



**University of Wisconsin – Madison  
Subject CONSENT to Participate in Research and  
AUTHORIZATION to Use and/or Disclose  
Identifiable Health Information For Research**

**Title of Study:** COAST III: Cytokine Dysregulation, Virus Infections, and Asthma

**PRINCIPAL INVESTIGATOR:** Robert F. Lemanske, Jr., M.D.

**CO-INVESTIGATORS:** James Gern, M.D.  
Wai-Ming Lee, PhD  
Carole Ober, Ph.D.

**Current Cooperative Studies:**

Diet and Obesity as Environmental Risk Factors for Asthma and Energy Expenditure - (PI: HuiChuan Lai, PhD.)  
T-Regulatory Cells and Childhood Asthma (Principal Investigator, James Gern, MD)

**Invitation/Summary**

**Note: “You” speaks to the child being invited to participate in the study.**

You and your parent(s) are invited to participate in a research study about the origins of childhood asthma. You are eligible to participate in this study because you were enrolled in the COAST (Childhood Origins of ASThma) research study prior to being born and are one of 257 children completing the first two projects (COAST I and COAST II) over the past 7-8 years. The study continues to be funded by the National Institutes of Health. Your participation is voluntary.

If you decide not to participate in this research study, your doctor will still take care of you and you will not lose any benefits or medical care to which you already have or will receive later.

**General description:**

The purpose of this research study is to learn more about how viruses are related to asthma, especially as children grow into their teenage years and enter puberty. This study will last for five years, and we will want to see you one time each year (for a total of five visits) during the study period. Each visit will last about 2 hours. At these visits you and your parent(s) will fill out some questionnaires. You will do breathing tests, provide a sample of mucus from your nose, put some numbing medicine on your arm and then volunteer a blood sample (equal to about three tablespoons of blood), and a doctor will examine you. Allergy skin testing will also be done at ages 9 and 13. We will keep the samples of nasal mucus and blood throughout this study.

The main risks of the study are that you could still experience some discomfort or bruising at the site where the needle enters the skin. With the allergy skin test, you could have an allergic reaction. We don't expect this though because you did not have a reaction before. We will want to know about when you enter puberty or (if a girl) when you have your first period and these questions might be embarrassing. We will ask questions about medical history and will ask for copies of your doctor's records and we will be careful to keep these records private.

There will be several smaller studies that some COAST subjects will be invited to participate in. If you are invited to do these studies, you will be given more information about the study at that time. You may ask questions about these studies at any time.

If you decide to join the COAST study, you can change your mind or stop at any time. If you complete the study, we will pay you approximately \$655 (depending upon the number of procedures completed). There will be no charge to you for any of the tests or clinic visits. There are no direct health benefits for being in this study. You will receive asthma and other health information and you will continue to be a part of a study that is learning about the start of asthma in children.

More detailed information is on the following pages. If you have any questions, please call Dr. Robert F. Lemanske, Jr., MD at 608-263-6184.

**A. WHAT IS THE PURPOSE OF THE STUDY?**

The purpose of this research is to continue to study how different infections (such as, the “Rhinovirus” that causes the common cold) are influenced by age, gender, environment and your immune system and how these things are related to the start and the severity of asthma.

**B. What will my participation in this study involve?**

If you agree to participate in this study, you will come to the University of Wisconsin Allergy and Asthma Research Center on 5 occasions. These visits will be around the time of your birthday. The procedures that will be done, and how often, are listed in the following chart:

<b>COAST 3</b>	Age 8	Age 9	Age 10	Age 11	Age 12	Age 13
Spirometry	X	X	X	X	X	X
eNO	X	X	X	X	X	X
IOS	X	X	X	X	X	X
Post-bronchodilator Reversibility	X	X	X	X	X	X
Sputum Induction			X			X
Plethysmography		X				X
Skin Prick Test		X				X
Nasal sample-scheduled	X	X	X	X	X	X
Blood sample	X	X	X	X	X	X
Genetic testing (add'l consent)	X	X	X	X	X	X
Physical exam	X	X	X	X	X	X
Questionnaires	X	X	X	X	X	X
Nasal sample – cold/asthma episode with diary, peak flow	as needed	as needed	as needed	as needed	as needed	as needed
Phone calls at ½ year and prn	X	X	X	X	X	X

**Explanation of Procedures:**

**CONSENT/ASSENT**

At the first COAST III visit, the consent form will be reviewed with parent(s). Your parent(s) will have an opportunity to ask questions and discuss the study before signing the consent form. The assent form will be read with you and you will have a chance to ask questions. If you agree to be in the study, you will sign the assent form, and your parent will sign to confirm that you had the chance to ask questions about the study.

