



SWEET SUCCESS: DIABETES AND PREGNANCY NEWSLETTER

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Preconception Care for Women with Diabetes

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Introduction

According to a publication by the Centers for Disease Control and Prevention, the purpose of preconception care for all women of reproductive age is to support healthy habits before pregnancy, which will then lead to improved pregnancy outcomes (Johnson, et.al., 06). While preconception care is recommended for all women of reproductive age, it is essential for women of childbearing age with diabetes or a history of gestational diabetes (GDM). Ideally, preconception counseling and family planning will take place during the pregnancy, and continue after delivery and through the child-bearing years.

Evidence for Preconception Care

There is sufficient evidence reported to support that pregnancy outcomes are improved in women with diabetes who receive preconception care. Whenever a woman of childbearing age with diabetes or a history of gestational diabetes sees a health care provider, she should receive preconception care and education. The goal of preconception care and education management for women with diabetes or a history of GDM is to eliminate or significantly reduce the maternal and fetal risks associated with hyperglycemia (Lowdermilk & Perry, 04). Since hyperglycemia in early pregnancy can be very harmful to fetal development, women should be counseled that they have three to four times

the likelihood of delivering a child with one or more birth defects in the presence of hyperglycemia. In fact, attaining and maintaining normoglycemia for a minimum of four to six weeks prior to attempting conception reduces the incidence of congenital anomalies and the risks of spontaneous abortion for women with Type 1 and 2 diabetes (Kitzmilller, et.al., 96). In spite of this evidence, one study found that there has not been an increase in the provision of preconception care and education to women with diabetes. This same study found that although there was increased awareness of the need for preconception care among adolescents, this was not true for any other age groups. It was found that health care providers are often lacking the skills, knowledge, and resources needed to provide such a program (Charron-Prochownik, et.al., 06).



Surprisingly, it has been found that approximately two-thirds of all pregnancies in women with diabetes are unplanned. (ADA, 03). Therefore, it is essential that women understand the importance of maintaining a healthy, active lifestyle and achieving glycemic control at all times before there is a pregnancy.

Achieving and maintaining optimal glycemic control, with HbA1c levels < 6.5% before pregnancy occurs is associated with reduced rates of congenital malformation. After conception, HbA1c rates of

< 6.0% are linked to decreased macrosomia (Kitzmilller, et.al., 08)

Women should be instructed to use birth control until optimal glycemic control has been achieved and maintained. They must be informed of the potential maternal and fetal health risks of uncontrolled diabetes since organogenesis is completed before most women know they are pregnant (Correa, et.al., 08)

Maternal & Fetal/Neonatal Risks

Maternal risks include:

- eye/retinal problems
- decreased renal function
- hypertension

Fetal and neonatal risks include:

- congenital anomalies
- miscarriage or stillbirth
- hypoglycemia after birth
- macrosomia

Preconception Care Inclusions

Programs that provide education consistent with the National Standards for Diabetes Self-Management Education Standards (DSME) are effective

in improving outcomes. DSME initiated during the preconception period is most effective when delivered by a multidisciplinary team, which may include traditional care givers, community health workers, patients, family members, lay public, peers and others (Funnell, et.al., 07).

Preconception care and education should be culturally and ethnically sensitive (Lawrence, et.al., 08). DSME programs that are more culturally relevant, patient centered and responsive to the needs of patients and communities are more appealing to consumers (Harris, et.al., 00; Piatt, et.al., 06). If health care providers are not familiar with

a woman's culture, it is important to ask about specific beliefs and medical practices in her culture. Asking open-ended questions may provide very useful information. Examples of such questions may include:

- What do you think caused the diabetes?
- What does diabetes do to you?
- What might it do to your baby if you become pregnant?
- What kind of treatment do you think you should receive?

Preconception care should include education and medical assessment.

