

PREGNANCY AND WEIGHT; Too Little, Too Much, and Just Right.

❖ Presented by:

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information and slides from
the Wyoming Department of
Health HBWW program.



Objectives:

- ❖ Explore inadequate weight gain as a risk factor for low birth weight
- ❖ Explain Statistical Model for low birth weight risk in WY
- ❖ Define weight gain recommendations during pregnancy
- ❖ Discuss development of WY Healthy Baby is Worth the Weight (HBWW) social marketing campaign
- ❖ Describe HBWW tools available for providers to use with pregnant women
- ❖ Discuss promising strategies for providers to support adequate weight gain during pregnancy
- ❖ Discuss strategies to help deal with smoking and substance abuse
- ❖ Discuss also complications of excess weight and weight gain in pregnancy

❖ Pregnancy is a complicated and emotional time for most women. Even the most excited and invested women may feel a twinge of panic about how the approaching bundle of joy is going to change their bodies, their lives and their relationships.



❖ Some may decide that any weight gain is too much, and may take measures to avoid the recommended weight gain for fear of how their partners may respond, or of how the pregnancy may change their bodies.



❖ Some may decide that since they are “eating for two” (even if one is the size of a potato) they may throw caution to the wind, and indulge in extreme eating and satisfying cravings. This may result in large babies, gestational diabetes and unwanted weight for later.



❖ A small proportion may indulge in risky or addictive behaviors that were patterns before the pregnancy, and that may result in fetal growth restriction, fetal harm or other problems in the pregnancy.



So..what is just right?

- ❖ A woman of average weight before pregnancy should gain 25 to 35 pounds during pregnancy.
- ❖ Underweight women should gain 28-40 pounds during pregnancy.
- ❖ Overweight women may need to gain only 15-25 pounds during pregnancy.

BMI Value	Weight Category	Recommended amount of weight to gain during pregnancy
Less than 19.8	Underweight	28 to 40 pounds
19.8 to 26.0	Normal	25 to 35 pounds
26.1 to 29.0	Overweight	15 to 25 pounds
Greater than 29.0	Obese	15 pounds

Rate of Weight Gain Recommendations

- ❖ First trimester: average gain of 2-4 pounds
- ❖ Second and third trimester:
 - ❖ **Low BMI:** slightly more than 1 pound/week
 - ❖ **Normal BMI:** 1 pound/week
 - ❖ **High BMI:** 2/3 pound/week
- ❖ Aim for a steady rate of weight gain for all BMI categories

- ❖ If twins are expected the patient should gain 35 to 45 pounds during the pregnancy. This would be an average of 1 ½ pounds per week after the usual weight gain in the first three months.
- ❖ With triplets or higher the weight gain is increased proportionally.

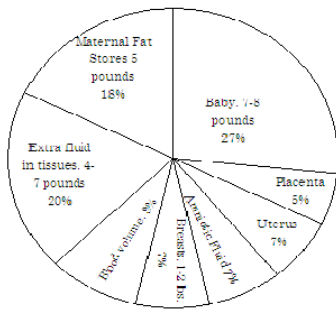


So where does the weight go?

- ❖ Baby 7- 8 pounds
- ❖ Placenta 2-3 pounds
- ❖ Amniotic fluid 2-3 pounds
- ❖ Breast tissue 2-3 pounds

- ❖ Blood supply increase 4 pounds
- ❖ Fat stores for delivery and breastfeeding 5-9 pounds
- ❖ Uterus increase in size 2-5 pounds
- ❖ Total 25 to 35 pounds

Where does all the weight go?



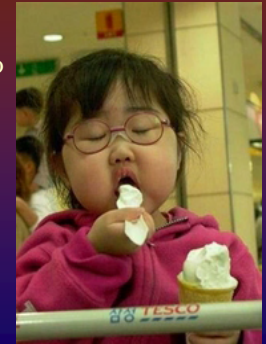
Why worry about maternal weight in pregnancy?

- ❖ **Weight at birth reflects the intrauterine experience:** it is a good indicator not only of a mother's health and nutritional status but also the newborn's chances for survival, growth, long-term health and psychosocial development.

