

FEBRUARY 16, 2021

Medical and Health Issues Related to International and Domestic Adoption

Gretchen Domek, MD, MPhil
Director, International Adoption Clinic



Objectives

- Describe the initial health evaluation and common medical and health issues for adopted children
- Examine long-term medical and health concerns related to adoption
 - Behavioral, mental health, and learning problems
 - Intra-uterine drug exposures





Initial Comprehensive Health Evaluation for Adopted Children



Health Problems are Common!

- Numerous studies have demonstrated that children in the foster care system, children adopted through private domestic agencies, and those adopted internationally all have an increased risk of physical, developmental, and mental health problems.
- Many of these issues persist and continue to be significant or do not become apparent until after the time of placement in an adoptive home.
- A child's development starts long before they are born!





Common Risk Factors for Adopted Children

- Poverty
- Inadequate prenatal care
- Prenatal and postnatal exposure to bloodborne and environmental toxins and pathogens (including drugs of abuse during pregnancy)
- Malnutrition
- Neglect of basic physical needs (e.g., food, clothing, medical care)
- Neglect of social needs (e.g., love, affection, attention)
- Inadequate developmental stimulation and emotional support
- Exposure to extreme violence
- Physical, emotional, or sexual abuse (direct or indirect exposure)



Initial History

- Review of all available medical records is important
 - International adoptions: “...most medical records should be considered interesting cultural documents rather than accurate descriptions of the child’s condition. Records are often incomplete, out-of-date, written in unusual terminology, or falsified.”

(Aronson J. Pediatric Annals. 2000;29(4):218-23)

- History may be sensitive! Older children who understand English may need to be in another room while the adoptive parents talk with the provider.





Initial History: FH, SH, PMH

- Family/genetic history
 - Mental health diagnoses
- Prenatal history
 - Alcohol or drug exposures
 - Maternal labs (infectious risks like HIV, HBV, gonorrhea, *Chlamydia*)
- Environmental exposures
 - Circumstances of relinquishment, previous placements, social history
- Birth history and past medical history
 - Medical records about delivery, newborn care, birth growth measurements
 - History of illnesses, hospitalizations, lab tests, imaging, growth measurements, developmental milestones, immunization records





Newborn Screening Program

- Newborn pulse oximetry screening
 - Performed after 24 hours of age before hospital discharge
 - Measures blood oxygen levels using a painless sensor on the baby's skin
 - Checks for critical congenital heart disease requiring early surgery or medical intervention
- Newborn hearing screen
 - A special machine is used to show if a baby responds to sound (often while sleeping)
 - Requires a follow-up test if a baby doesn't pass (2-10% fail initial test)
 - 1 in 500 babies is deaf or hard of hearing
- Newborn blood spot testing
 - Mandated by every state (parents can refuse)
 - Identifies over 35 different disorders affecting development
 - Typically performed at 24-48 hours and again at 8-14 days after delivery
 - Disorders include: PKU, congenital hypothyroidism, beta-thalassemia, sickle cell, CF
 - <https://www.colorado.gov/pacific/cdphe/disorders-included-in-colorado-newborn-blood-spot-screening>





Initial History: Child's Current Functioning

- Adaptive skills
- Speech/language skills (rate of acquisition of new language)
- Sleep dysregulation (evening routines and the bedtime environment are important!)
- Feeding/eating (sensory or oral motor difficulties)
- Elimination (toilet training, constipation, diarrhea)
- Quality of relationships/attachment within new family
- Behavior (tantrums, grieving, indiscriminate behaviors)
- School placement



