University of Vermont Consent to Participate in Research

Title of Research Project:	Accelerated Pulmonary Rehabilitation in the Preoperative Period (PREHAB)
Lead Investigator:	Katherine Menson, DO
Sites Where Research is Being Conducted:	University of Vermont Medical Center
Sponsor:	American Lung Association, Airways Clinical Research Center (ALA-ACRC)

Introduction

You are being invited to take part in this research study because you have Chronic Obstructive Pulmonary Disease (COPD) and a lung nodule that is highly suspicious for lung cancer, are currently smoking, and are eligible for lung resection surgery. This study is being conducted by the University of Vermont at the UVM Medical Center and the Vermont Lung Center.

Your participation in this research study is optional. We encourage you to ask questions and take the opportunity to discuss the study with anybody you think can help you make this decision.

Key Information to Help You Decide Whether or Not This Study Is Right for You

This is a research study to learn whether there are benefits to pulmonary rehabilitation (PR) during the period prior to lung resection surgery. Pulmonary rehabilitation is a medically supervised program that helps people with chronic lung disease and typically involves exercises, breathing techniques, and smoking cessation therapy, if applicable, as standard of care for anyone who has undergone lung resection surgery or other conditions. PR is typically performed after lung resection surgery however, evidence suggests it may be beneficial prior to surgery, which is why we are conducting this study.

This study will include approximately 20 participants over a two-year period recruited from the University of Vermont Medical Center (UVMMC) Lung Multidisciplinary Clinic (LMDC) or Cardiothoracic Clinic who have a physician diagnosis of COPD, are current smokers, with a new lung nodule that is confirmed or suspicious for lung cancer, with a plan for surgical resection.

Participants who elect to participate in this research study will be asked to enroll in pulmonary rehabilitation (PR) prior to their lung resection surgery, called “prehab” without any undue delay in surgical timeline. Prehab will include 2, one-hour sequential sessions of PR per day 4 days per week for 2 weeks for a total of 16 sessions of PR prior to surgery. Prehab will take place at the University of Vermont Pulmonary Rehabilitation clinic at 32 Malletts Bay Avenue in Winooski, Vermont. All PR participants are offered and prescribed smoking cessation therapy. Participants in this research study will be encouraged to engage in smoking cessation but are not required to.

The other main study procedures include a comprehensive medical, surgical and COPD history review, medication use, smoking history and substance use, and questionnaires related to your COPD, health, and quality of life.

The key risks associated with this study include discomfort with exercise and worsening or flare-up of your COPD symptoms as a result of participation in prehab, withdrawal symptoms from smoking cessation, and potential breach in confidentiality.

Your participation in this study is voluntary. If you decide not to participate in this study, you will not participate in pulmonary rehabilitation as part of this study prior to your surgery. You may also seek alternative forms of rehabilitation and education on lung disease. All patients preparing to undergo lung resection surgery are offered smoking cessation strategies regardless of participation in this study. You should talk with your health care provider about these alternatives.

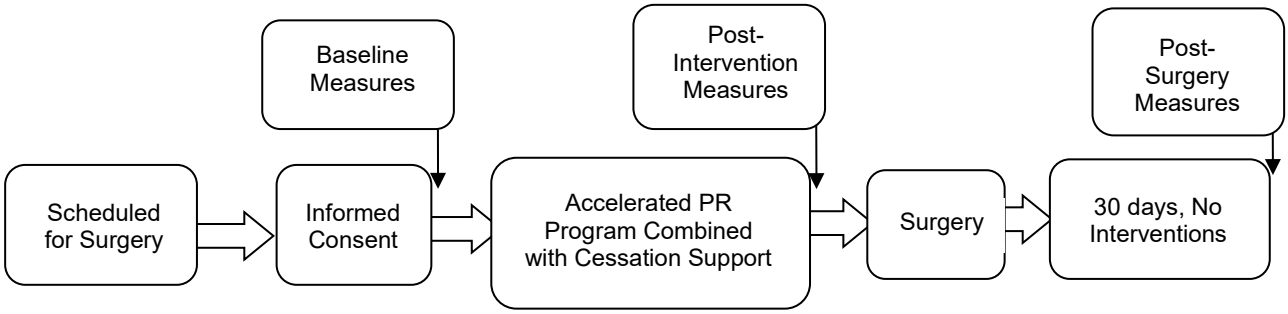
The information above is only a brief summary of the study. If you are interested in learning more, it is important to read the following pages for additional detailed information about the study. If you decide to take part in the research, you will be asked to provide written consent at the end of this document.

