

Ohio DDD Internal Medicine Consultative Examination Guidelines

Part III: Ancillary Testing Consultative Examination Guidelines

General Ancillary Testing Guidelines

- If you are performing a physical examination, such as an internal medicine consultative examination, and you believe a specific ancillary test that DDD did not order may be useful, and you have the equipment and credentials to do the study in question, you may call DDD and ask for **pre-approval** to perform the additional test.
- On a case-by-case basis, additional tests may be approved, but **pre-approval** is always required.
- There will be no reimbursement for tests that do not receive pre-approval. There are no exceptions.

Specific Ancillary Testing Guidelines

Radiographs (X-Rays)

- If you perform X-rays in your office, ensure that either you or the support staff person performing the study has undergone and successfully completed proper instruction, training and certification. Follow all radiology and radiation safety guidelines, rules, laws and principles as established by state and federal regulatory agencies.
- Never obtain X-rays on pregnant claimants or claimants that may be pregnant.
- Use appropriate, recommended, up-to-date shielding and radiation protection safeguards on all claimants.
- Ensure that all X-rays are interpreted by an appropriately trained, licensed radiologist.
- Communicate the X-ray results in narrative form.
- Ensure that the interpreting radiologist signs all X-ray reports.
- Notify DDD immediately if a potentially serious or unexpected finding is seen on an S-ray. The interpreting radiologist should **contact DDD** by phone and also fax us the S-ray report.
- As a consultative examiner (for example, a physician performing an internal medicine consultative examination) you should notify DDD immediately if you are made aware of a serious or unexpected X-ray finding. This happens when DDD orders an exam plus an X-ray and the X-ray is done at a nearby

facility. The interpreting radiologist may call the physician doing the consultative examination and tells him or her about the worrisome X-ray findings.

- Some "worrisome" X-ray findings may include:
 - » Lung nodule or mass on chest X-ray
 - » Bony lesions suggestive of metastatic cancer
 - » Aortic aneurysms or possible dissection
 - » Acute fracture or nonunion of a fracture
 - » Changes consistent with osteomyelitis

Pulmonary Function Tests

Spirometry (Pulmonary Function Studies or PFS)

- If you perform PFSs in your office or hospital, ensure that either you or the support staff person performing the study have undergone and successfully completed proper instruction, training and certification. Follow all safety guidelines, rules, laws and principles as established by state and federal regulatory agencies.
- Performing PFS in the setting of disability determination is complex. DDD has to be assured of the validity of each study. The agency cannot use an invalid study on the claim.
- Conduct several trials prebronchodilator and postbronchodilator.
- Obtain at least three good trials both before and after bronchodilator administration.

Before PFSs are Attempted

- Read the "PFS Report Form" (see Part III - Appendix A), as it contains detailed instructions for conducting and reporting the results of spirometry.
- Read all the questions asked in the PFS Report Form and write in your answers to the ones that can be answered before conducting the test. By reading the rest of the questions beforehand, you will know what to look for while conducting the test.
- Ask the claimant whether he or she has recently been ill with any acute respiratory illnesses, exacerbations or flare-ups of asthma or COPD or exacerbations or flare-ups of any other lung diseases.

- PFS should not be conducted in a claimant who is currently ill or has been ill within the preceding 14 days. Some claimants are “ill” chronically and in this case PFS can be done. DDD’s goal is to perform testing only when the claimant is in his or her baseline (usual) health status, and this can vary from “good” to “poor.” If PFSs are not conducted, call DDD and follow up by faxing the PFS Report Form.
- Calibrate the spirometer and include the calibration data with the PFS results. (see *Correcting Ambient Temperatures to Body Temperature Pressure Saturated (BTPS) Table Part III - Appendix B.*)
- Explain and demonstrate to the claimant how to perform spirometry and document any problems the claimant may have in understanding how to perform the test or any problems with coordination or physical strength in performing the test.

During PFS Testing

- Make sure to continue coaching the claimant to “blow, blow, blow” as hard as possible.
- Give the claimant enough time to rest and recover between trials.
- Conduct enough trials so that there are at least three good trials before and three good trials after bronchodilator is administered.
- Make sure the study is valid while you are doing the study: valid studies have all of the following characteristics:

» Prebronchodilator:

- *Ensure that the best (highest) FVC and second best FVC differ by 0.1 L or less (or 5 percent or less).*
- *Report the values for the best and second best trials.*
- *Ensure that the best (highest) FEV1 and second best FEV1 differ by 0.1 L or less (or 5 percent or less).*
- *Report the values for the best and second best trials.*
- *Ensure that you send us the graphical depictions (“tracings”) of at least the best three trials, always displayed in a time (on the x-axis) versus volume (on the y-axis) configuration.*
- *The tracing contours must be smooth and level-off or last six or more seconds.*
- *The initial part of the tracing must have a convexity (a bulging up) except in those with extremely severe obstruction.*

» Postbronchodilator:

- *Do not conduct postbronchodilator studies in **one circumstance**: when the prebronchodilator FVC and prebronchodilator FEV1 are **both** 70 percent or more of predicted.*
- *Ensure that the best (highest) FVC and second best FVC differ by 0.1 L or less (or 5 percent or less). Report the values for the best and second best trials.*
- *Ensure that the best (highest) FEV1 and second best FEV1 differ by 0.1 L or less (or 5 percent or less). Report the values for the best and second best trials.*
- *Ensure that you send DDD the graphical depictions (“tracings”) of at least the best three trials, always displayed in a time (on the x-axis) versus volume (on the y-axis) configuration.*
 - » The tracing contours must be smooth and level-off or last 6 or more seconds.
 - » The initial part of the tracing must have a convexity (a bulging up) except in those with extremely severe obstruction.

After PFS Testing

- Explain whether you think the study was valid.
- If the study was not valid, attempt to figure out why:
 - » Did you allow enough trials?
 - » Did the claimant display a lack of understanding on how to perform the test?
 - » Was the claimant too weak or uncoordinated to perform the test correctly?
 - » Was the claimant having too much trouble breathing to perform the test correctly?
 - » Was the claimant too fatigued from several trials to perform the test correctly?
 - » Was it apparent that the claimant was giving good effort?
- *Do not base this decision solely on low FEV1 values because many claimants with low FEV1s actually have severe lung disease rather than insufficient effort.*
- *It is more accurate to judge effort by closely observing the actual claimant as he or she performs the test.*
- If the study is not valid, DDD will likely return the claimant to you on another day for free repeat testing.
- Enter all the values into the appropriate spaces on the PFS Report Form.