Feeding Issues

- Feeding is an attachment behavior! Important to offer reassurance, NOT restrict feeding, and avoid stress.
 - *Love Me, Feed Me: The Adoptive Parent's Guide to Ending the Worry about Weight, Picky Eating, Power Struggles and More* (Katja Rowell)
- Anxiety around feeding → hoarding, pocketing, overeating
- Previous feeding techniques and exposures lead to difficulties with oral motor skills (sucking, chewing, swallowing) and picky eating
 - Babies fed via bottles with large nipples and big holes (orphanages)
 - Toddlers given large spoons and encouraged to eat quickly and mainly foods with a soft, liquid consistency (porridges and soups, not meats)
- Onset of puberty may be advanced as a child's nutritional status rapidly improves (high rates of precocious puberty in girls)



Complete Physical Exam

- Growth (weight, height, and head circumference)
- Physical exam
 - Dysmorphic features suggestive of a genetic condition/birth defect
 - ENT exam (dental caries and impacted ear wax for IA)
 - Genital exam (Tanner staging, testes descended)
 - Neurologic exam (developmental abnormalities)
 - Skin exam (birthmarks/scars, Mongolian spots, ringworm, molluscum)



Physical Exam: Special Considerations

- Especially for older children and those adopted internationally, some of these children have NEVER had a physical exam before (or have had only limited exposure to the medical system) and are very afraid!
- Interpreter should be present for older children (need to arrange this ahead of time)



Birth Defects

- A birth defect is a problem that happens while a baby is developing in the biological mother's body. Most birth defects occur during the first trimester (3 months) of pregnancy.
- They can be due to the maternal environment/exposures (infections or toxins), inherited genetically, or be of unknown cause.
- Approximately 3% (1 in 33) of babies will have a birth defect (120,000 babies born each year in the U.S.).
- A birth defect may affect how the body looks, works, or both.
- Birth defects can vary from mild to severe.



Birth Defects

- Most common birth defects in the U.S.:
 - Congenital heart defects
 - Cleft lip/palate
 - Down syndrome
 - Spina bifida
- <https://www.cdc.gov/ncbddd/birthdefects/data.html>





Screening Lab Tests for International Adoption

- Environmental, genetic, and nutrition risks:
 - Complete blood count (anemia, iron deficiency, Thalassemia)
 - Lead
 - Thyroid function tests (iodine deficiency, congenital hypothyroidism)
- Infectious diseases:
 - Hepatitis B and C
 - HIV
 - Strongyloides
 - Syphilis
 - Tuberculosis (serum test if > 2 years)
- Vaccine titers
- Stool studies: Giardia, parasites





Developmental/Psychological Assessments

- *Occupational Therapy:*
 - Fine motor
 - Sensory
 - Feeding and oral motor skills
- *Physical Therapy:*
 - Gross motor (rolling, crawling, sitting, walking, running, climbing)
- *Neuropsychology:*
 - Cognition
 - Speech/language
 - Sleep
 - Attachment
 - General behavior, socio-emotional development



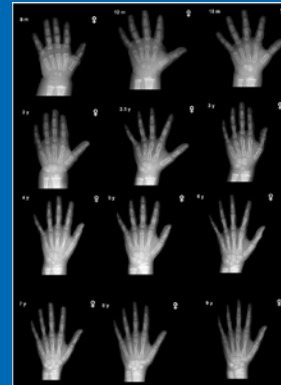
Special Consideration: Age Determination

- No accurate or reliable tests for age determination!
- Consider child's history/records, growth, development, dental exam
- Both bone and dental age may be delayed by malnutrition
- Radiographic bone age is rarely helpful

Upper teeth		Erupt at age
	Central Incisor	7-8 years
	Lateral Incisor	8-9 years
	Canine (cuspid)	11-12 years
	First Premolar	10-11 years
	Second Premolar	10-12 years
	First Molar	6-7 years
	Second Molar	12-13 years
	Wisdom Tooth	17-21 years

	Wisdom Tooth	17-21 years
	Second Molar	11-13 years
	First Molar	6-7 years
	Second Premolar	11-12 years
	First Premolar	10-12 years
	Canine (cuspid)	9-10 years
	Lateral Incisor	7-8 years
	Central Incisor	6-7 years

