

Women's Health *REPORT*

A QUARTERLY PUBLICATION OF WOMEN'S HEALTH DIETETIC PRACTICE GROUP

FETAL ALCOHOL SPECTRUM DISORDERS: Nutrition Matters By Jennifer Thomas, PhD

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Fetal alcohol spectrum disorders (FASD) refer to the range of adverse outcomes in children who were exposed to alcohol prenatally (1). At the most severe end of the spectrum is fetal alcohol syndrome (FAS). Characteristics of FAS include: facial dysmorphologies such as a flattened midface and short eye openings, pre and postnatal growth retardation, and evidence of brain damage or dysfunction identified by physical alterations to the brain and/or behavioral and cognitive impairments. Although some individuals who have been exposed to alcohol prenatally may not meet all of the diagnostic criteria for FAS, particularly facial dysmorphologies, they may still suffer from alcohol-related alterations in physical development and, most importantly, brain pathology and subsequent behavioral abnormalities.

Prenatal alcohol exposure affects the development of many brain areas: the cortex, basal ganglia, cerebellum and hippocampus, to name a few. White matter deficits are also apparent, suggesting that connections among brain areas are compromised (2). As would be expected with such neuropathology, children with FASD exhibit impairments in a number of behavioral domains, including learning and memory, motor function, attention, executive functioning, and social processing (3). The variation in outcomes between individuals prenatally exposed to alcohol is likely a result of numerous factors, including alcohol dose and pattern of exposure, developmental timing of alcohol exposure, genetics, and other maternal characteristics. Evidence suggests that nutritional variables may also affect the fetus' vulnerability to FASD.

prenatal alcohol exposure may place the fetus at higher risk for birth defects (4). Suboptimal nutritional status could be a consequence of poor diet, which is commonly observed among individuals with alcohol use disorders. Thus suboptimal nutritional status may interact with alcohol and potentially increase blood alcohol level (4). For example, animal studies have reported that levels of prenatal alcohol exposure and zinc deficiency have minimal gross effects on the developing fetus independently, but produce severe damage when they co-occur (7). Similarly, we have demonstrated that the combination of prenatal alcohol exposure and a diet containing only 40% of recommended levels of choline—a level observed in epidemiological studies of pregnant women in California—produces more severe physical, neuropathological and behavioral alterations in developing rats than alcohol or choline deficiency alone, above and beyond a simple additive effect. These data indicate that poor maternal diet can exacerbate alcohol's damaging effects on the fetus. However, even if pregnant women consume a healthy diet, alcohol intake can compromise nutrient absorption and utilization of nutrients such as thiamin, folate, pyridoxine, vitamin A, vitamin D, magnesium and zinc, and can impair placental transfer of nutrients (5, 6). Thus, alcohol alone can compromise nutritional status.

Nutrient Supplementation During Prenatal Alcohol Exposure

Conversely, if poor nutritional status exacerbates alcohol's teratogenic effects, then optimal nutritional status should be protective. Animal studies have shown that prenatal zinc or folate supplementation can attenuate alcohol's teratogenic effects (8-10). We have been investigating the possibility that supplementation of choline, an essential nutrient, may reduce the severity of FASD. Using a rodent model, we found that choline supplementation during prenatal alcohol exposure reduces the severity of alcohol-related birth weight deficits, delays in physical and behavioral development, and cognitive deficits (11, 12). These data suggest that nutrient supplementation can protect against alcohol's adverse effects on the developing fetus in the animal model. An ongoing clinical study is currently examining the effects of micronutrient supplementation with and without choline during pregnancy on the neurodevelopment of children born to women who consume alcohol during pregnancy.

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Suboptimal Nutritional Status and Prenatal Alcohol Exposure

Suboptimal nutrition or nutritional deficiencies may exacerbate risk for FASD. Current literature illustrates that nutritional deficiencies alone are teratogenic, or damaging to the developing fetus. However, a combination of poor nutritional status and

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FROM THE CHAIR Maria Pari-Keener, MS, RD, CDN



Welcome to Issue 2! I hope you are thawing out from winter and looking forward to a productive Spring! Your Chairs and Committee members are busy working on awards selection, as well as getting ready for incoming leaders. Your Public Policy Coordinator will be attending the Public Policy Workshop in April and will report back to you in our next newsletter. Membership is busy with webinar scheduling—they have two successful webinars under their belt this year, so stay tuned for more. Mentoring is off to a great start with lots of inquiries from recent solicitations. Keep them coming, as Pat Slinger-Harvey will highlight her work in our next issue.

