

The Montreal Diet Dispensary Approach to Counseling Pregnant Young Women

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Herein lies the paradox of the pregnant teenager—the possibility of either the best obstetrical outcome or the most disappointing. With good nutrition, a supportive family, regular medical care, and a healthy lifestyle, adolescents have the least obstetrical complications. On the other hand, with the stress of poverty, poor eating habits, and unfavorable lifestyles, low-birthweight rates among infants of teens are almost twice that for infants born to older mothers, with correspondingly higher rates of infant morbidity and mortality.¹⁻⁵ Adolescent pregnancy superimposes two critical growth periods, that of adolescence and that of pregnancy. In counseling, it is important to remember that we deal with the adolescent who is pregnant, not pregnancy in the adolescent.

Case Study: Introducing Tina

Tina, age 17, presents herself for her first appointment at 16 weeks, carrying her first pregnancy. She has recently spent several days in the hospital because her boyfriend of seven months punched her in the stomach during an argument.

Tina has had a difficult adolescence. She spent two years in group homes from which she often ran away. She has experienced the hardships of living on the street.

Tina has now returned home because she could not survive on her own. She lives with her parents who receive welfare, and 4 other siblings (ages 15, 11, 7, 4) as well as a 75-year-old grandmother and an 86-year-old great aunt in a cramped 3-bedroom apartment. She is unhappy as she feels she has no privacy and her parents treat her like a child. She would like to move but has no money.

Tina stands 5'4" and weighs 108 pounds, which is two pounds over her nonpregnant weight. At the interview, she states that she dislikes her mother's cooking, hates milk and often vomits. She suffers from anemia and asthma. Tina used to smoke one pack of cigarettes per day, but has now quit, yet still smokes marijuana on weekends.

Finally, the doctor has recently ordered bedrest due to bleeding. She has also been advised to stop school to which she had recently returned.

All this is distressing for Tina who is no longer sure how she feels about her pregnancy, her parents, who are hard on her, and her boyfriend, who gets on her nerves.

Like the majority of pregnant teenagers, Tina is experiencing the physical and emotional changes of pregnancy in the context of her adolescent development:

- She fluctuates between feelings of dependency and autonomy.

- She experiences mood swings and lacks consistency between stated goals and behavior. She rebels against parental restrictions.
- Peer pressure is strong.
- Body image is important. She is concerned about how she looks, but eats what she likes and resists making changes in her diet for more nutritious alternatives.
- She sometimes forgets to take her vitamins and may skip meals, especially breakfast and lunch.
- She often obtains food from fast-food restaurants, vending machines and the corner store.
- She is prone to exaggeration.
- She loves to look at baby pictures and dreams of a perfect baby, yet complains that her baby moves all the time and gives her no rest.

Helping Tina through pregnancy requires more than supplying guidance and information. It requires a wide range of skills and knowledge of nutrition as well as human behavior. The Higgins Method marries the *art of counseling*, which focuses on establishing a caring, open, “client-centered” relationship, with the *science* of assessing nutritional risks and determining a nutritional care plan.^{6, 7}

THE SCIENCE OF THE HIGGINS METHOD

Teens enter pregnancy at various stages of growth and nutritional status. In addition, some have had difficult upbringings and have suffered abuse and/or neglect. Many are living in very stressful circumstances which may influence their ability to obtain proper nutrition. They may be living with friends or the boyfriend’s family, be on the run, or otherwise have to exist on very low incomes. Often, teens are unaware or deny the possibility of pregnancy and hence are at risk for inadequate food and exposure to drugs and alcohol at a time of greater risk to the fetus. Keeping all these factors in mind, the dietitian’s approach is one of great support and nurturing.

