

Louisiana Lung Cancer Study Newsletter



School of Medicine
Department of Genetics

LSU Study Updates

The first evidence of a lung cancer gene was reported by our lung cancer research group, in collaboration with the Genetic Epidemiology of Lung Cancer Consortium (GELCC)*, within a region on chromosome 6 (*Am J Hum Gen*, 2004). As we have shared before, we discovered the genes RSG17 (*Clin Cancer Res*, 2009) and PARK2 (*Am J Hum Gen*, 2015) within that region associated with an increased incidence of lung cancer in a small number of families. The genes discovered to date, however, explain only a small portion of the risk of lung cancer, and not all of the causal genes for lung cancer have yet been identified for the majority of the high-risk families with clustering of multiple lung cancer cases. To aid us in advancing our search for these other genes, we are presently performing sequencing in our previously collected familial lung cancer pedigrees and are also expanding our study's eligibility criteria which will in turn expand our potential to unveiling other genes that play a role in the development of lung cancer (see page two for more details).

*GELCC is the only group in the world that studies lung cancer in high-risk families with multiple affected lung cancer cases.

Who Are We? We Are The Lung Team!

Some of you may know us already, and some of you may not. We are the Louisiana Lung Cancer Research Study Team, better known as "The Lung Cancer Study". We are a long-term NIH-funded study located in the School of Medicine's Genetics Department at Louisiana State University Health Sciences Center in New Orleans (LSUHSC-NO).

- ◆ **Diptasri Mandal, PhD, Principal Investigator**
- ◆ **Angelle Bencaz, MSPH, Co-Investigator**
- ◆ **Jessica Chambliss, MS, CRC, Co-Investigator**

We enroll families not just from New Orleans, but also from all over the United States. New Orleans is known as "The Big Easy" and here we try our very best to make enrollment as easy as possible for all of our families.



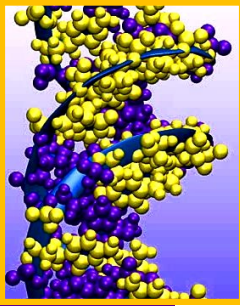
New in the News of Lung Cancer: A Quick Look

- Researchers at The University of Texas MD Anderson Cancer Center are working on a personalized assessment tool to better predict the risks of developing lung cancer in never and light smokers (*Scientific Reports*, 2016; 6:36482). This may prove to be beneficial as recent studies have reported an increase in lung cancer among nonsmokers in the U.S. (*Proportion of Never-Smoker Non-Small Cell Lung Cancer Patients at Three Diverse Institutions. J Natl Cancer Inst*, 2017).
- Immunotherapy is a promising field of research that is changing the treatment of lung cancer for the better. Some studies are looking at standard lung cancer treatments, like surgery, radiation therapy or chemotherapy, in combination with immunotherapies, which could be a potential game changer for individuals undergoing lung cancer treatment. Lung cancer patients have more treatment options than they ever did before, especially since new breakthroughs for immunotherapy are occurring (*Immune-based Therapies for Non-small Cell Lung Cancer. Anticancer Res*, 2017).
- Research on precision medicine is advancing the treatment of non-small cell lung cancer (NSCLC) by providing targeted therapy. In recent months, several new drugs have been approved by the FDA (U.S. Food and Drug Administration) for specific types of NSCLC. Visit FDA.gov for a complete list of approved pharmaceuticals.



If you know someone who has been diagnosed with lung cancer, please share our research study information with them. If you would like to get in touch with us, please contact us by using our toll-free number **1-888-720-7757**, emailing us at **LungCaStudy@lsuhsc.edu**, or visiting our website at **<http://www.medschool.lsu.edu/lungcancer>** for more information and to fill out our "Study Participation Form".

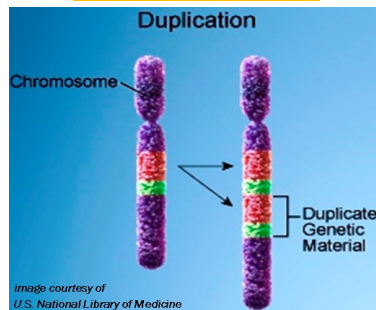
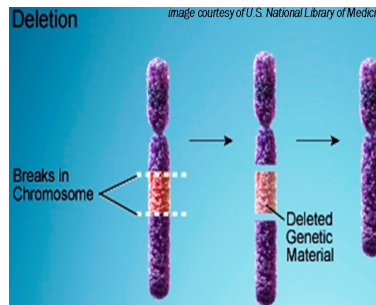
Same Faces, New Places



Whole exome sequencing (WES) may help uncover mutations in certain genes that may contribute to developing certain diseases like lung cancer.

