

# Risk Continuum

## Abstract

This whole-class kinesthetic activity demonstrates how genes and the environment together influence a person's risk for drug addiction. It works with groups of 12 or more students, and it can be adapted to be used with other diseases that are influenced by both genes and the environment.

## Learning Objectives

- Family history and genetics can help predict a person's risk for developing drug addiction (or other diseases).
- A person's behaviors can increase or decrease their risk for developing drug addiction.
- A person with a higher risk has a greater chance of having a disease, but they may not develop it.
- A person with a lower risk has a lower chance of having a disease, but they still may develop it.

## Estimated time

- 15 minutes

## Materials

- Behavior cards: one per person.



## Introduction

We don't get to choose our genes or our family history. But particularly for complex diseases like drug addiction, our genes do not determine our destiny. Our lifestyle and environment also play important roles.

Within our lifestyle and environment, there are some factors that we can control and some that we can't. Easy access to drugs, exposure to abuse or trauma, and low parental supervision are all commonly cited risk factors for addiction. But as with our genes, we have little to no control over these things. What we can control is our behavior, and that is a focus of this activity.

*Note: Keep in mind that risk and protective factors do not necessarily cause or prevent disease themselves. Some are causative, and others are markers that are **associated** with healthy or disease states.*

## Preparing Behavior cards

1. General Behavior cards are provided on page 4. Alternatively, you may use the blank cards on page 5 and add your preferred Risky, Neutral, and Protective behaviors. For example:
  - a. Use factors that are consistent with other addiction prevention curricula that your students may be familiar with.

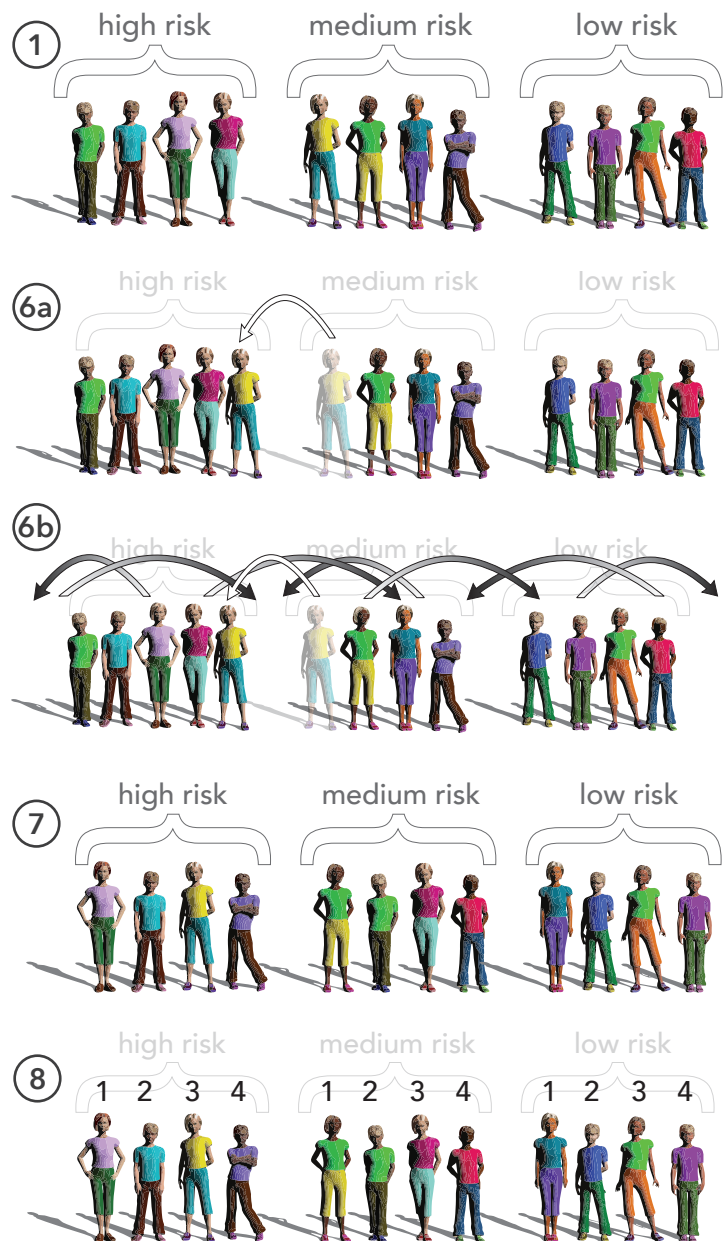
- b. Use factors from the resources listed at the end of this document.
- c. Ask your students to brainstorm about risky and protective behaviors. Discuss them as a class, and choose the behaviors to use on the cards.

*Note: Be sure to add at least three behaviors to each card. This emphasizes the idea that many of our behaviors together contribute to disease risk. For the Neutral card/s, it is ok to use a combination of risky and protective behaviors.*

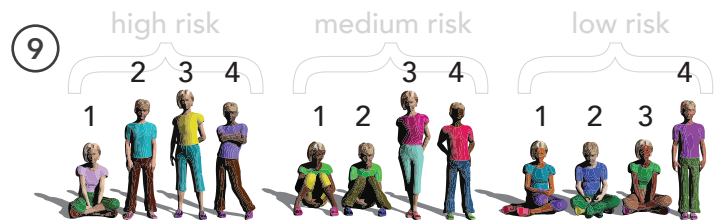
2. Make enough copies of the Behavior cards to provide one per person. Aim to distribute a balanced number of each type of card.

