





**PARTNERS IN PERINATAL HEALTH
CONFERENCE
MAY 18, 2010**

*“Substance Use and Co-Occurring Disorders: Working with the Substance
Exposed Family”*

*Enid Watson M.Div
Institute for Health and Recovery*

The Effects of Alcohol Consumption on a Developing Baby

Months 1, 2, & 3	Months 4, 5, & 6	Months 7, 8, & 9	Birth – 18 months
<ul style="list-style-type: none"> • The major organs develop (heart, lungs, kidneys, etc.) • The basic structure of brain is laid down 	<ul style="list-style-type: none"> • Body grows rapidly • Movement increases 	<ul style="list-style-type: none"> • The brain grows very rapidly and organizes itself so it can work properly • The lungs mature 	<ul style="list-style-type: none"> • The brain continues to grow rapidly as the baby learns new things every minute 
<p>Drinking alcohol during the first 3 months can result in problems such as heart defects and facial changes.</p>	<p>Drinking alcohol during the second 3 months can slow a baby's overall growth and change the way cells in the brain develop.</p>	<p>Drinking alcohol during the last 3 months can greatly reduce brain growth and hurt overall brain development.</p>	<p>A mother who drinks alcohol while breastfeeding will pass some of that alcohol along to her baby. Babies drink less milk when there is alcohol in it.</p>
<p>Stopping drinking during the first 3 months can help prevent organ damage and changes to the way the face looks.</p>	<p>Stopping drinking now can improve a baby's birth weight and growth and prevent the most severe effects on the brain.</p>	<p>Stopping drinking now can prevent the most severe effects on the brain (early in the 3rd trimester) and prepare the mother to handle the challenges of raising a child.</p>	<p>Stopping now means that a baby will get the nutrition that he or she needs, and a mother can be a better parent, more prepared to deal with the ups and downs of raising children.</p>

When you stop drinking, you have a better chance of having a healthy baby!

Fact Sheet: Methadone Maintenance Treatment & Pregnancy

General

- Heroin was identified as the primary substance of abuse for 54%¹ (v. 15% nationally²) of pregnant women admitted to Massachusetts substance use disorder treatment programs, while the incidence of polydrug use resulted in 61% of pregnant women in treatment reporting past use of heroin in 12 months prior to admission.
- Methadone Maintenance Treatment (MMT) is currently the standard of care in the United States for the treatment of opioid addiction in pregnant women.³ Concurrent addictions counseling is required for all individuals receiving MMT.
- Daily doses of >60 mg/day (range of 50 to 150 mg/day) of Methadone are found to be effective in treatment of heroin and other opioid dependence among pregnant women.^{4,5} Higher doses in the third trimester are sometimes warranted because of enhanced methadone metabolism.⁶ Methadone doses are necessarily higher than those in the early 1980s because of the increased purity of heroin, and the greater amounts of the drug used by individuals.
- It is recommended that pregnant women continue MMT through delivery.⁷

Benefits of Methadone Maintenance Treatment (MMT) among Pregnant Women

- MMT has long been regarded as the treatment of choice for opioid dependence among pregnant women for the following reasons: “MMT improves prenatal care, reduces the risk of exposure to HIV, hepatitis and other maternal infections, allows the pregnant opioid-dependent woman an opportunity to prepare for birth instead of seeking out heroin and, compared to illicit heroin use, reduces fetal exposure to repeated maternal opioid withdrawal.”⁸
- MMT contributes to a 3-fold increase in treatment retention and 3-fold reduction in heroin use.³