**BREATHING TESTS:**

The breathing tests are most accurate if you have not had albuterol in the four hours before the start of the test. If you have needed to use your albuterol, you should, but we will want to know and may want to reschedule the testing for another time.

1) Exhaled Nitric Oxide (eNO) starts with taking a deep breath through a tube, followed by a medium, even blowing out into the tube. This test measures the amount of Nitric Oxide that is exhaled. Nitric Oxide is believed to be higher in the lungs if you have allergies and/or asthma.

2) Impulse Oscillometry (IOS) is a test where you breathe normally through a tube and a gentle puff of air is blown into their mouth. This test is one method of measuring if it is hard for air to get in to your lungs.

3) Spirometry is the test where you take a deep breath and then blow out as long and hard as possible into a mouthpiece. We will ask you to do this up to eight times.

After completing these breathing tests, you will then be given two puffs of albuterol. Fifteen minutes after the albuterol you will be asked to repeat the IOS and Spirometry measurements. This is called **post-bronchodilator reversibility**.

4) Plethysmography At age 9 and 13, you will be asked to sit in a small clear room about the size of a small closet or telephone booth. You will take normal breaths, until the study coordinator tells you to take two quick breaths, and then one really big breath in and a long but not a forceful breath out. This test is repeated as many times as needed to complete the test or until you do not want to continue or up to the time limit of 30 minutes.

**Risks:** There is no discomfort associated with the eNO, IOS, or Spirometry. In some people, taking albuterol may make their heart race, make them feel jittery or nervous, can increase blood pressure, or cause nausea and/or headache. However, these things usually go away in less than an hour. There is no discomfort associated with Plethysmography. Possibly you may not like being in this small room (claustrophobia), but the box is made of clear plastic, which allows you to see your parents and everything in the room. You can also stop the procedure if you want to.

If you have a cold or pneumonia, we may want to reschedule the breathing tests, as the results may not show the normal levels for you. Therefore, we will never ask you to hold medicines during a time that you are sick. We will also never ask you to “skip” a breathing medication, but may ask you to wait to take the medicine until after testing if the visit is scheduled in the morning. Specific instructions will be given for your situation.

#### **SPUTUM INDUCTION:**

This is a procedure to obtain some mucus or phlegm from low in your lungs. For the Sputum Induction test at age 10 and 13, you will inhale or breathe in a mist of concentrated salt water through a mouthpiece for up to 12 minutes. You will be asked to stop every 4 minutes, blow your nose, and rinse, gargle with water and spit into a cup. Then you will be asked to cough really hard to get some of the mucus from your lower airways and spit it into a collection cup. We will do a breathing test (peak flow meter) every 4 minutes as well to make sure that the salt water is not changing your breathing. The entire procedure takes about 45 minutes.

**Risks:** There is little discomfort associated with Sputum Induction. Some symptoms that you may have with the concentrated saltwater test are a salty aftertaste, sore throat, or feeling tired. During this procedure, it is natural to feel like coughing but we will ask you not to cough or clear your throat except when we ask you to. Because you are trying to hold your cough, this might make you feel uncomfortable. On rare occasions, shortness of breath, wheeze, lightheadedness, nausea and/or headache may occur.

#### **ALLERGY SKIN TESTING:**

You will have allergy skin testing 2 times during COAST III, once at age 9 and again after completing puberty. Fourteen drops of different allergens will be placed on the skin of your back with a sterile tool that will lightly prick the skin. The skin will be checked for a reaction to the allergens 15 minutes after the drops are applied.

**Risks:** Your back might itch or burn where the test was done and there may be mild pain from the sharp scratch from the tool. In very rare cases, a whole body allergic reaction may cause shortness of breath, hives, swelling of the skin or tongue, itchy skin or a fall in blood pressure, and so we will check you for 20-30 minutes after the test. Emergency care will be available to treat these rare reactions.