Establishing a Nutritional Care Plan

- Consider:
 - biological age, age of first menarche;
 - income, psychosocial situation, personal stress;
 - weight for height, weight history, weight gain;
 - medical and obstetrical history, progress of pregnancy, physical signs of possible nutrient deficiencies;
 - cigarettes, alcohol, drugs, lifestyle.
- Assess food intake as a “yardstick” to measure nutritional status. The dietitian gathers psycho-socio-medical information and then obtains a diet history calculating usual daily caloric and protein intake. Changes in food consumption during pregnancy are noted. What the teen eats and how much she or her family spends on food is used to validate the diet history. The resulting food intake serves as a “yardstick” to measure the teen’s nutritional status.
- Assess nutritional requirements using the Higgins Method. Calculate the nutritional prescription, including:
 - determination of basic non-pregnancy requirements.
 - addition of normal pregnancy needs;
 - rehabilitation allowances as per Higgins Method for:

Underweight

A correction factor is added for every pound underweight taking into account the remaining number of weeks of gestation.

Undernutrition

A correction factor is added when the initial daily protein intake falls below requirements.

Other stress factors

A correction factor is added for previous low birth weight, previous abortion, pregnancy less than one year apart, pernicious vomiting, failure to gain weight, emotional stress.^{7, 8}

Tina's Nutritional Prescription

	Kcal	Protein
Nutritional Requirements		
Basic needs*	2,200	44
Pregnancy needs*	300	16
Undernutrition	90	9
Stress – personal situation	100	10
Total	2,690	79
Tina's initial food intake	1,685	51
Deficit to make up	1,005	28

*Using the Recommended Daily Allowances in the U.S.

THE ART OF COUNSELING IN THE HIGGINS METHOD

- Teens respond to kindness and openness. To make a difference in an often difficult period, the dietitian is warm, empathetic, flexible, nonjudgmental and creative in her approach.
- An aptitude that greatly enhances the dietitian/teen relationship lies within the dietitian herself: how she perceives the teen; how she is able to pick up on her unique qualities; and how she is able to radiate this back to the teen.
- Patience is a key element since progress may be slow. In general, teens require extra attention to succeed. The dietitian does not underestimate her own potential as a role model.⁹
- In establishing rapport, care is taken to make the teen feel that *she* is indeed special, that *she* is important, that the dietitian is on her side. It is only when the teen feels understood and accepted that she becomes ready to make modifications. The dietitian encourages close family members and/or the boyfriend to become involved in the teen's pregnancy.

Counseling Environment

- A nonthreatening, homey, relaxed type of environment (baby pictures, cozy furniture, chairs placed close together) helps the teen feel comfortable.
- Paperwork is minimized to a single worksheet that provides a global picture at a glance.
- A successful initial interview requires at least 75 minutes; getting to know a client takes time.
- Plan on about 40 minutes for follow-ups.

Overview of the Global Picture

Once the information has been gathered, the next step is to outline, with the help of the teen, positive points that are beneficial to the baby, and on the other side of the ledger, those factors which need to be modified for optimal outcome. This permits the teen to have insight into her situation and allows the dietitian to set the pace for motivation, encouraging the teen to participate in resolving mutually-agreed-upon areas.

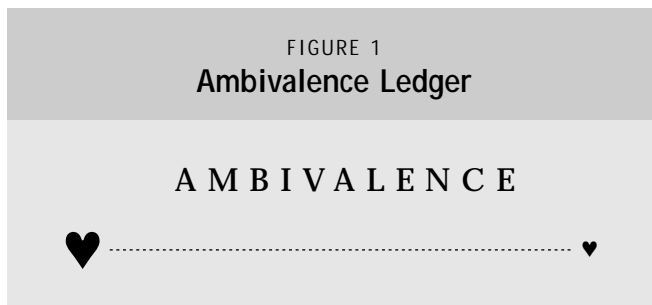
Tina's Strengths

- has quit smoking
- no previous disappointing obstetrical record, "slate is clean"
- at desirable body weight, not underweight
- family support
- is not isolated
- motivated, referred herself early for service
- loves fruit and salads

Tina's Weaknesses

- marijuana on the weekends
- nausea and vomiting
- anemia
- bleeding
- asthma
- low weight gain
- stress with family (overcrowding)
- relationship problems with boyfriend
- depressed
- dislikes milk

Ambivalence is dealt with before going any further in counseling. Usually when the teen is seen at the Montreal Diet Dispensary (MDD) she has already made up her mind to pursue the pregnancy. The question of acceptance is brought up here for the teen to express outright how she feels about a baby in her life. She herself moves a model of a miniature fetus on the side of the ledger wherein lies her feeling of acceptance (see Figure 1).