Fetal/Neonatal Effects of MMT During Pregnancy

- The combination of MMT and comprehensive prenatal care improves birth outcomes.^{9, 10}
- Neonatal Abstinence Syndrome (NAS) “is a generalized disorder characterized by signs and symptoms indicating dysfunction of the autonomic nervous system, gastrointestinal tract, and respiratory system”¹¹ and is often exhibited by neonates of heroin and methadone-maintained mothers. Such infants tend to be in a neurologically distressed condition. Although NAS symptoms can be more severe than those resultant from prenatal heroin use, studies have revealed no direct association between methadone use and low birth weight,¹² and the majority of children appear to have no lasting effects from prenatal exposure.
- NAS is not dependent upon maternal methadone dosage.¹³ The severity of NAS plateaus between maternal methadone doses of 40-60 mg/day; neonates born to women maintained on <50 mg/day were as likely as those born to women maintained on >50 mg/day to require treatment for NAS.¹⁴
- NAS appears to be exacerbated by prenatal tobacco use.¹⁵
- The Academy of Pediatrics recommends that mothers on MMT breastfeed newborns.¹⁶ Low concentrations of methadone in breast milk do not negatively impact neonatal withdrawal.

Breastfed infants may require shorter hospitalization for NAS¹⁷ and bonding between mother and child may be increased.¹⁸

Safe Analgesics for Methadone-Maintained Laboring Women

- Methadone-maintained women should be offered the same options for relief of pain associated with childbirth with the exception of opioid agonist/antagonists such as nalbuphine (Nubain) or butorphanol (Stadol), which may precipitate withdrawal symptoms by displacing methadone from the opioid receptors. Morphine, meperidine, fentanyl, or other narcotics that are opioid agonists may be offered instead.¹⁹

Resources: Massachusetts Substance Abuse Information and Education HELPLINE
www.helpline-online.com or 1-800-327-5050. **24 hours/7 day coverage**

¹ Massachusetts Department of Public Health, Bureau of Substance Abuse Service (2005). Overall treatment admissions by adult pregnant women. *Management Information System FY 2004*.

² Office of Applied Studies, Substance Abuse and Mental Health Services Administration. (2004). The DASIS report. Pregnant women in substance abuse treatment 2002. Arlington, VA: Author.

³ Substance Abuse and Mental Health Services Administration (SAMHSA) (2004) TIP 40. Clinical guidelines for the use of buprenorphine in the treatment of opioid addiction.

⁴ Rayburn, W.F., & Bogenschultz, M.P. (2004). Pharmacotherapy for pregnant women with addictions. *American Journal of Obstetrics and Gynecology*, 191, 1885-1897.

⁵ Substance Abuse and Mental Health Services Administration (2006) TIP 45. Detoxification and substance abuse treatment.

⁶ Drozdick, J.III, Berghella, V., Hill, M., and Kaltanbach, K. (2002). Methadone trough levels in pregnancy. *American Journal of Obstetrics and Gynecology* 187:1184-8.

⁷ SAMHSA (2006).

⁸ Young, D.M. (2007).

⁹ Johnson R.E., Jones H.E., Fischer G.. (2003) Use of buprenorphine in pregnancy: Patient management and effects on the neonate. *Drug and Alcohol Dependence*. 70(2 Suppl):S87-S101; 2003a

¹⁰ Svikis, D., Golden. A., Huggins, G., Pickens, R.W., McCaul, M.E., Velez, M., Rosendale, T., Brooner, R., Gazaway, P., Stitzer, M., & Ball, C.. (1997) Cost-effectiveness of comprehensive care for drug-abusing pregnant women. *Drug Alcohol Depend.* 45:105-113.

¹¹ Johnson et al (2003)

¹² Kashiwagi, M., Arlettaz, R., Lauper, U., Zimmerman, R., & Hebisch, G. (2005). Methadone maintenance program in a Swiss perinatal center. I. Management and outcome of 89 pregnancies. *Acta Obstetrica et Gynecologica Scandinavica*, 84, 140-144.

¹³ Berghella, V., Lim, P., Cherpes, J., Hill, M.K., Kaltenbach, K., Wapner, R.Jo. (2000) Maternal methadone dose and neonatal withdrawal. *American Journal of Obstetrics & Gynecology*, 182:S154.

¹⁴ Brown, H.L., Britton, K.A., Mahaffey, D., Brezendine, E., Hiatt, A.K., & Turnquest, M.A. (1998). Methadone maintenance in pregnancy: A reappraisal. *American Journal of Obstetrics & Gynecology*, 179, 459-463.