This issue features research on Fetal Alcohol Spectrum Disorders, our spotlight session topic at last year's FNCE. I was recently reminded of this talk while reading a story in the New York Times Magazine about a specially-trained dog that was able to help a boy with FAS. Although I had learned a great deal during Dr. Jennifer Thomas and Alyce Thomas' lectures, this article illuminated what life was like with a child with FAS—it was heart-breaking, and thus made their discussion all the more relevant to me. Dr. Jennifer Thomas' research is fascinating and highlights the importance of choline in mitigating the effects of alcohol during pregnancy. Alyce Thomas' article will aid you in how to screen women properly for alcohol use and help you gain strategies to helping pregnant women. Therese Shumaker, who also works in this field, discusses vitamin and protein deficiencies that take place during alcoholism.

I hope you enjoy this issue. As always, feel free to contact me at whdpgchair@gmail.com with any questions or concerns.

FROM THE EDITOR Jamie Mok, MS, RD



Happy National Nutrition Month, WH members! I, for one, am ready to spring forward this month into longer days and warmer weather, which I'm sure we could use a little more of! Every year January and February fly by so fast. I suppose these months are extra packed as we try to catch up from the holidays and start new projects. I want to specially thank our authors for making time in their schedules to contribute wonderful, informative pieces to our newsletter.

In this issue of the WH Report we have a beautiful collaboration of experts on alcohol and women across the lifespan. Our FNCE Spotlight Session speakers, Dr. Jennifer Thomas and Alyce Thomas, RD, give us the scoop on the latest clinical research and practical applications of prenatal alcohol consumption and fetal development. Dr. Thomas presents an in-depth look at fetal alcohol spectrum disorders and the pre- and postnatal nutritional implications for mother and baby. Her article discusses current research including findings from clinical trials with which she has been involved. Our very own 2011 WH DPG Award for Excellence in Practice in Women's Health recipient, Alyce Thomas, RD, discusses the topic of alcohol consumption during pregnancy. Her article looks into the current nutrition recommendations, screening tools, and intervention strategies RDs can utilize to optimize mom's nutrition status and minimize adverse outcomes in baby. In this issue you will also find a great article written by an expert in the field of nutrition and alcoholism, Therese Shumaker, MS, RD, LD, which explains the metabolism and nutritional implications of alcohol consumption—an interesting read with lots of information!

Remember to check out the mentoring and membership updates for the latest scoop on our flourishing mentorship program, relationships and upcoming webinars in store for you. And last, but not least, be sure to see the announcements from the Nominations committee welcoming new leaders and inviting you to newly open positions.

Happy reading!

Nutrient Supplementation After Prenatal Alcohol Exposure

It is also possible that nutrient supplementation could be an effective treatment/intervention among individuals with FASD, even after birth, when their alcohol exposure has ceased. Animal models have demonstrated that postnatal choline supplementation can reduce the severity of behavioral alterations associated with developmental alcohol exposure, even when the choline supplementation is administered after developmental alcohol exposure. Specifically, postnatal choline supplementation can reduce the severity of open field hyperactivity, and deficits in working memory, spatial memory, reversal learning, and trace classical conditioning (13-17). In all of our animal studies to date, behavior is examined after choline treatment has ended, indicating that the effects of choline supplementation are not acute, but rather long-lasting functional changes in the brain. In fact, reduction in the severity of spatial learning deficits associated with developmental alcohol exposure can be observed months after the completion of choline supplementation. Currently, a clinical trial is being conducted in young children with FASD to determine if choline supplementation improves their attention, memory and executive functioning.

But how late in postnatal development can choline be administered and still have beneficial effects? Our animal studies have shown that choline is not only effective when administered a day after alcohol exposure has ended, but also when initiated 10 days later, a period of development that would be equivalent to early/mid childhood in humans (18). Interestingly, in contrast to the effects of prenatal choline supplementation, postnatal choline supplementation appears to target areas of the brain, namely the hippocampus and prefrontal cortex, which are important for cognitive functioning. In fact, with our model, postnatal choline supplementation does not attenuate deficits in motor functioning or delay eyeblink conditioning, behaviors that depend on the functional integrity of the cerebellum and other motor areas of the brain (16, 19).

Now that many individuals with FASD have reached adolescence and young adulthood, we recently investigated whether choline supplementation during a later period of development could reduce fetal alcohol effects with our animal model. When administered during periods of development equivalent to late adolescence/young adulthood in humans, choline was effective in reducing spatial working memory deficits, but no longer effective in reducing hyperactivity or deficits in simple spatial learning. These results suggest that choline supplementation later in life may still be effective in selective areas of the brain like the prefrontal cortex, an area whose development extends well into adolescence. Although results from ongoing clinical studies are needed to determine if these results translate to human clinical populations, the findings from our animal model have promising implications for human intervention programs.

