

## Getting Started:

# What are the foundations of prevention science?

## General Principles of Primary Prevention Science

Primary prevention is focused on **PREVENTING** the onset of problem behaviors and issues related to topics such as:

**Substance use, Mental Health, Violence, Delinquency, School Drop-Out, and Teen Pregnancy.**

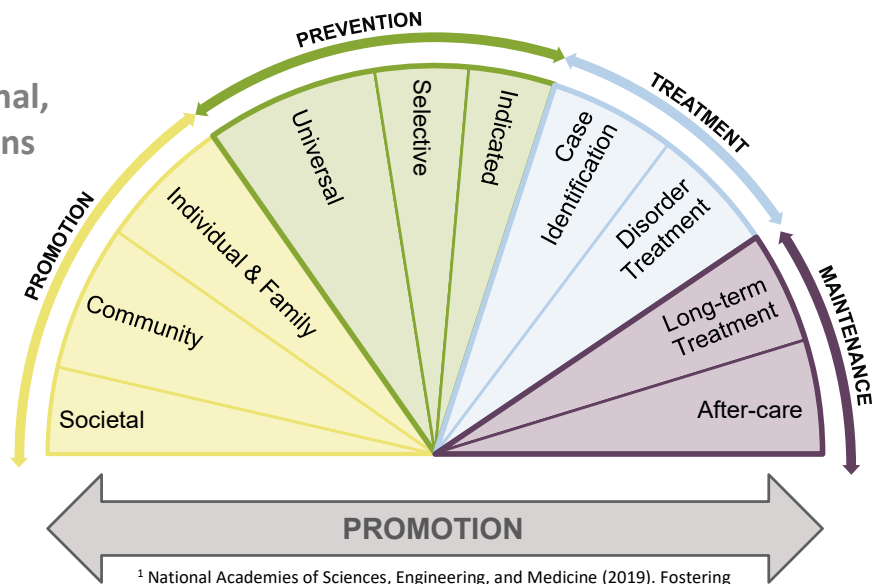
It involves interventions that are applied **BEFORE** there is any evidence of the problem. Research has proven these issues can be prevented by identifying and addressing the underlying causes (risk factors) that lead to negative outcomes for youth. While comprehensive service planning is required to meet all needs, it is vitally important health and well-being promotion and prevention services are provided.

The graphic below outlines the *2019 Spectrum of Mental, Emotional, and Behavioral (MEB) Interventions*<sup>1</sup> (formerly, and still often, referred to as the *Continuum of Care or Continuum of Mental, Emotional, and Behavioral Services*) from the National Academies of Sciences, Engineering, and Medicine's (formerly the *Institute of Medicine*). This Spectrum demonstrates the need for a comprehensive set of interventions that span across multiple service areas. It is important to note several new elements to the updated Spectrum:

- Promotion is divided into three segments to show that we need to increase health and well-being promotion services and that they should be focused on the different segments of an individual's life.
- Segment sizes are adjusted based on the amount of MEB required, with the larger segments reflecting the need for more MEB interventions when developing and implementing comprehensive, strategic prevention plans.

## 2019 Spectrum of Mental, Emotional, and Behavioral (MEB) Interventions

National Academies of Sciences,  
Engineering, and Medicine



To learn more about MEBs  
& related topics, visit:

<https://doi.org/10.17226/25201>.

<sup>1</sup> National Academies of Sciences, Engineering, and Medicine (2019). *Fostering Healthy Mental, Emotional, and Behavioral Development in Children and Youth: A National Agenda*. Washington, DC: The National Academies Press.

<https://doi.org/10.17226/25201>.

