activities that may be safe during pregnancy are low-intensity, non-weight bearing exercises.

Exercises that May be Safe for Pregnant Women:

- Swimming
- Anaerobic Dancing
- Riding on a stationary bicycle

Exercises that pregnant women should avoid include participation in ball games (increase of abdominal trauma), weight lifting, scuba diving, martial arts, anaerobic exercise (sprinting), and exercise above 2,500 meters altitude, and any exercise with high risk of falling or requiring balance (no gymnastics).

Tips for Better Health

The way in which food is prepared effects the nutritional value of the food. Cooking meats or vegetables in high fat, creamy sauces adds more fat to the diet than the body needs and can build up plaque in the heart.

Below are some cooking methods that are not healthy:

- Frying
- Cooking chicken with the skin still on

Here are some cooking methods that contribute to optimal health:

- Steaming
- Baking
- Boiling
- Broiling
- Roasting
- Grilling

Cooking chicken with the skin removed is one easy way to cut excessive fat from a diet. Another way to reduce fat is to drink skim milk. There is no difference in nutrient value between skim, 1%,2%, and whole milk. If you cannot drink skim then 1% is preferable. Two percent is not ideal, but is not completely incompatible with healthful eating. If you absolutely must drink whole milk, be advised to reduce fat from other parts of your diet and to try to cut back gradually by going first to 2%, then 1% and then
if you become accustomed to that, then try skim.

Other tips for healthful eating:

- Plan meals and make a list of things you will need for those meals before you go grocery shopping
- Stick to your list when you shop
- Avoid impulse buying, or buying things you do not need and were not planning on buying
- Avoid grocery shopping when you are hungry
- Don't buy more food than you think you can eat before it goes bad (fruits and vegetables)
- Involve the entire family in healthful eating to encourage long-term changes in the eating patterns and health of family members

Everyone cannot eat healthily all the time. Occasional splurging is not going to have long-term negative effects. It is harder to eat healthily on a consistent basis if you think you are depriving yourself. Allow treats and plan times to splurge and to not worry about what you eat. Weekend evenings are good times for splurging. Do not be hard on yourself if you find that you are not eating well, but resolve once more to stick to healthful eating and remember all the benefits there are to gain from eating right.

Activity 1

Below are the daily menus of what people ate on July 17, 2002. Critique the nutritional quality of the food consumed during the overall day by ranking the day "Ideal," "Good," or "Bad." Write any thoughts or comments you have about how the person ate on this particular day.

Person #1:
Breakfast -Lucky Charms, chocolate milk, pop tart
Lunch -McDonald ' s Extra Value Big Mac Meal, Coke
Dinner -Fried chicken, fried okra, biscuit with gravy , salad, Dr. Pepper
Snack -Candy bar

Ranking –

Comments –

Person #2:
Breakfast -Raisin Bran, sliced pears, water
Lunch -Peanut butter and jelly sandwich, on white bread, carrot sticks, potato chips, and water
Dinner -Meatloaf, salad, rice, green beans, water
Snack -Dry Cheerios

Ranking –

Comments –

Person #3:
Breakfast- Bagel, yogurt, pear, orange juice, water
Lunch -Two slices of whole wheat bread with 1 tablespoon of peanut butter and banana slices to make a sandwich, reduced fat and sodium potato chips, apple, water
Dinner- Baked (skinless) chicken with Season All, mashed potatoes, broccoli, salad, water
Snack -Frozen yogurt

Person # 4:
Breakfast -Cheerios, 2% milk, banana sliced and added to the cereal, orange juice
Lunch – Turkey sandwich on whole wheat bread/bun, 11/2 teaspoons of mustard or mayonnaise, lettuce, tomato, carrot sticks, pretzels, water
Dinner – Spaghetti with homemade meat sauce (90% lean ground beef or ground turkey), salad, 1 tablespoon salad dressing, French Bread, non-sweetened iced tea or water
Desert – Angel food cake, with blueberries, strawberries, and cool whip topping, tea or decaffeinated coffee

Ranking –

Comments –

Activity 2

In the space indicated, plan a healthy three-day menu for a woman who is eight weeks pregnant. With each meal, provide a beverage. Try to follow the food guide pyramid.

Day 1:

Breakfast –

Lunch –

Dinner –

Snack –

Day 2:

Breakfast –

Lunch –

Dinner –

Snack –

Day 3:

Breakfast –

Lunch –

Dinner –

Snack –

Activity 3

In the space indicated, plan a healthy three-day menu for a woman who is eight months pregnant. With each meal, provide a beverage. Try to follow the food guide pyramid.

Day 1:

Breakfast –

Lunch –

Dinner –

Snack –

Day 2:

Breakfast –

Lunch –

Dinner –

Snack –

Day 3:

Breakfast –

Lunch –

Dinner –

Snack –

Activity 4

In what ways should a pregnant woman's diet differ from a non-pregnant woman's diet or an adult's diet without any special nutritional needs?

Activity 5

Outside of class, try to explain some of what you have learned in this class to someone who is not in this class.

Activity 6

Go to a grocery store and see if you can buy food to feed a family of 4 for a week with $50. Report what you would buy and how much you would spend on each item on a sheet of paper .

Activity 7

Below is a list of snacks. Circle the snacks that are the best nutritionally.

Crackers and cheese
Peanut butter and jelly sandwich on whole wheat bread
Snickers
Fritos
Potato chips
Carrot Sticks
Yogurt
Raisins
Ice Cream Bar
Banana
Pickles
Dried fruit mix
Cookies
" Ants on a log" -Celery with peanut butter in the middle and raisins on top, resembling "ants on a log"
Laffy Taffy
Almond Joy
Pretzels
Gram crackers
Apple