- ❖ While the more common of the two problems is too much weight gain, **the more serious is too little weight gain.** Too much weight can lead to LGA, gestational diabetes, shoulder dystocia, and an increased rate in cesarean and operative deliveries.



- ❖ There is also growing evidence that obese babies are more likely to grow into obese children and adults and are at greater risk for health problems such as diabetes.
- ❖ One area of good news; breast feeding seems to discourage obesity and diabetes in later life.



How to encourage pregnant moms to not exceed recommended weight gain:

- ❖ It is not necessary to "eat for two" during pregnancy. It's true that pregnant women need extra calories from nutrient-rich foods to nourish the fetus, but the general need is to consume only 100 to 300 more calories per day than the patient did before becoming pregnant.

Suggestions for the pregnant mom concerned about excess weight gain;

- ❖ Avoid processed and glycemic foods.
- ❖ Trade white flour for whole grains.
- ❖ Choose 2% or skim milk.
- ❖ Eat whole fruits instead of just juices.
- ❖ Add a salad to lunch and supper.
- ❖ Small frequent meals.



- ❖ Exercise is safe and healthy in pregnancy. Keep heart rate below 140 bpm and avoid overheating.

- ❖ Fish may be eaten safely in pregnancy one to two times weekly. Farm raised fish are safe, avoid the larger salt water fish species.

- ❖ Lean protein is an important part of a pregnancy diet.

- ❖ Drink plenty of water.



What about too little weight gain and low birth weight?

- ❖ Too little weight gain and low birth weight can be serious problems which affect not only fetal growth but long term outcome including brain growth and development.



- ❖ SEPT. 12, 2002 | Jeffrey R. Kaiser, M.D., M.A., and a group of scientists at the University of Arkansas for Medical Sciences (UAMS) are studying how to determine whether very low birth weight infants are in danger of brain injuries in the first days of life.



- ❖ Scientists know that some very low birth weight babies have difficulty maintaining a constant flow of blood to the brain, which can lead to brain damage that causes long-term learning and behavioral problems or cerebral palsy. This problem is called impaired cerebral auto-regulation.



- ❖ Despite significant improvements in survival for very low-birth weight babies, they are still at high risk of long-term health problems because of impaired cerebral auto-regulation," Dr. Kaiser said.



Other problems SGA or IUGR babies commonly have:

- ❖ Decreased oxygen levels

- ❖ Low Apgar scores (an assessment that helps identify babies with difficulty adapting after delivery)

- ❖ Meconium aspiration (inhalation of the first stools passed in utero) which can lead to difficulty breathing

- ❖ Hypoglycemia (low blood sugar) difficulty maintaining normal body temperature

- ❖ Polycythemia (too many red blood cells)

Fetal causes of SGA

- ❖ Multiple gestation (twins, triplets, etc.)
- ❖ Infection
- ❖ Birth defects
- ❖ Chromosomal abnormality
- ❖ Decreased blood flow in the uterus and placenta
- ❖ Placental abruption or previa
- ❖ Prematurity

Common maternal causes for SGA

- ❖ High blood pressure
- ❖ Chronic kidney disease
- ❖ Advanced diabetes
- ❖ Heart or respiratory disease
- ❖ Malnutrition, anemia
- ❖ Substance use (alcohol, drugs)
- ❖ Cigarette smoking

What can be done to prevent SGA?

- ❖ Regular prenatal care can help identify those pregnancies at risk, and begin regimens to diminish the effects of maternal disease.
- ❖ Community based programs such as WIC and Best Beginnings can help moms realize the importance of good nutrition during pregnancy and improve access to nourishing foods.
- ❖ Department of Health: HBWW now in Wyoming

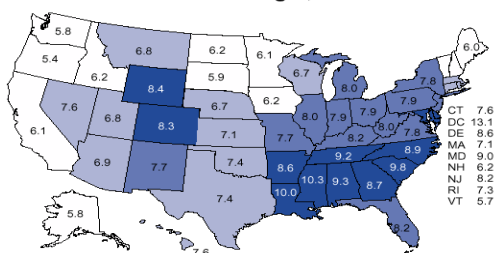


- ❖ For pregnant women on Medicaid insurance, Healthy Additions Maternity Program.
- ❖ Education is the key.
- ❖ Helping pregnant women to realize that the choices they make directly affect their children for the rest of their lives.
- ❖ Pregnancy for the mom is 9 months, what happens during pregnancy is for the rest of the baby's life.



