Abstract

An optional worksheet to use in conjunction with the interactive online activity of the same title located in The New Science of Addiction: Genetics and the Brain module on our website (url above). Students use video interviews and questionnaires to construct a pedigree that tracks nicotine addiction in the fictitious Marshall family.

Learning Objectives

- Researchers construct pedigrees to track a trait through multiple generations of a family.
- Once complete, researchers look for patterns within a pedigree that indicate whether or not the trait being tracked is inherited.
- Constructing a pedigree is only the first step in identifying genes involved in disease.

Logistics

Time Required

| Class Time:     | 25 minutes |
| Prep Time:      | 10 minutes |

Materials

Student handouts, computers with internet access

Prior Knowledge Needed

None

Appropriate For:

Primary | Intermediate | Secondary | College

Extension (optional)

After completing the pedigree for the Marshall family, learn about the next steps in tracking down an addiction gene by visiting Discovering an Addiction Gene Using the Candidate Gene Approach on our website.

Credits

Molly Malone, Genetic Science Learning Center
Sheila Avery, Genetic Science Learning Center (illustrations)

Funding

Funding for this module was provided by a Science Education Drug Abuse Partnership Award (SEDAPA) from the National Institute on Drug Abuse, a component of the National Institutes of Health, Department of Health and Human Services.
PI: Pedigree Investigator: On the Case of Nicotine Addiction

The New Science of Addiction: Genetics and the Brain

Print-and-Go™

Answer Key

<table>
<thead>
<tr>
<th>Name</th>
<th>Risk</th>
<th>Name</th>
<th>Risk</th>
<th>Name</th>
<th>Risk</th>
<th>Name</th>
<th>Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wally</td>
<td>None</td>
<td>Trudy</td>
<td>None</td>
<td>Ken</td>
<td>None</td>
<td>Greta</td>
<td>None</td>
</tr>
<tr>
<td>Tees</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>Brand</td>
<td>None</td>
<td>Michael</td>
<td>None</td>
</tr>
<tr>
<td>Peter</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>Time</td>
<td>None</td>
<td>Joy</td>
<td>None</td>
</tr>
<tr>
<td>James</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>Lily</td>
<td>None</td>
<td>Jason</td>
<td>None</td>
</tr>
<tr>
<td>Linda</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>Vanessa</td>
<td>None</td>
<td>Elizabeth</td>
<td>None</td>
</tr>
<tr>
<td>James</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>Victor</td>
<td>None</td>
<td>Jason</td>
<td>None</td>
</tr>
<tr>
<td>Linda</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>Lily</td>
<td>None</td>
<td>Jason</td>
<td>None</td>
</tr>
<tr>
<td>Joy</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>Jason</td>
<td>None</td>
<td>Elizabeth</td>
<td>None</td>
</tr>
<tr>
<td>Alex</td>
<td>ADHD</td>
<td>Todd</td>
<td>None</td>
<td>Alex</td>
<td>ADHD</td>
<td>Jason</td>
<td>None</td>
</tr>
<tr>
<td>Brian</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>Brian</td>
<td>None</td>
<td>Jason</td>
<td>None</td>
</tr>
<tr>
<td>Alex</td>
<td>ADHD</td>
<td>Todd</td>
<td>None</td>
<td>Alex</td>
<td>ADHD</td>
<td>Jason</td>
<td>None</td>
</tr>
<tr>
<td>Brian</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>Brian</td>
<td>None</td>
<td>Jason</td>
<td>None</td>
</tr>
<tr>
<td>Alex</td>
<td>ADHD</td>
<td>Todd</td>
<td>None</td>
<td>Alex</td>
<td>ADHD</td>
<td>Jason</td>
<td>None</td>
</tr>
<tr>
<td>Brian</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>Brian</td>
<td>None</td>
<td>Jason</td>
<td>None</td>
</tr>
</tbody>
</table>

Engaging in risky behavior
Depression
ADHD

Module

© 2005 University of Utah

This activity was downloaded from: http://gslc.genetics.utah.edu/teachers
Risk factors for the Marshall family include:
- Depression
- Attention Deficit Hyperactivity Disorder (ADHD)
- Engaging in risky behavior

Imagine you are an investigator looking for genes that influence nicotine addiction. Log on to http://gslc.genetics.utah.edu and click on EXPLORE: PI: Pedigree Investigator, On the Case of Nicotine Addiction. Complete the activity to gather information for your study.

Fill in the chart below with the appropriate symbol for each family member. Be sure to record any risk factors that are discussed as well.

Symbol Key:
- Male
- Female
- Affected
- Deceased
- Two parents
- Engaged in risky behavior
- Attention Deficit Hyperactivity Disorder (ADHD)
- Depression