## **BLOOD DRAWS:**

About 3 tablespoons (50cc) of blood will be drawn from your arm. The blood samples will be obtained from a vein in your arm and a numbing medicine will be used on the area where the blood will be drawn.

Blood samples will be maintained into the future to be used throughout this study until the sample is gone. More information about the blood tests is at the end of the consent form. Blood sample testing will be completed at the UW and some of the sample may be shared with an outside researcher to perform a specific test not completed at the UW. The sample will be sent only with information critical to the illness history.

For families who move (or already have moved) out of the greater Madison area, we can continue to get a sample of blood from you.. We will work with your parents to identify a laboratory where the blood draw can be done. The COAST staff will arrange for the blood draw, provide the equipment, and pay for the blood draw.

**Risks:** Drawing blood from a vein may cause discomfort or soreness and possible bruising or swelling at the spot where the blood is drawn. Rarely, a minor infection may result from this procedure. Possible side effects to the numbing cream include paleness, redness, mild swelling, itching, and rash. However, this is rare because a very small amount of cream will be used.

## **PHYSICAL EXAM**

A physical exam will be completed by one of the Allergy and Asthma doctors from the University of Wisconsin Hospital and Clinics. This will be a brief examination with a focus on symptoms and systems associated with allergies and/or asthma. This exam will also include an evaluation to determine whether or not your child has reached puberty. Puberty begins with the start of menstruation in girls. However, in both boys and girls, there are other signs that show that puberty is beginning such as pubic and armpit hair, and breast (girls) and genital (boys) changes. The form is specific for boys and girls. It contains drawings of genitalia at each of 5 stages during puberty. We will ask you and your child (as you choose) to circle the drawing that most closely represents their body. The reason for knowing this information is to help us time the changes that we may see happen in your child's health. Research shows that boys are more likely to have asthma as youngsters and tend to outgrow it during puberty. Girls are more likely to develop asthma during puberty.

The form will be completed by the parent and child at the scheduled visit or may be taken home. It will be put in an envelope for a research staff person to collect or, if completed at home, returned by mail.

**Risks:** Completing the form for body changes for puberty could be embarrassing for your child. To minimize this embarrassment we will do the following: 1.) Allow you to fill out the form with help from the child private and put the form in an envelope at the visit, or 2.) take the form home to fill out and return by mail.

## **QUESTIONNAIRES**

We also will collect the following health information about you for this research study in the form of questionnaires:

- Child health and medication history questionnaires
- Questions about start of menstruation and puberty
- Questions for the parent/child that ask about overall health and categories of disease such as immune compromised diseases (e.g. cancer, HIV) and activities that could affect their health (e.g. smoking, exercise)
- Family history of allergy and asthma
- Review of environment as it relates to allergen exposure
- "Quality of Life" questionnaires, which discuss: 1.) general health of the child, 2.) child's health relative to asthma and the 3.) impact of the illness (allergy and asthma) on the family
- Family address, phone, child SSN etc., and any other necessary information in order to maintain contact and to complete payment for completion of visits

## **NASAL MUCUS SAMPLING**

Nasal mucus samples will be collected by the “blowing” method that you have learned over the past several years during regular study visits and during periods of illness. Normal saline (watered down salt water) will be squirted into each nostril and you will be asked to blow your nose into a plastic zip-loc baggie.

We will ask your parents to call the study center when you have symptoms of a cold with a runny nose, cough, fever, or wheezing, or when you need to “step-up” on your asthma action plan. We will continue to track all respiratory infections or colds, and will collect a sample at that time. Samples will be tested for factors that will help us learn more about the development and course of allergies and asthma. Nasal sample testing will be completed at the UW and some of the sample may be shared with an outside researcher to perform a specific test not completed at the UW. The sample will be sent only with information critical to the illness history. Nasal samples are maintained throughout the COAST study for testing. More detailed information about the different tests that are done is at the end of the consent form.

For families who move (or who already reside) out of the greater Madison area during the course of the study, continued participation in this part of the research study is encouraged.. As all families are involved in collecting samples, continued participation is possible. Families would be asked to contact the COAST staff when you are ill (a toll-free number is provided). The COAST staff would verify the need to obtain a nasal sample and then would provide all required materials and a pre-paid mailer for sending the sample to UW. Instructions for the procedure will be in both oral, written and photo form.