So how are we doing in Wyoming with LBW?

Low Birth Weight, 1999



Percentage of live births with birth weight <2,500 g
 □ 5.4-6.6 □ 6.7-7.6 □ 7.7-8.2 □ 8.3-13.1
 United States rate: 7.6, Healthy People 2010 target: 5.0

Source: National Vital Statistics System, National Center for Health Statistics, CDC.

- ❖ In 2006 8.9% of babies in Wyoming are LBW (less than 2500 grams or 5 lbs 8 oz), we rank 39/50. Alaska ranks 1st with 6.0% LBW, Mississippi is 50th, the worst with 11.4% LBW Healthy People 2010 goal is 5.0%.



So how can we improve?

- ❖ Education, education, education.
- ❖ Good nutrition and healthy weight gain are of paramount importance in pregnancy.
- ❖ Avoidance of substances known to be dangerous to the fetus.
- ❖ Colorado has instituted the "A Healthy Baby is Worth the Weight" program and now Wyoming is beginning a similar program.



Healthy Baby is Worth the Weight (HBWW)

- A social marketing campaign to address adequate prenatal weight gain in Wyoming.
- Inadequate prenatal weight gain is one of the leading contributors to Wyoming's low birth weight rate among singleton pregnancies.
- Healthy People 2010 goal is 5.0%².

The Cost of LBW

Medical care for LBW infants represents more than half the medical care costs for all newborns.⁴

Wyoming spent nearly \$14.1 million, or approximately \$950,000 per year in health care, education and child care for children born at LBW (1988 through 2003).²

Importance of a HBWW Campaign in WY

- Pregnant women who gain appropriate weight are more likely to have a healthy baby.
- One in four Wyoming women gain too little weight during their pregnancy.
- Twenty percent of Wyoming women are considered underweight prior to pregnancy.²
- *Inadequate weight gain during pregnancy is possibly modifiable with appropriate intervention.*

Tipping the Scales Report

- ❖ In 1999, CO Department of Public Health and Environment conducted a population-attributable risk analysis for the first time using all 166,591 births between 1995 and 1997.
- ❖ Report is called *Tipping the Scales: Weighing in on Solutions to the Low Birth Weight Problem in Colorado* www.cdph.state.co.us/pp/womens/pdf/tippingthescales.pdf

Tipping the Scales Report⁵

LBW can be attributed to a number of factors:

- ❖ Multiple gestation is the largest risk
- ❖ Among singleton births:
 - ❖ **The #1 factor is inadequate maternal weight gain during pregnancy**
 - ❖ The #2 factor is smoking during pregnancy
 - ❖ The #3 factor is premature rupture of membranes
 - ❖ The #16 factor is altitude over 10,000 feet

Building a Statistical Model to Explain Low Birth Weight in Wyoming

- ❖ 2004 Wyoming study to determine which variables and interactions between variables are important in explaining LBW in Wyoming.
- ❖ Birth certificate data (Jan. 1998–Dec. 2002) for singleton births to mothers who were residents of Wyoming.
- ❖ Infants with congenital anomalies were excluded.

Variables in Final Model⁶

- ❖ Interpregnancy interval <2 years (OR=1.3, p=0.001)
- ❖ Maternal marital status=unmarried (OR=1.15, p=0.013)
- ❖ >High school education (OR=0.80, p=<.0001)
- ❖ Black maternal race (OR=1.9, p=0.001)
- ❖ Asian maternal race (OR=2.0, p= 0.001)
- ❖ Medical Risk Factor for Current Pregnancy (OR=2.5, p=<.0001)
- ❖ Rural maternal residence (OR=0.8, p=0.002)
- ❖ ≥1 pregnancy terminations (OR=1.2, p=0.009)
- ❖ ≥1 previous live births (OR=0.7, p=<.0001)