The mechanisms behind choline's beneficial effects observed in the animal model have yet to be elucidated. Choline plays many roles in brain development (20, 21). Choline acts as a precursor to the neurotransmitter acetylcholine and to cell membrane com-

ponents like phosphatidylcholine. Our research indicates that postnatal choline supplementation attenuates some of alcohol's damaging effects on cholinergic neurons in the hippocampus (22). Moreover, choline, like folate, serves as a methyl donor, affecting the homocysteine/methionine cycle and DNA methylation. We recently reported that developmental alcohol exposure alters DNA methylation and that choline changes global methylation in the hippocampus and prefrontal cortex differently in alcohol-exposed compared to control subjects (23). These data suggest that choline may also act as an epigenetic factor. It is likely that choline acts via multiple pathways, as its mechanisms of action likely vary depending on the developmental timing of administration.

Understanding how nutritional factors moderate and mediate alcohol's teratogenic effects can help inform development of preventative efforts to target high-risk populations, and identify effective interventions in pregnant women, newborns and youth. Such interventions may improve the nutritional status of the mother, correcting nutritional deficiencies or acting on pathways that enhance behavioral and cognitive functioning in individuals with FASD. In sum, manipulation of nutritional variables may prove valuable in protecting the fetus and improving the lives of individuals with FASD.

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ALCOHOL AND PREGNANCY: Imperfect Together... But Can Nutrition Make a Difference?

By Alyce M. Thomas, RD

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Abstract

It is estimated that over 50% of women of child-bearing age consume alcohol, and one in eight binge drink, which is defined as consuming four or more drinks in less than 2 hours (1). Many health organizations recommend abstinence from alcohol for women who are pregnant or contemplating pregnancy. However, this view is not shared by all healthcare providers. While most of the research on alcohol use in pregnancy points towards adverse outcomes, the nutritional status of the mother may play a role in the severity. This article will address how the nutrition care process (NCP) can be incorporated into the care of the woman who may occasionally drink or abuse alcohol during her pregnancy.

Introduction

According to the National Institute on Alcohol Abuse and Alcoholism (NIAAA), more than 50% of women consume alcohol during their child-bearing years (2). Approximately 10% of pregnant women drink during their pregnancies, with 1.5% not reducing the amount of alcohol consumed (2).

Alcohol use in pregnancy is a controversial and contentious topic, with no unanimity among healthcare professionals on whether alcohol should be consumed during any stage of gestation. Most health organizations, such as the American Congress of Obstetricians and Gynecologists (ACOG) (3), the American Academy of Pediatrics (AAP) (4), the March of Dimes (5), the Academy of Nutrition and Dietetics (6-7), and government agencies—the U.S. Surgeon General (8), the Centers for Disease Control and Prevention (CDC) (9) and the NIAAA (2)—have stated that no amount of alcohol consumption can be considered safe during pregnancy. The 2010 Dietary Guidelines for Americans also discourage alcohol use in pregnancy, especially in the first trimester because of possible negative behavioral or neurological consequences to the offspring (10).

Yet, a February 2, 2008 segment of Good Morning America Weekend entitled, “Can Pregnant Women Drink Alcohol in Moderation?” created additional controversy, when a number of physicians interviewed questioned whether complete abstinence of alcohol during pregnancy is warranted (11). The physicians cited a lack of evidence-based research that links moderate alcohol consumption, such as an occasional glass of wine, to fetal alcohol spectrum disorders (FASD). In a news release after this segment was aired, ACOG reiterated its position that “women should avoid alcohol entirely during pregnancy or while trying to conceive because damage can occur in the earliest weeks of pregnancy” (12).

Potential Effects of Alcohol on the Nutritional Status of the Pregnant Woman

A standard alcohol drink is approximately 14 grams of pure alcohol. This is the amount that is found in 12 ounces of beer, 5 ounces of wine and 1.5 ounces of distilled spirits (2). The NIAAA defines moderate drinking for women as up to one drink per day (2). This amount may seem small however, only one drink per day increases the risks of developing certain diseases in women, such as breast cancer (13). Health risks, including compromised nutritional status, increase as the amount of alcohol consumed increases. Nutritional consequences associated with an excessive alcohol intake include (14-15):

- Appetite suppression
- Reduced nutrient intake
- Impaired nutrient absorption and metabolism
- Gastrointestinal problems
- Poor food choices

In pregnancy, decreased nutrient intake or impaired nutrient absorption and metabolism will negatively impact perinatal outcomes, including maternal weight loss and fetal undernutrition (16). These outcomes may exacerbate if the woman also drinks alcohol. While FASD is the most serious consequence associated with maternal drinking during pregnancy, the amount and when alcohol is consumed to cause these effects remains unclear. If optimal nutrition and multivitamin-mineral supplementation are associated with improved pregnancy outcomes, this effect may hold true for the pregnant woman who drinks alcohol. As discussed in the preceding article by Jennifer Thomas, PhD, poor eating habits and nutritional deficiencies may exacerbate the risk of FASD, while optimal nutrition may provide some protection.

