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# Energy policy should consider health implications

**New research** has investigated the complex relationship between energy consumption and public health, by analysing historical data from around the world. It indicates that electricity does not provide additional health benefits for countries with low levels of infant mortality, and that increased coal consumption has negative health impacts.

**In the next 20 years** the International Energy Agency predicts a 50 per cent increase in global energy demand. Currently coal is the dominant fuel used for power generation (more than 40 per cent is sourced from coal) and, without policy changes, it will continue to dominate.

The relationship between energy and health is complicated. Electricity can help provide clean water, sanitation and reduce exposure to indoor air pollution from energy sources, such as coal and wood burning in homes. However, its production from fossil fuels increases outdoor air pollution and greenhouse gas (GHG) emissions, which ultimately lead to climate change and associated negative health impacts.

Health has seldom been the focus in energy policy research. This study analysed data on health and energy statistics from 1965 to 2005 to examine the relationship between two established general measures of health (life expectancy and infant mortality) and electricity consumption across 41 countries with very different histories of development. Data were from several sources, including UNICEF statistics, the human mortality database and the Review of World Energy.

The results indicated a difference between countries that had a high infant mortality/low life expectancy in 1965, and those with low infant mortality/high life expectancy in 1965. For high infant mortality/low life expectancy countries, such as Brazil, India and Indonesia, there was a fall in infant mortality with increased electricity consumption. However, for low infant mortality/high life expectancy countries, such as the majority of EU Member States, electricity consumption had no apparent impact.

Electricity consumption was associated with improved health only in countries with infant mortality greater than 100 deaths per 1000 live births in 1965. This supports previous research that suggests electricity consumption can improve public health in countries with high infant mortality, as there is greater opportunity for positive impacts through improved sanitation and water supply.

The results also indicated there was no link between life expectancy and electricity consumption. The researchers suggest this is because infants are more vulnerable to impoverished circumstances, so the impacts of electricity on infant mortality are greater and more immediate than on life expectancy.

However, when coal consumption was considered independently from electricity consumption, analysis indicated that increases in coal consumption were associated with both higher infant mortality rates and reduced life expectancy.

The results have strong implications for energy policy in terms of possible health impacts. The finding that coal consumption negatively affects health is of particular concern in the light of projected increases in coal use for power generation. However, further research is needed to analyse subpopulations within countries in terms of access to electricity and health status, as well as causes of death. Better data on other potential influences, such as educational level, vaccination and health care access, would be helpful in estimating energy impacts more accurately.

**Source:** Gohlke, J.M., Thomas, R., Woodward, A. *et al.* (2011) Estimating the Global Public Health Implications of Electricity and Coal Consumption. *Environmental Health Perspectives* 119(6):821-826. This article is free to view at: http://ehp03.niehs.nih.gov/article/fetchArticle.action?articleURI=info%3Adoi%2F10.1289%2Fehp.1002241
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