Interactions in Final Model⁶

- ❖ Maternal weight gain and altitude:
 - ❖ Among women who lived at altitude ≥5000 ft, women who gained <15 lbs during their pregnancy were 3.6 times more likely to have a low birth weight birth. (95% CI: 2.2 - 5.7)
 - ❖ Among women who lived at altitude <5000 ft, women who gained <15 lbs during their pregnancy were 1.9 times more likely to have a low birth weight birth. (95% CI: 1.6 – 2.3)

Interactions in Final Model⁶

- ❖ Maternal weight gain and maternal age:
 - ❖ Among women under the age of 20, women who gained <15 lbs during their pregnancy were 3.0 times more likely to have a low birth weight birth. (95% CI: 2.2 - 4.1)
 - ❖ Among women ages 20-39, women who gained <15 lbs during their pregnancy were 1.9 times more likely to have a low birth weight birth. (95% CI: 1.6 – 2.3)

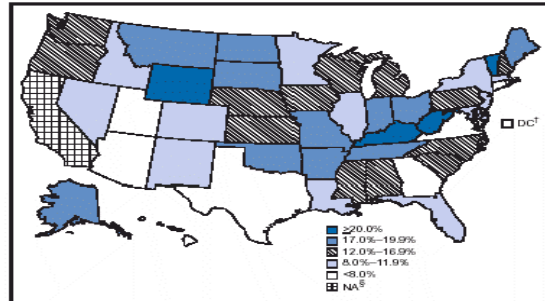
Interactions in Final Model⁶

- ❖ Maternal weight gain and smoking:
 - ❖ Among women who gained 15 lbs or more during their pregnancy, women who smoked were 1.9 times more likely to have a low birth weight birth. (95% CI: 1.6 – 2.2)

Interactions in Final Model⁶

- ❖ Among women who smoked and gained <15 lbs during their pregnancy, women who smoked more cigarettes were more likely to have a low birth weight birth.
 - ❖ Increase of 2 cig/day:
OR=1.1 (95% CI: 1.0 – 1.1)
 - ❖ Increase of 8 cig/day:
OR=1.4 (95% CI: 1.1 – 1.6)
 - ❖ Increase of 10 cig/day:
OR=1.5 (95% CI: 1.2 – 1.8)
 - ❖ Increase of 20 cig/day:
OR=2.1 (95% CI: 1.3 – 3.4)

Smoking in pregnancy is a big problem in Wyoming



* Overall U.S. rate was 11.4%.
 † District of Columbia.
 § Data not available. California does not report maternal smoking.

Source: MMWR © 2004 Centers for Disease Control and Prevention (CDC)

- ❖ Some steps have been made to decrease smoking in Wyoming, but overall few people realize the dangers that smoking and other substance use impose upon pregnancy.
- ❖ Public education can and should be dramatically increased. One in 5 or 20% of pregnant women in Wyoming smoke compared to 11% nationally.



Women have yet another reason to stop smoking while pregnant.

- ❖ In the largest study of its kind, plastic surgeons have found that smoking during pregnancy significantly elevates the risk of having a child with excess, webbed or missing fingers and toes.



From the January 2006 issue of Plastic and Reconstructive Surgery

- ❖ Women who smoked one to 10 cigarettes per day increased the risk of having a child with a toe or finger deformity by 29 percent. The more a woman smoked, the higher the risk became.
- ❖ Women who smoked 11 to 20 cigarettes a day raised the risk 38 percent, and women who smoked 21 or more cigarettes per day raised the risk 78 percent.

Smoking during pregnancy affects speech-processing ability in newborn infants

Key, Alexandra P. F.; Ferguson, Melissa; Molfese, Dennis L.; Peach, Kelley; Lehman, Casey; Molfese, Victoria J.

Source: ENVIRONMENTAL HEALTH PERSPECTIVES 115 (4): 623-629 APR 2007

- ❖ Abstract: **BACKGROUND:** Tobacco **smoking** during **pregnancy** is known to adversely affect development of the central nervous system in babies of **smoking** mothers by restricting utero-placental blood flow and the amount of oxygen available to the fetus. **Behavioral data associate maternal smoking with lower verbal scores and poorer performance on specific language/auditory tests.**
- ❖ **OBJECTIVES:** In the current study we examined the effects of maternal **smoking** during **pregnancy** on newborns' speech processing ability as measured by event-related potentials (ERPS).