Using the Academy of Nutrition and Dietetics Evidence-based Analysis Library (EAL) and Nutrition Care Manual (NCM) in the Nutrition Management in Alcohol in Pregnancy

Evidence Analysis Library (EAL)

The registered dietitian (RD) plays a vital role in the care of the woman who drinks alcohol during her pregnancy. A comprehensive nutrition history may provide clues of alcohol use that are not always clearly discernible to other members of the healthcare team. While there are no evidence-based nutrition practice guidelines developed specifically for alcohol use in pregnancy, other guidelines in the EAL have addressed this topic. These include the Gestational Diabetes (GDM), Disorders of Lipid Metabolism (DLM), and Heart Failure (HF) guidelines (17). The GDM recommendation for alcohol consumption states, “The RD should advise pregnant women, including those with GDM, to avoid the consumption of alcohol, including alcohol used in cooking.

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No amount of alcohol consumption can be considered safe during pregnancy. Alcohol use during pregnancy increases the risk of alcohol-related birth defects, including growth deficiencies, facial abnormalities, central nervous system impairment, behavioral disorders, and impaired intellectual development” (18). This recommendation was given a consensus rating because the available scientific evidence did not present consistent results, or controlled trials were lacking. The DLM and HF guidelines concur with this statement.

Nutrition Care Manual (NCM)

Surprisingly, the NCM does not include alcohol consumption in the Prenatal Nutritional Risk Screen nor does it assign a risk criteria (19). However, alcohol is included in the Initial Prenatal Nutrition Assessment Form and is listed as a beverage to avoid on the Pregnancy Nutrition Therapy Patient Handout.

Additional information on alcohol use can be found in the Behavioral Health’s section on Substance Abuse and Addiction in the NCM. Most of the information can be adapted to provide nutrition care to pregnant women, although certain interventions are not applicable, such as high dose nutritional supplementation.

Because no level of alcohol use in pregnancy has been deemed safe, the controversy continues regarding alcohol consumption in any form, including cooking. While no cooking method results in 100% alcohol evaporation, the longer the cooking time, the more alcohol is evaporated (20). Although no specific research has linked cooking with alcohol to FASD, the consensus of the GDM workgroup committee was that pregnant women should avoid alcohol consumption in any form (18). If the woman is known to abuse alcohol, the NCM recommends that cooking with alcohol should be avoided to maintain sobriety and prevent relapse. Other recommendations include getting rid of any accessory associated with drinking, such as a favorite corkscrew, and avoiding foods and beverages with caffeine, which may increase anxiety and could lead to cravings for alcohol and/or other substance use. Additional tips can be found in the patient handout, *Sobriety Cooking Tips* (21).

Alcohol Screening Tools

All pregnant women should be screened for alcohol use during their initial visit, whether in a prenatal clinic or private office, by trained medical and non-medical providers, including RDs. Screening provides an opportunity to identify women at risk for alcohol-related behaviors and to facilitate discussion on the negative impact of drinking during pregnancy (22). Several brief questionnaires have been developed to screen pregnant women for alcohol use. The benefits of these questionnaires include their brevity, ease of administration response scoring, and incorporation into the nutrition assessment. Most can be administered and scored in less than five minutes. Two examples of screening

tools for alcohol use in pregnancy are the T-ACE (Table 1) (23) and the 4Ps (Table 2) (24).

The T-ACE screening tool is a four-item validated questionnaire, which takes less than one minute to ask and score the responses. One point is given for the ACE questions and two points for the first question on tolerance if the pregnant woman consumes more than two drinks to feel high. A positive screen is a score of two points or more. The 4Ps (Parents, Partners, Past and Pregnancy) was developed for use with pregnant women. A woman who answers yes to one or more questions should be referred for further assessment. Both screening tools are available in the public domain, and may be copied and used without permission.

Intervention

For most pregnant women, a discussion of the possible negative consequences of drinking in pregnancy may result in the elimination of all alcohol use. If a pregnant woman has been identified as an alcohol abuser, the RD must be aware of the patient’s goals when developing the nutrition prescription. While eliminating alcohol consumption is of primary concern, how to achieve that may require a variety of strategies to achieve success. The RD must guide in a direction that coincides with the woman, as her goals are paramount. Goals must be realistic, attainable and measurable, but may need to be limited to one priority area. Family involvement is important and may be necessary to provide the support needed to achieve and maintain abstinence.

