

National Longitudinal Lung Health Research Project Overview

Plan for participation in this study is as follows:

- Individuals participating in any of the Running Lungs races being held across the U.S. as well as anyone who wants to be part of the study who hears about it through word of mouth, the Wortman Lung Foundation Website or the Breath Research website or app will be eligible.
- If an individual wants to participate the websites will have a contact form they can complete so that the study team can mail them further information about the study and a consent form, which they can read, and if they agree, sign to participate. Consent forms will also be available at all races so those interested can sign up to participate at the same time they pick up their race packet.
- Once the consent is signed and received by the study team, the individual will complete questionnaires which gather information about their basic demographics activity levels, nutrition/diet, and medical history (family and personal), and general lifestyle questions (employment, primary geographical residence, environmental exposures, etc.). Emails will be sent to each participant with a link to secure online portal where the questionnaire can be completed.
- Once the 5 questionnaires are complete, participants will receive a cheek swab kit to allow them to provide a DNA sample.
- After these things are completed, participants will not need to do anything further.
- To be a longitudinal study we will ask participants to complete follow up questionnaires. Racers will receive follow up questionnaires every year they participate in a race. If races aren't completed back to back then follow-up questionnaires will be sent every two years. Non-racers will also be asked to complete follow up questionnaires every two years to provide follow-up information on if anything has changed.
- iPhone users, will be asked to download the My Breath app from the app store and use it. The app will instruct individuals to record his/her breathing: individuals will be guided to use the microphone that is part of the iPhone headset (that comes with the iPhone) to complete these measurements. These measurements will be performed every two years.
- Individuals competing in a Wortman Lung Foundation Healthy Lungs Race will have their race time recorded as a marker of health and fitness.



Wortman Lung Cancer Foundation
RUNNING LUNGS

WORTMAN LUNG CANCER FOUNDATION 501(C)(3)
EIN 47-1025060 - Letter 5436-effective:6-09-2014
WortmanLungCancerFoundation@gmail.org

All profits go to Mayo Clinic Lung Cancer &
Healthy Lung Research

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Screening is important

- New screening guidelines are in place for people at risk.
- Early detection of lung cancer allows for better survival.
- Low-dose spiral CT scans can detect lung tumors at an earlier stage.

Sources:

American Cancer Society: <http://www.cancer.org/cancer/news/features/why-lung-cancer-strikes-nonsmokers>
American Cancer Society, Cancer Facts and Figures 2016: <http://www.cancer.org/acs/groups/content/@research/documents/document/acspc-047079.pdf>
American Lung Association: <http://www.lung.org/>

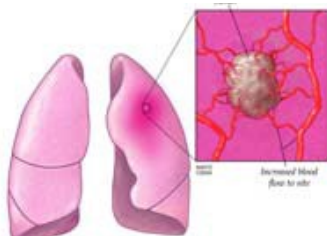
Why Lung Cancer holds a peculiar distinction... and doesn't have to be the #1 Cancer Killer



Lung Cancer is the least-researched major cancer- According to data presented the 16th World Conference on Lung Cancer, rates among NEVER SMOKERS are surging. Lung Cancer tops all other malignancies worldwide
American Cancer Society estimates there will be more than 220,000 new lung cancer cases in 2016 with 160,000 deaths in the U.S. that's equal to the number of deaths attributed to the next four cancers - Breast, Prostate, Colon and Pancreatic - combined! Lung Cancer tops all other cancers Worldwide
Lung cancer in women is rising and that is why RUNNING LUNGS RACES have become the means to educate communities by introducing fun lung facts to remove the stigma that lung cancer is a just smokers disease.

A never smoker and active woman, Linda Wortman was shocked to be diagnosed with lung cancer in 2008 at Mayo Clinic. After treatment and recovery, her loving husband, Jerry, helped Linda find a new passion of running with only a lung-and-a-half. and completed a 5k race in 50 states. Now they are running a 10K race in every continent. Linda and Jerry most recently co-founded Wortman Lung Cancer Foundation 501(c)(3) and RUNNING LUNGS Run/Walk events in 4 states, MN AZ MT & FL.

Linda and Jerry run to fight the unfair stigma associated with lung cancer. Everyone knows people shouldn't smoke, but any blame or stigma attached to lung cancer needs to disappear. Shockingly, Linda was required to attend Nicotine Rehab, even though she never smoked. Her life insurance was cancelled and she was told "You should be dead"! As oncologists and funders point out: "Low funding levels for lung cancer are a vicious cycle that results in fewer scientist getting on the case, this must be changed"! RUNNING LUNGS Mission? To help create lung cancer awareness & raise funding for lung health and lung cancer research to help save lives. Shockingly 40% of those diagnosed Never Smoked or stopped years before their diagnosis. Scientific findings such as the potential of CT scanning to save lives by allowing early detection, must be released to the public through the media —



Anyone can get lung cancer

Most often, this change in lung cells happens when people breathe in dangerous, toxic substances.

