IRON AND VITAMIN THERAPY IN PRECONCEPTION, PREGNANCY AND BREATFEEDING, ROUTINE

**DEFINITION**
This protocol discusses recommendations for supplementation for vitamins and iron during preconception, pregnancy and breastfeeding. Iron is mandatory for normal fetal development; iron deficiency may have deleterious effects on the intellectual and behavioral development of the newborn. Routine iron supplementation during pregnancy is not advised, but treatment of high risk women is appropriate. Daily supplementation of all breastfeeding women is recommended because breast milk does not supply adequate levels of iron to the infant. Folate is critical to the correct closure of the neural tube. Most women lack sufficient levels of folate from their diet to reduce the risk of neural tube defects; routine supplementation with prenatal vitamins or folic acid tablets for at least 1-3 months prior to conception and throughout the first trimester is optimal.

**SUBJECTIVE**
Must include:
1. No known allergies to iron, prenatal vitamins, or folic acid.
2. Nutritional intake evaluation.
3. Planning pregnancy or already pregnant.

May include:
1. No complaints or symptoms.
2. Poor nutrition.
3. History of prenatal vitamin use before conception.
4. Tobacco addiction.
5. Pica use.
6. Other medications that interfere with folic acid or iron absorption or metabolism.

**OBJECTIVE**
May include: Confirmation of pregnancy by positive pregnancy test, pelvic examination or ultrasound.

**LABORATORY**
HCT $\geq 33\%$ or HGB $> 11.0$ grams. (If anemia present, proceed with this protocol for folic acid recommendations and consult protocol Anemia in Pregnancy for iron recommendations).

**ASSESSMENT**
Woman needing prenatal vitamins or folic acid with or without iron therapy for preconception or prenatal care.

**PLAN**
1. Folic acid
   a. For women with no history of infant with neural tube defects, advise well balanced diet and:
      1) Provide folic acid 1 mg orally daily for 1-3 months prior to pregnancy and throughout the first trimester.
      OR
      2) Continue or initiate prenatal vitamin one tablet orally daily.
   b. High risk patients are those who have had prior pregnancies affected by neural tube defect.
      1) Continue or initiate folic acid 4 mg. orally daily for 1-3 months prior to conception and at least through the first trimester.
      2) Continue or initiate prenatal vitamin once daily.
2. Iron supplements
   a. For routine healthy women with adequate diets, await results of hemoglobin testing. Supplement during pregnancy only if needed depending on results. See protocol Anemia in Pregnancy.
   b. For women with history of pre-pregnancy anemia or dietary insufficiency in preconception or in the first trimester, provide FeSO$_4$ 300 mg daily orally until results of hemoglobin tests are available.
   c. For women initiating prenatal care in the third trimester, provide FeSO$_4$ 300 mg orally 3 times daily until hemoglobin test results are available.
   d. For breastfeeding women without anemia, give FeSO$_4$ 300 mg orally once daily for infant nutrition. Treat those women with anemia with higher doses as needed to resolve their anemia.
   e. Because iron is best absorbed if taken on an empty stomach, instruct women to take FeSO$_4$ one
PLAN (Continued)

hour before eating or 2 hours after eating. Absorption of iron is improved by combining it with vitamin C formulations other than FeSO₄.

f. If patient has nausea and vomiting in pregnancy, initiation of iron therapy may be delayed until these symptoms resolve, unless she has severe anemia.

g. Consider providing stool softener (e.g. docusate sodium) to prevent constipation with FeSO₄ use.

PATIENT EDUCATION

1. Counsel on nutrition.
2. Review instructions on administering prenatal vitamins, folic acid and iron.
3. Counsel patient on possible side effects of iron supplementation and suggest management for those possible side effects:
   a. Dark, tarry stools.
   b. Nausea and vomiting.
   c. Constipation.
4. Caution patient to store iron tablets in safe area out of the reach of children. As few as 6-12 tablets of FeSO₄ may be lethal to children (30% of drug poisoning of children in the past resulted from iron ingestion).
5. Advise patient to take one tablet of iron supplement and one prenatal vitamin daily while breastfeeding.
6. Encourage women to use folic acid or prenatal vitamins for at least 1-3 months prior to conception with every pregnancy.

REFER TO MD

1. Women who are intolerant of recommended therapies.
2. Women with contraindications to recommended therapies.

REFERENCES

1. AAP and ACOG Guidelines for Perinatal Care Fifth Edition, American Association of Pediatrics and American Congress of Obstetricians and Gynecologists, Elk Grove Village, IL.