**Risks:** There is unlikely to be any risk associated with the nasal blow into the baggie. However, if your nose is dry or if you have had a recent bloody nose, you might have bloody mucus. You may not like the feeling of having wet mucus on your nose as a result of blowing into a baggie.

**Peak Flow Meter Readings:** You will be asked to complete peak flow readings each day during the nasal sample collection and record your highest peak flow reading on the diary card. A Peak Flow Meter is a “take-it-with-you”, hand held device used to measure how air flows from one’s lungs in one fast blast. Using the meter is as simple as taking a deep breath and blowing out a candle. You will be able to keep the Peak Flow Meter at the end of the final season for future use.

**Risks:** A Peak Flow Meter is not a medicine. Sometimes pushing the air out of your lungs in a “fast blast” may cause you to cough or wheeze.

**Diary Cards:** During the time that you are getting samples of nasal mucus, you and your parents will also be asked to keep a diary. Each day on this diary you will write down the highest number from your Peak Flow test, and then use stickers to mark whether you have a cold or if your asthma is bad and whether you have to use any medicines for your asthma. You will start the diary one week before the first nasal blow, do it for five weeks during the nasal blows, and then one week after the last nasal blow.

**Risks:** There is unlikely to be any risk with the completion of the diary cards

In summary, when your child has cold symptoms lasting two days, we will request that you do the following:

- Contact the study center
- Collect a nasal sample and send the sample in the self addressed mailer tube
- Record symptoms with the “dots” on the diary card during the days of the illness
- Obtain a peak flow reading each morning and record this number on the diary card.

## **GENETIC TESTING:**

With the permission of your parents, a portion of the blood sample that is obtained at the annual visit will be used to identify allergy and asthma related genes by Dr. Carole Ober at the University of Chicago. Studying genes or DNA is becoming more common in clinical research studies, but is still in an early stage. We know that certain genes make you tall or short or give you brown or black hair. Similarly, certain genes are related to asthma, and may be related to the way that asthma develops as you are

exposed to different viruses or as you grow into puberty. Studying DNA from children with and without asthma may help us better understand the importance of those genes and how they are involved in causing allergies and asthma. We may also learn why some people have allergies and asthma that is worse than other people. Blood samples obtained in this study will be analyzed only for genes related to allergic diseases and asthma. Individual results will not be known. You and the study center will not be told of individual results and no results will appear in your medical records.

Your decision on whether or not to participate in this optional portion of the study will not affect your participation in the main portion of the study.

**Risks:** Even though we will remove identifying information from your blood sample and do not intend to tell you or anyone else the results of the testing on your blood sample, there is a very small chance this information could accidentally become known to you, your doctor, or others. If this happens and the result gets into your medical record, it will not likely affect your health insurance because only allergy and asthma related genes are being identified. There might be other risks we do not know about yet. We will be very careful to see that your genetic results are not revealed.

### **ADDITIONAL STUDIES**

During COAST III, some children will be asked to participate in one or more of the following studies. (These studies will not include all the children.)

- Serial Nasal Sample Study: obtaining a series of nasal samples at home to evaluate how participants with and without asthma respond to the same virus
- Obtaining an MRI (a picture of the inside of the body using magnetic images) while breathing in a special gas that will show how air fills different parts of your lungs; research indicates that air fills lungs differently for people who have asthma and who do not have asthma.
- Completing an airway challenge test, or bronchoprovocation test with Methacholine. This test is completed in order to evaluate asthma severity.

More information about these studies will be available if you are invited to participate.

### **C. Are there any benefits to me?**

You are not expected to benefit directly from being in this study. However, you will receive information about childhood allergies and asthma, which you may consider a benefit of the study. Additionally, your participation in this research may help other people in the future by helping us learn more about allergies and asthma.

There may be information that could be of value to you or your primary care physician such as the type of virus that you have during a cold, the results of skin testing or the results of a breathing test. Your parents may choose to have this information shared with you and or your child's primary care physician by indicating this preference at the end of the consent.