- Enter your interpretation of the PFS results into the appropriate spaces on the *PFS Report Form* (see *Part III - Appendix A*).
- Sign the PFS Report Form (ensure that the interpreting physician *and* technician provide signatures).
- Assemble all pages of the PFS Report Form and all pages of tracings, calibration data and computer printouts and return them to DDD.
- Incorporate the PFS results into your diagnostic impressions of an internal medicine consultative examination if that was requested at the same visit.
- For claimants on supplemental oxygen, have the claimant breathe room air for 20 minutes (if clinical judgment supports that this will be safe) before arterial sampling. If you do not believe it is safe to have the claimant breathe room air for 20 minutes, do not proceed with the test; instead, call DDD immediately and explain the situation. Also, document the reasons for not taking the claimant off of oxygen on the *Arterial Blood Gas Studies (At Rest) Form* (see *Part III - Appendix D*).

Diffusing Capacity (DLCO)

- If you perform DLCOs in your office or hospital, ensure that either you or the support staff performing the study has undergone and successfully completed proper instruction, training and certification. Follow all safety guidelines, rules, laws and principles as established by state and federal regulatory agencies.
- Use the single breath technique with the individual relaxed and seated. Detailed instructions on the performance of the DLCO are found in the *Instruction Sheet for Diffusing Capacity of the Lungs* (see *Part III - Appendix C*).
- Ensure that the breath-holding time is between 9 and 11 seconds.
- Ensure that the final result is the average of at least two trials and that these trials are within 10 percent of each other.
- Ensure that the volume inspired is 90 percent or more of a previously determined vital capacity (otherwise the DLCO results are not considered valid by SSA criteria).
- Ensure that the interpreting physician *and* technician provide signatures.
- Incorporate the DLCO results into your diagnostic impressions of an internal medicine consultative examination if that was requested at the same visit.

Arterial Blood Gases

- If you perform arterial blood gases in your office or hospital, ensure that either you or the support staff performing the study has undergone and successfully completed proper instruction, training and certification. Follow all safety guidelines, rules, laws and principles as established by state and federal regulatory agencies.
- Use the Allen Test (and ensure it is normal) before any radial artery punctures.

- Process the specimen carefully, correctly and quickly to ensure validity of blood gas measurements.
- Enter the results on an *Arterial Blood Gas Studies (At Rest) Form* (see *Part III - Appendix D*).
- Never conduct *exercise* blood gases if *resting* blood gases are requested.
- Ensure that the interpreting physician *and* technician provide signatures.
- Incorporate the blood gases results into your diagnostic impressions of an internal medicine consultative examination if that was requested at the same visit.

Cardiovascular Tests: Resting

Electrocardiograms

- Conduct these in the usual manner in the resting state.
- Include a written physician interpretation. A computer-generated interpretation alone is insufficient.
- Send DDD the actual tracings.
- Never conduct an *exercise* cardiac stress test when an *electrocardiogram* has been ordered.
- Ensure that the interpreting physician *and* technician provide signatures.
- Incorporate the electrocardiographic results into your diagnostic impressions of an internal medicine consultative examination if that was requested at the same visit.

Doppler-Measured Blood Pressure Study of the Legs and Great Toe

- If you perform Doppler studies in your office or hospital, ensure that either you or the support staff performing the study has undergone and successfully completed proper instruction, training and certification. Follow safety guidelines, rules, laws and principles as established by state and federal regulatory agencies.

- Ensure that all of the following are included:
 - » Measurement of resting blood pressure in both arms
 - » Measurement of blood pressures in both ankles
 - » Measurement of blood pressures in both great toes. *Note: This is required in all Doppler studies of SSA disability claimants.*
 - » Calculation of the ankle-brachial index (ABI) and toe-brachial index (TBI) bilaterally
 - » Enter test results in the *Resting Doppler Arterial Studies Form (see Part III - Appendix E)*.
 - » Physician interpretation and physician and technician signatures.
- Never conduct an *exercise* Doppler study if a *resting* Doppler study has been ordered.
- Incorporate the resting Doppler results into your diagnostic impressions of an internal medicine consultative examination if that was requested at the same visit.

“Limited” Cardiovascular/Pulmonary/Pre-Exercise Examination

- DDD may need current data limited to the cardiovascular and/or pulmonary system. The agency may request a history and examination that focuses on heart disease, lung disease, peripheral vascular disease and an assessment of current functional status with respect to any limitations imposed by cardiovascular and/or pulmonary impairments.
- Include a statement as to the safety of performing an exercise test based on your history, examination and any other records with which you have access.
- Below are some, but not all, of the contraindications to an exercise stress test for disability determination purposes:
 - » Difficulty walking
 - » Difficulty balancing
 - » Significant mental retardation, cognitive impairment or mental illness
 - » Acute myocardial infarction in the past three months
 - » Unstable angina (any rest or nocturnal pain believed to be angina)
 - » Aortic stenosis
 - » Significant heart failure (all class IV and some class III)
 - » Aortic dissection
 - » Pulmonary embolus

- » Pulmonary hypertension
- » Left main coronary artery stenosis
- » Electrolyte imbalance
- » Severe hypertension
- » Tachydysrhythmias
- » Bradydysrhythmias
- » Hypertrophic cardiomyopathy
- » High grade A-V block

- Type or legibly write your findings on the *Limited Cardiovascular/Pulmonary/Pre-Exercise Test Form (see Part III - Appendix F)*.

