

10% increase in cigarette tax (effect on adults)

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 adults. 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
Regular smoking	21	6507706	-0.004	0.002	45	-0.004	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

- Wasserman, J., Manning, W.G., Newhouse, J.P., & Winkler, J.D. (1991). The effects of excise taxes and regulations on cigarette smoking. *Journal of Health Economics*, 10(1), 43-64.
- Callison, K., & Kaestner, R. (2014). Do higher tobacco taxes reduce adult smoking? New evidence of the effect of recent cigarette tax increases on adult smoking. *Economic Inquiry*, 52(1), 155-172.
- Cheng, K.-W., & Kenkel, D.S. (2010). U.S. cigarette demand: 1944-2004. *Contributions to Economic Analysis and Policy*, 10, 1.
- DeCicca, P., & McLeod, L. (2008). Cigarette taxes and older adult smoking: evidence from recent large tax increases. *Journal of Health Economics*, 27(4), 918-29.
- DeCicca, P., Kenkel, D.S., & Mathios, A.D. (2008). Cigarette taxes and the transition from youth to adult smoking: Smoking initiation, cessation, and participation. *Journal of Health Economics*, 27, 904-917.
- Evans, W.N., Ringel, J.S., & Stech, D. (1999). Tobacco taxes and public policy to discourage smoking. *Tax Policy and the Economy*, 13, 1-56.
- Farrelly, M.C., & Engelen, M. (2008). Cigarette prices, smoking, and the poor, revisited. *American Journal of Public Health*, 98(4), 582-3.

- Farrelly, M.C., Bray, J.W., Pechacek, T., & Woollery, T. (2001). Response by adults to increases in cigarette prices by sociodemographic characteristics. *Southern Economic Journal*, 68(1), 156-165.
- Franks, P., Jerant, A.F., Leigh, J.P., Lee, D., Chiem, A., Lewis, I., & Lee, S. (2007). Cigarette prices, smoking, and the poor: implications of recent trends. *American Journal of Public Health*, 97(10), 1873-7.
- Franz, G.A. (2008). Price effects on the smoking behaviour of adult age groups. *Public Health*, 122(12), 1343-8.
- Centers for Disease Control and Prevention (CDC). (1998). Response to increases in cigarette prices by race/ethnicity, income, and age groups--United States, 1976-1993. *JAMA*, 280(23), 1979-1981.
- Shang, C. (2012). *The robustness of price elasticity estimates: A revisit of various methodologies used to estimate demand for cigarettes*. University of Illinois at Chicago.
- Sheu, M.L., Hu, T.W., Keeler, T.E., Ong, M., & Sung, H.Y. (2004). The effect of a major cigarette price change on smoking behavior in california: a zero-inflated negative binomial model. *Health Economics*, 13(8), 781-91.
- Sloan, F.A., & Trogdon, J.G. (2004). The impact of the Master Settlement Agreement on cigarette consumption. *Journal of Policy Analysis and Management*, 23(4), 843-55.
- Stehr, M. (2007). The effect of cigarette taxes on smoking among men and women. *Health Economics*, 16(12), 1333-1343.
- Tauras, J.A. (2004). Public policy and some-day smoking among adults. *Journal of Applied Econoimcs*, 7(1), 137-162.
- Tauras, J.A., Chaloupka, F.J., & National Bureau of Economic Research. (1999). *Price, clean indoor air laws, and cigarette smoking: Evidence from longitudinal data for young adults*. Cambridge, MA: National Bureau of Economic Research.
- Tauras, J.A. (2006). Smoke-free air laws, cigarette prices, and adult cigarette demand. *Economic Inquiry*, 44(2), 333-342.

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