- ❖ **RESULTS:** Brainwaves of babies of nonsmoking mothers were characterized by typical hemisphere asymmetries, with larger amplitudes over the left hemisphere, especially over temporal regions. Further, infants of nonsmokers discriminated among a greater number of syllables whereas the newborns of smokers began the discrimination process at least 150 msec later and differentiated among fewer stimuli.
- ❖ **CONCLUSIONS:** Our findings indicate that prenatal exposure to tobacco smoke in otherwise healthy babies is linked with significant changes in brain physiology associated with basic perceptual skills that could place the infant at risk for later developmental problems.

Title: Effects of maternal smoking in pregnancy on prenatal brain development. The Generation R Study Author(s): Roza, Sabine J.; Verburg, Bero ; Jaddoe, Vincent W. V.; Hofman, Albert; Mackenbach, Johan P.; Steegers, Eric A. P.; Witteman, Jacqueline C. M.), Verhulst, Frank C.; Tiemeier, Henning

Source: EUROPEAN JOURNAL OF NEUROSCIENCE 25 (3): 611-617 FEB 2007

- ❖ Abstract: Nicotine, as has been shown in animal studies, is a neuroteratogen, even in concentrations that do not cause growth retardation. In humans, there is only indirect evidence for negative influences of nicotine on brain development from studies on the association between maternal **smoking in pregnancy** and behavioral and cognitive development in the offspring.
- ❖ We investigated the associations of maternal **smoking in pregnancy** with fetal head growth characteristics in 7042 pregnant women.

- ❖ When mothers continued to smoke during **pregnancy**, fetal head circumference showed a growth reduction of 0.13 mm [95% confidence interval (CI): -0.18, -0.09] per week compared to fetuses of mothers who never smoked during **pregnancy**. Biparietal diameter of fetuses with **smoking** mothers grew 0.04 mm (95% CI: -0.05, -0.02) less per week than that of fetuses of nonsmoking mothers.
- ❖ In conclusion, continuing to smoke during **pregnancy** leads to reduced growth of the fetal head. Further research should focus on the causal pathway from prenatal cigarette exposure via brain development to behavioral and cognitive functions.

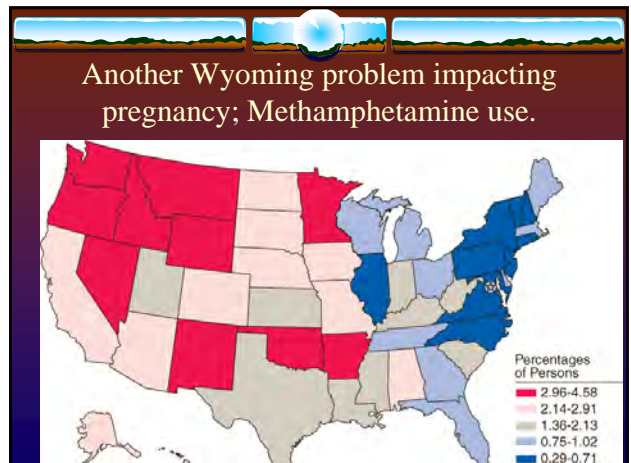
Title: Does maternal smoking during pregnancy predict the smoking patterns of young adult offspring? A birth cohort study Author(s): Al Mamun, Abdullah; O'Callaghan, Frances V.; Alati, Rosa; O'Callaghan, Michael; Najman, Jake M.; Williams, Gail M.; Bor, William

Source: TOBACCO CONTROL 15 (6): 452-457 DEC 2006

- ❖ Abstract: Objective: To examine the association between maternal **smoking** during **pregnancy** and the development of **smoking** behavior patterns among young adult offspring. Method: Data were from the Mater- University of Queensland Study of **Pregnancy** (MUSP), a birth cohort of 7223 mothers and children enrolled in Brisbane, Australia, in 1981.

- ❖ The development of **smoking** behaviors (early or late onset, or combination of onset and prevalence patterns) among offspring at age 21 years with different patterns of maternal **smoking** (never smoked, smoked before or after **pregnancy** but not during **pregnancy**, or smoked during **pregnancy**) were compared.
- ❖ Maternal **smoking** information was derived from the prospectively collected data from the beginning of **pregnancy** until the child was 14 years of age. Analyses were restricted to the 3058 mothers and children whose **smoking** status was reported.