The primary nutrition prescription is eliminating alcohol while providing sufficient calories and nutrients to promote adequate maternal weight gain and fetal growth and development. The following recommendations can be found in the NCM’s Behavioral Health (Substance Abuse) and Reproduction (Obstetrics) sections:

- Moderate or discontinue sugar intake, which will help to decrease any cravings for sugar
- Moderate or discontinue caffeine to avoid the potential for another addiction
- Adequate complex carbohydrate, protein and fiber intake
- Moderate fat intake to avoid excessive weight gain
- Prenatal vitamin/mineral supplementation
- Regular, well-spaced meals and snacks
- Individualized meal plan with the woman’s food preferences, work/school schedule, etc.
- Adequate fluid intake to avoid dehydration and possible pre term labor
- Promote physical activity in accordance with ACOG’s guidelines

Nutrition counseling will help the woman to achieve her goals. Several behavioral change theories and models have been

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developed to assist the RD in providing strategies for effective nutrition counseling. These evidence-based methodologies include motivational interviewing, goal setting, problem solving, social support and stress management, and are found in the NCM and the International Dietetics and Nutrition Terminology (IDNT) Reference Manual (25). One effective technique to help decrease alcohol use in pregnancy is brief intervention (22,26). This low cost, time-limited intervention method consists of six elements using the acronym FRAMES (Table 3) and is used by health professional who are not addiction specialists. When used effectively, brief intervention has been shown to be non-judgmental, without offering criticism or guilt. Brief intervention has been successfully used by WIC RDs trained in this counseling approach (27).

Conclusion

Although alcohol use in pregnancy is associated with adverse perinatal outcomes, including FASD, a positive maternal nutritional status may provide some protection as explained in Dr. Jennifer Thomas's article. Alcohol screening should be incorporated into every prenatal nutrition assessment. The RD plays a critical role in the care of the woman who drinks during pregnancy by applying evidence-based interventions to help eliminate alcohol consumption, while providing effective medical nutrition therapy to promote adequate weight gain and nutrients for a healthy, well-nourished mother and baby.

TABLES

Table 1. T-ACE Screening Tool

- (T) TOLERANCE: How many drinks does it take to make you feel high?
- (A) ANNOYED: Have people annoyed you by criticizing your drinking?
- (C) CUT DOWN: Have you ever felt you ought to cut down on your drinking?
- (E) EYE OPENER: Have you ever had a drink first thing in the morning to steady your nerves or get rid of a hangover?

One point for each yes answer to the A, C, E questions

Two points is the tolerance of more than two drinks to feel high

A positive screen is a score of two or more points

Source: National Association on Fetal Alcohol Syndrome. T-ACE.

<http://www.nofas.org/healthcare/T-ACE.aspx> Accessed February 2, 2012.

Table 2. 4Ps Screening Tool for Alcohol Use in Pregnancy

The 5 questions are:

1. Did any of your **parents** have a problem with using alcohol or drugs?
2. Does your **partner** have a problem with drug or alcohol use?
3. Before you were **pregnant**, how often did you drink beer, wine, wine coolers, or liquor or use any kind of drug?
4. In the **past** month, how often did you drink beer, wine, wine coolers or liquor or use any kind of drug?

A yes score to any question should be referred for further assessment.

Source: Virginia Department of Behavioral Health and Developmental Services. *Tips for Screening Pregnant Women. Screening Tools for Drug and Alcohol Use – 4Ps.*

<http://www.dbhds.virginia.gov/documents/screener-4Ps.pdf> Accessed March 2, 2012.

Table 3. Brief Intervention – FRAMES

- Step 1 **Feedback** – provide the woman with feedback on her risk for alcohol problems, such as current drinking pattern
- Step 2 **Responsibility** – emphasize the woman's responsibility for personal choice in reducing her alcohol consumption
- Step 3 **Advice to change** – provide clear advice to reduce or stop drinking
- Step 4 **Menu of ways to stop drinking** – provide a variety of alternative strategies to reduce or stop drinking
- Step 5 **Empathetic counseling style** – a warm, reflective and understanding counseling style in brief intervention has shown to be more effective than an aggressive, confrontational or coercive style
- Step 6 **Self efficacy** – encourage the woman's confidence that she is able to make changes in her alcohol consumption

Source: National Institute on Alcohol Abuse and Alcoholism. *Brief intervention for alcohol problems – Alcohol Alert No. 43-1999.* <http://pubs.niaaa.nih.gov/publications/aa43.htm> Accessed March 2, 2012.

CASE STUDY

BE is a gravida 3, para 2 who was referred to an RD for inadequate weight gain (9 pounds in 30 weeks gestation).