Medical Assessment of:

- Complete medical history
- HbA1c
- Blood pressure check
- Blood glucose levels and testing patterns
- Assessment of medications and change to those compatible with pregnancy

"Promotion of healthy eating and activity and medication if needed can begin before fetal hyperinsulinemia is established"

- Neurological exam
- Lipid profile
- Random urine microalbumin and creatinine screen

If the woman has not had regular medical care, consider referring for:

- Dilated eye exam
- Dental exam
- EKG & cardiac evaluation

Education about:

- Meal planning
- Exercise
- Stress reduction
- Self-monitoring of blood glucose levels
- Insulin administration as needed

Providers of Care

The multidisciplinary diabetes health

care team is best suited to provide preconception care and education to all women with diabetes of childbearing age at every medical visit.

Team members may include:

- Physicians knowledgeable in the management of high risk pregnancy
- Diabetes educators (RN, RD)
- Behavioral medicine specialists
- Other health care team members as necessary

Conclusion

Charron-Prochownik, et al. (08) suggested that perhaps programs which train community health workers to provide preconception education to women with diabetes would be appropriate. This might enable programs to be established in community settings, and offer services to women who don't have health care insurance coverage outside of pregnancy.

Health care providers can educate women of childbearing age with diabetes at all medical appointments. Implementing even a few changes can positively impact pregnancy outcomes and maternal health. In addition, there can be long term family benefits to lifestyle changes such as obesity prevention and risk reduction of developing diabetes in the children of women with diabetes (Hanson, et.al., 04).

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Piatt G, Brooks MM, Orchard TJ, et al. Translating the chronic care model into the community. *Diabetes Care*. 2006; 29:811-16.

Looking at the “Art” of Diabetes Education

Beyond the Numbers

Charlene Canger, MFT, LCSW

Robert (Bob) Anderson Ed.D., a favorite author of mine, toils away in the Department of Medical Education at the University of Michigan's Center for Diabetes Education. Together with Martha Funnell, MS, CDE, he often challenges readers, in a gently irreverent style, to think beyond patients' compliance with treatment regimes to a broader view of interpersonal dynamics influencing outcome. In a recently published article entitled “The Art and Science of Diabetes Education: A Culture Out of Balance”, Anderson explores this seeming dichotomy in the practice of diabetes education. The evidence-based research is the obvious driving force of the science of diabetes education. Establishing and building a relationship to a therapeutic level is the art in which the science is enveloped.

Therapeutic alliance and its impact on outcomes have been solidly documented in psychology and counseling research in addition to nursing, medicine, and education.



“Communicating with a patient in a positive relational context to facilitate change is the art of the work”

Communicating with a patient in a positive relational context to facilitate change is the art of the work. Like any truly satisfying relationship in life, respect, compassion, empathy, and warmth are the cornerstones of a positive alliance between a diabetes educator and a person struggling with diabetes. Within the safety and support of such a relationship, openness, candor, and self-disclosure develop, laying the infrastructure for growth and behavioral change (hopefully for both the patient and the educator).

The authors review the diabetes literature futilely searching for evidence supporting the role of a CDE's interpersonal skills, values, and ability to develop a therapeutic relationship and find none. In fact, they worry, “if outsiders were to review the diabetes education research and evaluation literature, they could well conclude that diabetes educators are no more than interchangeable cogs in a wheel...and it is not unreasonable to conclude that computers could easily replace themat considerable cost savings”.

Anderson and Funnell then examine six systematic reviews of research and evaluation on diabetes education from 1985-2005 entering the search term *diabetes* and *patient education* with other key terms that would estimate the importance of literature dedicated to the science of diabetes education and then the art of diabetes education in the medical literature. What the authors found is striking and can be viewed in the tables below. The literature stresses the science and narrow behavioral issues related to treatment compliance with no more than a nod

Web Wonder

Pomona Valley Medical Center-Region 8 has its own webpage for their Sweet Success program. At their site you will find links for calculators (initial insulin dose, calculation of average blood sugar from HbA1c), sample forms (diabetic flow sheet, meal planning worksheet), links to many other websites, and a reference list of other helpful resources.