Concept of Caring for the Baby

- The Higgins approach is based on the assumption that all mothers want a healthy baby.¹⁰ However immature or unrealistic a pregnant teen's mothering ability may be, the dietitian uncovers and enhances it. Appealing to her ability to care for a helpless baby awakens her desire to look after and feed the baby.
- Many teenage pregnancies, especially in low-income groups, may have been planned as a way of establishing status: becoming an adult, escaping from an unhappy family situation, keeping a boyfriend, expressing rebellion.

A teen nevertheless experiences mixed feelings about her pregnancy. This ambivalence may express itself throughout pregnancy. The dietitian helps the teen accept that she is now a mother.¹¹ How does she feel about looking after her baby? What does she wish for, a boy or a girl? Does the baby have a name? Does she feel her baby move? What does the ultrasound show? These questions are asked to make the baby "real."

- The teen is told that pregnancy is a time of "building the foundation for the rest of life." It is explained that while others can help her care for the baby after birth, for the time being the baby is totally dependent on her for the fulfillment of his needs. *Only she can feed her baby.*

- The teen slowly comes to the understanding that the baby is distinct from herself, a separate being with separate needs, but at the same time dependent on her— an integral part of her. Herein starts the beginning of the relationship with her baby.¹¹

Concept of Baby's Growth and Development

- Do not assume that teens understand the reproductive system: the dietitian takes this opportunity to give information. With simple information and analogies, her baby's growth as it relates to the transformations in her own body is explained. Lack of questions may not mean lack of interest. She may be too shy to ask questions.
- Showing pictures of babies at various stages in pregnancy, describing the baby's growth, and simplifying physiology and nutrition creates a mental image of the baby, his needs, his development. Slowly, the teen develops a rapport with her baby, enabling her to initiate the sense of being a parent.
- Maternal changes and stages of fetal growth are summarized according to trimester (Table 1). These build on each other in relation to time.

Concept of Feeding the Baby

- In the Higgins Method, the concept of feeding the baby starts indeed during the pregnancy when the baby grows and develops more rapidly than in any other period of life. The relationship between food, nutrient requirements and baby's growth is explained. If food is insufficient, competition occurs and the baby loses.⁶
- To emphasize the concept of the baby's ever continuing growth, the dietitian compares the "building of a baby" to the "building of a house," introducing the nutrients as the building materials for the baby (Table 2).
- The dietitian explains that a baby cannot reach optimal development without proper quantities of necessary building materials. For the baby to reach full potential, Tina is encouraged to meet her own as well as her baby's requirements. The dietary recommendation (2,690 calories and 79 g protein) corrects Tina's nutritional deficit and meets the requirements of the developing baby.

TABLE 1

Analogies Used at the MDD to Explain Maternal Changes and Stages of Fetal Growth⁷**0–12 weeks
Implantation of
human seedling**

Formation of the baby occurs. The embryo gets nourishment from the “mother’s soil.” The placenta is the “tree of life.” Its roots are the baby’s connection to the mother. This analogy of providing nourishing soil (blood) for seed (baby) is one the mother easily understands. This tiny seedling baby needs to be fed often. By the end of the twelfth week, the embryo is completely formed—indeed a baby in miniature.

This period can be demanding on a mother’s body. Hormonal adjustments cause emotional changes, fatigue, nausea, vomiting and constipation. Teens often do not know they are pregnant at this time or may deny it. They are more likely to have indulged in drugs, alcohol and poor eating habits which makes them feel guilty. It is important to know how to answer questions about these concerns.

**13–27 weeks
Physiological
adjustments —
critical time**

This period is marked by a 50% increase in blood volume (4 to 6 lbs of additional blood) which is crucial to allow for the expansion of the uterus and the building of the “highway” (the highly vascularized placenta) for the transportation of the “building materials” (nutrients and oxygen) to, and wastes from, the baby.