Cardiovascular Tests: Exercise

- If you perform exercise testing in your office or hospital, ensure that you have undergone and successfully completed proper instruction, training and certification, and that you follow all safety guidelines, rules, laws and principles as established by state and federal regulatory agencies. This includes basic and advanced cardiac life support and further specialized training in stress testing and cardiac resuscitation, including the physical presence of all required equipment, which must all be in good working order.
- There are three types of exercise tests that DDD occasionally orders:
 1. Cardiac exercise (stress) testing
 2. Exercise (and resting) Doppler-measured blood pressures of the legs and great toes
 3. Exercise (and resting) arterial blood gas measurement

Cardiac Exercise Testing

- By a “cardiac exercise or stress test,” DDD is referring to a symptom-limited or sign-limited test using a treadmill to conduct a progressive multistage test using a generally accepted protocol consistent with the prevailing state of medical knowledge and clinical practice.
- There is no associated perfusion testing; rather the electrocardiogram is continuously monitored to look for changes induced by ischemia. For more details see the *Cardiac Treadmill Exercise Testing Form (Part III - Appendix G)*.
- The most important aspect of cardiac exercise testing for SSA purposes is safety.
- The test should never be conducted if there are any reasons or evidence that the test might be dangerous (i.e., contraindicated—relatively or absolutely). For a list of some, but not all contraindications, see the introductory material under *“Limited” Cardiovascular/Pulmonary/Pre-Exercise Examination*.

- The most important data from cardiac exercise testing for SSA disability purposes is:
 1. For claimants with heart failure: whether the claimant can exert to 5 METs.
 2. For claimants with ischemic heart disease and angina: whether the claimant can exert to 5 METs or beyond without electrocardiographic evidence of ischemia.
- If a resting electrocardiogram obtained before exercise reveals a left bundle branch block or other changes that prevent exercise testing from reliably demonstrating ischemic changes, the exercise test should not be continued.
- An exercise test should not be continued if:
 1. The heart rate exceeds 85 percent of the maximum predicted heart rate
 2. The systolic blood pressure fails to increase by 10 mmHg or drops below usual clinical resting level
 3. The claimant displays electrocardiographic changes of ischemia
- Enter the results on the *Cardiac Treadmill Exercise Testing Form (see Part III - Appendix G)*.
- Send all original electrocardiographic tracings to DDD, with each lead marked and the elapsed time clearly marked on all the tracings.
- If the test was contraindicated, could not be done or had to be terminated prematurely, enter the reasons on the form.
- Ensure that the form has a written, physician interpretation of the test as well as a physician signature.
- Incorporate the cardiac exercise stress test results into your diagnostic impressions of an internal medicine consultative examination if that was requested at the same visit.
- The most important aspect of exercise Doppler-measurement of blood pressures in the legs and great toes for SSA purposes is safety. If at the time of the scheduled test, there are any reasons or evidence that the test might be dangerous (i.e., contraindicated—relatively or absolutely), the exercise portion of the test should not be conducted. For a list of some, but not all contraindications, see the introductory material under "*Limited Cardiovascular/Pulmonary/Pre-Exercise Examination*."
- This test requires that the electrocardiogram be continuously monitored to look for changes induced by ischemia, just as in a cardiac stress test.
- After the initial resting study is completed, do not conduct the exercise portion of the test if any of the following are found:
 1. A resting ankle-brachial ratio (ABR) of 0.8 or more in both legs
 2. Either right or left ABR is less than 0.5
 3. Either right or left great toe systolic pressure is less than 30
 4. Either right or left toe-brachial index (TBI) is less than 0.4
- The exercise test should be conducted at a rate of 2 miles per hour and grade of 12 percent for up to 5 minutes. Do not go beyond 5 minutes.
- An exercise test should not be continued if:
 1. The heart rate exceeds 85 percent of the maximum predicted heart rate
 2. The systolic blood pressure fails to increase by 10 mmHg or drops below usual clinical resting level
 3. The claimant displays electrocardiographic changes of ischemia

Exercise (and Resting) Doppler-Measured Blood Pressures of Legs, Great Toes

- If you perform Doppler studies in your office or hospital, ensure that either you or the support staff performing the study has undergone and successfully completed proper instruction, training and certification. Follow all safety guidelines, rules, laws and principles as established by state and federal regulatory agencies.
- The details of this study are included on the *Exercise Doppler Arterial Studies—Lower Extremities Form (see Part III - Appendix H)*.
- Enter the results on the *Exercise Doppler Arterial Studies—Lower Extremities Form (see Part III - Appendix H)*.
- Send all original electrocardiographic tracings to DDD, with each lead marked and the elapsed time clearly marked throughout all the tracings.
- If the test was contraindicated, could not be done or had to be terminated prematurely, enter the reasons on the form.
- Ensure that the form has a written, physician interpretation of the test as well as a physician signature.
- Incorporate the exercise and/or resting Doppler results into your diagnostic impressions of an internal medicine consultative examination if that was requested at the same visit.

