

## **Post- Arrival Evaluations**

### **Identifying medical problems common to internationally adopted children.**

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No matter how healthy your internationally adopted child appears, he or she should see your physician within the first few weeks after his or her arrival-or sooner if there appear to be problems. Physicians evaluate the health status of children using a medical history, physical examination, and laboratory tests. In children adopted from abroad, the history may be limited or fabricated and the physical examination rarely identifies the problems common to international adoptees-most of which are infectious diseases by and large diagnosable only by appropriate lab tests.

For that reason, a battery of screening tests is absolutely necessary to fully evaluate the health of your child.

### **Common Infectious Diseases**

The first study we undertook after opening the International Adoption Clinic at the University of Minnesota was an evaluation of children who had been examined by their family physician after their arrival in this country. Of our study group of 52 adoptees, 33 had been previously examined. Of these, only 7 had received the screening tests that are recommended by us and by the American Academy of Pediatrics (AAP), and 52 percent had undiagnosed infectious disease. Four were hepatitis B surface antigen positive, three had enteric parasites, and one had tuberculosis (TB). These findings underscore the importance of

screening even in children who appear healthy.

The following tests are recommended by the AAP and us to screen for infectious diseases common among international adoptees.

*Hepatitis B profile, to include HbsAg, anti-HBs, and anti-HBc:* Because hepatitis B (HVB), a viral disease that affects primarily the liver, is endemic in most countries placing children in the United States, it is very important to screen for it. The virus is transmitted person to person by percutaneous (needle stick or biting), mucous membrane, or sexual exposure to infected bodily fluids, particularly blood and serous fluid from exudative (weeping) skin lesions. Saliva and semen carry smaller quantities of the virus.

When adults and older children are exposed to hepatitis B, most fight the

infection effectively and clear the virus from their systems. The immature immune systems of infants and very young children, however, may not identify this organism as an invader. These children do not clear the virus from their system and become chronic carriers of the virus-at risk for exposing others and for developing ongoing liver damage and liver cancer. Ninety percent of children infected in the first six months of life will have chronic, life-long disease.

The risk of hepatitis B in international adoptees reflects the overall prevalence in the country of origin: 8 to 10 percent in Asia, sub-Saharan Africa, and parts of South America; 2 to 7 percent in Eastern Europe and Northern China; and less than 2 percent in Western Europe and the United States. The close confines of institutional care

settings increase the risk of transmission.

An initial screening when your child first arrives in the United States and a second screening after the maximum incubation period of 12 weeks are recommended. The hepatitis B profile rather than the simple testing for hepatitis B surface antigen should be used.

When the risk of transmission of hepatitis B to other family members was examined, infection rates ranged from 5 to 37 percent, with increased risk when the adoptee was less than 3 years of age. While all household contacts are at risk of being infected, caregivers are at the highest risk of acquiring hepatitis B. The hepatitis B vaccine series is mandatory for household members when a family adopts a child who is hepatitis B surface antigen positive.

Delta hepatitis virus has been recognized in a number of adoptee's who test positive for hepatitis B surface antigen. Therefore, a screening for antibodies to delta virus should be included in the evaluation of any child with chronic hepatitis B infections should be referred to a pediatric liver or infectious disease specialist.

*Stool examination for ova and parasites:* In general, intestinal parasites are more common in older children and in countries where water treatment and sewage disposal standards are poor. While a number of different organisms can be identified, *Giardia lamblia*, a water-borne parasite encountered very frequently in institutionalized children of all ages, deserves special mention. Not only can it cause distressing symptoms in your child, it is easily transmitted to others.

*Mantoux (intradermal PPD) skin test with Candida control:*  
Tuberculosis is an infection caused by the bacterium *Mycobacterium tuberculosis*, which differs in many ways from the bacteria that cause other childhood infections. Because of these differences, the usual antibiotics prescribed for simple childhood infections are not effective in tuberculosis.

Children are exposed to tuberculosis when they inhale the contagious sputum droplets of an infectious contact—usually an adult in their environment. These sputum droplets are spread by coughing, laughing or even singing, so it is not difficult to see why infected adults, who can typically generate a more vigorous cough, are considered highly contagious and young infants are not.

Like hepatitis B, TB is endemic in most countries placing

children in the United States. Infected adults may work in orphanages or nurseries or be part of a foster family. In other circumstances, TB may be passed from an infected mother to her child immediately after birth. These children are often extremely ill and many do not live beyond the early days of infancy, especially if poor nutrition and lack of medical care contribute to the severity of the illness.