- ❖ Results: The proportion of young adults who smoked regularly, either with early onset or late onset, was greater among those whose mothers had smoked during **pregnancy** compared with those whose mothers had never smoked. Those whose mothers stopped **smoking** during **pregnancy**, but who then smoked at other times during the child's life, were similar to those whose mothers had **never smoked**. This association was robust to adjustment for a variety of potential covariates.
- ❖ Conclusions: The findings provide some evidence for a direct effect of maternal **smoking** in utero on the development of **smoking** behavior patterns of offspring and provide yet another incentive to persuade pregnant women not to smoke.



From the US Department of Health, 2006

- ❖ Young adults aged 18 to 25 were the most likely to use methamphetamines in the past year.
- ❖ For adults aged 18 to 25, rates of past year methamphetamine use were among *the highest in Wyoming (4.6%)*, Arkansas (4.4%), Minnesota (3.8%) and Nevada (3.8%).
- ❖ Methamphetamine use was the lowest among young adults in New York (0.3%), Connecticut (0.4%), and Vermont (0.4%).

- ❖ Again education can make a dramatic impact.
- ❖ Many young women who use methamphetamines are unaware of the dramatic and long term dangerous effects upon themselves and their families.



Meth Makeover



1998



2002

Title: The infant development, environment, and lifestyle study: Effects of prenatal methamphetamine exposure, polydrug exposure, and poverty on intrauterine growth
Author(s): Smith, Lynne M.; LaGasse, Linda L.; Derauf, Chris; Grant, Penny; Shah, Rizwan; Arria, Amelia; Huestis, Marilyn; Haning, William; Strauss, Arthur; Della Grotta, Sheri; Liu, Jing; Lester, Barry
Source: PEDIATRICS 118 (3): 1149-1156 SEP 2006

- ❖ Abstract: OBJECTIVE. **Methamphetamine** use among **pregnant** women is an increasing problem in the United States. Effects of **methamphetamine** use during pregnancy on fetal growth have not been reported in large, prospective studies.
- ❖ We examined the neonatal growth effects of prenatal **methamphetamine** exposure in the multicenter, longitudinal Infant Development, Environment and Lifestyle study.

- ❖ RESULTS. The **methamphetamine** exposed group was 3.5 times more likely to be small for gestational age than the unexposed group. Mothers who used tobacco during pregnancy were nearly 2 times more likely to have small-for-gestational-age infants. In addition, less maternal weight gain during pregnancy was more likely to result in a small-for-gestational-age infant. Birth weight in the **methamphetamine** exposed group was lower than the unexposed group.
- ❖ CONCLUSIONS. These findings suggest that prenatal **methamphetamine** use is associated with fetal growth restriction after adjusting for covariates. Continued follow-up will determine if these infants are at increased risk for growth abnormalities in the future.

Title: Effects of methamphetamine-induced neurotoxicity on the development of neural circuitry: a hypothesis

Source: BRAIN RESEARCH REVIEWS 34 (3): 103-118 DEC 2000

- ❖ Abstract: Exposure of the developing brain to methamphetamine has well-studied biochemical and behavioral consequences. We review: (1) the effects of methamphetamine on mature serotonergic and dopaminergic pathways; (2) the mechanisms of methamphetamine neurotoxicity and (3) the role of serotonergic and dopaminergic signaling in sculpting developing neural circuitry.
- ❖ Consideration of these data suggest the types of neural circuit alterations that may result from exposure of the developing brain to methamphetamine and that may underlie functional defects.

Smaller subcortical volumes and cognitive deficits in children with prenatal methamphetamine exposure Source: PSYCHIATRY RESEARCH-NEUROIMAGING 132 (2): 95-106 DEC 15 2004

- ❖ Abstract: The purpose of this pilot study was to examine possible neurotoxic effects of prenatal **methamphetamine** (Meth) exposure on the developing brain and on cognition. Meth-exposed **children** (n=13) and unexposed control subjects (n=15) were evaluated with MRI. Global brain volumes and regional brain structures were quantified.