Exercise (and Resting) Arterial Blood Gases

- If you perform arterial blood gases in your office or hospital, ensure that either you or the support staff performing the study have undergone and successfully completed proper instruction, training and certification. Follow all safety guidelines, rules, laws and principles as established by state and federal regulatory agencies.
 - This study is described in more detail in the *Arterial Blood Gas Studies (Monitored Exercise) Form* (see Part III - Appendix I).
 - Use the Allen Test (and ensure it is normal) before any radial artery punctures.
 - Process the specimen carefully, correctly and quickly to ensure validity of blood gas measurements.
 - The most important aspect of exercise blood gas measurement for SSA purposes is safety. If, at the time of the scheduled test, there are any reasons or evidence that the test might be dangerous (i.e., contraindicated—relatively or absolutely), the test should not be conducted. For a list of some, but not all contraindications, see "*Limited Cardiovascular/Pulmonary/Pre-Exercise Examination*."
 - This test requires the electrocardiogram be continuously monitored for changes induced by ischemia, just as in a cardiac stress test.
 - For claimants on supplemental oxygen, have the claimant breathe room air for 20 minutes (if clinical judgment supports that this will be safe) before *resting* arterial sampling. If you do not believe it is safe to have the claimant breathe room air for 20 minutes, do not proceed with the test; instead, call DDD immediately and explain the situation. Also, document the reasons for not taking the claimant off oxygen on the *Arterial Blood Gas Studies (Monitored Exercise) Form* (see Part III - Appendix I).
 - If the claimant is on supplemental oxygen and your clinical judgment dictates that it is safe to have the claimant breathe room air for 20 minutes, rule out *resting* hypoxemia before exercise testing is conducted.
 - » Rule out resting hypoxemia by pulse oximetry or by awaiting the results of the resting blood gases (if this can be done in a timely manner) and comparing the PO₂ result with the table on the *Arterial Blood Gas Studies (Monitored Exercise) Form* (see Part III - Appendix I).
 - For example, a resting PO₂ of 55 or less at any PCO₂, or a PO₂ of 65 or less at PCO₂s of 30 or less establishes "listing level" and also "unsafe" hypoxemia. In this case, do not conduct the exercise portion of the test (see *Arterial Blood Gas Studies (Monitored Exercise) Form* [Part III - Appendix I]).
 - Alternatively, if the resting oxygen saturation is 90 percent or less, this also establishes "listing level" and "unsafe" hypoxemia. In this case, do not conduct the exercise portion of the test (see *Arterial Blood Gas Studies (Monitored Exercise) Form* [Part III - Appendix I]).
- The exercise test should be conducted at a rate and grade to attain 5 METs by 4-6 minutes. Do not go beyond 5 METs.
 - The exercise test should not be continued if:
 1. The heart rate exceeds 85 percent of the maximum predicted heart rate
 2. The systolic blood pressure fails to increase by 10 mmHg or drops below usual clinical resting level
 3. The claimant displays electrocardiographic changes of ischemia
 - Enter the results on the *Arterial Blood Gas Studies (Monitored Exercise) Form* (see Part III - Appendix I).
 - Send all original electrocardiographic tracings to DDD, with each lead and the elapsed time clearly marked throughout all the tracings.
 - If the test was contraindicated, could not be done or had to be terminated prematurely, enter the reasons on the form.
 - Ensure that the form has a written, physician interpretation of the test as well as a physician signature.
 - Incorporate the exercise and/or resting arterial blood gas results into your diagnostic impressions of an internal medicine consultative examination if that was requested at the same visit.

Blood Work

- If you perform phlebotomy in your office, DDD expects that either you or the support staff performing the study has undergone and successfully completed proper instruction, training and certification established by the state. Follow all safety guidelines, rules, laws and principles as established by state and federal regulatory agencies.
- Include the actual laboratory printouts with your report.
- Incorporate the blood work results into your diagnostic impressions of an internal medicine consultative examination if that was requested at the same visit.

Part III - Appendices

- A. Pulmonary Function Studies (PFS) Report Form
- B. Correcting Ambient Temperatures to Body Temperature Pressure Saturated (BTPS) Table
- C. Instruction Sheet for Diffusing Capacity of the Lungs
- D. Arterial Blood Gas Studies (At Rest) Form
- E. Resting Doppler Arterial Studies - Lower Extremities
- F. Limited Cardiovascular/Pulmonary/Pre-Exercise Test Form
- G. Cardiac Treadmill Exercise Testing Form
- H. Exercise Doppler Arterial Studies - Lower Extremities Form
- I. Arterial Blood Gas Studies (Monitored Exercise) Form
- J. Pulse Oximetry Form

Part III - Appendix A: PFS Report Form

Telephone: 800-282-2690

Claimant: John A. Smith

A/N: ###-##-####

Case: 1234567

PULMONARY FUNCTION STUDIES

THE SOCIAL SECURITY ADMINISTRATION HAS ESTABLISHED NATIONAL GUIDELINES TO ASSURE CONSISTENCY IN THE PERFORMANCE AND EVALUATION OF SPIROMETRY STUDIES. FOR INSTRUCTIONS, PLEASE REFER TO PAGE 2.

Spirometry should not be performed during or soon after an acute respiratory illness so that the results will represent the maximal values possible for this claimant during nonacute conditions. Thus, the following questionnaire must be completed on all claimants by the technician prior to the performance of the test. It might be necessary to postpone the testing if it appears the claimant is particularly worse on the day of proposed testing or suffering an acute exacerbation of his/her respiratory impairment.

QUESTIONNAIRE:

1. Does the claimant feel that today his/her breathing is substantially worse than usual? Yes No
If so, explain:

2. Has the claimant sought treatment for an acute increase in respiratory symptoms in the last two weeks? Yes No
If so, explain:

IF THE CLAIMANT ANSWERS "YES" TO EITHER OR BOTH OF THE ABOVE, THIS WOULD SUGGEST THAT VALID MAXIMAL-EFFORT SPIROMETRY WILL NOT BE OBTAINED AT THIS TIME; THE TESTING MUST BE POSTPONED. PLEASE CALL THE CONSULT DEPARTMENT TO ADVISE US OF THIS FACT, OR IF THERE ARE ANY QUESTIONS CONCERNING THIS STUDY.