Lower teeth





Nursing an Adopted Baby

- May be able to achieve a partial or even full milk supply
- Regimens involve pumping the breasts with a fully automatic pump, taking a birth control pill to mimic pregnancy, and taking a galactogue to stimulate milk production (need to start at least 2 months before the baby arrives)
- Galactogogues (can be used alone if less than 2 months to prepare)
 - Fenugreek (herb sold in tea or capsule form)
 - Pharmaceutical drugs (Metoclopramide/Reglan or Domperidone/Motilium)
- Nursing supplementation device (allows you to feed supplementary milk or formula while baby nurses at the breast)
- Visit with a lactation professional if interested (as early as possible!)
- Breastfeeding Management Clinic
 - <https://www.childrenscolorado.org/doctors-and-departments/departments/primary-care/breastfeeding-management-clinic/#>



Long-term Medical and Health Issues Related to Adoption





Developmental Delays

- Timely identification of developmental delays is critical!
- All children should be routinely screened at every well visit
- Common risk factors for adopted children:
 - Prematurity, prenatal substance exposure, poor prenatal care, genetics
- Referrals can be made to Early Interventions between birth to 36 months of age
- Referrals can be made through the school system for children older than 36 months (may qualify for IEP or 504 Plan)
- Referrals to individual therapies (e.g., speech, occupational, and physical therapy) when indicated



Behavioral and Mental Health Problems

- Adopted children are at high risk for sensory, emotional, and behavioral difficulties
- Common risk factors for adopted children:
 - Prenatal drug and alcohol exposure, family history (genetics)
 - IA: prolonged institutionalization, multiple placements, previous abuse/neglect
- Impact of intra-uterine drug exposure can be subtle and extensive
- Even children placed as newborns may have struggles related to their early history or history of adoption that show up years later.





Behavioral and Mental Health Problems

- Sensory integration disorder, excitability
- Attachment disorder
- Self-stimulation behaviors (e.g., rocking, head banging)
- Attention problems, impulsivity, or ADHD
- Irritability, severe temper tantrums
- Withdrawn behaviors
- Aggression, self-injuring behaviors, oppositional defiant/conduct disorder
- Sleep dysregulation, night terrors/nightmares
- Anxiety, depression, other mood disorders
- Learning problems, school avoidance
- Autism Spectrum Disorder
- Addiction



Prenatal Substance Exposure

- Almost all drugs are known to cross the placenta and have some effect on the fetus
- More exposure = more adverse effects
- Prevalence estimates for prenatal substance use vary widely and have been difficult to establish
- Two methods to identify drug use:
 - Self-report
 - Biological specimens (no gold standard)
 - Urine (recent use)
 - Meconium (2nd and 3rd trimester use)
 - Hair (longer period of use)
- Negative screening DOESN'T ensure that the pregnancy was drug free

TABLE 1 Comparison of Drug Use Among Women 15 to 44 Years of Age by Pregnancy Status: 2009–2010

	Pregnant Women, %	Nonpregnant Women, %
Illicit drug use	4.4	10.9
Alcohol use	10.8	54.7
Binge drinking	3.7	24.6
Cigarette use	16.3	26.7



Prenatal Substance Exposure

- Embryonic period (1st 8 weeks): Early in gestation can have teratogenic effects on embryo/fetus causing miscarriage or a birth defect
- Fetal period (9th week to birth): After major structural development is complete, there can be more subtle and long-term effects
 - Abnormal growth and/or maturation
 - Alterations in neurotransmitters and their receptors
 - Changes in brain organization



Prenatal Substance Exposure

TABLE 2 Summary of Effects of Prenatal Drug Exposure

	Nicotine	Alcohol	Marijuana	Opiates	Cocaine	Methamphetamine
Short-term effects/birth outcome						
Fetal growth	Effect	Strong effect	No effect	Effect	Effect	Effect
Anomalies	No consensus on effect	Strong effect	No effect	No effect	No effect	No effect
Withdrawal	No effect	No effect	No effect	Strong effect	No effect	*
Neurobehavior	Effect	Effect	Effect	Effect	Effect	Effect
Long-term effects						
Growth	No consensus on effect	Strong effect	No effect	No effect	No consensus on effect	*
Behavior	Effect	Strong effect	Effect	Effect	Effect	*
Cognition	Effect	Strong effect	Effect	No consensus on effect	Effect	*
Language	Effect	Effect	No effect	*	Effect	*
Achievement	Effect	Strong effect	Effect	*	No consensus on effect	*

* Limited or no data available.