Information learned from this study will be shared with our families in two ways:

1. Information about you will be shared with you, your parents and with your doctor if you ask us to do so.
2. Study findings can be found in these places:
  - a.) Published articles and abstracts (copies of these are available on our website <http://coast.medicine.wisc.edu>)
  - b.) Newsletters published by COAST (2-4 times / year)
  - c.) Talks given by the Principal Investigator(s) at community gatherings.

### **Commercial Product Information**

Although this is not the purpose of the research we are doing, it is possible that the work being done may contribute to the research and development of new pharmacological or genetic treatment strategies. These research results may eventually be of commercial value, but neither you nor COAST will be able to share in any profit that may occur from the commercialization of products developed with information obtained from you or your samples.

**D. Are there any costs?**

There are no costs to you for participation in the study other than arranging for transportation to the study center. If your parents need help with transportation, the COAST coordinators would be able to discuss this with your family. Occasionally there have been charges assigned to a family by error, and the COAST staff will take care of this by contacting the appropriate department once notified by the family.

**E. Will I be paid for my participation?**

Recognizing that this study will require extra time and effort, you and your parents will be paid or compensated for participation in the study. *This amount will be prorated according to the procedures completed.* The compensation per procedure is as follows:

Blood Draw	\$25	Physical Exam	\$10
Skin Test	\$25	Nasal mucus Sample- Scheduled	\$10
Breathing tests	\$15	Nasal Mucus Sample – as needed	\$15
Plethysmography	\$15	Sputum Induction (check or gift card)	\$50
Reversibility	\$15	Parent/guardian compensation	\$20

Compensation will typically be given in the form of a gift card (see below) and in a check. An illness visit for nasal mucus (\$15) will be given in the form of a gift card. Gift cards will be to area merchants (such as Target, Wal-Mart, and Toys R Us) of the family's choice.

Usable items that will also serve as study reminders (e.g. magnets, toys such as balls and stickers) will be given after study visits in appreciation of your willingness to help us learn more about asthma and allergic disease. COAST will also schedule group gatherings for the purpose of educational updates on COAST findings and will provide childcare at the time of these presentations.

**F. Are there any side effects or risks to me?**

The main risk of taking part in this research is that someone who is not involved in this study could know your personal information. A breach of confidentiality could cause damage to you or your reputation. However, the chances that this will happen are very small. If needed, a referral for counseling or other services will be available. Risks for the individual procedures have been explained.

**G. What protected health information will be used for this study?**

**How will my privacy be protected?**

**Who will use my health information?**

**We will gather the following protected health information for use in this study:**

From you we will gather:

- Information about you and your parent , such as birth dates, home address, and home phone number, work phone number, email address. We also need your social security number in order to compensate you for study visits.
- Information about your parents, siblings and your health with comprehensive questionnaires about factors related to allergies and asthma including environmental, dietary considerations and height and weight history.
- Information about changes that develop as you enter puberty.

From your medical records kept by your doctor, and emergency/urgent care:

- Information about your general health.
- Treatment for any allergy/asthma related condition.

From the procedures completed on you as a part of the COAST study:

- Lung function results
- Blood testing results
- Mucus testing results

- Genetic testing results

We will gather and record results on report forms and enter these into a computerized database. In the case of the genetic information, the original report form is maintained in Chicago and the results for the group are reported to Madison.

Privacy Protection:

We will protect your confidentiality by using a series of codes on all of the information that you provide. This coding for your information is completed in the following way. You are assigned three levels of "ID" numbers. The first ID number is related to the written information that is gathered. The second random ID number is for your laboratory information (the results of blood work and mucus samples). The Principal Investigator (PI) who works with the statistics for the COAST project randomly chooses the third ID number. Then, when a sample is sent to an outside agency, such as when the genetics sample is sent to investigators in Chicago, the sample is labeled with this 3<sup>rd</sup> number. Only the PI of the statistics section can link this number to your child's written and laboratory information. Therefore, whenever either the University of Wisconsin or the outside agency generates data, that PI is the "translator" and must connect this information to all other data on you.

All research records will be treated confidentially. Your name will not be in any publication of this study. Presentation of research results done with outside agencies is a possibility. If such presentations are done, no individual results will be shared with others.

The professional standards of confidentiality do not prevent the researchers from disclosing, without your consent, information that would identify you as a participant in the research project if required by law (e.g. child abuse, reportable communicable disease, threat of harm to self or others).