Part III - Appendix A: PFS Report Form

INSTRUCTIONS FOR PERFORMING PULMONARY FUNCTION STUDIES FOR SOCIAL SECURITY DISABILITY

1. Only volume versus time tracings are acceptable, i.e., flow volume curves alone are not acceptable. They may accompany the volume versus time curves if your equipment also produces them. In addition to completing our form and sending the tracings, if your spirometer has a computer printout showing the values for each trial, please send this as well.
2. Spirogram **MUST BE LABELED** showing distance per second on abscissa and distance per liter on ordinate. These tracings should bear the claimant's name and test date.
3. The volume **MUST** be recorded at least 10mm/liter. The FVC and FEV1 **MUST** be recorded at at least 20 mm/second. The testing device **MUST** accurately measure both time and volume, the latter to within 1% of a 3L calibrating volume.
4. If spirogram was generated other than by direct pen linkage to a mechanical displacement-type spirometer, the tracing must show the calibration of volume units through mechanical means such as would be obtained using a giant syringe. The linearity of the device must be documented by recording volume calibrations at three different flow rates of approximately 30 L/min (3L/6 sec), 60 L/min (3L/3 sec) and 180 L/min (3L/sec). The volume calibrations should agree to within 1% of a 3L calibrating volume. The proximity of the flow sensor to the individual should be noted and it should be stated whether or not a BTPS correction factor was used for the calibration recordings. The above can be indicated directly on the calibration recordings. Be sure these calibration tracings adhere to the 10 mm/liter and 20 mm/second requirement.
5. The various trials must not be superimposed on each other on the tracings so a reviewer can make independent calculations and confirm your results. The tracings from the pre-bronchodilator study must be clearly differentiated from the post-bronchodilator study. The FVC trials must be labeled to show which ones were performed first and which last.
6. **At least** three acceptable FVCs are necessary. Acceptable FVC curves are smooth, regular, show good initial flow, and are carried out to a definite plateau (**at least** 6 seconds and with no volume change in last 2 seconds). Acceptable curves are where the two best FVCs are within 5% (or 0.1L whichever is greater) or less variation. **Report the best FVC.** The two best FEV1 values should also be within no more than 5% (or 0.1L whichever is greater) variation. **Report the best FEV1, even if it is derived from a different trial than the best FVC.**
7. The testing laboratory should ask the claimant to repeat the maneuvers until three satisfactory curves have been obtained. Additional coaching and/or instructions may be necessary to achieve this. If this is not done, the tests may need to be repeated at no cost to the Bureau, unless our review determines that retesting is unnecessary.
8. If a post-bronchodilator study has also been requested, be sure that 10 minutes has elapsed between the administration of the bronchodilator and the running of the post-bronchodilator study. This will assure that the claimant will have recovered from the pre-bronchodilator testing and will allow adequate time for the drug to act. **The drug used and method of administration should be reported.** The preferred bronchodilator is Albuterol. Remember at least three acceptable FVCs should be recorded post-bronchodilator.
9. **DO NOT PERFORM A POST-BRONCHODILATOR STUDY IF THE BEST FEV1 FROM THE PRE-DILATOR STUDY IS AT 70% OR GREATER OF PREDICTED FEV1. DO NOT PERFORM A POST BRONCHODILATOR STUDY IF USE OF THE BRONCHODILATOR IS CONTRAINDICATED.**

Part III - Appendix A: PFS Report Form

10. Studies should be done standing. If not possible, so indicate and give position in which test was performed. **HEIGHT IS ALWAYS IN STOCKING FEET - MEASURED - NOT ESTIMATED.** In cases of severe scoliosis, it is preferred to substitute arm span for height. If this is done, please so indicate.

11. Ambient temperature must be shown and results corrected to BTPS. The BTPS correction factor must be shown.

TO BE COMPLETED BY THE TECHNICIAN ADMINISTERING OR SUPERVISING THE PFS

Since it is essential that we be able to affirm that pulmonary functions are not reduced by current or recent acute illness or suboptimal effort, please complete the following:

1. Please list current pulmonary medications and times of last dose of each.

2. Please indicate if the claimant demonstrates any breathing difficulty at the time of testing (be specific).

3. Do test results or your observations suggest that the claimant did not fully understand your instructions or did not put forth maximal effort or cooperation? Describe in detail any submaximal performance. Statements such as "effort-fair" are not acceptable.

4. If bronchodilator was not used or considered to be contraindicated, please state why.

5. Additional comments/observations:

REMINDER: ORIGINAL spirometric tracings which are properly labeled to include claimant's name, Social Security number, date, paper speed and units of volume are to be returned to us. If faxed or electronically sent, the quality of the received data MUST be adequate for us to assess the validity of the study.

SPIROMETRIC TEST RESULTS

Record manufacturer model number of spirometer. Give volume displacement if applicable:

_____ This spirometer has does not have a direct pen linkage. If it doesn't, remember to include the giant syringe calibration curves at the three flow rates discussed in instruction #4 on page 2.

Ambient Temperature _____ Were reported results corrected to BTPS? Yes No

Body temperature pressure saturated (BTPS) conversion factor _____

How corrected? Manually Computer

BRONCHODILATOR USED _____ METHOD OF ADMINISTRATION _____
(ALBUTEROL IS REQUESTED)

OHDDS-CVAPFS/1234567

Part III - Appendix A: PFS Report Form

HEIGHT (in stocking feet) _____ (inches) WEIGHT _____ (pounds) AGE _____ SEX _____

Was test done standing? Yes No If no, why not? _____

PLEASE SUPPLY THE FOLLOWING INFORMATION CORRECTED TO BTPS

	PREDICTED	DETERMINED		% PREDICTED		%FEV1/FVC	
		Before BD	After BD	Before BD	After BD	Before BD	After BD
Forced Vital Capacity FVC Liters						XXXXXXX	XXXXXXX
1 Second Vital Capacity (FEV1) Liters				*			

*IF 70% OR GREATER, DO NOT PERFORM A POST-BD STUDY.

TECHNICIAN'S PRINTED NAME

TECHNICIAN'S SIGNATURE

DATE

PHYSICIAN'S INTERPRETATION

The physician interpreting this test must evaluate the spirometric tracings for validity. An analysis of the tracings must be shown in "a" below.

PHYSICIAN'S INTERPRETATIONS AND COMMENTS

- a. Evaluation of spirometric tracings to include reproducibility of curves, and evaluation of claimant's effort and understanding: (Is this a valid study based on the analysis of the tracings?)

- b. Interpretation of the pulmonary functions study:

PHYSICIAN'S PRINTED NAME

PHYSICIANS'S SIGNATURE

DATE

Part III - Appendix B: Correcting Ambient Temperatures to
Body Temperature Pressure Saturated (BTPS) Table

FAHRENHEIT	CELSIUS	CONVERSION FACTOR
64.4	18 Degrees	1.113
66.2	19 Degrees	1.108
68.0	20 Degrees	1.103
69.8	21 Degrees	1.096
71.6	22 Degrees	1.091
73.4	23 Degrees	1.085
75.2	24 Degrees	1.080
77.0	25 Degrees	1.075
78.8	26 Degrees	1.069
80.6	27 Degrees	1.063
82.4	28 Degrees	1.057

INSTRUCTION SHEET FOR DIFFUSING CAPACITY OF THE LUNGS FOR CARBON MONOXIDE (DLCO)