Prenatal Substance Abuse: Short- and Long-term Effects on the Exposed Fetus. Behnke M, Smith V, COMMITTEE ON SUBSTANCE ABUSE, and COMMITTEE ON FETUS AND NEWBORN. Pediatrics 2013; 131:e1009-24.



Tobacco

- Nicotine is only 1 of ~30 compounds that have been associated with adverse health outcomes through maternal smoking
- Nicotine patches and gums during pregnancy are also unsafe
- Electronic vapor products: in addition to the toxic effects of nicotine, some of the flavorings can be toxic
- Affects fetal growth and can cause low birthweight, but older children appear more likely to be obese
- Associated with cleft lip and palate
- No clear neonatal withdrawal symptoms after birth
- Affects brain development and has long-term behavioral effects:
 - Impulsivity, hyperactivity, and attention problems
 - Higher rates of delinquency, criminal behavior, substance abuse in adults
 - Abnormalities in learning and memory



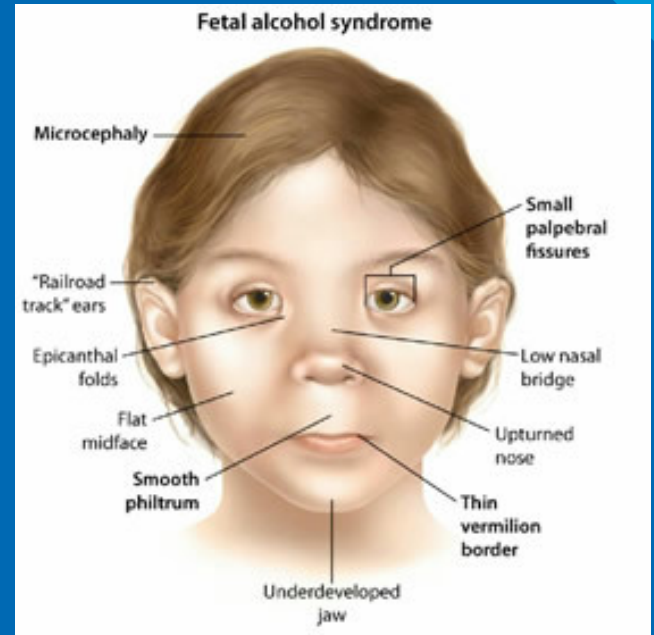
Marijuana

- Very common in Colorado! (“If it’s legal, it must be safe”)
- Does not appear to have an effect on fetal or childhood growth
- No clear teratogenic effects (birth defects)
- No clear neonatal withdrawal symptoms after birth
- Associated with increased startles and tremors in newborns
- Affects brain development and has long-term behavioral effects:
 - Impulsivity and attention problems
 - Has not been shown to affect IQ, although may cause subtle deficits in learning and memory



Alcohol

- Most widely studied prenatal drug of abuse
- Affects fetal growth and can cause low birthweight and long-term poor growth
- No clear neonatal withdrawal symptoms
- Associated with low levels of arousal in newborns
- Known teratogenic effects: FAS/FASD
- FAS diagnosis:
 1. Abnormal facial features
 2. Lower-than-average height, weight, or both
 3. Central nervous system problems (e.g., small head size, problems with attention and hyperactivity, poor coordination)
 4. Prenatal alcohol exposure; although confirmation is not required to make a diagnosis