This blood volume increase is most marked between 18 and 22 weeks. This “rising tide” permits the fetus to grow adequately in the last trimester. The dietitian stresses the importance of eating often and enough, drinking plenty of water, salting food to taste and taking the vitamin-mineral supplement. Should this increase in blood volume not occur, it will be at the expense of the fetus.

Stores for breastfeeding are laid down between 13 and 20 weeks accounting for about 6 lbs. The teen is reassured that she is not putting on too much weight but rather that nature is preparing her body for breastfeeding, whether she plans to breastfeed or not.

**28–40 weeks
Baby’s growth spurt**

Until 27 weeks, most babies are at about the same weight (\approx 2 lbs 4 oz). The last trimester is the “crowning glory” for the fetus. The teen is now at a crossroad. She is encouraged to take the optimal development path where the fetus gains almost 1 oz per day and where optimal brain growth is favored. This is much less stressful if physiological adjustments (good placental development, good blood volume increase, good weight gain, etc.) have been met. Most mothers can support a pregnancy until this point regardless of nutritional status. Differences in birth weight are related to differences in growth in this last trimester.

- The MDD Teen Study shows that the lowest average daily deficit for teens at low risk was 150 Kcal and 2 g protein, and the greatest daily deficit was 1300 Kcal and 76 g protein for those at high risk.¹² (With teens,

the MDD uses the figure from the 1958 National Research Council Recommended Dietary Allowances for energy and protein.) Hence, dietary recommendations may vary widely from teen to teen.

TABLE 2

Analogy Used at the MDD to Explain the Baby's Growth in Relation to Nutrient Needs⁷

Building of a house	Building of a baby
Architect's blue print	Genetic code derived from parents
Contractor's schedule	The nine months of pregnancy
Workers (bricklayer, carpenter, etc.)	Calories required for growth
Building materials (bricks, wood, etc.)	Protein to build cells
Cement to hold materials together	Vitamin C = extracellular cement
Trucks to transport materials to construction site	Iron to transport oxygen

Counseling Approach

The teen is asked: "What is the best food for a newborn baby?"

"Milk" is the spontaneous answer.

"Yes." The dietitian emphasizes: "Now, as well as after birth, a baby needs milk." Continuing the analogy, the dietitian explains: "A newborn needs to be fed milk 6 times per day. The secret to having a healthy baby is to feed him now the same way as after he is born. These 6 feedings correspond to one quart of milk."

It then becomes logical for the teen that when pregnant, she is eating for two, feeding herself and her baby.

The dietitian asks: "Are you ready to feed your baby? Eat for yourself, drink milk for your baby. To feed your baby, add one glass of milk to each of your 3 meals, and one in-between each meal." The dietitian asks that the container of milk be marked with a big "B" for "baby." This reinforces the importance of feeding the baby, reduces the possibility that the teen will share the milk with other family members—the quart of milk is indeed "the baby's milk", and diminishes feelings of greed or guilt. Thus, the major recommendation to make up the dietary deficit focuses on "feeding the baby his milk." The quart of milk covers most of the caloric and protein deficit.

Tina states that she does not drink milk.

The dietitian asks if she is no longer accustomed to drinking milk? She stresses the importance of feeding the baby. Yes, she may feel "full" for awhile, but her stomach can handle small quantities at a time.

The dietitian also determines if there might be an emotional barrier. Milk is a symbolic food related to deep emotional feelings for it is the first food a baby gets from his mother.^{9,13,14} Tina as "the baby" associates milk with mother. If the teen's relationship with her mother or mother substitute was poor or deficient, the teen may also associate feelings of repulsion or disgust when the word "milk" is mentioned. It is important that the teen know this. Once vented, feelings of hostility or neglect can be dealt with. "Now that you have baby to take care of, you can chose to put things behind you. You can be a good mother. Your baby needs you. Your baby needs to be fed and the best food for your baby is milk." Suggest flavoring the milk: flavored or colored milk will not present the same emotional barrier as does white milk.

