ANOPHTHALMIA / MICROPHTHALMIA REGISTRY AND OCULAR GENETICS

www.Einstein.edu/Genetics/programs/Ocular-Anophthalmia-Micophthalmia-Registry

Ocular Genetics

Dr. Adele Schneider, our clinical geneticist, is a world expert in the field of Microphthalmia, Anophthalmia and Ocular Coloboma, sometimes abbreviated as MAC or A/M.

We offer clinical genetic services under the umbrella of the MAC Clinical Care Center and we also conduct clinical research in a study called the Anophthalmia / Microphthalmia (A/M) Clinical and DNA Research Study, which is described below.

Clinic patients do not have to enroll in our research study and people enrolled as research subjects do not have to choose Einstein Genetics for their clinical care.

We also see patients for a wide variety of other conditions affecting the eyes, as part of our ongoing Pediatric and Adult Genetics clinics.

We hold occasional joint clinics at Wills Eye Institute, Philadelphia, where patients can be seen by Einstein Genetics together with Wills Ophthalmology at one multidisciplinary clinic.

What is A/M?

Anophthalmia and microphthalmia (A/M) are birth differences of the eyes, defined by either extremely small or underdeveloped eyes. Anophthalmia and microphthalmia are considered to be the severe end of a spectrum of eye problems, with coloboma at the milder end of the spectrum (sometimes called the MAC spectrum).

- Microphthalmia (small eye)
- Anophthalmia (absence of eye)
- Coloboma (closure defect in iris, retina or optic nerve)

A/M may be present in one eye or both. A/M can happen as an isolated finding or in combination with other birth defects or medical complications of the eyes or the rest of the body.

Most children born with A/M have no family history of the condition, but some families have more than one affected person. Some families have one person who is severely affected and one with milder symptoms, perhaps so mild they did not even know.

ICAN Family Support Group

The Division of Genetics at Einstein Philadelphia has a close collaboration with the family support group ICAN, the International Children’s Anophthalmia Network, and participates actively in all aspects of their conferences. Learn more about ICAN at www.Anophthalmia.org.
The Anophthalmia / Microphthalmia (A/M) Clinical and DNA Research Study

The Anophthalmia / Microphthalmia research study and Registry were established in 1993 at Einstein Medical Center Philadelphia, with funding from the Albert Einstein Society, to assemble a database of individuals with A/M and to undertake a descriptive analysis of the Registry population.

Our Registry is collecting extensive clinical information on individuals with anophthalmia, microphthalmia and coloboma and their families. We will then summarize the findings and describe other birth defects that occur together with A/M. We hope to identify new syndromes associated with severe eye malformations.

Our study also includes genetic testing using DNA extracted, in most cases, from blood samples.

Some tests may be offered free in the laboratories of our research partners and some must be ordered clinically under each person’s health insurance.

This study brings together two main lines of research – to learn more about the exact symptoms found in people with A/M and to learn more about the genetic causes of A/M. We aim to discover correlations between the clinical features (which we call the phenotype) and the genetic findings (the genotype).

Eligibility

Any individual with anophthalmia, microphthalmia or coloboma in one or both eyes is eligible for inclusion in this study. Parents, siblings and other family members of affected individuals are enrolled in some cases. A separate consent form is needed for each family member who enrolls in the study.

People who enroll in a research study are usually called research subjects or subjects or enrollees or participants, rather than patients.

If you decide to enroll in the study, we will ask you to sign a consent form and also to have a conversation with us in which we review details about the research as part of the process of informed consent. This conversation may be by phone or an electronic method such as Skype.

Clinical Information – The Phenotype

For this part of the study, individuals provide medical records from their doctors and other healthcare providers, and continue to do so even after a genetic cause is found. This is called a longitudinal study, because it gathers information about the same people over a period of time.

We offer a Medical Release Form (page 5), to help people gather medical records and send them to us.
A Clinical Genetics evaluation is part of the medical records requested for this study. It is often done by a medical geneticist / genetic counselor team in a Medical Genetics department. It entails a physical exam, clinical photography, drawing up the family health history in the form of a pedigree and, often, blood tests for DNA genetic testing.

Some enrollees travel to Einstein Philadelphia for a Clinical Genetics evaluation and become our clinical patients. Others get evaluated at a local Genetics department near their home.

Dr. Adele Schneider, our clinical geneticist, is available if local Genetics or Ophthalmology departments wish to consult her or ask for guidance.

Genetic Testing – The Genotype

This arm of our research aims to identify which genes can cause A/M when something goes wrong.

Understanding the genes and the products they code for helps us understand how malformations occur when the genetic material contains an error.

Many underlying causes of A/M have been found and new research continues to grow our knowledge, as we learn more about different types of genetic errors.

In the past, our research focused on sequencing one gene at a time in the laboratories of our research partners.