Factors that could make you at higher risk:

- ◆ Do you or have you been a **smoker**?
- ◆ Are you or have you been **exposed to second hand smoke** on a consistent basis at home, at work, etc.?
- ◆ Have you checked to make sure your house is not one of the 1 in 15 in the US subject to **radon** (colorless, odorless radioactive gas that exists naturally in soil) exposure the second-leading cause of lung cancer?
- ◆ Are you exposed to **hazardous chemicals at work** (e.g. asbestos, uranium, arsenic, cadmium, chromium, nickel and some petroleum products)?
- ◆ Is the **air quality** good where you live?
- ◆ Is there particle pollution: smog, smoke, etc.?
- ◆ Do you have a **family history** of lung cancer?

Lung Cancer Facts

- Lung cancer kills more men and women than breast, prostate, and colon cancer combined.
- Smoking is the number one cause of lung cancer and accounts for 90% of all lung cancer deaths, but it is not the only cause
- Radon exposure is the second leading cause, and the first among people who have never smoked.
- Additional causes include secondhand smoke, air pollution, asbestos, and occupational exposures.
- Every 2.5 minutes another person is diagnosed.
- 20% of these deaths are non-smokers
- Only 15% of lung cancer patients are diagnosed in the early stage when the disease is most curable.

Most often there are no distinct or noticeable symptoms until the disease is in its later stages, but these are ones to watch for:

- ◆ A cough that doesn't go away and gets worse over time
- ◆ A chronic cough or "smoker's cough"
- ◆ Hoarseness
- ◆ Constant chest pain
- ◆ Shortness of breath or wheezing
- ◆ Frequent lung infections such as bronchitis or pneumonia
- ◆ Coughing up blood

Other symptoms include:

- * Weight loss
- * Bone pain or fractures
- * Loss of appetite
- * Blood clot
- * Headaches

Mayo Clinic/Wortman Foundation – National Longitudinal Lung Research Project

The Wortman's approached Dr. Bruce Johnson and his team to be part of this lung health initiative by providing a research arm to the Running Lung races. Dr. Johnson's research has three general areas of interest, including clinical physiology, environmental physiology and human performance physiology; with significant overlap across these areas.

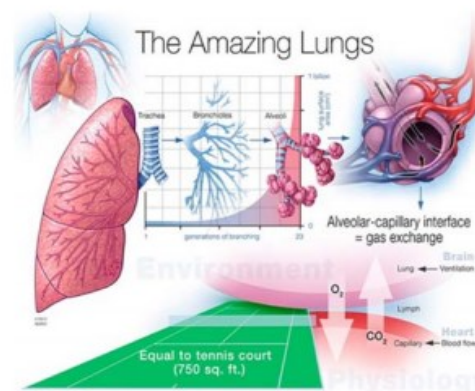
More specifically, the Johnson research lab has a strong focus on pulmonary physiology and is well suited for this partnership. The Running Lung races provide a unique opportunity to create a longitudinal database of participants from various locations, ages, backgrounds, and lifestyles to better understand two primary questions, 1) what are the physiological, genetic and environmental factors that influence lung function and 2) why do people differ in the aging response and what role does fitness or chronic activity play?

The purpose of this study is to engage communities and enhance education on lung health and lung cancer, while investigating the influence of genetics and environment on changes in lung function as one age and development of various lung diseases including lung cancer.

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Lung Facts

- The lungs are one of the largest internal body organs.
- The right lung is slightly larger than the left lung.
- Humans breathe 15-20,000 times per day, breathing in 2100 to 2400 gallons of air each day.
- The lungs consist of approximately 300 million tiny sacs called alveoli (grape like clusters) where the gas exchange of oxygen and carbon dioxide takes place.
- The surface area of the lungs is huge and dependent on gender and height.



Lung Fun Facts

- We lose half a liter of water everyday breathing.
- Lung cancers have a better chance to be cured if detected early.
- Rates are decreasing in men, but not women.
- Lung cancer kills more men and women than breast, prostate, and colon cancer combined.
- People can live with one lung.
- Taking a breath is one of the first and last things you do in life.
- Stretched out, the lungs have the surface area of a tennis court.
- 1 in 14 people will develop lung cancer in their lifetime.
- More than 430,000 people alive today have been diagnosed with lung cancer at some point.
- Every 2.5 minutes, another person is diagnosed.
- 20% of lung cancer deaths are non-smokers.