The Lung Cancer Study has been applying an advanced technology called whole exome sequencing (WES) to examine various genes across families that have at least two or more relatives who have been diagnosed with lung cancer, for the purposes of identifying possible genetic mutations (changes in DNA) that may contribute to the development of lung cancer. This modern analytical tool, WES, is known as next-generation sequencing and allows us to detect genetic variants such as mutations and copy number variants (CNVs). We may not know all of the genetic variants linked to lung cancer at this present time; however, what we do know for certain is that there are many more unknown genetic variants still to be found. CNVs are deletions or

duplications of parts of a chromosome (long strands of



DNA) where genes can be

found and that may increase risk factors for certain hereditary cancers. CNVs have been linked with many different cancers. Think of these CNVs as error messages that change the gene's instructions, and this change, or error message, may lead to the development of cancer. We expect great knowledge to come from these genetic variants and CNV exploration endeavor with the help of WES technology. We will be able to identify the genes that are transmitted through the generations of each family. Identification of these genes can lead to better and cost-effective screening, prevention, and personalized treatment in individuals who are at the highest risk of lung cancer.

**We would like to express our sincere gratitude to all of you who have assisted us on this journey, by participating in the study, and without whom none of this would have been possible.*

Physicians Corner

We want to take this opportunity to thank the physicians who have referred patients and the hospital collaborators who have contributed to our study. *If you would like to refer potential participants to the study, or receive study pamphlets for distribution or display, please contact us by phone (1-888-720-7757) or via email (LungCaStudy@lsuhsc.edu).* We believe that making our study information more available to lung cancer patients and their families may help us to understand the genetics of lung cancer. Also, hospitals and clinics that opt to join our study surveillance network will be in compliance with the standards and accreditations of the Commission on Cancer (CoC). We help those that collaborate earn and stay CoC accredited. If you would like to join our surveillance network, you can get in touch with us using the contact information given above.

Early Onset Lung Cancer

To aid us in advancing our search for the genes that play a role in the development of lung cancer, we recently expanded our study eligibility criteria by beginning to enroll individuals who were diagnosed with lung cancer at an early age (35 years of age or younger), regardless of whether the individual has a family history of lung cancer. Lung cancer that is diagnosed at age 35 or younger is classified as “early onset lung cancer” (EOLC). EOLC strongly suggests a genetic predisposition and familial aggregation of certain cancers despite an individual's lack of a family history (of lung cancer) at the time of his or her diagnosis. We are now enrolling EOLC cases to determine if there are any major gene mutations in these individuals that could lead us to potential therapeutic strategies in the future.