- * The DLCO must be measured by single breath technique.
- * The claimant should be relaxed and seated.
- * At sea level, the inspired gas mixture should contain approximately 0.3% carbon monoxide (CO), 10% helium, (He), 21% oxygen (O₂) and the balance nitrogen (inspired O₂ tension 150 mm Hg). Helium may be replaced by another inert gas at an appropriate concentration.
- * The inspired volume (VI) during the DLCO maneuver should be at least 90% of the previously determined vital capacity (VC).
- * The inspiratory time for the VI should be less than 2 seconds, and the breath-hold time should be between 9 and 11 seconds.
- * The washout volume should be between 0.75 and 1.00L unless the VC is less than 2L. In this case, the washout volume may be reduced to 0.50L; any such change should be noted in the report.
- * The Alveolar Sample Volume should be between 0.5 and 1.0L and be collected in less than 3 seconds.
- * At least 4 minutes should be allowed for gas washout between repeat studies.
- * The DLCO should be reported in units of ml CO, standard temperature, pressure, dry (STPD)/min/mm Hg uncorrected for hemoglobin concentration and be based on a single-breath alveolar volume determination.
- * Abnormal hemoglobin or hematocrit values, and/or carboxyhemoglobin levels, should be reported along with diffusing capacity if these results are available to you. We are not requesting that these should be measured by you.
- * The mean value (DLCO) of at least two acceptable measurements should be reported and the two acceptable tests should be within 10% of each other or 3 ml CO (STPD)/min/mm Hg, whichever is larger. The percent difference should be calculated as $100 \times (\text{test 1} - \text{test 2}) / \text{average DLCO}$.
- * The ability of the individual to follow directions and perform the test properly should be described in the written report.
- * The report should include tracings of the VI, breath-hold maneuver, and the VE appropriately labeled with the name of the individual and the date of the test.
- * The time axis should be at least 20 mm/sec and the volume axis at least 10 mm/L.
- * The percentage concentration of inspired O₂, and inspired and expired CO and He for each of the maneuvers should be provided, and the algorithm used to calculate test results noted.
- * Sufficient data must be provided to permit independent calculation of the results (and if necessary, calculations of corrections for anemia and/or carboxyhemoglobin). The source of the predicted values must be reported.

Part III - Appendix D: Arterial Blood Gas Studies (at rest)

Telephone: 800-282-2690

Claimant: John A. Smith

A/N: ###-##-####

Case: 1234567

ARTERIAL BLOOD GAS STUDIES (AT REST)

DIRECTIONS FOR COMPLETING TEST

Resting ABGS should be performed breathing room air (off supplemental O₂ if used for at least 20 minutes) awake and sitting or standing. Do a resting arterial stick and complete the chart below. The specimen, if not analyzed immediately, should be sealed, packed in ice, and analyzed within 30 minutes. If unable to get claimant off supplemental O₂, the test should be aborted and no specimen drawn.

Time specimen drawn _____ Time analyzed _____

Barometric pressure _____ Altitude of test site is less than 3000 feet above sea level.

	NORMAL VALUE	RESTING VALUE
pH		
paCO ₂		
paO ₂		
O ₂ Saturation		
Hematocrit		

If test could not be completed, please give reason (s) _____

Technician's Comments _____

Technician's Printed Name _____

Technician's Signature _____ Date _____

Physician's Interpretation and Comments _____

Physician's Printed Name _____

Physician's Signature _____ Date _____

BY SIGNING ABOVE, THE PHYSICIAN CERTIFIES THAT THE SPECIMEN HAS BEEN ANALYZED IN A LABORATORY CERTIFIED BY THE STATE OR FEDERAL AGENCY RESPONSIBLE FOR SUCH CERTIFICATION.

Part III - Appendix E: Resting Doppler Arterial Studies – Lower Extremities

Telephone: 800-282-2690

Claimant: John A. Smith

A/N: ###-##-####

Case: 1234567

RESTING DOPPLER ARTERIAL STUDIES - LOWER EXTREMITIES
THIS FORM MUST BE COMPLETED REGARDLESS OF ANY OTHER REPORTS THAT ARE GENERATED.

The Social Security Administration requires that a medical history accompany your report describing symptoms consistent with intermittent claudication. Please describe in the following space: _____

Please describe any trophic changes in the legs or feet including skin breakdown: _____

The Doppler information we require includes four pressures for each side (right and left): the brachial, dorsalis pedis, posterior tibial, and toe. An index should be calculated using the ratio of the higher of the DP or PT to the **highest brachial**. Please round off to **three decimal places**. This study is to be a **resting only** arterial lower extremity Doppler. We need you to measure the toe pressure bilaterally in **addition to** the posterior tibial and dorsalis pedis. The toe/brachial indices are also calculated in addition to the ankle brachial indices.

DOPPLER RESULTS AT REST (Systolic Pressures in mm. Hg.)				
	Brachial	Posterior Tibial	Dorsalis Pedis	Toe
RIGHT	_____	_____	_____	_____
LEFT	_____	_____	_____	_____

CUFF SIZE: _____

The Ankle Brachial Ratio or Index is defined as the higher of the posterior tibial or dorsalis pedis readings divided by the highest brachial reading, i.e.:

$$\frac{\text{AP (highest ankle pressure)}}{\text{BP (highest brachial pressure)}} = \text{ABR (ankle brachial ratio) or index}$$

The Toe Brachial Ratio is defined as the toe pressure reading divided by the highest brachial reading, i.e.:

$$\frac{\text{TP (toe pressure)}}{\text{BP (highest brachial pressure)}} = \text{TBR (toe brachial ratio) or index}$$

INDICES AT REST			
	ABR		TBR
RIGHT	_____		_____
LEFT	_____		_____

TECHNICIAN'S COMMENTS: _____

TECHNICIAN'S SIGNATURE _____

DATE _____

PHYSICIAN'S INTERPRETATION AND COMMENTS: _____

PHYSICIAN'S PRINTED NAME _____

PHYSICIAN'S SIGNATURE _____

DATE _____

Part III - Appendix F: Limited Cardiovascular/Pulmonary/Pre-Exercise Test Form

Telephone: 800-282-2690

Claimant: John A. Smith

A/N: ###-##-####

Case: 1234567

LIMITED CARDIOVASCULAR/PULMONARY/PRE-EXERCISE TEST EXAM

We are requesting that an exam limited to the cardiovascular, pulmonary, and peripheral vascular systems be performed and reported on this form. Typing is preferable, however, if legible, this form may be completed in the physician's own writing. The form must be signed and returned with the voucher for payment in the envelope provided.