In TB infection, the usual focus is the lung, but untreated TB may spread more widely. For this reason, the symptoms of TB may range from the relatively healthy child with mild wheezing or coughing to the more severely affected child with widespread disease involving the brain, lungs, bones or kidneys. Children with very poor nutritional status and those who acquire TB very early in life are at increased risk for widespread disease.

After exposure to tuberculosis, the body's immune system develops a delayed hypersensitivity response, which is reflected in a positive Mantoux test. The skin test remains positive even after appropriate treatment. Thus, a positive skin test may mean either a previous exposure (infection without active disease), the presence of the actual disease, or a past infection that is now cured. Differentiating between these possibilities is clearly very important.

All children adopted from abroad should receive the Mantoux (needle prick) intradermal skin test for TB. This test, known as a PPD, is more sensitive and specific than the multiple puncture test (Tine).

Because undernourished children may fail to respond to the

Mantoux test even though they may have been exposed to TB (a negative reaction called anergy that is related to inability of the immune system to respond appropriately), we recommend physicians control for this possibility by placing a *Candida* (yeast) skin test at the same time. In children whose immune system is appropriately active, the *Candida* skin test will be positive, and a negative Mantoux test will then accurately reflect the child's never having been exposed to TB. Depending on the country of origin, 3 to 9 percent of international adoptees will have a positive skin test.

The immune system may require up to 3 months to respond after an initial TB exposure. If your child has symptoms consistent with TB and the initial Mantoux test is negative, testing

should be repeated within 6 to 12 weeks.

In some countries, BCG, a vaccine made from Calmette-Guerin bacillus, a weakened strain of a related mycobacterium, is used to prevent the spread of TB. Most children from Eastern Europe and China have been vaccinated (look for a small scar usually on the left shoulder). Unfortunately, this vaccine, administered at birth, does not provide complete protection. Individuals who have been vaccinated can still be infected with TB.

There is great confusion within the medical community about TB testing when a child has received BCG vaccine. You may hear that because your child was immunized with BCG, the TB testing cannot be performed or that the BCG can be responsible for a "positive" reaction. The AAP has now advised physicians

that children who have received BCG Vaccination can be screened with a Mantoux test. Interpretation of the test is the same as in non-immunized children.

Positive Mantoux reactions of 5 mm (1/5 inch) or greater in an HIV-infected child or 10 mm (2/5 inch) or greater in the HIV-negative adoptee should be evaluated. Your physician should elicit an appropriate history, perform a physical examination and obtain a chest x-ray. At this juncture, the results of the history, physical examination, chest x-ray, and sputum or other bodily cultures for TB will be used to differentiate between the possibilities of active tuberculosis or simple exposure (infection without active disease).

Because many physicians in the United States have not encountered TB, consultation with an

infectious disease specialist is recommended for any child whose Mantoux test is positive. At the very least, the specialist will review the evidence for the diagnosis, outline an appropriate course of drug therapy, and will be available to supervise treatment.

*HIV-1 and HIV-2 testing:* Although HIV is a worldwide epidemic, it fortunately has affected few international adoptees. Even though the risk is small, testing remains very important because of treatment options now available. Two groups of laboratory procedures are used to evaluate the presence of HIV infection: tests that identify antibody directed toward HIV (ELISA antibody test) and tests that directly identify the presence of the virus (growing the virus in viral culture or polymerase chain reaction (PCR), which identifies the genetic material of the

virus). The ELISA antibody test is the least expensive and easiest procedure available, but it may not be the most appropriate test in young children for the following reasons:

- Under 18 months, the ELISA antibody test reflects the mother's passively transmitted antibodies. Thus, the test may be falsely positive if the mother is HIV positive but the infection has not been transmitted to the baby.
- The ELISA test may also be falsely negative. More children are being reported who test negative on the ELISA but are still proven to be infected when culture or PCR is done.
- The ELISA turns positive later than the

culture or PCR. For example, if a child is exposed to HIV via a contaminated syringe, blood product, or vaccine three weeks before placement, his or her ELISA will not be positive (too soon), but the viral culture or PCR will be positive.

Consequently, the AAP recommends that children younger than 18 months of age have a direct test for the virus (culture or PCR) rather than the ELISA antibody test alone. Children who are HIV-positive should be evaluated by a specialist in pediatric AIDS.