“IT PAYS TO ASK...IT PAYS TO KNOW”

[www.episcenter.psu.edu/paysguide](http://www.episcenter.psu.edu/paysguide)

Updated May 2020

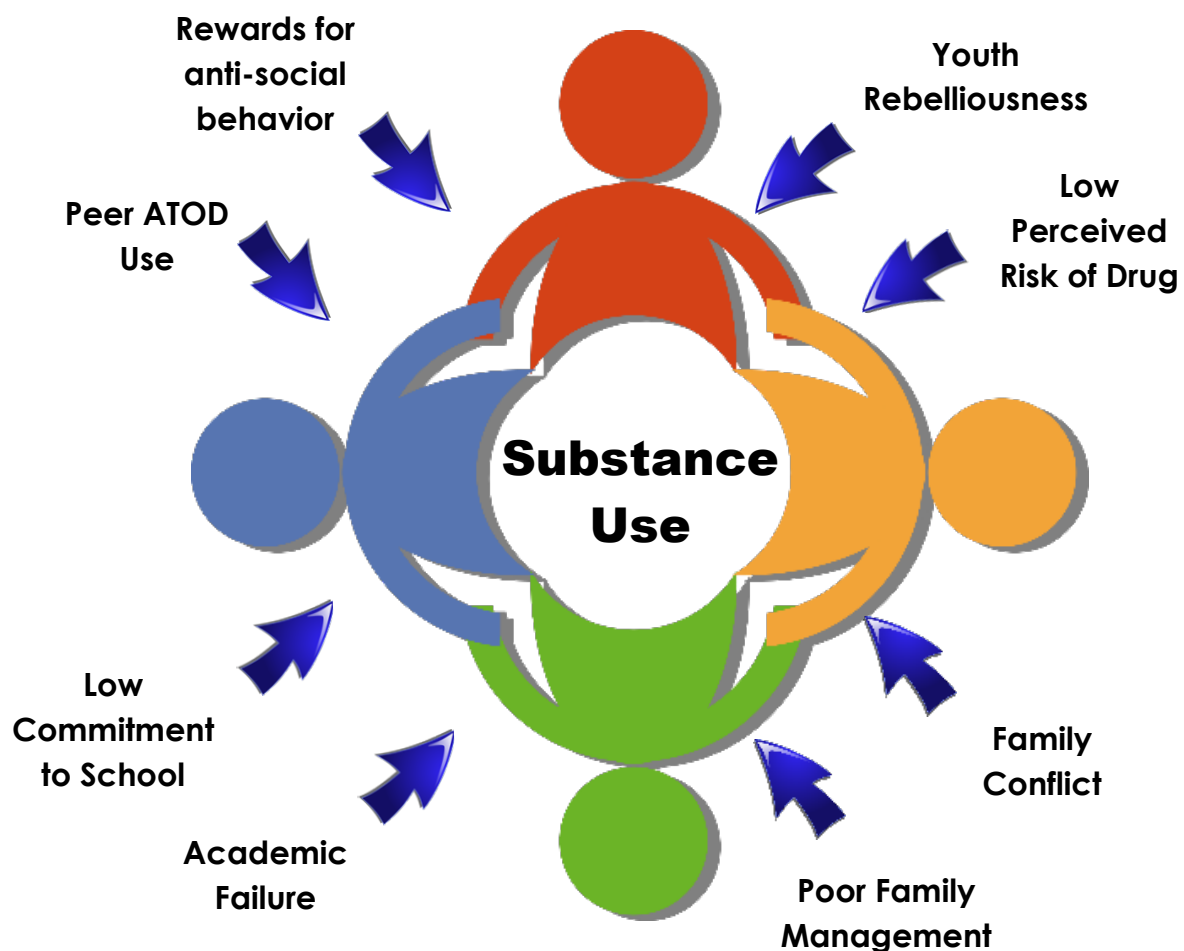
## The Risk-Factor Effect

### Equifinality vs Multi-finality

The effects of risk factors cross many dimensions within a youth's life. A single risk factor is not linked to a single problem behavior, but rather multiple risk factors have been scientifically linked to multiple negative youth outcomes. Conversely, a youth experiencing multiple risk factors is much more at risk for single negative behaviors. Let's explore what we mean.