NUTRITION RECOMMENDATIONS

A pregnant teenager's high intake of poor nutritional value foods, as well as lack of money, may result in a deficit in iron and other nutrients. Upon reviewing the intake, the dietitian stresses:

- 8 oz of orange juice per day, both as the extracellular cement (vitamin C) and a good source of folic acid
 - 1 egg per day, as an economical source of high-quality protein
 - 5 oz liver per week, as the best and least expensive dietary source of iron
 - at least one dark green or yellow vegetable, ensuring a good source of beta-carotene and/or folic acid
 - additional foods as needed to meet the dietary prescription
- The dietitian also stresses that the teen should drink sufficient water, explaining its role, her requirements and the signs of early dehydration, and that she should use salt to taste. She also emphasizes the need for a vitamin-mineral supplement.
 - The teen is encouraged to eat 6 times per day, similar to the feeding pattern of a newborn. This is important for teens who often are sporadic eaters,

skipping meals, especially breakfast. The dietitian explains the negative effect of long periods without food on the developing baby.

- To help the teen follow through, the MDD provides those who are financially disadvantaged with vouchers for home-delivered milk. They also receive eggs (one dozen per two weeks) and a vitamin-mineral supplement in two-week supplies to ensure compliance.
- Any weakness that may have been identified is addressed. The effects of tobacco, alcohol or drugs on the baby are explained, and corrective action is agreed upon. Excessive caffeine use is also discouraged. If money is scarce, emergency relief is provided. Peer support is offered through a group-activity program, though all nutritional counseling is done on a one-to-one basis.
- Mutually-agreed-upon goals are reviewed in simple terms. The teen is invited to repeat these to assure understanding and agreement.
- The notion that “the baby who is well-fed and taken care of during pregnancy starts life as a winner” is meaningful and hopeful for a mother-to-be.

Teaching strategies—working together with the teen in setting realistic goals to meet her own as well as baby’s requirements

- Describe baby’s growth at each visit.
- Motivate the teen to feed and care for her baby before birth.
- Use analogies to explain her nutritional prescription.
- Advise foods necessary to meet nutritional prescription (Table 3).

CONTINUING SUPPORT

- Regular supervision and support is provided one to one by the same dietitian at two-week intervals.
- Appointments are scheduled at a convenient time (school schedule, sleeping in, etc.), allowing sufficient time for the interview.

- Dietitian is alert to changing conditions which may influence teen’s situation.
- Dietitian monitors progress—diet history, weight, clinical signs, situation changes.
- Flexibility is needed, should the teen be late.
- If the teen does not come to a follow-up visit, the dietitian makes every effort to contact her, expresses concern over her progress, schedules another appointment or visits her at home.
- The dietitian adjusts to the needs of the teen.
- The teen is encouraged to call between appointments if she has questions.
- Teens like to keep diaries. Often they wish to keep track of what they eat. This is encouraged and a special form is supplied.
- When appropriate, the dietitian helps the teen find an immediate solution to an emerging problem. In other cases, she orients the teen to an agency providing the appropriate service.
- The dietitian guides the teen through her journey of pregnancy and towards their common goal—a happy healthy teen and a beautiful “*Blue Ribbon Baby*.”

In each follow-up, the dietitian does the following:

- Clinical signs are noted.
- Weight gain is monitored with rate of gain as an important indicator.
- Teen’s well-being is assessed, inquiring about changes in health, lifestyle (smoking, alcohol, drug), and living situation (school hours, boyfriend, family, etc.).
- Diet history is conducted, positive changes are praised, reinforcement is made to meet dietary goals.
- Information or subject matter related to specific time in pregnancy is discussed.
- TLC (tender loving care) is generously given. Maternal attachment is quietly assessed. Baby items may be given to further enhance maternal bonding as well as to alleviate stress.