Nutrition Assessment:

Food and Nutrition-Related History: .

Total Energy Intake: 1800 kcal

Food Intake

- Meal/snack pattern: Eats two meals a day: lunch and dinner

Alcohol Intake

- Drink size volume: 3 oz. glass of wine
- Frequency: twice a week – usually on weekends

T-ACE Screening: 0

Caffeine Intake

- Total caffeine: 3 cups of coffee daily

Carbohydrate Intake

- Total carbohydrate: 150 gm/day

Protein Intake

- Total protein: 65 gm/day

Medications/herbal supplement intake:

- Prenatal multivitamin-mineral supplement.

Knowledge/beliefs/attitudes.

- Never referred to RD in previous pregnancies. Concerned with weight gain

Physical activity and function:

- Occasionally takes children to the park, swims once a week when husband is able to spend time with children complained of tiredness

Anthropometric Measurements

- Height: 5' 4"; Current weight: 151 lbs; Pre-pregnancy weight: 142 lb. BMI: 24.4;

Biochemical Data, Medical Tests and Procedures

- Lab values: Hgb 13.2, Hct 38.7, A1C 5.1%, B/P: 105/67 mmHg

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Nutrition Focused Physical Findings

- Overall appearance: normal

Client History

Personal history:

- Age: 32
- Education: Masters degree in English literature
- Present history this pregnancy:
 - Gastrointestinal: occasional nausea during 1st trimester
 - Plans to breastfeed

Past obstetrical history:

- 1st pregnancy: 4 years ago, healthy male, 40 weeks gestation; birth weight: 3215 gm; gained 27 lb during the pregnancy; breastfed for one year.
- 2nd pregnancy: 2 years ago, healthy female, 40 weeks gestation; birth weight: 3110 gm; Gained 25 lb. during the pregnancy; breastfed for six months.
- Social history:
 - Lives with husband and 2 children
 - Has part-time internet home business

Diet History:

Breakfast: none

Lunch:

- Turkey and cheese sandwich
- 8 ounces pineapple juice

Afternoon Snack: 1 banana

Dinner :

- 1 grilled chicken breast
- 1 medium-size sweet potato
- Large salad (½ plate)

Night Snack: small bag of pretzels

Comparative Standards

Estimated Energy needs: based on the Institute of Medicine's DRIs for normal weight women:

- Estimated Energy Requirements (EER) = $354 - (6.91 \times 32) + PA \times (9.36 \times wt [kg] + 726 \times ht [m])$
- EER = $354 - (6.91 \times 30) + 1.0 \times (9.36 \times 73 + 726 \times 1.57) + 452$ for 3rd trimester = 2500 kcal

Nutrition Diagnosis

Problem/Etiology/Signs & Symptoms

Food and nutrition-related knowledge deficit is related to lack of prior exposure to nutrition education as evidence by 9 pound weight gain at 30 weeks gestation.

Nutrition Intervention:

Food and /or Nutrient Delivery

Nutrition Prescription:

- Increase calorie intake to 2500 kcal
- Increase carbohydrate intake to minimum of 175 gm
- Increase calcium intake
- Increase fruit and vegetable intake
- Increase fiber to 30 gm/day

Nutrition Education

- Food-safety issues
- Avoidance of herbal-dietary supplements
- Weight gain guidelines according to IOM recommendations
- Prenatal weight gain grid
- Calcium-rich foods
- Physical activity
- Avoidance of alcohol

Nutrition Counseling

Goal Setting:

- Weight gain: 1 lb/wk
- Keep food records
- Include 3 snacks each day
- Eliminate alcohol
- Physical activity: will increase swimming to 3 x/wk, will take at least 40 minute walk with children 2 x/wk

Nutrition Monitoring and Evaluation

- Food records
- Weight: total and rate of weight gain
- Alcohol consumption
- Physical activity adherence
- Follow up with RD in 2 weeks

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MEMBERSHIP UPDATE – Free Webinars

Over the past few months, the WH DPG has offered a series of free webinars to its members. Webinars provide a low-cost, convenient way to share knowledge and information. In January we heard an informative presentation on Nutritional Recommendations in Twin to Twin Transfusion Syndrome (TTTS): Hype or Hope? This session was presented by Miriam Erick, MS, RD, CDE, LD of Brigham and Women's Hospital. Miriam is one of our members and it was a great opportunity for her to showcase her knowledge and expertise.

The February Webinar featured a distinguished researcher from the National Institutes of Health, Office of Dietary Supplements. Regan Lucas Bailey, PhD, RD presented on Dietary Supplement Use in Women and gave the attendees much to think about in terms of making sure that as registered dietitians we really take the time to explore the latest research in the area of herbs and supplements and more importantly that we ask our clients about the types of supplements they are taking.