¹⁵ Choo, R.E., Huestis M.A., Schroeder J.R., Shin, A.S., & Jones, H.E. (2004). Neonatal abstinence syndrome in methadone-exposed infants is altered by level of prenatal tobacco exposure. *Drug and Alcohol Dependence*, 75, 253-60.

¹⁶ American Academy of Pediatrics, Committee on Drugs. (2001) Transfer of drugs and other chemicals into human milk. *Pediatrics* 108:776-789.

¹⁷ Jansson, L.M., Choo, R., Velez, M.L., Harrow, C., Schroeder, J.R., Shakleya, D.M., and Huestis, M.A., (2008). Methadone maintenance and breastfeeding in the neonatal period. *Pediatrics* 121:106-114.

¹⁸ Phillip, B. L., Merewood, A., & O'Brien, S. (2003). Methadone and breastfeeding: New horizons. *Pediatrics* 111:6, 1429-1430.

¹⁹ Goff, M., & O'Connor, M. (2007). Perinatal care of women maintained on methadone. *Journal of Midwifery & Women's Health*, 52, e23-e26.

Breastfeeding and Substance Use Resources

Internet Resources

Breastfeeding and the Use of Human Milk

PEDIATRICS Vol. 115 No. 2 February 2005, pp. 496-506

<http://pediatrics.aappublications.org/cgi/content/abstract/115/2/496>

Considerable advances have occurred in recent years in the scientific knowledge of the benefits of breastfeeding, the mechanisms underlying these benefits, and in the clinical management of breastfeeding. This policy statement on breastfeeding replaces the 1997 policy statement of the American Academy of Pediatrics and reflects this newer knowledge and the supporting publications. The benefits of breastfeeding for the infant, the mother, and the community are summarized, and recommendations to guide the pediatrician and other health care professionals in assisting mothers in the initiation and maintenance of breastfeeding for healthy term infants and high-risk infants are presented. The policy statement delineates various ways in which pediatricians can promote, protect, and support breastfeeding not only in their individual practices but also in the hospital, medical school, community, and nation.

Is It Safe for My Baby?

[http://www.camh.net/About Addiction Mental Health/Drug and Addiction Information/Safe Baby/index.html](http://www.camh.net/About_Addiction_Mental_Health/Drug_and_Addiction_Information/Safe_Baby/index.html)

This resource gives information about the relative risk and safety of prescription, over-the-counter and illegal drugs, along with alcohol, tobacco and other substances to the unborn baby (fetus) when the mother is pregnant and the baby when breastfeeding. It also provides recommendations to discuss with your health care provider.

Perinatal Care of Substance Using Mothers and Their Infants - Breastfeeding

<http://speciosum.curtin.edu.au/breastfeeding/breastfeedingIndex.html>

The purpose of the website is to provide rural and remote health care professionals with information which will enable them to meet the special needs of chemically dependent pregnant and postnatal women and their infants.

Includes detailed guidelines and charts concerning the risks and benefits of breastfeeding an infant of a substance using mother.

Websites

Drugs and Lactation Database (LactMed)

<http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?LACT>

A peer-reviewed and fully referenced database of drugs to which breastfeeding mothers may be exposed. Among the data included are maternal and infant levels of drugs, possible effects on breastfed infants and on lactation, and alternate drugs to consider.

Motherisk

<http://www.motherisk.org/women/index.jsp>

The Motherisk Program at The Hospital for Sick Children in Toronto, Ontario, Canada is a clinical, research and teaching program dedicated to antenatal drug, chemical, and disease risk counselling. It is affiliated with the University of Toronto. Created in 1985, Motherisk provides evidence-based information and guidance about the safety or risk to the developing fetus or infant, of maternal exposure to drugs, chemicals, diseases, radiation and environmental agents.