<http://www.peridocs.com/SanGabriel/SweetSuccess/SSTOC.htm>

Thanks to Laura Smith, RN, Diabetes Educator for sharing this website. For more information, please contact her at laura.smith@pvhmc.org

to dynamics heavily researched in other disciplines. To omit the critical element of therapeutic alliance and its core skills in further diabetes patient education literature would be a considerable failing as educators must continually demonstrate their worth to payors and administrators. The authors decry that diabetes educators' values, interpersonal skills, and compassion are absent from the literature and that "it is in the best interests of our profession to establish that the contribution of skilled, compassionate, patient-centered diabetes educators is both unique and fundamental to the success of our work". They end by stressing that the need exists, as do tools for evaluation. "...Now, we need to determine if the will exists".



Translation of Research into Care

Leona J. Dang-Kilduff, RN, MSN, CDE, Region 4

I recently presented at the Center for Disease Control Division of Diabetes Translation conference. This conference was great for making contacts with researchers and leaders in diabetes. We as diabetes educators are creating our own and our client's futures with the translation of research into practice. This conference taught me to analyze research and apply it to practice.

The definition of translation research from Google is one that "...takes a result from basic or fundamental science and studies its applicability in the clinical or human situation." Another type of translation research addresses the adoption of prevention and treatment strategies that have been demonstrated to be effective through clinical research in the care of patients and in population-based prevention of conditions such as heart disease and stroke. This is what all diabetes educators do on a daily basis in their practices.

We all constantly read research, analyze it, and see how it can be applied to our practice. But where do we begin?

First, read the title to see if it looks like it would apply to your practice.

Second, read the abstract. Most research has been a repeat of other research. Look to see if there is anything new and would it change your practice.

Third, look at the type of research. The strongest research is one that has been conducted as a random-

ized trial. A large portion of the research we use however, cannot ethically be conducted using a randomized trial. The question becomes, how can we offer care to a few pregnant women and not to others? It has been done, but not often. Women have agreed to participate in these studies and the results are stronger.

A large portion of the studies relating to pregnancy and reproduction are epidemiologic and cohort studies. Epidemiologic studies are those in which the health or illness of populations are examined. O'Sullivan identified gestational diabetes through an epidemiologic study. He reviewed disturbing obstetrical histories for women prior to their development of diabetes (O'Sullivan 65). His original intent was to study gestational diabetes as a sign of future diabetes. Now it is a whole area of study and clinical practice.

Cohort studies look at a group with specific similarities. Many of the studies conducted for gestational diabetes are cohort studies. They ask different questions, such as whether or not there was an intervention? Were they looking at outcomes? What were the outcomes? Was there a comparison group? We often don't have equivalent control groups or no control group to compare with. The most recent cohort study is the 2008, Hyperglycemia and Adverse Pregnancy Outcomes study (HAPO 08). We are all holding our breath waiting for this study's

results to be translated into recommendations that will change our practice.

Generally we can't, or won't ask women to not receive treatment, or receive treatment that we feel is inferior. Intervention studies are extremely costly. Typically we tend to see more observational and basic research studies. These are often excellent and can start directing your thoughts and practices in new, creative and different directions.

Fourth, does the research appear solid? Were the objectives clear? Methods clean? Does it have an analysis, discussion and summary that is easy to understand? What theory is the paper based on? Is it logical and does it make sense?

Recently I have begun to read more research. My colleagues and I have been busy updating the Sweet Success Guidelines for Care. We have needed to identify current evidence based research to use for our recommendations. We want to make sure we use the strongest research possible and make it applicable to the real world.

Pregnancy and reproduction is only a small slice of the general population, but affects the health of our future population. The care a woman and her offspring receive during pregnancy echoes throughout their lifetime. It is our goal to provide the best care possible during this crucial time in life.

References:

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O'Sullivan JB, Mahn CM. Criteria for the oral glucose tolerance test in pregnancy. *Diabetes* 1965;23(3):278-285.