*RPR or VDRL for syphilis:* Although the risk of syphilis is low (less than 2 percent), appropriate screening is necessary to identify children who require treatment. Children who have a positive Venereal Disease Research

Laboratory (VDRL) test or rapid plasma reagin (RPR) test should be evaluated according to the recommendations of the AAP's Committee on Infectious Diseases. Many treatments delivered abroad are incorrect or fail to eradicate the spirochete in sites such as the central nervous system. If treatment regimens administered abroad are not fully described as to the type of penicillin, dose in units or in milligrams per kilogram, number of doses and duration of therapy, the child should be reevaluated fully and re-treated if necessary. Statements such as "syphilis treated in mother" (or infant) are too vague and should not be considered as indicative of adequate therapy.

### **Other medical screening**

In addition to the screening tests for infectious diseases, we recommend (as does the AAP) a complete blood

count with erythrocyte (RBC) indices and a dipstick urinalysis. RBC indices and iron status will help determine whether your child has iron-deficiency anemia, as many children do after they have been in an orphanage a long time. Urinalysis will help pick up problems such as infection with a certain parasite.

We also recommend a developmental exam for all international adoptees, but especially for those who have been institutionalized. Children from Eastern Europe, Russia, and China should have their lead level and antibodies to hepatitis C checked, and children from China should be screened for hypothyroidism because of the high incidence of dietary iodine deficiency. Vision and hearing screening can be done as directed by the primary physician.

Because we have recently found that

some children reported to have received three or more DPT/OPV vaccines in Eastern Europe have no antibodies to these diseases-meaning the vaccines used were outdated or improperly stored, the child lacked an appropriate immunologic response at the time of vaccination, or the vaccination certificate is fraudulent-we recommend testing for diphtheria and tetanus antibodies in any child reported to have received three or more DPT vaccines. If antibodies are absent or low, or if the child has received fewer than three DPT vaccines, we advocate starting the immunization sequence over again according to the AAP's recommendations for children not immunized in the first year of life.

### **Persuading Doctors**

Parents may find some reluctance on the part of their family physician to do

the recommended screening. In a survey we're currently conducting, we've found that less than 50 percent of children adopted in this country from Eastern Europe and less than 20 percent of children from China have been adequately screened.

Unfortunately, physicians tend to look at the parents, not the child. The parents come from a middle-class suburb; they don't have TB, syphilis, or HIV, therefore the child doesn't either. Physicians don't feel they need to do the screening tests. However, if the birth parents had walked in with the child, the physician would probably have ordered even more tests. So, parents may have to remind their physician to consider the child's country of origin and the diseases that are endemic in that country that can't be diagnosed through a physical examination.

### **Testing in the Birth Country**

Should you ask to have your child tested for these diseases in his or her country of origin? Pre-placement blood testing is variable. A defined set of tests is not currently required for visa approval for the majority of orphans. In some cases, testing may be ordered by the embassy or the embassy's physician when a specific communicable disease is common in the community or suspected in your child. Some agencies or countries have a set testing protocol for children prior to referral. Therefore, blood tests may have been performed on your child. If not, you should ask yourself the following five questions before requesting blood tests for specific diseases.

**1. Can the test be done?** Medical facilities in some countries are so limited, it is impossible to test for certain disorders.

Some countries are so limited, it is impossible to test for certain disorders. Some countries fail to acknowledge that diseases such as AIDS are a problem and may therefore refuse **to do the test.**

### **2. Will the test be performed correctly?**

Countries with limited medical infrastructures may not have the capability to perform the test accurately. There will be a result-but if the reagents are outdated, the equipment obsolete, or the technician poorly trained, it may be worthless.

### **3. Will the results be reported accurately?**

Outright dishonesty, while rare, does occur.

### **4. Will drawing blood place the child at risk of catching the disease for which you are testing?**

Disposable needles and syringes are often difficult to obtain and sterilization procedures may be lax. Aside from mother-to-infant transmission of hepatitis, syphilis, and

HIV during pregnancy, labor and delivery, transmission through needles contaminated with infected blood is the most common way for these disease to infect children.

**5. Will the test be done at a time when the results will be meaningful?**

For example, hepatitis B has an incubation period of up to 12 weeks. A child who tests negative for the hepatitis B Virus (hepatitis B surface antigen) at two months of age may actually be positive later. With HIV, the most commonly used test does not identify the virus but only tests for the protective antibody. A child infected with HIV may not reliably produce antibodies until 18 months of age. After considering the above issues of safety and validity, ask yourself one more thing: Will the result really change your mind about proceeding with the adoption? If

not, don't ask that the test be performed.

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