U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
NATIONAL INSTITUTES OF HEALTH
National Human Genome Research Institute

Building 10 CRC, Room 8D54A
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Clinical and Basic Investigations of Purine and Pyrimidine Metabolism Disorders NIH Protocol

We are doing this research to better understand the causes and medical complications of diseases called Disorders of Pyrimidine and Purine Metabolism (DPPMs). You are being asked to join this research study because your body has a different way of dealing with chemicals called pyrimidines or purines. We are trying to find out more why your body handles these chemicals differently and the medical problems that you can have when it happens. We can learn more about DPPMs by seeing you and doing some tests. During the course of this study, we plan to collect the following information: growth, frequency and duration of hospitalizations, intellectual outcomes, the incidence, prevalence, and severity of metabolic, cardiac, immune, blood, gastrointestinal, kidney, skeletal, neurological, and other organ manifestations of DPPMs.

Participants may be seen at the NIH Clinical Center for a period of 1-7 days with periodic follow-up if the study team finds it necessary. Participants with DPPMs may be asked to participate in medical studies. Here is a list of some of the most common tests doctors may recommend:

- Medical and dietary history, physical examination;
- Expert health professionals and doctors of the heart, hearing loss, nervous system, behavior, development, nutrition, physical medicine and rehabilitation or other areas of medicine as needed (such as digestive tract, endocrine or growth glands, kidney, blood cells and immune system, sedation) may need to be consulted during the study. These doctors may recommend additional tests and/or evaluations, and we will discuss these with you.
- We may use your blood for sequencing of your DNA and to link it to your medical and/or family history.
- Blood tests to assess liver and thyroid function, purine and pyrimidine levels, blood counts and blood chemistries, for genetic tests and basic research studies;
- Urine collection to examine purines, pyrimidines, electrolytes, organic chemicals, sugar, and proteins for measuring kidney function;
- A stool sample to study how gut microbes affect the fate of chemicals, purines and pyrimidines, in your body;
- Collect dietary history to help us understand how food impacts chemicals, purines and pyrimidines, in your body;
- Dental exams to check your teeth;
- An eye doctor may give you a full eye exam;
- We may check your hearing
- Photographs of the face and body (wearing underwear) to help track growth and appearance;
- Brain or abdomen magnetic resonance imaging (MRI);
- Ultrasound and computed tomography (CT) to check your abdomen and other organs;
- Electrocardiogram and echocardiogram of the heart;

- Hand X-ray to determine bone age;
- Dual energy X-ray absorptiometry (DEXA) scan to evaluate bone density;
- We may do an EEG of your brain.
- Nerve conduction and electromyogram (EMG). Not all participants will need this testing;
- Skin biopsy for cell culture (cells to grow in the laboratory for future testing) if not yet performed or unavailable. Not all participants will need this testing;
- Direct measurements of the glomerular filtration rate. Not all participants will need this testing;
- Neurocognitive tests to measure leaning abilities and behaviors;
- Other medical tests or procedures recommended by consulting doctors, if indicated.

There are three types of participants that will be included in this study:

1. Participants with known DPPMs
2. Family members of the above participants
3. Unrelated healthy volunteers

Inclusion Criteria		
1. Participants with known, suspected, or uncharacterized DPPMs	2. Family members of participants with known DPPMs	3. Unrelated healthy volunteers
• At least one month of age; • A medical history that, in the expert opinion of the study team, is consistent with the DPPM; • Have a primary metabolic or genetic physician, or primary care provider • Willingness of participant or legally authorized representative to sign informed consent.	• At least one month of age; andnot pregnant; • Relationship either by blood or marriage, to an individual enrolled or about to be enrolled in the study with known or suspected DPPM; • Willingness of participant or legally authorized representative to sign informed consent.	• No personal or family history of DPPMs; • Regardless of gender, at least one month old, and not pregnant; • No symptoms of DPPMs; • Ability to sign informed consent
Exclusion Criteria for all three types		
1. Intercurrent or chronic conditions which in the opinion of the investigators, can then interfere with the interpretation of research studies (e.g. ongoing cancer treatment resulting in bone marrow suppression in a study participant with a suspected DPPM also presenting with bone marrow suppression).		

Contact Information

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