We have received a **Certificate of Confidentiality** from the federal government, which will help us protect your privacy. The Certificate protects against the involuntary release of information about you collected during the course of the study to persons not connected with the study. The researchers involved in this project cannot be forced to disclose your identity or any information about you collected in this study in any legal proceedings at the federal, state, or local level, regardless of whether they are criminal, administrative, or legislative proceedings. However, you or the researcher may choose to voluntarily disclose the protected information under certain circumstances. The Certificate of Confidentiality does not prevent the researchers from disclosing voluntarily, without your consent, information that would identify you as a participant in the research project if required by law (e.g. child abuse, reportable communicable disease, threat of harm to self or others) or as required by state or federal agencies who may review our records under limited circumstances, (e.g. such as a U.S. Department of Health and Human Services (DHHS) request for information for an audit or program evaluation or an FDA request under the Food, Drug and Cosmetics Act.)

Who will use this information?

The information collected from you and your parents (from visits and from your medical records) will be used by the researchers at the University of Wisconsin and the University of Wisconsin Medical Foundation. Coded health information (as described in the previous section) will be shared with researchers outside the UW-Madison, but within the COAST research project, such as Principal Investigators Dr. Carole Ober at the University of Chicago at Chicago, Dr. Homer Boushey at University of California at San Francisco and Dr. Sebastian Johnston at Imperial College of London in order to complete analysis of findings. General group information may be shared with investigators outside the COAST study. Every effort will be made to keep your information confidential.

**Others at UW-Madison and its affiliates who may need to use your health information in the course of this research:**

- UW-Madison regulatory and research oversight boards and offices
- Accounting and billing personnel at the UW-Madison
- Research support services staff at the UW-Madison and its affiliates
- Data derived from the study may be reviewed by the Research Subject Advocate and the Data and Safety Monitoring Committee from the General Clinical Research Center.

**Others outside of UW-Madison and its affiliates who may need to receive your health information in the course of this research:**

- The National Heart Lung and Blood Institute of the National Institutes of Health (NIH)

People outside of UW-Madison and its affiliates who receive your health information may not be covered by privacy laws and may be able to share your health information with others without your permission. However, when information is shared with others outside the UW-Madison and its affiliates, it is not shared in a way that can identify an individual.

**H. Is my permission voluntary and may I change my mind?**

Your permission is voluntary. You do not have to sign this form and you may refuse to do so. If you refuse to sign this form, however, you cannot take part in this research study.

When you sign this form, you have given consent to participate in the study. However, it is understood that at any time you or your parents may choose not to complete a particular procedure, or you may completely withdraw from the study. You may also choose to skip any questions that you do not feel comfortable answering.

IF YOU DECIDE NOT TO PARTICIPATE IN THIS STUDY OR IF YOU STOP WHILE THE STUDY IS UNDERWAY, THERE WILL BE NO AFFECT ON THE HEALTH CARE TO WHICH YOU ALREADY HAVE OR WILL RECEIVE LATER.

**I. How long will my permission to use my health information last?**

There is no end date for the use of the data or samples gathered in this research study. By signing this form you are giving permission for your health information to be used for this study and shared with the individuals, companies, or institutions described in this form. It will be difficult but not impossible to withdraw your child’s sample from analysis after it has been submitted and every effort will be made to honor the written request for withdrawal of the use of your child’s information. An example of a situation that would not be possible to honor would be if group results that include your child’s data are part of a published article or presentation. You may withdraw your permission at any time by writing to the person whose name is listed here:

*Dr. Robert F. Lemanske, Jr.*  
Department of Pediatrics, K4/916 CSC  
University of Wisconsin School of Medicine and Public Health  
600 Highland Ave., Mail Drop 9988  
Madison, WI 53792  
(608) 263-6180 (608) 263-8539.

Beginning on the date you withdraw your permission, no new health information will be used. Any health information that was shared before you withdrew your permission will continue to be used. If you withdraw your permission, you can no longer actively take part in this research study.