In deciding which genes to test, we turned to research in mammals, which has identified several genes associated with development of the eye. We asked if genetic changes, or mutations, in these same genes might cause A/M in humans. And sometimes the answer was yes.

Recently we have switched our attention to larger tests that sequence many genes at the same time, thanks to new advances in genetic testing technology. Whole exome sequencing (WES) and Whole Genome Sequencing (WGS) are examples of genetic tests that look at huge amounts of DNA.

Very large gene sequencing panels sometimes find mutations in so-called novel genes, genes that we did not previously know about or did not recognize as being important for the growth of the eyes in an unborn child.

Genetic Testing Plan – Research Testing or Clinical or Both

Certain genetic tests that used to be available only on a research basis are now offered in clinical laboratories, and some insurance companies cover these tests for their members.

When a patient or family contacts us to enroll in this research study, we assess each case and suggest a Genetic Testing Plan. We refer the family to a local Genetics Department if needed. We communicate with the family or referring healthcare provider about which tests can or should be ordered at a clinical laboratory.
Chromosome Microarray, an important diagnostic test, is now available only in clinical laboratories and can no longer be offered free as part of our research study.

When the Genetic Testing Plan calls for DNA testing in a research laboratory, participants send samples. If needed, we send the participant a kit containing blood tubes with packaging material and instructions on how to draw the blood sample and ship it to the research laboratory. The participant pays for the blood draw and shipping.

Research testing is offered free but is slow. Research findings need confirmation in a CLIA-certified laboratory before they can be used for clinical purposes. Other pros and cons of research vs. clinical testing are explained in our consent forms.

Benefits of Joining the Research Study

Families enrolled may or may not benefit directly from this study.

Sometimes genetic tests are negative, and no genetic changes or mutations are found.

If mutations are discovered, it may take a few years to understand the results and report them back.

Sometimes a specific diagnosis will be made, thus providing more accurate genetic risks and more personalized medical management.

Occasionally genetic results help us learn about health problems associated with a specific gene.

Although we cannot guarantee that we will find informative results from this research, there is a general benefit to science. Since A/M is a relatively rare condition, any studies that advance our general knowledge about anophthalmia / microphthalmia are potentially helpful to all.

How Long Is the Study?

This study continues for an indefinite period of time. DNA samples are stored permanently and people remain enrolled permanently, unless they withdraw from the study. We invite Registry members to continue sending us medical records, even after genetic testing is complete. This study is unique because it does more than try to solve the genetics puzzle. It also follows the medical future of our research subjects, not only the past events.

Contact for More Information:

Research Coordinator, Ocular Genetic Counselor:

Sarina Kopinsky, MS, LCGC

Clinical Geneticist, Principal Investigator (PI):

Adele Schneider, MD, FACMG

Tel: 215-456-8722 | Genetics@Einstein.edu | Fax: 215-456-2356
FORM: RELEASE OF INFORMATION

Attention: Medical Records Manager

I hereby authorize the release of Protected Health Information to:

Einstein Medical Center Philadelphia
Genetics Division
Levy 2 West, 2nd floor
5501 Old York Road
Philadelphia, PA 19141

Attention: Adele Schneider, MD, FACMG, Clinical Geneticist
Sarina Kopinsky, LCGC, Genetic Counselor / Research Coordinator,
kopinsks@einstein.edu

Institution Requesting Records From: (One release for each institution. Please provide details of each department, healthcare provider and date of service. Please include phone and fax numbers if possible.)

__________________________________________________________________

Purpose for medical records: Clinical research study

Requesting records about this patient:
Patient’s Name: ____________________________
Date of Birth: ____________________________
Address at time of treatment: ____________________________

EXPIRATION DATE: ____________________________ / No expiration specified
Specify date, event or condition upon which this consent will expire unless revoked at an earlier date/time.)

The small print: I understand that my records are protected under the Health Insurance Portability and Accountability Act, Federal Privacy Act, P.L. 93-575, the Federal Alcohol and Drug Abuse Act, P.L. 92-282, the Pennsylvania Mental Health Procedures Act, 1976 and the Pennsylvania Confidentiality of HIV Related Information Act, and therefore cannot be disclosed without my written consent unless otherwise provided for in the regulations. I understand that I may revoke this authorization (except to the extent that action has been taken in reliance thereon) at any time by written, dated communication to the Einstein Healthcare Network and/or that my consent expires under the circumstances specified above under “Expiration Date.”

Signature of Patient: ____________________________ Date: ______________

Signature of Parent/Legal Guardian/Legal Representative:
______________________________ Date: ______________

Name of Parent/Legal Guardian/Legal Representative: ____________________________
______________________________ Relationship to Patient: ____________________________

Home Phone: ____________________________ Cell Phone: ____________________________

Work Phone: ____________________________ Email Address: ____________________________