Title	Intelligent Design and the Fractal Structure of the Lungs
Topic/Field	Life Sciences
Target audience	General

In general, respiration is an activity of life in which living organisms take in oxygen and expel carbon dioxide. Living organisms obtain the energy needed for activities in life by oxidizing nutrients obtained through digestion and absorption. There are approximately 300 million alveoli in one lung, so there are about 600 million alveoli in both lungs.

The human respiratory system consists of the nose, pharynx, larynx, trachea, bronchi, and lungs; air moves in and out of it, and it also functions as a radiator and humidifier. It also acts as a cushion to protect the heart from external shock. The lungs are developed surrounding the heart. As we can see, the lungs are a wondrous organ and are clearly a product of God's creative design.

The lungs of the human body are characterized by features that distinguish them from those of other mammals, such as the presence of dichotomous branching and respiratory bronchioles. The lung structure of birds is different from that of humans and does not match an evolutionary sequence in terms of efficiency. Further, the lungs of primates differ from those of humans in the number of lobes and laryngeal sacs.

The lung's structure is fractal, and the fractal dimension is 2.97, which is close to three dimensions. Thanks to this structure, an enormous area of about 85 m^2 and 300 million alveoli are accommodated in a volume of only about 5 – 6 L within the chest cavity, although the alveolus is only 0.3 mm. Assuming that the atmospheric pressure in the beginning was 1.7 atm based on the 35% oxygen concentration in the atmosphere in the past, it was predicted that the partial pressure of oxygen in the blood would be over 126 mmHg and the oxygen saturation in the blood would always be close to 100%. Even giants over 3 meters tall could have lived healthily without lung diseases such as pneumothorax.

The lungs are designed to remove dust particles through physical actions such as collision, sedimentation, blocking, diffusion, and electrostatic sedimentation.

However, recent fine dust (PM2.5) pollution is increasingly threatening human respiratory health.

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Curriculum Vitae

Mr. Hyongkil Kim is a civilian industrial hygienist assigned to the Bioenvironmental Engineering Flight, Osan Air Base, United States Air Force in Republic of Korea. In his current position, he manages the occupational and environmental health surveillance program. He also serves as a deacon at the Salvation Army Church in Songtan where he spends many hours teaching and aiding those affected by disaster. He is married and a devoted father of two children.

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Conferences of Korean Association for Creation Research:
2013: Ozone Formation from the Water above the Expanse and Related Calculations of Noah's Flood
2015: A Study of Lung's Design and its Fractal Structure
2017: A Study of Ear's Design
2018: A Study of Human Eye's Design
2023: Calculation of Excess Cancer Deaths by Cosmic Radiation Exposure After Noah's Flood (Asian Creation Conference in Taiwan)