## Instructions

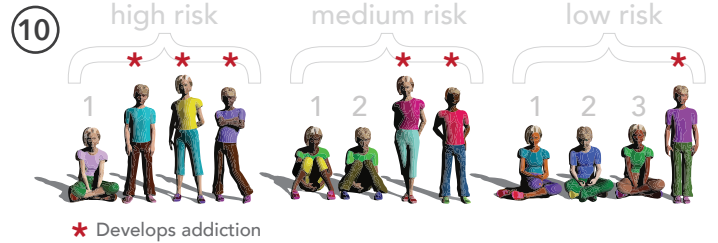
1. Have students stand in a single row, side by side, and facing the same direction.
2. Mark off two spots so that the students are roughly divided into thirds.
3. Explain that the students represent a continuum. Students on the left have the greatest genetic risk for developing drug addiction. Those on the right have the lowest genetic risk. The “thirds” are broader groupings of high, medium, and low risk.
4. Explain that people within each risk group have a certain probability of developing drug addiction, based on their family history and genetics. But their behaviors also influence their risk.
5. Starting on the left, have each student choose a Behavior card (without looking).
6. Move each student according to their Behavior card:
  - Protective – Move one group to the right
  - Neutral – Remain where you are
  - Risky – Move one group to the left
7. Have students reflect on how their behaviors have affected their risk.
8. Within each risk group, the students should count off 1 to 4.



9. Ask the following students to sit:
- High risk – students who counted 1
  - Medium risk – 1 & 2
  - Low risk – 1, 2 & 3



10. Those who are still standing represent the people who will develop the disease.



## Discuss

- People in all risk groups develop drug addiction, though the largest proportion is from the high-risk group.
- Even in the high risk group, not everyone develops drug addiction.
- Protective behaviors can move a person to a lower risk group, potentially preventing them from developing drug addiction. (Ask students for whom this was true to raise their hands.)
- Sometimes, people with protective or neutral behaviors still develop addiction. (Ask students for whom this was true to raise their hands.)
- Even though their risk increases, some people with risky behavior do not develop the disease.

## Adaptations

You can create a risk continuum for other diseases that are influenced by both genes and the environment, such as diabetes, cancer, and more. Fill in the Behavior cards to reflect the relevant risky, neutral, and protective behaviors.

## References & Resources

Cleveland, M. J., Feinberg, M. E., Bontempo, D. E., & Greenberg, M. T. (2008). The role of risk and protective factors in substance use across adolescence. *Journal of Adolescent Health, 43*(2), 157-164. doi: [10.1016/j.jadohealth.2008.01.015](https://doi.org/10.1016/j.jadohealth.2008.01.015)

Mihalic, S. F., & Elliott, D. S. (2015). Evidence-based programs registry: Blueprints for Healthy Youth Development. *Evaluation and Program Planning, 48*, 124-131. doi: [10.1016/j.evalprogplan.2014.08.004](https://doi.org/10.1016/j.evalprogplan.2014.08.004)

The Blueprints for Healthy Youth Development website includes a searchable database of research-supported prevention programs. It also includes a list of risk and protective factors. <https://www.blueprintsprograms.org>

Murthy, V. H. (2017). Surgeon General's Report on Alcohol, Drugs, and Health. *Jama, 317*(2), 133-134. The report is available online at <https://addiction.surgeongeneral.gov/table-of-contents>. Chapter 3 includes specific risk and protective factors.

This document from the Search Institute includes a list of protective factors. It distinguishes between internal and external factors, and also organizes them by age group: <https://youth.gov/youth-topics/substance-abuse/risk-and-protective-factors-substance-use-abuse-and-dependence>

Youth.gov provides a list of risk and protective factors, organized by age group: <https://youth.gov/youth-topics/substance-abuse/risk-and-protective-factors-substance-use-abuse-and-dependence>

This activity is based upon work funded by the Utah State Board of Education. The contents provided here are solely the responsibility of the authors and do not necessarily represent the official views of the funders.

# Behavior Cards

Cut along the dotted lines to make 3 individual cards

## Risky

Have lots of unstructured time outside of school.

Deal with problems & challenges alone.

Spend time with peers who abuse drugs & alcohol.

Pay little attention to your education.

Pay little attention to your physical & mental health.

Use drugs and/or alcohol.

## Neutral

Practice a combination of risky and protective behaviors.

## Protective

Participate in organized activities outside of school.

Turn to family, friends, or support services for help with problems & challenges.

Commit yourself to school and finish your education.

Take care of your physical & mental health.

Practice refusal skills and coping strategies.

Avoid drugs & alcohol.

# Behavior Cards

Cut along the dotted lines to make 3 individual cards

**Risky**

**Neutral**

**Protective**