Why Is This Research Study Being Conducted?

Pulmonary rehabilitation (PR) reduces the burden of disease and hospital readmission, improves exercise capacity and health-related quality of life in patients with COPD. Patients who are preparing to undergo lung resection surgery may benefit from participating in pulmonary rehab in the time between lung nodule detection and surgery, called prehab. Patients with COPD who smoke may benefit the most from prehab by reducing the risk of hospital readmission, complications from surgery, and overall disease burden. However, this study is being conducted because we do not know how prehab might impact those who smoke.

What Is Involved In The Study?

The study will last approximately 6 weeks, maybe more depending on when you are scheduled for your surgery. You will be enrolled in the study on or shortly after your LMDC or Cardiothoracic Clinic visit where your care providers will discuss your course of treatment including your candidacy for surgery. If you agree to participate in this study, you will be enrolled in PR called “prehab”, without any delays to your surgery.



This informed consent document will be reviewed with you in detail by members of the study team. You are welcome to discuss this with your doctors, family and friends to help determine if this study is a good fit for you. If you decide to participate, we will confirm your eligibility to participate in the study at or shortly after your LMDC or Cardiothoracic Clinic visit. You may agree to consent at that LMDC or Cardiothoracic Clinic visit or by telephone or tele-video based on your availability and preference. You may also come to the Vermont Lung Center, our research clinic in the Medical Office Building next to Fanny Allen in Colchester, Vermont at a separate time if you prefer to do so and it does not delay enrollment in prehab.

As noted above in the key information section, PR itself is considered standard of care for patients who have undergone lung resection surgery or who have other conditions. The purpose of this study is to see if PR performed prior to lung resection surgery, which we are calling “Prehab”, is possible and beneficial. Prehab will consist of 16 total sessions over 14 days. Prehab will take place at the University of Vermont Pulmonary Rehabilitation clinic in Winooski, Vermont which is located at 32 Mallets Bay Avenue. You will be asked to participate in 2 sequential one-hour sessions, 4 days per week for a total of 16 sessions over 8 days. Typically, PR performed after surgery involves two back-to-back 1 hour sessions per day, 2-3 days per week, over 6-12 weeks. Due to the timing of you surgery, we have condensed Prehab to up to 16 sessions over a two week period. You will be provided with an exercise prescription that is tailored to your individual needs. Prior to each session, pulmonary rehab staff will evaluate you for symptoms and check your vital signs to ensure your safety during participation in each session. Exercise will include 30 minutes of warm-up and upper and lower body resistance training. Then you will be able to utilize endurance equipment such as a treadmill or recumbent bike during open gym.

Upon beginning prehab, prehab staff will perform several intake assessments which are considered standard of care for pulmonary rehab patients. These assessments include a 6-minute walk test, and two questionnaires, the St. George Respiratory Questionnaire (SGRQ) and the Patient Health Questionnaire (PHQ-9). For the 6-minute walk test you will be asked to walk for 6 minutes at a brisk pace up and down a flat surface (such as a hallway) while your heart rate and blood oxygen levels are being monitored. You may stop the test or take breaks at any time. The distance you walk, symptoms, heart rate and blood oxygen levels will be recorded. The SGRQ measures the impact of overall health, daily life, and perceived well-being in patients with COPD. The PHQ-9 measures the degree of depression severity in adults. These questionnaires will take approximately 5-10 minutes to complete.

As part of the research study, research staff will collect additional information from you and perform additional research assessments for research purposes only. We will measure your height and weight. We will collect information from you such as your age, sex, race, ethnicity, and other sociodemographic and economic characteristics. We will also ask you questions as well as review your medical record for your medical, surgical, and COPD history, medication use, substance use and smoking history. Smoking status will be assessed by exhaled carbon monoxide measurement for recent smoking, nicotine dependence scale, and readiness to change. We will also ask you to complete several questionnaires related to your health, COPD, and quality of life.

All participants will be offered and encouraged to participate in smoking cessation therapy which consists of smoking cessation counseling, a medication for smoking cessation called varenicline also known as Chantix, dual acting nicotine-replacement therapy (NRT), and referral to the state smoking cessation program. The smoking cessation counseling will consist of 1 one-hour individual counseling session with a mental health therapist trained in smoking cessation therapy. Participants will also be provided with educational modules on the benefits of smoking cessation which will be reviewed during the education portion of prehab. None of these interventions are required for participation in the study but are offered as standard of care for participants in PR.