- ❖ Ten Meth-exposed and nine unexposed **children** also completed neurocognitive assessments. Meth-exposed **children** scored lower on measures of visual motor integration, attention, verbal memory and long-term spatial memory.

- ❖ Despite comparable brain volumes in each group, the Meth-exposed **children** had smaller putamen bilaterally (-17.7%), smaller globus pallidus (left: -27%, right: 30%), smaller hippocampus volumes (left: -19%, right: -20%) and a trend for a smaller caudate bilaterally (-13%).

- ❖ The reduction in these brain structures correlated with poorer performance on sustained attention and delayed verbal memory.

- ❖ In summary, compared with the control group, **children** exposed to Meth prenatally exhibit smaller subcortical volumes and associated neurocognitive deficits. These preliminary findings suggest prenatal Meth exposure may be neurotoxic to the developing brain.

Functional magnetic resonance imaging of verbal learning in children with heavy prenatal alcohol exposure

Author(s): Sowell, Elizabeth R.; Lu, Lisa H.; O'Hare, Elizabeth D.; McCourt, Sarah T.; Mattson, Sarah N.; O'Connor, Mary J Bookheimer;
NEUROREPORT 18 (7): 635-639 MAY 7 2007

- ❖ Abstract: We examined functional MRI activation patterns corresponding to verbal paired associate learning in a group of 11 children with heavy prenatal **alcohol** exposure compared with 16 typically developing children. Among the typically developing children, prominent activation was observed in the left medial temporal lobe, left dorsal frontal lobe and bilateral posterior temporal cortices during learning and recall.

- ❖ These results may indicate an increased reliance on frontal memory systems in the children with heavy prenatal **alcohol** exposure, perhaps compensating for dysfunctional medial temporal memory systems.

- ❖ Our findings are consistent with neuropsychological and structural imaging studies, and provide the first evidence for brain activation abnormalities, independent of group performance differences, during verbal learning and recall in children with heavy prenatal **alcohol** exposure.

- ❖ Anorexia nervosa and bulimia nervosa are rarely diagnosed during pregnancy, but many cases come to light later, usually after seeking treatment for their eating disorders at specialist clinics. The data suggesting an association between eating disorders and a variety of complications of pregnancy.



❖ The evidence which is available suggest that serious eating disorders are rarely precipitated during pregnancy, bulimic symptoms frequently improve temporarily, but the course of anorexia is less vulnerable to change.



❖ There is a clear need for accurate prevalence rates of eating disorders in pregnancy to be derived in order that this issue can be addressed and so that obstetricians can be advised of the clinical risks and the possible benefits of psychiatric intervention.



WHAT CAN WE DO TO PROMOTE THE BEST OUTCOMES??

- ❖ Early prenatal care is paramount.
- ❖ Community based programs such as WIC work.
- ❖ Support and implement HBWW.
- ❖ Educate our patients on healthy weight gain and dangers of toxic substances to them and their children.



- Assess BMI for all women, and refer early to local resources for poor weight gain for all BMI categories.
- Recognize patients who may be at high risk for not only medical problems, but for life choice issues. Begin early counseling and education.



Other Promising Strategies for Providers

- ❖ Increase awareness and education related to appropriate weight gain based on evidence-based practice
- ❖ Educate on and support adequate weight gain during pregnancy, including on-going weigh gain discussion.
- ❖ Encourage the patient's partner and family to be sensitive to a healthy weight gain in pregnancy and supportive of the patient.

❖ HBWW Tools for Healthcare Providers:

1. Letter of endorsement from Dr. Sherard
2. Patient Education: Posters and brochures provided in English and Spanish
3. Pocket Counseling Guide:
 - Five A's for Adequate Weight Gain
4. Gestation wheel with BMI calculator

❖ HBWW Tools (con'd)

5. Prenatal Weight Gain (wall) chart
6. Prenatal Weight Gain Grid (individual) chart
7. RX pad with individual weight gain recommendation
8. Post card for ordering additional campaign materials

Determine BMI Status

During first prenatal visit:

- Measure height
- Ask for pre-pregnancy weight, unless have pre-pregnancy weight documented
- Determine BMI status using BMI/ gestational wheel or Prenatal Weight Gain chart
- Begin plotting weight on Prenatal Weight Gain Grid chart

How much weight do I need to gain during my pregnancy?

