

PI: Pedigree Investigator

On the Case of Nicotine Addiction

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.

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

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.

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

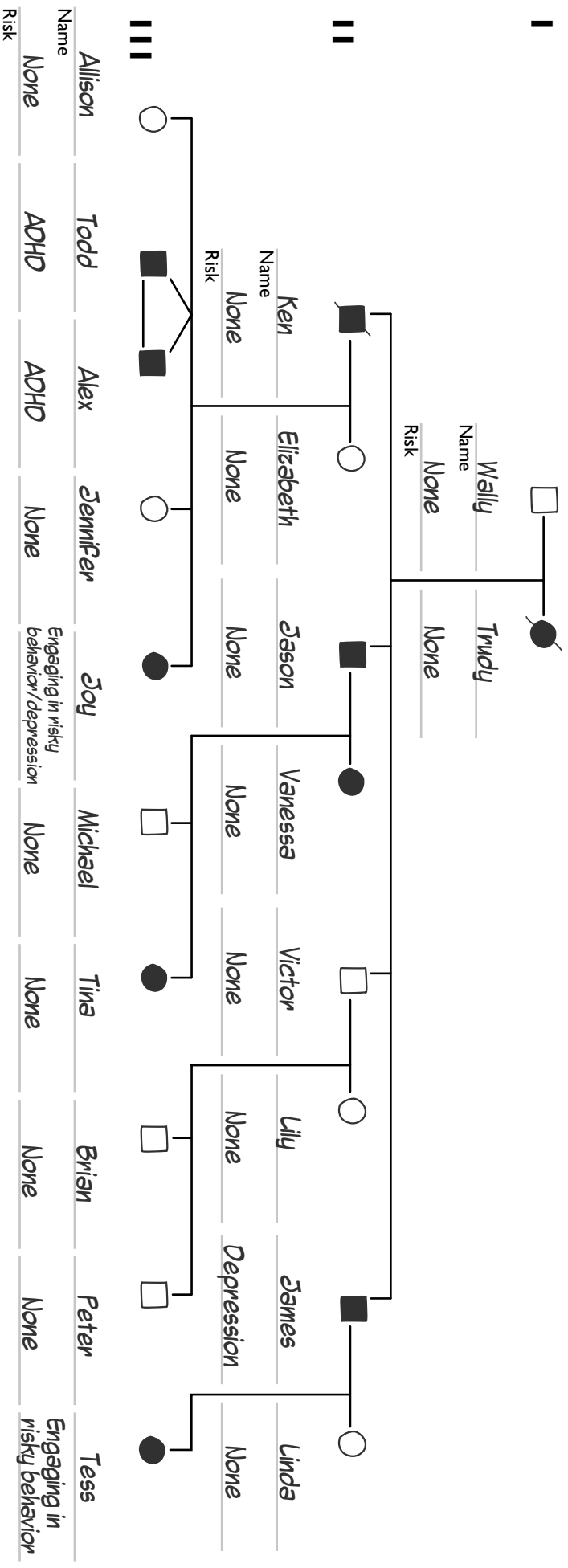
Molly Malone, Genetic Science Learning Center
Sheila Avery, Genetic Science Learning Center (illustrations)

Funding

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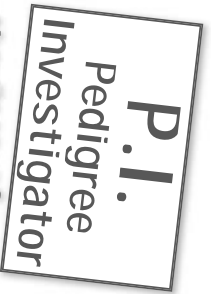
PI: Pedigree Investigator! On the Case of Nicotine Addiction

Answer Key



Name _____

Date _____



On the Case of
 Nicotine Addiction

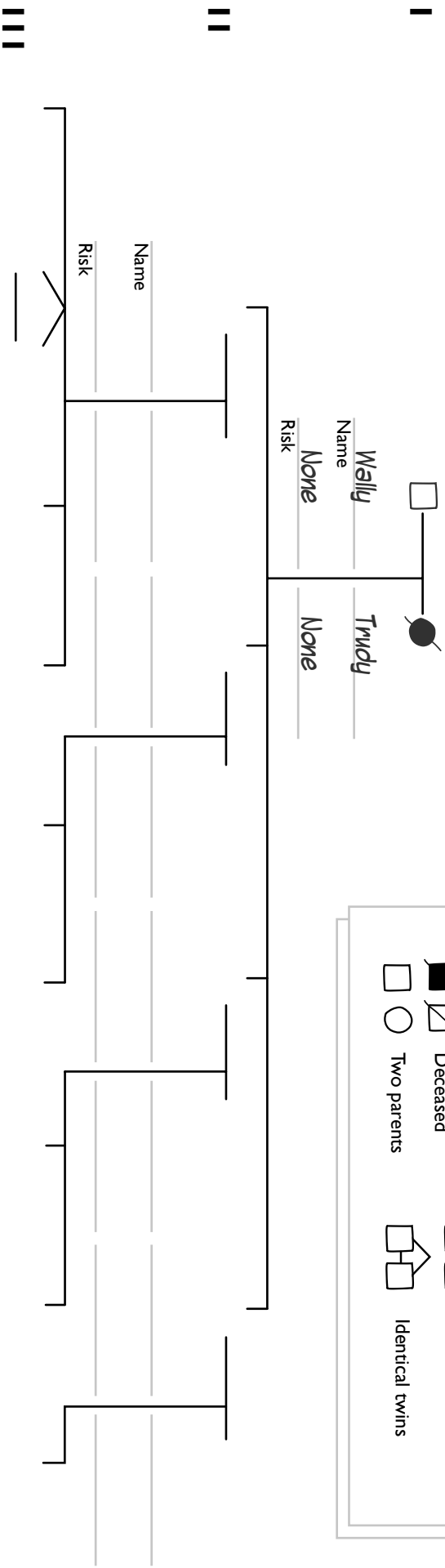
Imagine you are an investigator looking for genes that influence nicotine addiction. Log on to: <http://gsic.genetics.utah.edu/units/addiction> and click on **EXPLORE: P.I. Pedigree Investigator, On the Case of Nicotine Addiction**. Complete the activity to gather information for your study. View the video interviews, written surveys, and official records for the Marshall family. 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.

- Risk factors** for the Marshall family may include:
- ▶ Depression
 - ▶ Attention Deficit Hyperactivity Disorder (ADHD)
 - ▶ Engaging in risky behavior
 - ▶ None

Symbol Key:

<input type="checkbox"/>	Male		A family: I and II are generations
<input type="checkbox"/>	Female		Children are shown in birth order
<input checked="" type="checkbox"/>	Affected		Non-identical twins
<input checked="" type="checkbox"/>	Deceased		Identical twins
<input checked="" type="checkbox"/>	Two parents		

Pedigree Chart:



Name _____

Risk _____