Following completion of prehab prior to your surgery for the last pulmonary rehabilitation visit and research Visit 2, the pulmonary rehab and research staff will repeat several of the assessments performed at your initial intake. These will include the 6-minute walk test, interim health history and medication use, adherence to smoking cessation therapy and the prehab program, exhaled carbon monoxide, nicotine dependence scale, readiness to change, and questionnaires related to your health, COPD and quality of life. We will also ask you to complete a study evaluation which will ask you questions about your experience and satisfaction with prehab. This visit will take approximately 1-1.5 hours.

You will then undergo lung resection surgery as part of your standard of care. The research team will monitor your electronic health record for potential complications from surgery and your recovery.

Throughout your participation in the study you will be continually monitored for safety concerns, adverse events, and COPD exacerbations by your health care providers, the prehab and research staff. If you have any concerns about your health or safety or you experience a health-related event during your participation in the study, we encourage you to get in touch with the research team as soon as possible. We will also ask you about any potential events or safety concerns that may occur between study visits.

Private information/data collected from you during this study will NOT be used for future research studies or shared with other researchers for future research, even if the information identifying you are removed from the private information/data.

Schedule of Study Visits and Assessments

	Visit 0 (V0)	Visit 1 (V1)	Prehab (16 total sessions: 2 sessions/day, 4 days/week for 2 weeks)	Visit 2 (V2)	Lung Resection Surgery
Timeline (days)	-1 (± 7)	0 (-3, ≤ 3 days prior to PR start)		+14 (± 7, ≤ 3 days from PR end)	+15 (± 42)
Visit Duration	1-1.5 hrs	1-1.5 hrs		1-1.5 hrs	
Informed Consent	*				
Demographics	*				
Brief Medical and Smoking History	*				
Physician Assessment	*				
Eligibility Criteria	*				
Sociodemographic and economic characteristics		*			
Full Medical, Surgical and COPD History		*			
Interim Health and COPD History				*	
Medication Review		*		*	
Substance Use and Smoking History		*		*	
Height and Weight		*			
Questionnaires		*		*	
Prehab Initiation		*			
Pulmonary Rehab SOC Assessments (6MWD, SGRQ, PHQ-9, etc.)		*		*	
Pulmonary Rehab participation			*		
Smoking Cessation Counseling, NRT and varenicline			*		
Study Evaluation				*	
Lung Resection (lobectomy, pneumonectomy, or wedge resection)					*
Adverse Event and COPD Exacerbation Assessment		*	*	*	

What Are The Risks and Discomforts Of The Study?

Carbon Monoxide Measurement

There are no known risks or discomforts associated with this procedure.

Questionnaires

The questionnaires/surveys are not tests. There are no right or wrong answers. Some people may feel uncomfortable answering some questions. You will not be required to complete questionnaires or questions that make you feel uncomfortable or do not want to answer. Responses to questionnaires/surveys will be kept confidential.

Psychological
Although unlikely, there may be unforeseen psychological or financial risks for participants in this trial. For example, you may have unrealistic expectations of benefit from Pulmonary Rehab, or may have psychological distress from having a diagnosis of lung cancer COPD or other disease/illness, discomfort during Pulmonary Rehab and potential complications from surgery unrelated to the research study. Many people, however, have psychological benefit from participating in pulmonary rehab and research in general, when there is potential to help others based on the results of the study.

Prehab
The potential risks of prehab are based on the exercise component of pulmonary rehab. Vital signs are obtained before, during, and after exercise. Prehab staff will assess and monitor the risks of the following occurring during exercise:

- Respiratory exacerbation (increased breathing symptoms) is a rare complication of PR, although some patients may experience bronchospasm, or tightening of the airways. Patients are assessed for symptoms, blood oxygen levels are monitored, and provided oxygen as needed. If necessary, you may be asked to use your rescue inhaler for relief, and exercise would be discontinued for the day or transitioned to less intense exercise (i.e., seated exercises).
- High blood pressure is a normal response during exercise, however if you present to a session with elevated blood pressure (>180/100), which will be determined by the medical professionals you will be working with at the Pulmonary Rehabilitation Clinic, prior to exercise, we will first allow you to rest seated and recheck per policy. If your blood pressure remains elevated you will not be allowed to exercise for that day. The Medical Director of PR will be consulted and they will notify your primary care and other clinicians, as needed, to control blood pressure so that PR can be resumed as soon as possible. If appropriate, you may be allowed to exercise at a reduced intensity. Symptoms for high blood pressure are also assessed by a respiratory therapist (RT) or physical therapist (PT) during exercise, as is standard of care during PR.
- Risk of irregular heart beat (arrhythmia) is low in participants who do not have a pre-existing diagnosis. If you experience palpitations, light-headedness, or chest discomfort, you will be instructed to stop exercising and additional vital signs and examination will be performed. The medical director will be notified for further work-up and evaluation.

