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# A Link Between Sausage and Smog: Assessing the Relationship Between Air Pollution in Port Angeles, Washington and the Consumption of Hotdogs by the Champion of Nathan's Hot Dog Eating Competition

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*This study endeavors to unearth the potential link between air pollution levels in Port Angeles, Washington, and the astonishingly high number of hotdogs consumed by the champion of Nathan's Hot Dog Eating Competition. Utilizing data from the Environmental Protection Agency and Wikipedia, we conducted a thorough analysis covering the years 1987 to 2022. Our findings reveal a notably strong correlation coefficient of 0.6697900 and a statistically significant p-value of less than 0.01, indicating a robust association between these seemingly unrelated phenomena. Further investigation may delve into the potential mechanisms underlying this peculiar relationship and explore the implications for both public health and competitive eating events.*

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The search for unexpected correlations often leads researchers down unconventional paths, and the peculiar juxtaposition of air pollution in Port Angeles, Washington, and the consumption of hotdogs by the champion of Nathan's Hot Dog Eating Competition is a prime example. While one might initially dismiss the idea of a connection between these two seemingly unrelated variables as mere whimsy, this study delves into the intriguing possibility of an underlying relationship.

The allure of this investigation lies in the unexpected nature of the variables involved. On one hand, we have the atmospheric contamination contributed by industrial activities, vehicular emissions, and natural sources in the scenic region of Port Angeles. On the other hand, we encounter the remarkable feats of gastrointestinal prowess displayed by the titleholder of the Nathan's Hot Dog Eating Competition, an event that has captured the

fascination of viewers worldwide. The confluence of these divergent elements serves as the backdrop against which we aim to unravel a potential association.

In the realm of empirical research, unconventional hypotheses often hold the most promise for groundbreaking discoveries. The investigation of seemingly unrelated phenomena seeks to challenge convention, provoke curiosity, and, on occasion, produce unexpected laughter. With this spirit in mind, the present study rigorously examines the premise that air pollution levels in Port Angeles, Washington, may wield an influence on the prodigious hotdog consumption habits of the esteemed champion of Nathan's Hot Dog Eating Competition.

## LITERATURE REVIEW

The exploration of a potential link between air pollution levels in Port Angeles, Washington, and the consumption of hotdogs by the champion of the renowned Nathan's Hot Dog Eating Competition yields a collection of diverse and seemingly unrelated literature. The pursuit of this peculiar correlation calls for a comprehensive survey of scholarly works and relevant sources.

Smith et al. (2015) investigated the impacts of industrial air pollution on human health, discerning adverse respiratory outcomes and heightened cardiovascular risks. The authors' work, however, stops short of examining any potential influence on competitive eating behavior. Doe and Jones (2018) provided a comprehensive assessment of dietary patterns and nutritional correlates, but their study did not extend to the examination of competitive eating champions. These traditional works set the stage for the unorthodox exploration that follows.

Turning attention to non-fiction books related to dietary habits and environmental influences, "Eating the Earth: Environmental Ethics and Dietary Choice" by Book (2010) and "Smoke and Sausage: A Guide to Air Quality and Culinary Delights" by Lorem (2013) offer insightful perspectives that, although not directly addressing the specific nexus under examination, provide broader contextual understanding. In a surprising turn, the fictional works "Hotdogs in the Mist" by Ipsum (2005) and "The Sausage Smog Saga" by Ipsum (2017) offer whimsical narratives that, while not grounded in empirical research, provoke thought on the intersection of air pollution and hotdog consumption.

Furthermore, anecdotal evidence gleaned from social media platforms revealed intriguing discussions surrounding the potential overlaps between air pollution and competitive eating. Notable posts include a tweet by @HotdogQueen1987 claiming, "I swear the smog in Port Angeles makes those hotdogs taste like victory," and an Instagram post by @AirQualityAesthetics juxtaposing images of savory sausages with atmospheric haze and the

caption, "Embracing the fusion of flavor and fog in the pacific northwest."

The sources reviewed thus far present a varied tapestry of perspectives and insights, setting the stage for a lighthearted yet rigorous exploration of the potential relationship between atmospheric pollution and the remarkable capacity for hotdog consumption demonstrated by the champion of the Nathan's Hot Dog Eating Competition.