Height (feet and inches)	Underweight (Pounds)	Normal Weight (Pounds)	Overweight (Pounds)	Obese (Pounds)
	BMI < 18.5	BMI 18.5-24.9	BMI 25.0-29.9	BMI ≥ 30.0
4'8"	105-120 lb	95-116	117-125	136 or higher
4'9"	106-121 lb	97-117	119-124	138 or higher
4'10"	107-122 lb	98-118	120-125	139 or higher
4'11"	108-123 lb	99-119	121-125	140 or higher
5'0"	109-124 lb	101-120	123-126	142 or higher
5'1"	110-125 lb	102-121	124-126	143 or higher
5'2"	111-126 lb	103-122	125-127	144 or higher
5'3"	112-127 lb	104-123	126-127	145 or higher
5'4"	113-128 lb	105-124	127-128	146 or higher
5'5"	114-129 lb	106-125	128-129	147 or higher
5'6"	115-130 lb	107-126	129-130	148 or higher
5'7"	116-131 lb	108-127	130-131	149 or higher
5'8"	117-132 lb	109-128	131-132	150 or higher
5'9"	118-133 lb	110-129	132-133	151 or higher
5'10"	119-134 lb	111-130	133-134	152 or higher
5'11"	120-135 lb	112-131	134-135	153 or higher
6'0"	121-136 lb	113-132	135-136	154 or higher
6'1"	122-137 lb	114-133	136-137	155 or higher
6'2"	123-138 lb	115-134	137-138	156 or higher
6'3"	124-139 lb	116-135	138-139	157 or higher
6'4"	125-140 lb	117-136	139-140	158 or higher

Your chances of having a healthy weight baby (greater than 5 pounds, 8 ounces) is better when you gain enough weight.

HBWW Posters

The image shows two posters. The left poster is titled "THEIR HEALTH OUTWEIGHS YOUR FIGURE" and features a woman holding a baby. The right poster is titled "¡Subí 3 libras más! ¡Perfecto!" and features a woman holding a baby. Both posters include text about healthy weight gain during pregnancy.

The 5 A's for Weight Gain

- ASK:
 - What are her weight gain goals/concerns?
- ASSESS:
 - BMI determination and plotting on grid
- ADVISE:
 - Provide strong, clear, personalized weight gain information based on BMI category
- ASSIST:
 - Problem solve and educate on components of weight gain
- ARRANGE:
 - Refer as appropriate

- ❖ We must address the problems of smoking during pregnancy and Methamphetamine use, and alcohol use; which are well above national averages.
- ❖ We, as a state can no longer afford to ignore these issues .



The Good News!

- Inadequate maternal weight gain is **modifiable**.
 - Goal of HBWW is to increase the number of women who gain adequately and decrease future health problems for babies and children.
 - Implementation of pilot projects in Laramie, Natrona, Platte and Teton counties during early 2007.
 - Statewide implementation of program anticipated by end of 2007.
- ❖ *Maternal high risk behaviors may be modifiable with education and encouragement.*

- ❖ HBWW is going to be a great program for Wyoming and I believe that we as HCPs need to really endorse and encourage it.
- ❖ I also believe that we need a state wide multi-media educational program targeting Methamphetamine use, smoking and alcohol in pregnancy.



HBWW Summary

- ❖ Inadequate weight gain is a modifiable risk for low birth weight.
- ❖ HBWW social marketing campaign provides materials and guidance for modifying the risk of inadequate weight gain during pregnancy.
- ❖ WDH needs your feedback regarding this pilot project to determine how to successfully implement the statewide.

Thank you for your valuable time and effort to promote and support healthy pregnancy outcomes in Wyoming!

- ❖ In conclusion, the future of Wyoming's babies is in all of our hands.



References

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Contact Information

- ❖ To refer a Medicaid insured pregnant mother to the *Healthy Together!...Healthy Additions* program contact Kim Franchi, RN, at 1-888-545-1710 ext. 7067.
- ❖ To refer a pregnant mother to Best Beginnings contact your local Public Health Office.
- ❖ To learn more about HBWW program contact Deb Hamilton, WDH Perinatal Systems Manager, Women's Health Coordinator at 307-777-7944.