- Musculoskeletal injuries can occur; however you will be monitored by a PT during exercise to ensure that exercises are performed correctly. Exercises will be modified based on your individual needs. If you have diabetes and are on medication that can cause low blood sugar, you will be asked to measure your blood glucose prior to exercise using your glucometer and you will be monitored for signs of hypoglycemia (low blood sugar) during exercise. High glycemic drinks are available should hypoglycemia occur.

6-Minute Walk Distance
This test will be performed according to standard guidelines by trained members of the Pulmonary Rehab team. You will be asked to walk at your own comfortable, but brisk pace. You may experience shortness of breath, fatigue, or other symptoms associated with exercise and COPD. Your heart rate and blood oxygen will be monitored by the technician performing the test and the test may be stopped at any time. If deemed necessary, you may be asked to use your rescue inhaler and may be provided with oxygen, as needed.

Smoking Cessation
Regarding smoking cessation, risks include withdrawal symptoms, including urges to smoke, irritability, difficulty concentrating, difficulty sleeping, increased hunger, or increased feelings of depression or anxiety. Symptoms will be explained and mitigated by smoking cessation medication and nicotine replacement therapy.

Smoking Cessation Therapy and Nicotine Replacement Therapy (NRT)
There are also known side effects of nicotine replacement therapy (NRT) and smoking cessation medication called varenicline, also known as Chantix. You will be asked about potential side effects of these medications throughout the prehab program. The most common side effects of NRT are skin irritation and difficulties sleeping. These will be mitigated by encouraging rotation of patch side and adjusting timing and dosing of NRT. The most common side effects of varenicline are nausea, insomnia, and vivid dreams. These will be managed by encouraging you to take the medication with food and adjusting timing of doses.

Confidentiality
This study includes a risk of loss of confidentiality. We will follow Health Insurance Portability Accountability Act guidelines on confidentiality and minimize these risks by assigning unique identifiers to health information and study records, whenever possible. All physical records of your health information and participation in the study will be stored in the locked Vermont Lung Center in locked areas restricted to research personnel. All electronic records will be maintained in the UVMMC electronic health record, on password protected electronic devices, and on the Vermont Lung Center UVMMC shared drive with limited access to research personnel.

Incidental Findings
There is a possibility that while you participate in group exercise, we may see an abnormality that may have health implications that we did not expect to see. This is what is called an “incidental finding.”

If we see an incidental finding, a qualified person (usually a member of the research team) will communicate the information to you. If you wish, we will provide information about this incidental finding to your primary doctor or we will refer you to an appropriate doctor for further evaluation.

This study is neither designed nor intended to detect health problems. The monitoring that you will have as part of this research study does not substitute for an appropriate medical examination by a qualified health care provider. If you suspect that you might be suffering from injury or illness, you should not rely on this study as a way to determine your health status. The information from your questionnaires will not be shared with you or your personal physician, unless (as mentioned above) there is an incidental finding. The results of pulmonary rehab **will** be shared with your care team.

An incidental finding may cause you to feel anxious. If you have further tests done, those results will then become part of your medical record, which may affect current and future health or life insurance. The costs for any care that will be needed to diagnose or treat an incidental finding would not be paid for by this research study. These costs would be your responsibility.

What Are The Benefits of Participating In The Study?

There may be no direct benefit of participation in this study other than the opportunity to participate in prehab prior to your surgery and the opportunity to learn more about your COPD. This study may reduce your risk of complications from surgery, such as how long you have to be in the hospital or how long you are on oxygen. You may reduce the number of cigarettes you smoke, or quit altogether. People like you who have lung cancer and smoke may benefit from the results of this research.

What Other Options Are There?

You could have surgery without participating in this study. You may also seek alternative forms of rehabilitation and education on lung disease. You will still be offered smoking cessation therapy, even if you do not participate in this study. You can do pulmonary rehab at a later time after your surgery but it will not be part of this research study.

Are There Any Costs?