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The Preconception Health Council of California has a new website for promoting preconception care. You will find links to making a reproductive life plan and how to have a healthy body, mind, and environment. There is a link for men and for healthcare providers. Visit:

<http://everywomanocalifornia.org/>

The Diabetes Prevention Program Study (DPP) and its follow up - Role of RD's and RN's

Perpetua Magpuri, MA, RD, Nutritionist, Region 6.2

The Diabetes Prevention Program Study was funded by the National Institutes of Health (NIH) through the National Institutes of Diabetes and Digestive and Kidney Diseases (NIDDK). The purpose was to prevent or delay diabetes by treating with metformin or having those in the study adopt a healthy lifestyle. The study randomly assigned 3,234 pre-diabetic men and women, aged 25-85, who were followed over the 3.2 years of the study. All had a BMI of 24 or higher (22 BMI for Asian Americans), and had a blood glucose value between 95-125 mg/dl for fasting and 140-199 mg/dl for the two hour following a 75 gm oral glucose challenge test. Those enrolled were selected from various racial and ethnic groups and were randomized into either the placebo, metformin, or lifestyle groups.

The results, published in the *New England Journal of Medicine* in February 2002, revealed that intensive nutrition and exercise counseling led to a 58% reduction in the progression from pre-diabetes to diabetes compared to those who were not counseled.

Diabetes experts speculate that increasing activity levels and losing just 7% of initial body weight appears to be sufficient. For a 200 pound woman, this equates to fourteen pounds. Participants were encouraged to engage in 150 minutes a week (30 minutes a day for 5 days) of moderate exercise such as brisk walking.

The experts suggest that increasing activity levels and losing weight improves the body's ability to respond to insulin and handle glucose. Although several medications also have been found effective in controlling the progression of pre-diabetes, none has measured up to the use of diet and exercise. In the DPP for example, the diabetes medication metformin reduced the onset of diabetes by only 31%.

There are approximately 57 million people in the United

States who are at high risk of developing type 2 diabetes. However, this number could be significantly reduced if a healthy lifestyle change is made.

A follow-up study to the DPP is the Diabetes Prevention Program Outcome Study (DPPOS). This will allow researchers to continue to monitor participants to learn more about the study's long-term effects and the impact on diabetes-related health problems such as nerve damage and heart, kidney, and eye disease.

California has two centers, UC Los Angeles (Alhambra site) and UC San Diego, that make up the 27 centers nationwide that are participating in the DPPOS. The principal investigators are comprised of Endocrinologists, cardiologists, and exercise physiologists. Most of the center's clinics are coordinated by and RN and/or RD and along with the exercise physiologist serve as lifestyle coaches.

Most centers have a part-time behavioral psychologist or consultant who help the RD address chronic behavioral barriers to diet and exercise adherence.

As one of the participating RD's involved in this study I am proud to be part of the scientific investigative process. Through this important study, we hope to empower those at risk for developing Type 2 Diabetes to change their behavior and prevent this disease.

Reference:

The DPP Research Group: Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin. *N Engl J Med* 2002 February 7, 346(6):393-403.

Ankyloglossia and Its Significance for Breastfeeding A Report from ILCA

By Jeannette Panchula, BSW, RN, PHN, IBCLC, MCAH Program, Center for Family Health, CDPH

One of the “headliners” in this year’s International Lactation Consultant Conference in Orlando, Florida was Dr. James, G. Murphy, MD, FAAP, FABM, Assistant Professor of Pediatrics, F. Edward Hebert School of Medicine and a Fellow of both the American Academy of Pediatrics and the Academy of Breastfeeding Medicine from San Diego. His presentations dovetailed perfectly with the videos shown by Donna Geddes, PhD, Diagnostic Ultrasonographer from Perth, Australia.

Donna Geddes was able to demonstrate with ultrasounds the limited movement caused by a variety of tight frenulums (a band of fibrous material under the tongue, type 1, 2, 3 and 4). Dr. Murphy was able to provide information and encouragement to local pediatricians, ear, nose, and throat specialists, and dentists regarding ways to improve the breastfeeding skills in newborns when they have this condition. His presentation was based on over 500 frenotomies he has performed.