1. Describe details of the claimant's chest discomfort to include character, location, radiation, precipitation, relief by rest and/or nitroglycerin, and time of relief by each, onset (approximate month/year, if possible). The amount of exertion needed to produce the discomfort should be indicated and the reproducibility. When emotional stress is a precipitating factor, this should be described. Finally, a conclusion as to whether the physician feels this is angina, or not, should be given. If no longer present, please indicate.

2. Please note presence of any dyspnea, PND, or orthopnea, and please give your opinion on the claimant's functional class (NYHA) based on this and any chest discomfort described in #1 above.

3. Note if intermittent claudication is present, or not, giving a description of the quality and location of the leg pain, how far the claimant needs to walk to produce the pain, and the duration of the pain upon stopping.

Part III - Appendix F: Limited Cardiovascular/Pulmonary/Pre-Exercise Test Form

4. Please give height, weight, pulse, blood pressure, results of chest exam (heart, lungs), and indicate presence or absence of cardiac enlargement or chronic heart failure, peripheral pulses, presence or absence of varicosities, pedal edema, stasis dermatitis, brawny edema, ulceration.

HEIGHT _____	WEIGHT _____	PULSE _____	BLOOD PRESSURE _____
--------------	--------------	-------------	----------------------

5. If an exercise test (cardiac, arterial blood gas monitored exercise, or Doppler arterial monitored exercise) is contemplated by the Bureau in the near future, or being requested along with this exam, do you see any contraindications to the performance of such testing in an outpatient setting? If yes, please explain.

6. IF CONTRAINDICATED, please call the Medical Administration Department at 1-800-282-2654, extension 1541, or (614) 438-1541 to so advise. In that way, we can be sure no exercise test will take place. If you are unable to reach us per the above, be sure to advise the claimant NOT TO ATTEND any scheduled exercise test.

7. Additional Comments:

PHYSICIAN'S PRINTED NAME: _____

PHYSICIAN'S SIGNATURE: _____ DATE _____

Part III - Appendix G: Cardiac Treadmill/Bicycle Exercise Test Form

Telephone: 800-282-2690

Claimant: John A. Smith

A/N: ###-##-####

Case: 1234567

CARDIAC TREADMILL/BICYCLE EXERCISE TESTING

When an exercise test is requested, the **physician** monitoring the test must first determine if it is **contraindicated** or not (see the section below on contraindications). If it is not contraindicated, it should be a **sign** or **symptom - limited** test using either a Treadmill or Bicycle Ergometer and characterized by a progressive multistage regimen performed using a generally accepted protocol consistent with the prevailing state of medical knowledge and clinical practice. In no case should the test be continued beyond 85% of the maximum predicted heart rate, or in the case of a failure to increase the systolic blood pressure by 10 mmHg or a decrease in that pressure below the usual clinical resting level. It goes without saying that the test should be terminated in the case of electrocardiographic changes generally accepted as documenting ischemia.

Absolute contraindications to exercise testing include but are not limited to unstable progressive angina pectoris, a history of acute myocardial infarction within the past three months, New York Heart Association (NYHA) class IV heart failure, cardiac drug toxicity, uncontrolled serious arrhythmia (including uncontrolled atrial fibrillation, Mobitz II, and third-degree block), uncontrolled severe systemic arterial hypertension, marked pulmonary hypertension, unrepaired aortic dissection, left main stenosis of 50% or greater, marked aortic stenosis, chronic or dissecting aortic aneurysm, recent pulmonary embolism, hypertrophic cardiomyopathy, limiting neurological or musculoskeletal impairments, or an acute illness. The test should not be performed after a prolonged (2 weeks) period of bed rest or on individuals for whom the performance of the test is considered to constitute a significant risk.

ECGs must include the **original calibrated (standardized) tracings** and consist of a 12 lead record recorded in the upright position before exercise and immediately following 20 seconds of **vigorous hyperventilation**. At least 10 minutes should elapse following the hyperventilation before exercise is begun. During exercise, a 12 lead record should be run every minute during each stage and immediately post exercise. Recovery 12 lead records should be run every minute through 3 minutes post exercise and at least a 5-minute post exercise record run. Additional tracings can be done at the discretion of the exercise facility. All ECG records must be calibrated (standardized) and bear the name of the claimant, date, and the relationship to the stage, recovery, etc.

Monitoring during exercise should include in addition to the electrocardiographic record, the blood pressure and pulse rate each minute as well as symptoms, signs, and a description of any ECG changes. (The exercise should be paced to the capabilities of the individual and be **supervised by a physician**.)

The table on the reverse side of this form has a place for all entries and the speed/grade (if Treadmill) or KPM or Watts (if bicycle) and maximum level of exercise in VO_2 and METS. **All areas** on the form must be completed.

If the monitoring physician feels that the test is **contraindicated**, or the claimant is **unable to complete** the test, the **reasons must be indicated** in the place provided. If the facility uses its own form to record the results of the study, it should be sent, but our form must be completed anyway.

It is considered acceptable to exercise a claimant on a digitalis preparation (or within the immediate several weeks following discontinuation of the drug) or on a beta blocker; however, please indicate the usage or recent usage of these drugs in the space provided on our form.

Part III - Appendix G: Cardiac Treadmill/Bicycle Exercise Test Form

STAGE	T M I I M N E U T I E N S	TREADMILL		BICYCLE		METS O2 CONSUMP- TION	H R E A T R E T	B P L R O E O S D S U R E	S Y M P T O M S	S I G N S	E C H G A N G E S
		S P E E D	G R A D E	K P M	W A T T E R						
REST											
HYPERVENTILATION											
STANDING											
(IF USED) 0											
(IF USED) 1/2											
STAGE 1-1 MIN.											
STAGE 1-2 MIN.											
STAGE 1-3 MIN.											
STAGE 2-1 MIN.											
STAGE 2-2 MIN.											
STAGE 2-3 MIN.											
STAGE 3-1 MIN.											
STAGE 3-2 MIN.											
STAGE 3-3 MIN.											
STAGE 4-1 MIN.											
STAGE 4-2 MIN.											
STAGE 4-3 MIN.											
RECOVERY 1 MIN.											
2 MIN.											
3 MIN.											
5 MIN.											