Your participation in pulmonary rehab (prehab), your medications, and your surgery will be billed to your insurance. If you do not have insurance, you will be referred to the University of Vermont Medical Center Financial Aid services. Not all expenses may be covered by your insurance (such as deductible or co-pay), which you would be responsible for paying. You should check with your insurance company before starting PR. To our knowledge, all PR is covered by CMS and every major insurance provider. The additional assessments outlined above, such as obtaining your height and weight, questions about you and your medical history, and other assessments and procedures noted above in the section labeled “What is Involved In the Study” for research purposes only will be at no expense to you.

What Is the Compensation?

You will be compensated $50 for completing the study which includes $25 for each of the follow-up assessments (visit 1 and 2) to defray the potential expense related to travel and time off from work to participate in this study.

You will be required to provide your name and address each time you receive a payment. You will also be requested to provide your social security number if the amount of the payment is $100 or if the total payments from UVM are equal to or greater than $600 in a calendar year. If you are not a US Citizen or Permanent Resident Alien you will be required to complete

additional paperwork including your immigration status for payment. This information will be strictly confidential and will be used for tax withholding and reporting purposes only and will allow the University to determine your US residency for federal income tax purposes.

Compensation will be issued to you in the form of a pre-paid debit card, which will be provided and reloaded following the completion of your study visit.

Can You Withdraw or Be Withdrawn From This Study?

Your participation in this research study is voluntary. You may decline to participate or you may withdraw or discontinue your participation in this study at any point in time without penalty, prejudice or less of benefits to which you are entitled. If you wish to withdraw, please inform the study team.

You may elect to withdraw from prehab and remain in the study to continue with study visits and study specific assessments. Study visits, assessments and procedures may also be modified to more adequately meet your needs.

Should your disease become worse, should side effects become very severe, should new scientific developments occur that indicate the intervention is not in your best interest, or should your physician feel that this intervention is no longer in your best interest, the intervention will be stopped. In addition, the researcher may discontinue your participation in this study at any time.

What About Confidentiality of Your Health Information?

Your health information is being used for your participation in this research protocol. We need to know your past medical history to ensure that it is safe for you to participate and we need to collect ongoing health information once you have begun the research study to ensure your continued safety and to determine what effect the research project has had on your diagnosis.

What health information will be used and disclosed for this study?

The health information we plan to collect for this study is listed below.

- Medical history and examinations
- Information that identifies you, such as your name, address, age, and sex
- Reports from hospital and clinic visits
- Laboratory and other test results
- X-ray and other images and reports
- Lists of medications you are taking
- Responses to health surveys and questionnaires
- Reports from mental health services and testing
- Reports about drug and alcohol treatment, including records relating to treatment at a substance use treatment program

Who is disclosing your health information for this research study?

- The University of Vermont Medical Center
- Other doctors' offices and hospitals where you may receive medical care while this study is active

Who will use your health information in this study?

Our research team will use your health information. We may also share it with those who assist with the conduct of the research or oversight of the activities for this study. The representatives from the institutions, organizations, and agencies are listed below.

- The University of Vermont and its Committees on Human Research
- Officials from agencies and organizations that provide accreditation and oversight of research
- The University of Vermont Medical Center
- The sponsor of this study the American Lung Association, Airways Clinical Research Centers (ALA-ACRC), or others who fund the research, including the government
- Federal and state agencies that oversee or review research information, such as the U.S. Food and Drug Administration (FDA), the Department of Health and Human Services, the National Institutes of Health, and public health and safety authorities
- Your health insurer, for portions of the research and related care that are considered billable

Your health information is protected by a federal law called the Health Insurance Portability and Accountability Act (HIPAA). Once your health information is shared outside of the University of Vermont Medical Center, (insert appropriate hospital(s)) we cannot guarantee that these laws will continue to apply. As a result, your health information could be further disclosed for other purposes. In the absence of a Certificate of Confidentiality, it is also possible for a court or other government official to order the release of study data. The confidentiality of your health information cannot be guaranteed if you agree it may be used in this study.

How long will your health information be used for this research?

Your permission to use your health information will not end unless you withdraw your permission. During this study, you will not have access to study data. You may ask for your data once study activities are complete. You have a right to receive a copy of the information in your medical record at any time.

What if you decide not to give permission for research use of your health information?

If you decide not to allow the use and disclosure of your health information, you may not take part in this study. Your decision will have no effect on your current or future medical care.