2017 Health & Wellness Calendar

JANUARY	FEBRUARY	MARCH
1 A HAPPY NEW YEAR	1-28 National Cancer Prevention Month	1-31 National Nutrition & Health Month
1-31 National Radon Action Month	1-28 Wise Health Care Consumer Month	1-31 March To Health Month
1-31 National Blood Donor Month	1-28 National Heart Month	6-12 National Pulmonary Rehabilitation Week
1 Global Family Day	1-28 National Senior Independence Month	12 "Spring Forward" Daylight Saving Time
2 LSUHSC is back from the Holidays	4 World Cancer Day	12-18 Patient Safety Awareness Week
12 National Pharmacist Day	17 National Caregivers Day	15 Kick Butts Day March
16 Martin Luther King, Jr. Day	22 World Thinking Day	24 World Tuberculosis (TB) Day
22-28 National Certified Nurse Anesthetists Week	28 Mardi Gras, LSUHSC Closed	30 National Doctor's Day
APRIL	MAY	JUNE
1-30 National Cancer Control Month	1-31 National Cancer Research Month	1-30 National Cancer Survivor Month
1-7 Global Asbestos Awareness Week	1-31 Asthma & Allergy Awareness Month	1-30 Cancer Immunotherapy Month
3-9 National Public Health Week	1-31 American Lung Association's Breath Easy Month	1-30 Alzheimer's & Brain Awareness Month
7 World Health Day	2 World Asthma Day	5 National Cancer Survivors Day
11 World Parkinson's Day	6-12 National Nurses Week	8 World Brain Tumor Day
11-17 National Minority Cancer Awareness Week	12 International Nurses Day	12-18 National Men's Health Week
25 World DNA Day	14-20 National Women's Health Week	14 World Blood Donor Day
28 World Day for Safety & Health at Work	31 World No Tobacco Day	17 National Eat Your Vegetables Day
JULY	AUGUST	SEPTEMBER
1-31 National Social Wellness Month	1-31 National Immunization Awareness Month	1-30 Fruits & Veggies More Matters Month
1-31 Fireworks Safety Month	1-31 National Water Quality Month	1-6 World Asthma Week
1-31 UV Safety Month	1-31 Family Fun Month	15 Take A Loved One to the Doctor Day
1-31 National Park & Recreation Month	1-31 Back To School Month	20-28 Active Aging Week
4 Independence Day	1 WORLD LUNG CANCER DAY	21 World Alzheimer's Day
11 World Population Day	5 American Family Day	25 National Research Administrator Day
30 International Day of Friendship	13-19 National Health Center Week	26 Mesothelioma Awareness Day
	21-25 National Safe at Home Week	26 Family Health & Fitness Day
OCTOBER	 NOVEMBER	DECEMBER
1-31 Healthy Lung Month	1-30 LUNG CANCER AWARENESS MONTH	1-31 National Awareness Month of Awareness Months
1-31 National "Talk About Your Meds" Month	1-30 COPD Awareness Month	1-31 Universal & Human Rights Month
1-31 Employee Wellness Month	1-30 National Family Caregivers Month	3 Internationals Day of People with Disabilities
1 International Day of Older Persons	5 "Fall Back" Daylight Saving Time	5 International Volunteer Day
10 World Mental Health Day	17 LUNG FORCE Giving Day	10 International Human Rights Day
19-25 National Respiratory Care Week	17 INTERNATIONAL LUNG CANCER AWARENESS DAY	25-29 LSUHSC Closed for the Holidays
20 World Statistics Day	20 Great American Smoke-Out Day	29 New Year's Resolutions for Health
25 National Lung Health Day	27 National Family History Day	31 New Year's Eve

The Louisiana Lung Cancer Study Newsletter

The Lung Cancer Study is part of the Genetic Epidemiology of Lung Cancer Consortium (GELCC) which includes the following members:

- Dartmouth-Hitchcock Norris Cotton Cancer Center
- Harvard School of Public Health
- Karmanos Cancer Center
- Mayo Clinic and Foundation
- National Human Genome Research Institute, National Institutes of Health (NIH)
- University of Cincinnati
- University of Toledo Medical Center
- **LSU Health Sciences Center—New Orleans**



Funded by the National Human Genome Research Institute, National Institutes of Health

*Our local network of collaborators:

- Abbeville General Hospital
- Abrom Kaplan Memorial Hospital
- Acadia-St. Landry Hospital
- Acadian Medical Center
- Acadian General Hospital
- Bunkie General Hospital
- Dauterive Hospital
- Franklin Foundation Hospital
- Iberia Medical Center
- Lady of the Sea General Hospital
- Lafayette General Medical Center
- LSU Lallie Kemp Medical Center
- Mercy Regional Medical Center
- Opelousas General Hospital
- Our Lady of Lourdes Medical Center
- Pointe Coupe General Hospital
- Prevost Memorial Hospital
- Regional Medical Center of Acadiana
- ReliaPath
- St. Charles Parish Hospital
- St. Helena Parish Hospital
- St. James Parish Hospital
- St. Landry Extended Care
- St. Martin Hospital
- St. Tammany Parish Hospital
- Savoy Medical Center
- Southpark Community Hospital
- Teche Regional Medical Center
- Thibodaux Cancer Care Hospital
- University Medical Center of New Orleans
- Washington-St. Tammy Medical Center
- Louisiana Tumor Registry

LSU Health
NEW ORLEANS

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