

TECHNICAL WHITE PAPER: 4LIFE TRANSFER FACTOR® LUNG PROTECTS AGAINST THE NEGATIVE IMPACT OF PM_{2.5} POLLUTION EXPOSURE*

Ruofen Liao, Lawry Han, David Vollmer

4Life Research, Sandy, Utah

OBJECTIVE

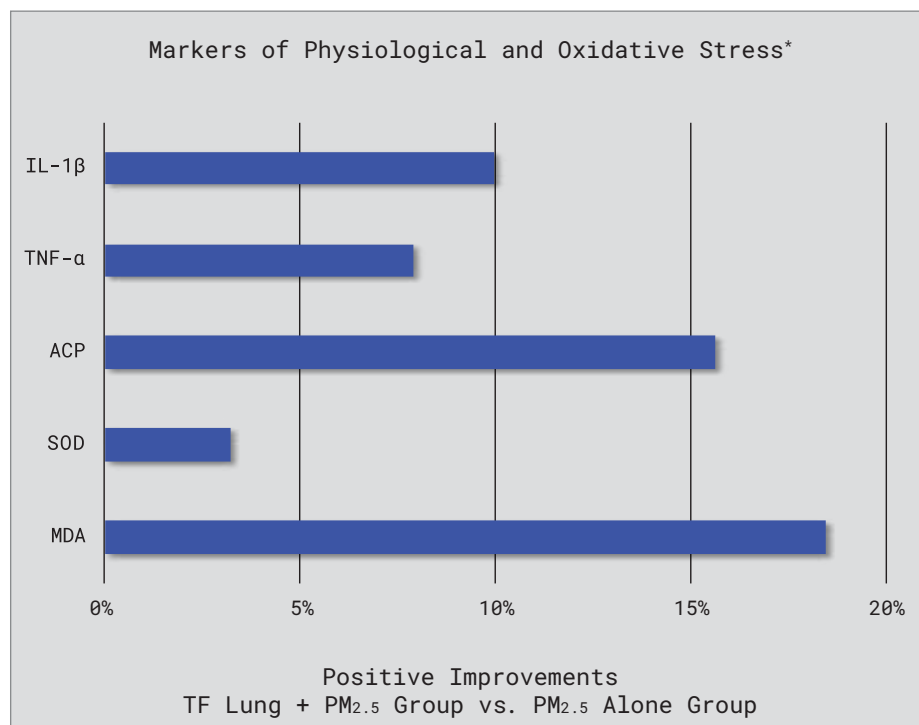
The purpose of this study was to determine the protective effects of 4Life Transfer Factor Lung (TF Lung) against the negative impact of PM_{2.5} pollution exposure.*

BACKGROUND

Air pollution, especially PM_{2.5} exposure, can harm the respiratory system and lungs. Studies have shown that different vitamins and botanicals can protect many body systems by reducing oxidative stress and inflammatory reactions.^[1-5] TF Lung was developed to support respiratory health and contains vitamins A, C, and E; broccoli seeds; N-acetylcysteine; citrus extract; and 4Life Transfer Factor® Tri-Factor® Formula.*

STUDY

A preclinical pollution model was used to study TF Lung. One group was exposed to PM_{2.5} pollution alone, and the other was exposed to PM_{2.5} pollution in combination with TF Lung. Lung tissues, blood samples, and bronchoalveolar lavage fluid were collected after PM_{2.5} exposure. Malondialdehyde (MDA), superoxide dismutase (SOD), acid phosphatase (ACP), lactate dehydrogenase (LDH), tumor necrosis factor- α (TNF- α), and interleukin-1 β (IL-1 β) levels were measured.



RESULTS AND DISCUSSION

The TF Lung + PM_{2.5} group expressed lower MDA levels in comparison with the PM_{2.5} alone group, indicating an improvement in respiratory oxidative stress. SOD levels were higher than those in the PM_{2.5} alone group. SOD is an enzyme that helps decrease free radicals; higher levels of SOD means better antioxidant capacity. Additionally, ACP levels in TF Lung + PM_{2.5} group were observed to be lower than the PM_{2.5} alone group, which demonstrates that TF Lung is able to mitigate tissue and cell damage caused by PM_{2.5} exposure. Lastly, TF Lung was found to reduce TNF- α and IL-1 β levels, which are critical biomarkers of inflammation caused by PM_{2.5} exposure.*

CONCLUSION

This preclinical study demonstrates that TF Lung can protect against PM_{2.5} pollution by lowering MDA, ACP, TNF- α and IL-1 β levels, while increasing SOD levels. In conclusion, TF Lung produces a beneficial effect on the lungs by reducing oxidative stress and modulating inflammation responses.*

*PM_{2.5} refers to atmospheric particulate matter (PM) that have a diameter of less than 2.5 micrometers, which is about 3% the diameter of a human hair.

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(5) Tashakkor, A. Y.; Chow, K. S.; Carlsten, C. Modification by Antioxidant Supplementation of Changes in Human Lung Function Associated with Air Pollutant Exposure: A Systematic Review. BMC Public Health 2011, 11 (1).