If you choose to stop taking part in this study in the future, you may cancel permission for the use of your health information. You should let the research team know that you are cancelling your permission. A member of the research team will assist you in making your decision effective. The study will continue to use the health information already collected for the study before you cancelled your permission, and you cannot get back information that was already shared with others.

Who can answer your questions about the use and disclosure of your health information?

If you have questions or concerns about the use and disclosure of your health information, you should ask a member of the study team at (802) 847-2193 or the Privacy Officer at The University of Vermont Medical Center, Inc, at (802) 847-2667.

Safeguarding Your Private Information

To protect your confidentiality, we will keep your data stored in a secure file that will only be accessed by direct study staff on a secure hard drive. Study records will be coded and directly identifiable information such as your name, date of birth, and other private identifiable information will be stored separately.

The results of this study may eventually be published, and information may be exchanged between medical investigators, but patient confidentiality will be maintained.

If your record is used or disseminated for government purposes, it will be done under conditions that will protect your privacy to the fullest extent possible consistent with laws relating to public disclosure of information and the law-enforcement responsibilities of the agency.

Clinical Trials Registration

A description of this clinical trial will be available on *http://www.ClinicalTrials.gov*, as required by U.S. Law. This Web site will not include information that can identify you. At most, the Web site will include a summary of the results. You can search this Web site at any time.

What Happens If You Are Injured?

If you are injured or become ill as a result of being in this research, The University of Vermont Health Network Affiliate hospital where you are enrolled in this research, will provide reasonable and usual medical care for that injury or illness. There will be no cost to you if the conditions listed below apply to your injury or illness. These conditions are:

1. The investigator determines that your injury or illness results from the research and not from your underlying condition or its usual treatment.
2. You let the investigator know about the injury or illness when you first notice it; and
3. You follow medical advice about proper treatment options for the injury or illness.

If the above conditions are not met, The University of Vermont Health Network affiliate hospital where you are seeking care may claim payments for your medical treatment from the study sponsor or your insurance company when these payments are allowed. If we bill your insurance for this care, you will be responsible for any associated co-payments or deductibles.

For an injury or illness that results from being in this study, The University of Vermont Health Network affiliate hospital where you are receiving care will not offer you any other payments, such as lost wages or expenses, except for your medical care. Even though you may receive medical care at no cost to you under certain conditions if you are in this study, The University of Vermont Health Network affiliate hospital and the University of Vermont do not admit to any responsibility for an injury or illness that results from being in the study.

If you agree to take part in this study and you sign this consent form, you are not giving up any of your legal rights.

Contact Information
You may contact Dr. Menson the Investigator in charge of this study, at (802) 847-2193for more information about this study. If you have any questions about your rights as a participant in a research project or for more information on how to proceed should you believe that you have been injured as a result of your participation in this study you should contact the Director of the Research Protections Office at the University of Vermont at 802-656-5040.

Additional Conditions to Aid the Research Process

Study Team Cell Phone Contact

The site study team would like the option to contact you via text messages and phone calls with a dedicated Vermont Lung Center cell phone. These messages may include: your name, appointment reminders (including dates and times), and reminders about appointment activities. Some of the information exchanged could be used to identify you.

Text messaging is not a secure form of communication, meaning that someone could access the information in the messages without your permission. To minimize this, the Vermont Lung Center cell phone will be password-protected and used only by Vermont Lung Center staff when contacting study participants. If your phone number is saved to create a contact in the cell phone, the contact profile will include only your unique study ID instead of your name. Your contact and any messages with you will be deleted from the cell phone upon completion/withdrawal from the study.

Would you like the option to be contacted via text or phone call using a dedicated Vermont Lung Center cell phone? Please write your initials on the line next to your choice.

_____ **YES**, you may contact me via text or phone call using a dedicated Vermont Lung Center cell phone.
_____ **NO**, I do not want to be contacted using a dedicated Vermont Lung Center cell phone.

Statement of Consent

You have been given and have read or have had read to you a summary of this research study. Should you have any further questions about the research, you may contact the person conducting the study at the address and telephone number given below. Your participation is voluntary, and you may refuse to participate or withdraw at any time without penalty or prejudice to your present and/or future care.

You agree to participate in this study, and you understand that you will receive a copy of this form.

_____

Signature of Participant Date

_____

Name of Participant Printed

_____

Signature of Principal Investigator or Designee Date

_____

Name of Principal Investigator or Designee Printed

Name of Principal Investigator: Katherine Menson, DO

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