Organization of Teratology Information Specialists

<http://www.otispregnancy.org/hm/>

The Organization of Teratology Information Specialists (OTIS) is dedicated to providing accurate evidence-based, clinical information to patients and health care professionals about exposures during pregnancy and lactation. The organization serves to provide education, to conduct relevant research and to support teratology information services throughout North America. To educate the public, the Organization of Teratology Information Specialists has compiled Fact Sheets on various exposures of concern. Fact Sheets answer frequently asked questions about exposures during pregnancy and lactation.

Books

Breastfeeding: A Guide for the Medical Profession (2005)

by Ruth A. Lawrence and Robert Lawrence

The completely revised and updated New Edition of this trusted text delivers complete, authoritative, evidence-based information on all of the scientific and clinical topics related to breastfeeding—from basic data on the anatomical, physiological, biochemical, nutritional, immunological, and psychological aspects of human lactation...to guidance on a full range of problems in clinical management. Written by a pioneer in the field of human lactation, the 6th Edition has been revised from cover to cover to include information on new drugs and herbal products, infections, and much more.

- * Provides the basic tools of knowledge and experience to enable readers to provide thoughtful guidance to the breastfeeding mother that is most applicable to her circumstances, problems, and lifestyle.
- * Features a wealth of references from the most recent studies.
- * Integrates evidence-based data with practical experience
- * Offers complete coverage of anatomy and physiology
- * the composition of human breast milk
- * guidance on lactation management
- * equipment, pumps, and other devices
- * contraindications to breastfeeding
- * and much more

Drugs in Pregnancy and Lactation: A Reference Guide to Fetal and Neonatal Risk (2008)

by Gerald G Briggs, Roger K Freeman, and Sumner J Yaffe

Thoroughly updated, with 127 new drug entries, the Eighth Edition of this popular reference provides practical, reliable information on over 1,175 drugs commonly prescribed to pregnant or lactating women. Each drug monograph summarizes potential side effects on the embryo and fetus and drug passage to the nursing infant. FDA Risk Factor ratings for each drug are included. Drugs are listed alphabetically and indexed by generic, domestic, and foreign trade names. Recommendations for pregnancy and breastfeeding are listed at the top of each drug review to provide for quick reference. This edition places special emphasis on drug-induced developmental toxicity, taking dosage into consideration wherever possible. Coverage includes more herbal medicines and nutritional supplements used by women. Summary paragraphs have been added to most drug reviews. A companion Website offers the fully searchable text and links to the Briggs Update newsletter (www.briggsdrugsinpregnancy.com).

Medications and Mothers' Milk 2008 (13th Ed.)

by Thomas W. Hale

Medications and Mothers' Milk 2008 is a comprehensive reference on the impact of currently used medications on breastfeeding mothers and infants. Written by renowned clinical pharmacologist, Dr. Thomas W. Hale, this thousand plus page book is packed with information

on more than 1000 drugs, vitamins, herbs, and vaccines. It includes tables on radioisotopes, radiocontrast agents, and common cold remedies.

Each drug entry includes the drug name and generic name; common trade names used in Canada, Australia, and the United Kingdom; uses of the drug; AAP recommendations on the drug; a drug monograph that describes what is currently known about the drug, its ability to enter milk, the concentration in milk at set time intervals, and other parameters that are important to a clinical consultant; pregnancy risk category; lactation risk category; theoretic infant dose; relative infant dose; adult concerns; pediatric concerns; drug interactions; alternative drugs that may be suitable choices; adult dosage; and a table that includes (when known) adult half life ($T_{1/2}$) of the medication, pediatric half life (PHL) of the medication, milk/plasma ratio (M/P), the time interval from administration of the drug until it reaches the highest level in the mother's plasma or peak time to max (T_{max}), percentage of maternal protein binding (PB), oral bioavailability (Oral), the volume of distribution (Vd), the pH at which the drug is equally ionic and nonionic (pKa), and the molecular weight (MW) of the medication.

<http://www.ibreastfeeding.com/index.html>

(Website specializes in providing quality breastfeeding books and materials, reliable updates on medications and research through a monthly newsletter, and an annual conference highlighting cutting edge research on breastfeeding issues.)