Alcohol

- Fetal alcohol spectrum disorders (FASDs) are a group of conditions that can occur in a person whose mother drank alcohol during pregnancy. These effects can include physical problems and problems with behavior and learning. Often, a person with an FASD has a mix of these problems.
- <https://www.cdc.gov/ncbddd/fasd/index.html>
- Long-term behavioral effects:
 - Impulsivity and attention problems
 - Poor coordination or balance
 - Poor judgment and problem-solving skills
 - Poor social skills
 - Increased delinquency and substance abuse
 - Abnormalities in learning and memory



Opiates/Opioids/Narcotics

- Drugs derived from opium: Vicodin, OxyContin, Percocet, Dilaudid, Heroin, Morphine, Codeine, Fentanyl, etc.
- Opioid substitution therapy:
 - Methadone (has been used to treat opioid use for decades)
 - Buprenorphine (Buprenex) (approved in 2002 for opioid-dependent adults)
- Benefits of opioid substitution therapy during pregnancy:
 - Prevents complications of withdrawal in the pregnant woman
 - Encourages prenatal care reducing the risk of obstetric complications
 - Reduces criminal activity
 - Avoids risks to the pregnant woman associated with drug use





Opiates/Opioids/Narcotics

- Likely affects fetal growth and can cause low birthweight, but no clear long-term effects on growth
- No clear teratogenic effects (birth defects)
- Neonatal Abstinence Syndrome (NAS) (especially methadone)
 - Sweating, fever
 - Hyperactive reflexes, yawning, sneezing
 - Irritability, high pitched crying, difficulty sleeping
 - Increased muscle tone and activity, tremors, seizures
 - Feeding problems, excessive sucking
 - Diarrhea
- Affects brain development and has long-term behavioral effects:
 - Hyperactivity and attention problems
 - Memory problems (no clear effect on development or IQ)

Often requires hospitalization and treatment with comfort care and medications (e.g., methadone or morphine)



Cocaine

- Affects fetal growth and can cause low birthweight, but no clear long-term effects on growth
- No clear teratogenic effects (birth defects)
- No clear neonatal withdrawal symptoms after birth
- Development of areas of the brain that regulate attention and executive functioning are particularly vulnerable to cocaine which affects:
 - Arousal
 - Attention
 - Memory
- No clear effect on overall development or IQ



Methamphetamine

- Studies are still in their infancy!
- Likely affects fetal growth and can cause low birthweight, but no clear long-term effects on growth
- No clear teratogenic effects (birth defects)
- No clear neonatal withdrawal symptoms after birth
- No clear long-term behavioral problems
- No clear effect on overall development or IQ



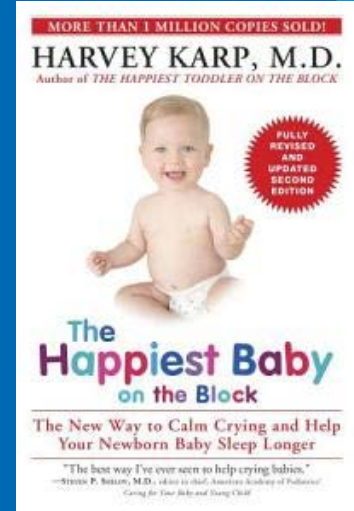
Prescription Medications

- Some medications are known to be harmful to the unborn fetus causing birth defects or neurodevelopmental issues
- Some medications are necessary for a pregnant woman to remain healthy
 - Chronic conditions (e.g., epilepsy, diabetes, depression)
 - Sometimes an alternate medication or a different dosage is recommended for treating the condition in pregnancy
- A pregnant woman should not start or stop taking a medication without talking with her physician (including over-the-counter and herbal remedies)



Comfort Care

- Five S's from The Happiest Baby on the Block
 - Swaddle
 - Side or stomach position
 - Shush
 - Swing
 - Suck
- Add a couple more S's
 - Sing
 - Sound (talking, Baby Mozart)
 - Stories (reading)



☆ THE 5 S's ☆

Swaddling

DUDU wrap
(Down Up Down Up)

Tight swaddling provides the continuous touching and support your baby is used to experiencing within the womb.