The series of webinars will continue in March and April as follows:

Thursday March 22, 2012

1:00 PM - 2:00 PM EST

SuperTracker (from ChooseMyPlate.gov)

Angela Leone, MS, RD

USDA, Center for Nutrition Policy and Promotion

Monday April 23, 2012

1:00PM - 2:00 PM EST

Baby-Friendly Hospital Initiative

Trish MacEnroe

Baby-Friendly USA, Inc.

Register at:

<http://www.anymeeting.com/PIID=EC53DB81814B>

Each webinar will be 1 hour in length and will offer 1 CEU pending approval from the Academy of Nutrition and Dietetics. Past webinars will be made available on the website; however, CEUs will only be offered on the feature date. Questions can be directed to Kathleen Pellechia, RD, Membership Chair at whdpgmembership@gmail.com.

We hope you can join us! If you have ideas for webinar topics or would like to present a webinar on the great work you are doing, contact Kathleen.

Mentoring Update

Pat Slinger-Harvey, WH DPG Mentoring Coordinator

Thanks to all those who contacted me, your WH DPG Mentoring Coordinator!

I am happy to report that I have had an excellent initial response to my appeals. I have been very busy compiling a database of experts in the field of women's health for both the Speaker's Bureau and the Mentoring Program. Look for future updates as I plan to showcase some of these mentor/mentee relationships in upcoming newsletters.

So keep those emails coming and I will contact you personally and work to ensure that your needs are met.
whdpgmentoring@gmail.com

 Academy of Nutrition and Dietetics

New Name, New Prizes for Academy Promoters!

Our name may have changed, but our commitment to rewarding individual Academy champions remains the same. That's why those who participate in the 2012-2013 Promoter Program are eligible to win some fantastic prizes this year.

All you have to do is encourage your friends and colleagues to join the Academy. The more you recruit between April 1 and September 1, 2012 the better your chances of winning.



To get Promoter credit, make sure your recruit enters your name in the "Did someone recommend Academy membership to you?" section of the 2012-2013 Academy Membership Application.

Prizes for our top promoters include:

- Apple iPad2
- Kindle Fire
- 12-month Netflix subscriptions
- Free Academy membership
- And special recognition for your efforts!

Remember, nobody can recruit Academy members better than you can!

Applications can be downloaded at www.eatright.org/joinacademy.

For questions, please e-mail promoter@eatright.org and thank you for supporting the Academy of Nutrition and Dietetics.

AWARDS UPDATE

Apply for Awards from the Women's Health DPG -Applications available in the members' section of the Web site and are due April 30th.

Excellence in Practice in Women's Health

Criteria for selection of this award:

- Member of WH for a minimum of 3 years consecutively immediately prior to application date.
- Minimum 5 Years of practice as an RD.
- Not previously selected as the WH Excellence in Practice in Women's Health Award.
- Developed or was a major contributor to innovative approaches to the practice of nutrition for women's health.

And/or

- Demonstrated or was a major contributor to the practice of nutrition in women's health in education or research/publications.

And/or

- Provided leadership on policy development, legislation and/or program development within the practice of nutrition for women's health, resulting in effects of local, state, national, and/or international significance.

Innovative approaches may not have been developed by a for-profit firm or national organization. Funding and/or technical assistance provided by private sources is acceptable, however must be disclosed on the application form.

- Members of the Award Selection Committee and of the WH executive committee are not eligible to apply for this award.

Got Case Studies?

The *Women's Health Report* is looking for contributing authors to share case studies for our future publications

Outstanding Student in Women's Health (2 awards given)

Criteria for selection of this award:

- Member of WH DPG.
- Not previously selected as a recipient of the WH DPG Outstanding Student in Women's Health Award.
- Participated and provided leadership in WH DPG activities, such as: committee service, newsletter contributions, involvement in association activities at district, state and national levels, etc.

And/or

- Demonstrated active involvement in health-related organizations (professional and voluntary), such as committee work for area, state, or national organizations.

And/or

- Developed, or was a contributor to, innovative approaches to the practice of nutrition in women's health for research and/or publications.

And/or

- Demonstrated involvement in or intent to practice in women's health via academic course work, thesis, etc.

Recipients will be recognized at the annual Food and Nutrition Conference and Expo, and receive a monetary gift.

Speaking of Green....

Serious about doing your part for the environment? Did you know you can opt out of receiving the print version of JADA by contacting Karen Noldan at knoldan@eatright.org.

For those who enjoy their print copies...the ADA Journal utilizes earth-friendly paper policies, including recycling not only paper, but where possible inks, emulsifiers, and office equipment (i.e. monitors, fluorescent bulbs) at Elsevier's US and overseas offices. For more information on how Elsevier strives to be an environmental steward, check out their "green" policies and philosophies in detail at www.elsevier.com!