### Equifinality

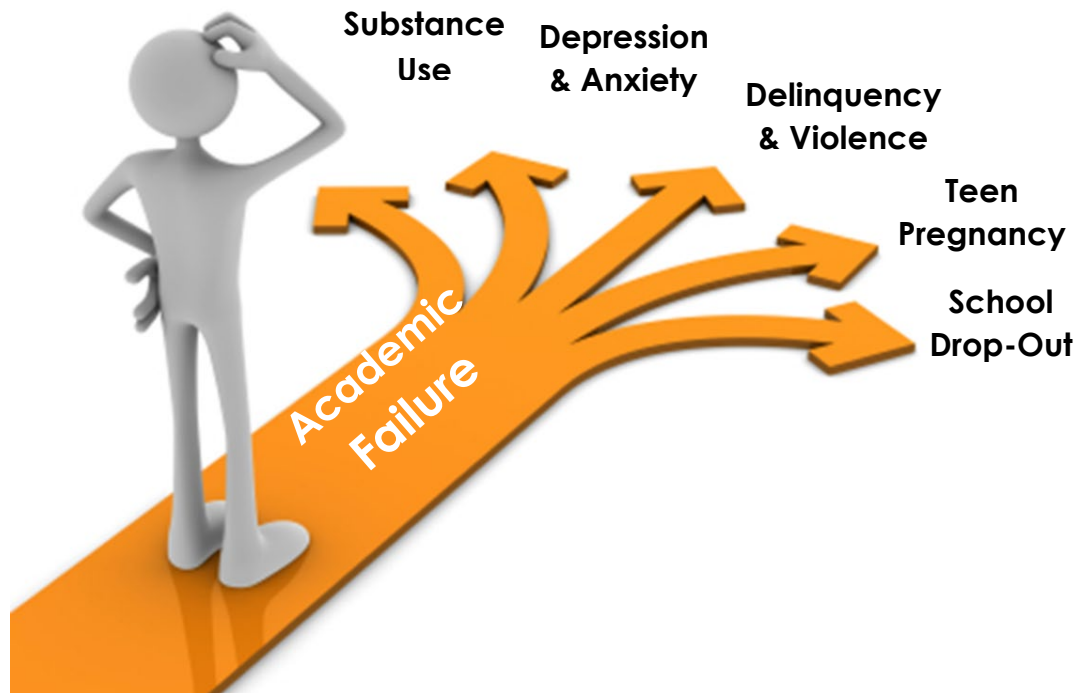
Equifinality is defined as "the principle that in open systems a given end state can be reached by many potential means" and in the context of prevention science it means that a youth who is experiencing multiple risk factors is at much higher risk of related negative youth outcomes. The illustration below shows how the multiple risk factors can lead to substance use.



"IT PAYS TO ASK...IT PAYS TO KNOW"

## Multi-finality

Multi-finality literally means “many ends” and in the context of the PAYS means that one risk factor can lead to many different negative youth outcomes as shown in the example below. While we would naturally tend to think that the risk factor “academic failure” might only lead to school drop-out, prevention science has shown us that academic failure puts youth at a much higher risk of all the negative youth outcomes shown here:



## Risk-Focused Prevention Planning

**The most effective strategic planning is done through a risk-focused, public health approach.**

The public health approach involves defining and measuring a problem, determining what is causing the problem, determining how to alleviate the problem, implementing effective strategies, and then measuring the effects of the strategies.

Do you remember when everyone smoked in movies, when offices had ashtrays in their conference tables, or when you were asked if you wanted to sit in the smoking or non-smoking section of a restaurant?

The visual aid on the next page outlines how the public health approach was used to respond to the issue of lung cancer. You will see that the example shows that the intervention was not based on lung cancer itself, but rather on one of the causes – reducing smoking.

The PAYS is used to help define the problem and to identify risk and protective factors that most directly relate to the priorities identified through the strategic planning process.

**“IT PAYS TO ASK...IT PAYS TO KNOW”**

**Two Public Health Approach Examples:  
To Reduce Lung Cancer & Youth Vaping**