A problem in many parts of California is the TIME it takes to get the treatment for these babies. In the past, physicians only had to notice that when an infant was crying he/she was unable to elevate the tongue – and clipping was done at birth or soon after that. The current practice is to “watch and wait” to “see if it affects breastfeeding”.

The videos presented by Donna Geddes demonstrated that when a tongue is unable to move DOWN AND OUT OF THE WAY so that there is an adequate-sized

space with vacuum formed at the back of the mouth at the junction of the hard and soft palate, babies don’t create an adequate bolus and do not have effective milk transfer. In some infrequent cases, when mothers have excellent milk release, or over-production babies compensate by having VERY LONG AND PAINFUL breastfeeding episodes, and thus receive adequate breastmilk.

Evidence-based research now shows that women are set up to fail to breastfeed if their babies are unable to effectively breastfeed during the first few weeks postpartum. Setting up the “baseline” for milk production in the mother is very time-sensitive. If baby is unable to get a good latch and perform milk removal/transfer during the first 2 weeks after birth, the mother’s body does not set up adequate number of prolactin receptors. This will cause her to always “play catch-up” with her milk production for the rest of the time she is breastfeeding this child. When her nipple is badly damaged (looks like a new lipstick) or feedings last over an hour, few mothers can tolerate this process for long.

Unfortunately, few people are taught to recognize the different levels of frenulum tongue attachment and what to do about correcting the problem. Even if the surgery is preformed early, SOME babies are already used to moving their tongue differently and require repeated assessments and assistance (mom pumping milk and teaching baby to move tongue out, etc. Dr. Murphy was able to dem-

onstrate that with early assessment and correction plus support for the mom, they are able to breastfeed their babies as long as they wish.

RPPC and CDAPP staff can share this information widely and assist the interdisciplinary team: pediatricians, ENTs dentists, family physicians and advanced practice nurses to present information enhancing the assessment and treatment of tight frenulums in their community. If by survey services are not readily available they can advocate for this care in order to enhancing breastfeeding for the mother and baby.

References:

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Donna T. Geddes, Diana B. Langton, Ian Gollow, Lorili A. Jacobs, Peter E. Hartmann and Karen Simmer, Removal and Sucking Mechanism as Imaged by Ultrasound Frenulotomy for Breastfeeding Infants With Ankyloglossia: Effect on Milk. *Pediatrics* published online Jun 23, 2008;

Catherine Watson Genna and Elizabeth V. Coryllos Breastfeeding and Tongue-Tie *J Hum Lact* 2009; 25; 111

You-tube video on the procedure: <http://www.youtube.com/watch?v=XN-vYd1m-o&feature=related>

“A problem in many parts of California is the TIME it takes to get the treatment for these babies.”



CDAPP REGIONAL PROGRAMS

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Region 5

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Region 6.1

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310-222-3651

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536-5090

Region 10

Kaiser Permanente System-North
408-366-4102

Region 11

Kaiser Permanente System-South
951-353-3569

CDAPP Regional Data Center

562-945-6484

Upcoming Educational Opportunities

August 28th, 2009: Region 2 Affiliate Training in Sacramento. For more information contact, Wendy Ly, at 916-733-1705 or via email at bangws@sutterhealth.org

September 14-15, 2009: Region 6.1 Affiliate Training in Long Beach. For more information contact, 562-595-6459.

October 22, 2009: Region 1 and 3 Sweet Success Affiliate Sharing Day, Location to be announced (SF Bay area), Contact Griselda Thomas at 415-476-9877.

October 27, 2009: Region 4 Affiliate Training at Lucille Packard Children's Hospital in Palo Alto. Contact leonad@stanford.edu or call 650-736-2210 or 650-498-5347

November 5-7, 2009: Sweet Success Express 2009 Diabetes and Pregnancy National Research Conference, Facing Change and Challenge, Anaheim. Contact Professional Education Center at 800-732-2387 / www.sweetsuccessexpress.com / www.proedcenter.com

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