Additional Principal Investigators conducting studies with the COAST children as eligible participants include the following:

James Gern, MD Professor Department of Pediatrics University of Wisconsin 608-263-6201	Carole Ober, PhD The University of Chicago Department of Human Genetics <a href="mailto:c-ober@genetics.uchicago.edu">c-ober@genetics.uchicago.edu</a> ,	Wai-Ming Lee PhD Professor School of Medicine and Public Health University of Wisconsin
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Additional Researchers for COAST III  
Homer Boushey MD, University of California, San Francisco  
Sebastian Johnson, MD Imperial College of London, England

Sean Fain, PhD, University of Wisconsin, Madison

**I. If I have additional questions, whom should I contact?**

Please take as much time as you need to think about whether or not you wish to participate. If you have any questions about this study, please have your parents contact Dr. Robert Lemanske, Jr., MD. For information on the rights of research subjects, you may contact the UW Hospital and Clinics Patient Relations Representative at (608) 263-8009.

**I. Agreement to Participate in this Study**

\_\_\_\_\_  
Name of Child

\_\_\_\_\_  
Name of Parent

I have read this consent and authorization form describing the research study. This consent includes a list of the procedures, risks, and benefits; I have had a chance to ask questions about the research study. I have received answers to all my questions. I agree to participate in this research study, as described above.

\_\_\_\_\_  
Signature of Parent:

\_\_\_\_\_  
Date:

**II. Genetic participation**

With your permission your blood sample will be used for genetic analysis as described in this consent, i.e for testing by Dr. Carole Ober at the U of Chicago. This is optional. Please indicate your preference below by placing your initials:

\_\_\_ Yes, I agree to allow genetic testing by Dr. Ober on my blood samples.

\_\_\_ No, I do not agree to allow genetic testing by Dr. Ober on my blood samples

**III. Authorization to Use and/or Share Health Information.**

Certification: I have read this Authorization form describing how my health information will be used and/or shared. I have had a chance to ask questions about the use and/or sharing of my health information for this purpose and I have received answers to my questions. I agree to the use and/or sharing of my health information. I agree that the holders of my medical (and other health records) or other identifiable health information may share these records with the UW researchers and the non-UW researchers, as described in this authorization form.

\_\_\_\_\_  
Signature of Parent:

\_\_\_\_\_  
Date:

\_\_\_\_\_  
Signature of person obtaining consent and authorization

Date: \_\_\_\_\_

**Family received a signed copy of this consent form**    yes    no

***Please indicate your preference for informing your child's primary care physician by signing your initials in the appropriate box(es):***

*Please **do not** inform me or my doctor*

**OR**

*Please inform me*

**AND/OR**

*Please inform my doctor*





## The SCIENCE of COAST: Supplement to the COAST consent

**Storage of Samples:** All samples of mucus (from the nose), blood and “dust” that were collected during COAST I and II were frozen and stored. Many of the samples have been nearly all used up as there have been so many tests conducted on some critical samples. However, samples previously collected, and future samples collected will be stored throughout this study.

**Types of Tests:** There are basically three types of samples on which we do tests: the blood samples, the nasal mucus samples, and the environmental samples (collected during COAST II). Decisions about the types of tests being conducted are based upon our understanding of their importance in the development of allergies and asthma, the cost of the tests and the ability to perform the tests. Each of these factors will be addressed throughout this section. The blood samples are the most complex group and will be discussed first.

**Blood Testing:** The tests being conducted on the blood will change from year to year, based on current research. This section will explain categories of tests and does not in any way include a full list of all tests being conducted now or in the future. Most of the testing is completed within the COAST laboratories. However, completion of tests may also be conducted at sites other than the University of Wisconsin School of Medicine and Public Health. The decisions to send samples elsewhere are made because the other site may be the only place that is performing the new testing procedure, because the other site can perform the procedure in a much more cost-effective manner, or because we are collaborating with another site to answer research questions related to allergies and asthma. Samples are sent without personal identifiers (such as name, birthdate etc.) and the outside institution has no access to your child’s individual record or information [CFR 42]. Information about specific tests being completed can be obtained by contacting the study staff at any time. Additionally, group information about results of tests can be found in COAST publications and on our website (<http://coast.medicine.wisc.edu>).