Side/Stomach Position

The infant is placed on their left side to assist in digestion, or on their stomach to provide reassuring support. When a baby is in a stomach down position do not leave them even for a moment.



Shushing

These imitate the continual whooshing sound made by the blood flowing through arteries near the womb. Shush as loudly as your baby is crying. As she calms down, lower the volume of your shushing to match.

Swinging

This refers to jiggling your swaddled baby using very small, rapid movements. Be sure to support your newborn's head and gently jiggle - do not shake - your baby. This is more of a "shiver" than a shake, moving back and forth no more than an inch in any direction.

Sucking

"Sucking has its effects deep within the nervous system," notes Karp, "and triggers the calming reflex and releases natural chemicals within the brain." This simply means giving your baby a pacifier or thumb to suck on.



Local Adoption Clinics



International Adoption Clinic (IAC)

- Began in 1999 to address the unique medical, behavioral, and developmental issues faced by internationally adopted children
- Specialized outpatient referral clinic at Children's Hospital CO serving families throughout the Rocky Mountain region
- Providers: medical (MD/PNP), OT, PT, neuropsychologist
- IAC Services:
 - Pre-adoption consultation
 - Post-adoption clinic evaluation
 - Follow-up clinic consultations as needed



IAC Contact Information

- Location: Children's Hospital Colorado, Anschutz Medical Campus, 13123 E. 16th Avenue, Aurora, CO 80045 (2nd floor Multidisciplinary Clinics)
- Tel: 720-777-4963
- Website: childrenscolorado.org/internationaladoption
- Email: International.Adoption@childrenscolorado.org



Connections for Kids Clinic at Denver Health

- A medical home for children and teens in foster and kinship care
- Partners with Denver Department of Human Services (DHS)
- Provides multidisciplinary services
 - Pediatric behavioral health specialist
 - Dental hygienist
 - Family planning health educator
- Contact Information:
 - Location: Eastside Family Health Center, 501 28th St., Denver
 - Tel: 303-602-5650
 - Website: DenverHealth.org



Conclusions

- Every child is unique and will have different needs!
- Adopted children have an increased risk of physical, developmental, and mental health/behavioral problems.
- Many of these issues persist and continue to be significant or do not become apparent until after the time of placement in an adoptive home.
- If you are worried about your child, seek help from a medical professional right away. Do not wait!



Resources

- CDC offers links to health guidance and the immigration process as well as international adoption resources
 - [cdc.gov/immigrantrefugeehealth/adoption/index.html](https://www.cdc.gov/immigrantrefugeehealth/adoption/index.html)
- U.S. Department of State gives intercountry adoption statistics and information on the international adoption process
 - travel.state.gov/content/travel/en/Intercountry-Adoption.html
- Department of Health and Human Services provides information on domestic and international adoptions
 - [childwelfare.gov/topics/adoption/](https://www.childwelfare.gov/topics/adoption/)



Resources

- Substance use during pregnancy (Opioids, THC, Tobacco, Alcohol)
 - CDC: [cdc.gov/reproductivehealth/maternalinfanthealth/substance-abuse/substance-abuse-during-pregnancy.htm](https://www.cdc.gov/reproductivehealth/maternalinfanthealth/substance-abuse/substance-abuse-during-pregnancy.htm)
- Fetal Alcohol Spectrum Disorders
 - CDC: [cdc.gov/ncbddd/fasd/facts.html](https://www.cdc.gov/ncbddd/fasd/facts.html)
 - National Organization on FAS: [NOFAS.org](https://www.nofas.org)
- Birth defects
 - March of Dimes: [marchofdimes.org/complications/birth-defects-and-health-conditions.aspx](https://www.marchofdimes.org/complications/birth-defects-and-health-conditions.aspx)