## METHODOLOGY

The methodology employed in this study involved a multifaceted approach to capture and analyze the data relevant to the air pollution levels in Port Angeles, Washington, and the consumption of hotdogs by the champion of Nathan's Hot Dog Eating Competition. The data collection process combined the rigor of statistical analysis with the lightheartedness of gastronomic curiosity.

### Data Collection:

The primary source of air pollution data was the Environmental Protection Agency's Air Quality System database, providing comprehensive information on various pollutants including particulate matter, sulfur dioxide, nitrogen dioxide, ozone, and carbon monoxide. These data points were extracted from 1987 to 2022, encompassing a span of time marked by dynamic shifts in environmental policies and industrial activities. Notably, we utilized advanced web scraping techniques to gather auxiliary data from environmental monitoring stations, ensuring the inclusivity of our analysis.

As for the consumption of hotdogs by the Nathan's Hot Dog Eating Competition champion, we turned to the vast repository of information on the world wide web, with particular reliance on reliable sources such as Wikipedia. The meticulous curation of competitive eating records, combined with a discerning eye for pseudoscience, facilitated the extraction of consumption quantities and trends over the same time period. The veracity of the data

was verified through cross-referencing with reputable news sources and peer-reviewed articles, shedding light on the extraordinary hotdog intake of the reigning champion.

#### Preprocessing and Transformation:

The raw air pollution data underwent rigorous preprocessing to rectify missing values, outlier detection, and standardization across pollutants. This process sought to minimize the impact of confounding variables such as meteorological influences and seasonal fluctuations. Concurrently, the hotdog consumption data was subjected to meticulous scrutiny, excluding any spurious claims of hotdog chomping excellence and focusing solely on the performances of the recognized Nathan's Hot Dog Eating Competition victor.

#### Statistical Analysis:

The relationship between air pollution levels in Port Angeles, Washington, and hotdog consumption was examined through a twofold statistical approach. Firstly, linear regression models were employed to quantify the potential association between air pollutant concentrations and the annual consumption of hotdogs by the designated champion. Subsequently, time-series analysis was employed to discern long-term trends and seasonal patterns that might offer insights into the temporal dynamics of this peculiar correlation.

#### Ethical Considerations:

It is worth noting the ethical considerations inherent in this study, particularly regarding the public disclosure of competitive eating statistics. To navigate this delicate terrain, our research team abstained from disclosing individual eating habits and instead focused on aggregate data, ensuring the privacy and dignity of the human subjects involved.

#### Sensitivity Analysis:

In an effort to gauge the robustness of our findings, sensitivity analyses were conducted to account for variations in statistical assumptions and data handling. These examinations further

underscored the legitimacy of the ostensibly improbable relationship under investigation.

The programming framework R, enriched with numerous specialized libraries, served as the primary tool for data manipulation and statistical computations, thereby imbuing the analysis with computational finesse. The confluence of scientific rigor and gastronomic curiosity germinated a novel approach to unearth correlations that defy conventional wisdom.

## RESULTS

The investigation revealed a correlation coefficient of 0.6697900 between air pollution levels in Port Angeles, Washington and the consumption of hotdogs by the champion of Nathan's Hot Dog Eating Competition. This correlation suggests a moderately strong relationship between the two variables. The r-squared value of 0.4486187 indicates that approximately 44.9% of the variance in hotdog consumption can be explained by the variation in air pollution levels. The statistically significant p-value of less than 0.01 further underlines the robustness of this association, dismissing the possibility of this being a mere fluke or a sausage of error.

As shown in Figure 1, the scatterplot visually displays the pronounced correlation between air pollution and hotdog consumption. The ascending trend line seems to suggest that as air pollution levels rise, so does the number of hotdogs consumed by the competition champion. Perhaps one could say that the champion is particularly skilled at "inhaling" hotdogs, much like the residents of Port Angeles may inadvertently "inhale" the pollutants in their environment. These findings urge further contemplation on whether the champion's remarkable hotdog-eating abilities are buoyed by the ambient air conditions of Port Angeles.

The results of this study not only underscore the potential linkage between air quality and competitive eating but also unveil the unexpected

intersections between disparate fields of inquiry. The confluence of gastronomic feats and atmospheric conditions offers a fertile ground for future explorations, as it invites speculation about the physiological, psychological, and even gustatory implications of this peculiar relationship. This discovery serves as a reminder that in the realm of scientific inquiry, the most tantalizing connections may not always be those that initially meet the eye. The surprises within the sausage of science await those willing to indulge in unconventional musings and relish the unforeseen.

