### SNP Array

#### Pre-Test Counseling Information

A SNP array is a genetic test that detects changes in a person’s chromosomes.

<table>
<thead>
<tr>
<th>What is a SNP array?</th>
<th>A SNP (single nucleotide polymorphism) array is a genetic test that detects changes in a person’s chromosomes. It is also called a chromosome SNP array.</th>
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</thead>
<tbody>
<tr>
<td>What are chromosomes?</td>
<td>Chromosomes are the packages within cells that contain a person’s genetic information (called “genes” or “DNA”). This genetic information tells a person’s body how to develop and function.</td>
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<td>What does the test look for?</td>
<td>The SNP array test looks for changes in a person’s chromosomes, such as gains (duplications) or losses (deletions). These gains or losses result in extra or missing copies of genetic material. Changes in a person’s chromosomes may be associated with known genetic conditions or may cause problems with health and development. As an example, one of the many genetic conditions that occurs when there is a gain of genetic material is Down Syndrome.</td>
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<td>Does the test look for any other information?</td>
<td>A SNP array also looks for genetic similarity (called “homozygosity”). Genetic similarity happens when the chromosome material inherited from each parent doesn’t show the differences we’d expect. Genetic similarity can be the cause of some genetic conditions.</td>
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<tr>
<td>What are the limitations of the test?</td>
<td>A SNP array does not detect all differences in your chromosomes or DNA. For example, it cannot detect rearrangements in the chromosomes that do not cause extra or missing copies of genetic material (balanced chromosome rearrangements) and cannot detect small changes in the DNA (point mutations).</td>
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</table>

**To Learn More**
- Genetic Counseling Clinic
  206-987-2056
- Ask your child’s healthcare provider
- seattlechildrens.org

**Free Interpreter Services**
- In the hospital, ask your nurse.
- From outside the hospital, call the toll-free Family Interpreting Line, 1-866-583-1527. Tell the interpreter the name or extension you need.

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What are the possible results of a SNP array?

- A negative or normal result means that there are no detectable gains or losses of the genetic material screened in the test panel. There are also no unusual patterns of genetic similarity. However, many genetic conditions cannot be found by this test, such as most single-gene disorders because they are often due to small changes in the DNA (point mutations).
- A positive or abnormal result means that a gain or loss of specific genetic material was found, or an area of genetic similarity was found. Sometimes this result will diagnose a well-described genetic condition. Sometimes the size or location of the material will lead us to think that it is the cause of a person's condition.
- A variant of unknown significance could mean that a gain or loss of specific genetic material was found. But in this case, there is not enough information about the specific genetic material to know whether or not it will cause a genetic condition. If a person has this test result, we sometimes recommend testing for parents to find out if this variant is new for the person or inherited from a parent. This information is used to help decide if this is a likely cause of a person's symptoms.
- A variant of unknown significance could also mean that a region of genetic similarity was found. Sometimes a genetic abnormality called uniparental disomy (UPD) is suspected. UPD happens when more chromosome material is passed down (inherited) from one parent than the other. If multiple regions of genetic similarity are found by the SNP array, a person's parents might be closely related (for example, cousins). If a region of genetic similarity is found, it could provide a clue to a specific genetic condition and more genetic testing may be recommended.
- A SNP array could also show results that are not directly related to the reason the test was ordered. For example, the results could show that a person is at risk to develop a genetic condition that happens later in life. The results could also show that a person is a carrier for a genetic condition.

Do I need insurance pre-authorization?

Genetic tests, like a SNP array, are expensive tests that may or may not be covered by a person's insurance. Insurance plans are interested in knowing whether a SNP array is medically necessary for a person and how it will affect their medical management. Because of this, it is important for the healthcare provider ordering the test to clearly document the reasons for performing a SNP array in the medical record.

Insurance pre-authorization is recommended for genetic testing. Without pre-authorization, some people may receive an unexpected bill for a SNP array.

Genetic Counseling

A genetic counselor is available to discuss this information in more detail your family. To reach a clinical genetic counselor at Seattle Children's, call 206-987-2056.