TABLE 3
Counseling Approach and Nutrition Recommendations

1 quart of milk per day	<p>Ask: "Did you know that the baby is growing even faster before birth than after?" The teen mother understands that unborn babies need to be fed to ensure optimal growth.</p> <p>"What is the best food for a newborn baby?" "Milk" is the mother's answer.</p> <p>"How often does a newborn baby need to be fed?" "Six times a day." So the dietitian stresses the need to give the baby six feedings a day now, as after birth.</p> <p>The teenage mother realizes that she is eating for two: "Eat for yourself, and feed your baby milk. Only YOU can feed your baby milk."</p> <p>"At the family table, set a place for yourself as usual, but do not forget baby's milk."</p> <p>"Mark container of milk with a big 'B' for baby."</p> <p>In the case of the non-milk drinker, suggest adding flavor to milk.</p>
8 oz of orange juice per day	<p>Best and most economical source of vitamin C: extracellular cement that holds cells together; enhances iron absorption—teach vitamin-mineral supplement with orange juice; smokers need more vitamin C.</p> <p>An excellent source of folic acid, the requirements of which dramatically increase in pregnancy.</p> <p>One 12-oz can of frozen orange juice is equivalent to 12-14 oranges. Keep it frozen and, each day, make one glass at a time using 3-1/2 tablespoons, as a special tonic.</p> <p>When citrus intake is inadequate, relate to clinical signs such as bleeding gums, frequent colds and/or infections, and bruising.</p>
1 egg per day	<p>An egg contains everything to support life.</p> <p>Cholesterol is needed for increased hormone synthesis and for myelination of fetal-nerve cells.</p> <p>A way to initiate breakfast for those who skip.</p>
5 oz of liver per week	<p>Liver is the best source of heme iron. Iron is like a truck which carries O₂ in the blood. With the increase in blood volume, more iron is needed.</p> <p>Economical. Give simple recipes to encourage consumption.</p> <p>A "power house" of many nutrients, including zinc, niacin, vitamin B₁₂, and folic acid, which are involved in blood formation. An important source of vitamin A.</p> <p>Often challenging to promote consumption.</p>
Dark green and yellow vegetables	<p>Stress at least one serving per day of an inexpensive source of beta-carotene.</p> <p>Beta-carotene maintains healthy epithelial tissue which acts as a barrier against infections.</p> <p>Often challenging to promote consumption.</p>
Other foods	<p>Teach other nutrient-rich foods to meet calorie and protein requirements.</p> <p>Keep in mind the teen's financial constraints, cultural habits, personal preferences.</p> <p>Limit changes to minimum—select changes by priority of importance.</p>
1 quart of water per day	<p>Just as a plant needs water, so do people.</p> <p>Total body water accounts for 50% of a woman's total body weight, and for 75% of the fetus's body weight, and all body fluids are salty.</p> <p>In pregnancy, the higher requirements for water and salt are due to increasing blood volume, amniotic fluid changing 8 times per day, increasing perspiration especially in hot weather ("the body's air-conditioning system"), and waste-product elimination.</p> <p>Fatigue, gastrointestinal problems, dizziness, edema, and irritability may be signs of dehydration.</p>
Salt to taste	<p>"Do not wait to be thirsty. Thirst is a sign of already present dehydration."</p> <p>Even when eating well, a teen may lack iron, zinc and folate. Consider prenatal supplement as "the fertilizer" added to the "mother's soil" (blood).</p>
Vitamin-mineral supplement	<p>Suggest prenatal supplement as an "insurance" that nothing is missing.</p> <p>Prescribe vitamin C for heavy smokers.</p> <p>Prescribe vitamin B-complex in situations of poor appetite, high nutritional requirements, vomiting or severe nausea, high emotional stress, fatigue, etc.</p>

CONCLUSION

The results of the MDD Teen Study demonstrate that the Higgins Nutrition Intervention Program is an approach that significantly reduces adverse pregnancy outcome with adolescents. Infants in the intervention group weighed an average of 55 g more than infants in the non-intervention group.¹² The low-birthweight rate was 39% lower, the very-low-birthweight rate was 56% lower, and the preterm-delivery rate was 41% lower among infants whose mothers participated in the program.¹²

To achieve similar results, the management of pregnant teens should include a well-defined nutrition intervention program. Intervention should be individualized, and the dietary approach based on diagnosed risk as done in the Higgins Method.

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