There are four major categories of blood testing that are currently being conducted on the COAST blood samples:

**Cytokine testing** = Cytokines are proteins that become a part of how a person’s immune system responds. There are many different proteins that are being studied, including new cytokines that continue to be “discovered” or “recognized” by researchers. We use a machine called Luminex<sup>®</sup> to do the cytokine testing. COAST started using the Luminex<sup>®</sup> only in the past three years and has greatly increased the speed with which we have been able to complete the cytokine testing. The particular cytokine being tested is based upon previous research by our group and by reputable researchers throughout the world. Additional protein substances made by specialized cells may also be studied as they relate to allergies and asthma. These additional substances are cytokines affected by hormones, and another component called “chitinases” (Yale/Chupp). Chitinases are substances that are important in the development of shells of insects and lobsters. In mammals, chitinases have been found to be important in the reaction of the lungs to allergens. Importantly, chitinase has also been noted to be present in the lungs of people with asthma. Researchers at Yale University will be studying COAST blood samples in an effort to increase knowledge of the role chitinases plays in the development of asthma. Yale will perform the test and will assess whether chitinase protein can be detected, and together we will determine whether this enzyme tracks with the development of various wheezing phenotypes during infancy and early childhood. Joint publications of the findings could be the results of these studies.

The second group of testing looks at the reaction in the blood to typical allergen stimulants. This test is called **Fluoro-Enzyme Immuno Assay (FEIA)**. FEIA examines plasma (the liquid part of blood) for the presence of antibodies (another kind of protein) that signal the possibility of an allergy. In infancy examining antibodies to foods was important. As the COAST children get older, antibodies to airborne

allergens such as ragweed become relevant to study. The specific tests completed will be age-appropriate and will be selected based on their significance in relationship to allergy and asthma symptoms in children. We use a machine called the Unicap<sup>®</sup> to do the FEIA testing.

The third type of testing that is completed within COAST is to actually determine what type of cells is found in the blood. Since the COAST study was started, there have been a number of new discoveries related to Cell Type and allergy and asthma. For example, a type of cell called the T-regulatory cell has been identified that may be important in controlling inflammation and allergies. Another cell that is being studied as it relates to allergy and asthma is the dendritic cell. With each of these cells, significant work is being completed to determine how these cells function and whether altering the function of the cell could influence the development or the exacerbation of asthma.

Finally, the fourth use of the blood is the Genetic testing. This testing looks at the differences in DNA and how that relates to asthma. It is also important to realize that some of the differences seen in the genes are stimulated by things that happen in the environment (e.g. if there is smoking in the house). Dr. Carole Ober, at the University of Chicago, is performing this testing.

**Mucus Samples:** Samples of nasal mucus are collected at scheduled visits, at the time of each significant respiratory infection or step-up in an asthma action plan, and during the seasonal nasal sample series (a COAST III subset). The samples will be stored for as long as possible in order to identify all viruses that may be a part of your child's respiratory illnesses. These samples will also be studied for many of the same type of proteins (cytokines) and for leukotrienes (powerful inflammation mediators) that were discussed in the blood section. As many of you are aware, the virus testing during the first years did not always have a result. Over the past few years, the use of new technology has allowed COAST to become much more able to find the virus that is present in the sample. In fact, this method works so well, that some of the viruses seem to be "new" viruses. Because of work with these new and unusual viruses, we have begun to work, with outside institutions (e.g. University of California-San Francisco) to take advantage of their skills and technology. Again, when working with these outside agencies, the samples will be coded and the outside researcher will not have any direct access to your child's information.

The original theory of COAST was that the RSV was the most important virus in causing asthma. Although this virus is important, our studies have shown that rhinovirus, the common cold virus, is more important than previously recognized. The fact that there are more than 100 different types of rhinovirus makes the further use of these new methods of detection crucial to understand how these viruses may lead to the development of childhood asthma.

**Environmental Samples:** Environmental samples have been collected from homes of COAST children in the greater Madison area. These samples are being studied because it is believed that exposure to some types of "harmless" bacteria and fungi in the environment may help the immune system to develop in a normal fashion, and help to prevent allergies and asthma. The analysis of these samples is being completed at Yale and Harvard Universities, two agencies that have developed an assay for these tests. Once this work is completed, The laboratory in Madison and Dr. Ober (geneticist at U. of Chicago) will study the relationship between environmental exposure and immune development and genetic effects, and the presence of allergy or wheezing in the COAST children.