Alcoholism remains one of the major causes of nutritional deficiency in the United States. Deficiencies develop even if the drinker ingests sufficient proteins, fats, and vitamins because the nutrients are not adequately absorbed from the gastrointestinal tract into the blood, are not broken down properly, and/or are not used effectively by the body's cells. Two classes of nutrients for which such problems occur are proteins and vitamins (1).

Alcohol can interfere with the uptake of essential amino acids. Decreased production of the main protein found in the blood, albumin, may lead to abnormally low levels of this protein in the blood. Albumin is needed to help maintain normal blood volume as well as the blood's concentration of minerals.

Perhaps the best known and potentially the most serious vitamin deficiency among alcoholics is thiamine (vitamin B1). A deficiency in thiamine is characterized by impaired mental function. Vitamin B1 generally can be administered with a great margin of safety; therefore, all alcoholics under going treatment should receive 50 mg of thiamine per day (1).

Approximately 90% of alcoholics may have inadequate dietary intake of zinc, and decreased plasma concentrations of zinc (2). Zinc is one of the essential nutrients involved in the catabolism of alcohol. Research has found that zinc supplementation, along with vitamin C, increases the detoxication process of alcohol. The supplemental dose should be that which is in a standard multivitamin preparation.

Vitamin A is depleted in the livers of chronic alcoholics. Vitamin A deficiency can impair the ability of the eye to adjust to dark conditions (night blindness) and in the liver, reduced vitamin A levels can change the structure of cells. Excessive vitamin A can be toxic, and has shown harmful effects. For example, in the liver, increased vitamin A levels can promote the formation of scar tissue, which also is worsened by concurrent alcohol use. In addition, alcohol can speed up or alter the conversion of vitamin A to other compounds. It is difficult to assess how much vitamin A is actually stored in the tissues, because vitamin A in the blood does not necessarily reflect levels in the liver. The usual replacement dose of vitamin A can be potentially harmful in alcoholics who continue to drink, because alcohol potentiates the toxicity of vitamin A. Patients with night blindness who have low levels of vitamin A in the blood may be given 2 milligrams of vitamin A per day for several weeks as a possible therapy (1).

An emerging therapy that has shown positive results in experimental animals is a molecule called silymarin, the active constituent of milk thistle. Silymarin seems to cause an alteration of the outer hepatocyte cell membrane that prevents toxin penetration. It also stimulates an increase in protein synthesis, which can stimulate liver regeneration and the formation of new hepatocytes. Silymarin's antioxidant activity has been found to be at least 10 times as potent as vitamin E. There is also some evidence that suggests that silymarin might have anti-fibrotic and anti-inflammatory effects that could also be beneficial in liver disease. To ensure therapeutic levels of silymarin, standardized milk thistle products are recommended (standardized to contain 70%–80% silymarin) and given in a divided dose equivalent to 200–400 mg of silymarin daily (3). Research indicates that standardized extracts may be used continuously up to 24 months.

Because alcoholics frequently have poor nutritional status, nutritional approaches may be useful in the treatment of alcoholic patients including those with alcoholic liver disease. Possible approaches include nutritional supplementation to compensate for the deficits in nutrients. Because of the potential usefulness of such an approach, several new compounds are being studied in clinical trials, and could be important tools in the prevention or amelioration of alcoholic liver disease.

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our mission

“Leading the future of dietetics in women's health.”

Announcements from the Nominating Committee

WH DPG welcomes new leaders for the upcoming 2012-2013 AND year!

Kathleen Pellechia, RD as Chair-Elect

Maya Feller, MS, RD, as Nominating Committee Member

Maria Bournas, MS, RD, as Membership Chair

Denise Andersen MS, RD, LD, CLC, as our

First House of Delegates Representative

Interested in volunteering?

As always, WH welcomes and encourages member involvement. We are currently recruiting for Assistant Publications Editor, Volunteer Coordinator, Research Coordinator and Public Policy Coordinator for next year. Please contact whdpgnominationschair@gmail.org if you or someone you know may be interested!

2011-2012 WH LEADERSHIP CONTACT INFO.

Executive Committee

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whdpgchair@gmail.com

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eat right. Academy of Nutrition and Dietetics

New Name, New Benefit

In addition to expanding your professional network, you can now earn FREE CPE by participating in the new eMentoring program.

The Academy's new name underscores the educational values our organization is committed to, and now we're proving it.

CPE is available for both mentees and mentors!

Academy eMentoring—where experience and enthusiasm merge.



Take advantage of this benefit by visiting the Mentoring Resources page at www.eatright.org