

10% increase in cigarette tax (effect on youth)

Public Health & Prevention: Population-level policies

Literature review updated December 2014.

As part of WSIPP's research approach to identifying evidence-based programs and policies, WSIPP determines "what works" (and what does not work) to improve outcomes using an approach called meta-analysis. For detail on our methods, see our [Technical Documentation](#). At this time, WSIPP has not yet calculated benefits and costs for this topic.

Program Description: We reviewed all available research studies on the degree to which changing cigarette taxes, and thereby cigarette retail prices, affects the prevalence of cigarette smoking among youth. The effects presented in this meta-analysis reflect the effects of a 10% increase in cigarette taxes.

Meta-Analysis of Program Effects

| Outcomes measured | No. of effect sizes | Treatment N | Adjusted effect size and standard error | | | Unadjusted effect size (random effects model) | |
|-----------------------------------|---------------------|-------------|---|-------|-----|---|---------|
| | | | ES | SE | Age | ES | p-value |
| Smoking before end of high school | 9 | 409686 | -0.009 | 0.000 | 16 | -0.009 | 0.001 |

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our [Technical Documentation](#).

Citations Used in the Meta-Analysis

- Carpenter, C., & Cook, P.J. (2008). Cigarette taxes and youth smoking: New evidence from national, state, and local Youth Risk Behavior Surveys. *Journal of Health Economics*, 27(2), 287-299.
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- Dee, T.S. (2000). The complementarity of teen smoking and drinking. *Journal of Health Economics*, 18, 769-793.
- Gruber, J. & Zinman, J. (2000). *Youth smoking in the U.S.: Evidence and implications*. NBER Working Paper No. w7780. Cambridge, MA: National Bureau of Economic Research, Inc.
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For further information, contact:
(360) 664-9800, Institute@wsipp.wa.gov

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