

## **Health Benefits** <sup>[1]</sup>



Natural gas is playing an increasingly important role for reducing standard air pollutants as well as greenhouse gas emissions. Since 2005 <sup>[2]</sup>, EPA has recorded substantial decreases in pollutants— 60% in fine particulate matter, 68% in SO<sub>2</sub> <sup>[3]</sup>, and 52% in NO<sub>x</sub> <sup>[4]</sup>—at the same time that natural gas production <sup>[5]</sup> has risen by 35% and natural gas electricity generation <sup>[6]</sup> has increased by 50%. When used for electricity generation, natural gas does not produce the harmful soot, SO<sub>2</sub> and mercury emissions that coal generation does. Replacing coal with natural gas electricity generation <sup>[7]</sup> results in a 400-fold reduction in particulate matter, a 4000-fold reduction in SO<sub>2</sub>, a 70-fold reduction in NO<sub>x</sub>, and a 30-fold reduction in mercury. Natural gas also reduces air emissions when burned in engines in place of gasoline or diesel.

Despite these health benefits, there have been numerous media reports that people living near oil and natural gas development have suffered negative health impacts from air emissions. Everything from nose bleeds to asthma and even cancer have been blamed on oil and natural gas development, but only anecdotally without independent verification. The media often accepts wild claims at face value, and fails to explain how oil and natural gas is regulated to protect air quality and human health.

In actuality there are several studies by academic and government scientists on health impacts that show that oil and natural gas production is meeting health standards. The Colorado Department of Public Health and Environment <sup>[8]</sup> found no significant concentrations of pollutants in the D-J Basin of northeast Colorado, where there had previously been concern. Other studies in Fort Worth <sup>[9]</sup>, Pennsylvania <sup>[10]</sup>, and Australia <sup>[11]</sup> have shown that concentrations around oil and natural gas sites stay well below levels deemed a health risk. Overall, valid health assessment studies demonstrate low risk of adverse impacts from oil and gas operations, and long-term studies of oil and natural gas workers who are more directly exposed than the public also show no harmful effects.

### **Feature content:**

No

### **Quick Facts:**

- Natural gas produces about 99.8% fewer sulfur dioxide emissions <sup>[12]</sup> and 45% fewer carbon emissions <sup>[13]</sup> than coal.
- Pennsylvania achieved \$14 billion to \$37 billion in annual public health benefits <sup>[14]</sup> by increasing natural gas electricity generation, which resulted in reductions of 73% in sulfur dioxides, 46% in fine particulate matter, and 23% in nitrogen oxides from 2008 to 2012.
- In Fort Worth, TX, an independent study <sup>[15]</sup> found emissions from natural gas sites did not exceed 24-hour concentrations above health-based screening levels.

### **Related Content:**

[Town of Erie Air Quality Review](#) <sup>[8]</sup>

[Fort Worth Natural Gas Air Quality Study](#) <sup>[16]</sup>

[NE Pennsylvania Ambient Air Sampling Report](#) <sup>[17]</sup>

[SW Pennsylvania Ambient Air Sampling Report](#) <sup>[18]</sup>

[Australia Health Watch Study](#) <sup>[11]</sup>

[Who Says There Are No Natural Gas Health Studies?](#) <sup>[19]</sup>

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### **Links:**

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- [3] <http://www3.epa.gov/airquality/sulfurdioxide/health.html>
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- [7] <http://www.cps.org.uk/files/reports/original/131202135150-WhyEverySeriousEnvironmentalistShouldFavourFracking.pdf>
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- [10] <http://extension.psu.edu/natural-resources/natural-gas/webinars/the-pennsylvania-marcellus-shale-short-term-ambient-air-sampling-project>
- [11] <http://energyindepth.org/wp-content/uploads/2012/05/Australian-Institute-Health-Survey.pdf>
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