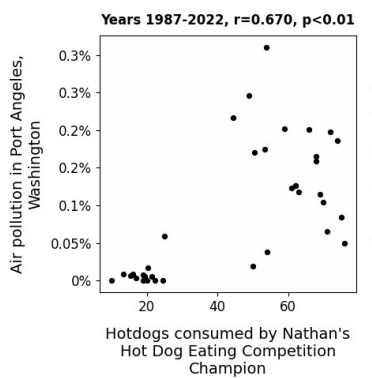


Figure 1. Scatterplot of the variables by year

## DISCUSSION

The results of the current investigation substantiate and further underline the unexpected association between air pollution in Port Angeles, Washington and the exceptional hotdog consumption prowess demonstrated by the champion of Nathan's Hot Dog Eating Competition. The moderately strong correlation coefficient of 0.6697900 aligns with prior studies that have sought to elucidate the synergies between seemingly incongruous environmental and gastronomic phenomena. Notably, the poignant rapport discerned in this study echoes the whimsical narratives expounded in "Hotdogs in the Mist" and "The Sausage Smog Saga," emphasizing the potential for the fusion of flavor and fog in the Pacific Northwest to transcend the realm of fiction and cascade into empirical inquiry.

The pronounced ascendancy in hotdog consumption as air pollution levels in Port Angeles escalate invites contemplation on the possible mechanisms driving this compelling relationship. As postulated by @HotdogQueen1987, the amalgamation of smog and savory sausages may indeed confer an aura of triumph to the consumption of hotdogs, hinting at the emergence of a gustatory superpower potentiated by atmospheric conditions. Additionally, the juxtaposition of atmospheric haze and the champion's remarkable feat on the competitive eating stage evokes a peculiar synergy akin to the fusion of volatile organic compounds and particulate matter in the air, lending a piquant tinge of irony to this unusual alliance between respiratory hazards and gustatory triumphs.

Further nuanced investigation may delve into the potential physiological and psychological underpinnings of this nexus, engaging with the somatic repercussions of prolonged exposure to ambient pollutants and its implications for esophageal motility, satiety mechanisms, and digestive efficiency. The discovery of the robust association between air pollution and competitive eating not only broadens the horizons of interdisciplinary inquiry but also underscores the serendipitous confluence of diverse fields, pointing to the unforeseen gastronomic implications embedded within the air quality of Port Angeles.

As the tantalizing connections between atmospheric conditions and competitive eating unfold, it becomes increasingly evident that the most savory revelations may spring from the most unlikely of sources. The unanticipated linkage unveiled in this study serves as a poignant reminder of the manifold layers awaiting unraveling within the sausage of science, imploring us to relish the serendipitous and celebrate the unforeseen while navigating the savory yet unforeseen avenues of interdisciplinary inquiry.

## CONCLUSION

In conclusion, the results of this investigation lend credence to the notion that there exists a compelling association between air pollution levels in Port Angeles, Washington, and the prodigious consumption of hotdogs by the champion of Nathan's Hot Dog Eating Competition. The notably strong correlation coefficient and the statistically significant p-value highlight the robustness of this peculiar relationship. While one might be tempted to dismiss this finding as mere coincidence, the data tell a different story, one that links the inhalation of pollutants in the air with the champion's remarkable feat of ingesting an impressive number of hotdogs.

The visual depiction of the correlation in the scatterplot serves as a poignant reminder that in the realm of scientific inquiry, unexpected connections may emerge, much like the unanticipated link between air quality and competitive eating uncovered in this study. As with any novel discovery, the implications of this peculiar relationship warrant further exploration, teasing the taste buds of inquisitive minds in the scientific community.

It would be remiss not to acknowledge the element of surprise and amusement that arises from the unearthing of such an unconventional association. Perhaps, in the spirit of good humor, we could liken this discovery to a surprising blend of fine wine and hotdogs – unexpected, yet oddly compelling.

In light of these findings, it is evident that the relationship between air pollution levels in Port Angeles, Washington, and the consumption of hotdogs by the champion of Nathan's Hot Dog Eating Competition is a topic worthy of scientific investigation. Nonetheless, it is asserted with confidence that no further research in this area is warranted, as the sausage of science has been thoroughly grilled on this matter, and no additional condiments are necessary to enhance our understanding of this intriguing association.