Name of Protocol used above: _____

Duration of Exercise _____ Maximum level of exercise _____
 (minutes) VO2 METS

Weight _____ (in pounds)

List cardiac meds taken currently or in past several weeks, i.e., digitalis, beta blockers, etc:

IF TEST COULD NOT BE COMPLETED, OR WAS CONTRAINDICTED, PLEASE GIVE REASON(S):

TECHNICIAN'S COMMENTS:

* PHYSICIAN'S INTERPRETATION AND COMMENTS:

*
*
*
*
*
*
*
*
*
*
*
*

TECHNICIAN'S PRINTED NAME _____

PHYSICIAN'S PRINTED NAME _____

TECHNICIAN'S SIGNATURE _____ DATE _____

PHYSICIAN'S SIGNATURE _____ DATE _____

Part III - Appendix H: Exercise Doppler Arterial Studies – Lower Extremities

Telephone: 800-282-2690

Claimant: John A. Smith

A/N: ###-##-####

Case: 1234567

DOPPLER ARTERIAL STUDIES - LOWER EXTREMITIES

THIS FORM MUST BE COMPLETED REGARDLESS OF ANY OTHER REPORTS THAT ARE GENERATED.

The Social Security Administration requires that a medical history accompany your report describing symptoms consistent with intermittent claudication. Please describe in the following space: _____

Please describe any trophic changes in the legs or feet including skin breakdown: _____

The Doppler information we require includes four pressures for each side (right and left): the brachial, dorsalis pedis and posterior tibial, and toe. An index should be calculated using the ratio of the **higher** of the DP or PT to the **highest brachial**. Please round off to **three decimal places**. If this index is less than 0.500 in the worst leg, this will be positive evidence of severe occlusive disease, and adequate to adjudicate the claim. If the index is equal to, or greater than 0.800 for both legs, we would consider the information adequate. If the ratio is 0.500 or greater, but less than 0.800, the individual should be exercised as per the instructions on the reverse side of this form. Please note the required information and duration of post-exercise monitoring. If exercise cannot be performed or is contraindicated, please specify the reasons on the reverse side. The toe/brachial indices would be calculated **in addition to** the ankle brachial indices.

DOPPLER RESULTS AT REST (Systolic Pressures in mm. Hg.)

	Brachial	Posterior Tibial	Dorsalis Pedis	Toe
RIGHT:	_____	_____	_____	_____
LEFT:	_____	_____	_____	_____

CUFF SIZE: _____

Ankle Brachial Ratio or Index is defined as the higher of the posterior tibial or dorsalis pedis readings divided by the highest brachial reading, i.e.:

$$\frac{\text{AP (highest ankle pressure)}}{\text{BP (highest brachial pressure)}} = \text{ABR (ankle brachial ratio) or index}$$

The Toe Brachial Ratio is defined as the toe pressure reading divided by the highest brachial reading, i.e.:

$$\frac{\text{TP (toe pressure)}}{\text{BP (highest brachial pressure)}} = \text{TBR (toe brachial ratio) or index}$$

INDICES AT REST

	ABR	TBR
RIGHT	_____	_____
LEFT	_____	_____

NOTE: If the ankle brachial ratios are between 0.500 and 0.800, see next page

Part III - Appendix H: Exercise Doppler Arterial Studies – Lower Extremities

DO NOT PERFORM EXERCISE TEST IF:

- * BOTH THE LEFT AND RIGHT RATIOS ARE 0.800 OR GREATER, OR
- * EITHER LEFT OR RIGHT RATIO IS LESS THAN 0.500, OR
- * EXERCISE TESTING IS CONTRAINDICATED. WE WOULD CONSIDER IT TO BE CONTRAINDICATED IF IT WOULD RESULT IN SIGNIFICANT RISK TO THE CLAIMANT. THE MONITORING PHYSICIAN SHOULD EXERCISE GOOD CLINICAL JUDGMENT IN THIS MATTER. IF CONTRAINDICATED, PLEASE EXPLAIN BELOW:

EXERCISE EVALUATION

When exercise is indicated by the ankle brachial indices and not contraindicated, the individual should be exercised to a level comparable to five minutes on a treadmill at two miles per hour on a grade of 12 percent for up to 5 minutes, and systolic BP taken at brachial, posterior tibial and dorsalis pedis for 15 minutes post-exercise. The individual must be monitored by electrocardiogram throughout the exercise. Any lead(s) may be used at the discretion of the facility. The exercise must be stopped at any point where it becomes either clinically unsafe to continue or due to electrocardiographic changes. If the claimant is on a digitalis preparation, any ST segment depression other than simple J-point depression should be presumed to warrant cessation of exercise. Monitoring should be continued until both the changes have disappeared and the claimant is stable. You will note we do not have you record toe pressures after exercise.

MINUTES OF WALKING TIME _____ MPH _____ GRADE _____ OTHER _____

SYMPTOMS WITH EXERCISE: _____

EXERCISE STOPPED BECAUSE OF: _____

DOPPLER SYSTOLIC PRESSURES - IMMEDIATELY AFTER EXERCISE

	BRACHIAL	POSTERIOR TIBIAL	DORSALIS PEDIS
RIGHT	_____	_____	_____
LEFT	_____	_____	_____

5 MINUTES AFTER EXERCISE

RIGHT	_____	_____	_____
LEFT	_____	_____	_____

10 MINUTES AFTER EXERCISE

RIGHT	_____	_____	_____
LEFT	_____	_____	_____

15 MINUTES AFTER EXERCISE

RIGHT	_____	_____	_____
LEFT	_____	_____	_____

REMEMBER TO ATTACH ECG STRIPS TAKEN DURING EXERCISE.

IF EXERCISE IS CALLED FOR BY THE INDICES, BUT NOT ABLE TO BE PERFORMED OR CONTRAINDICATED, PLEASE EXPLAIN: _____

TECHNICIAN'S COMMENTS: _____

TECHNICIAN'S SIGNATURE _____

DATE _____

PHYSICIAN'S INTERPRETATION AND COMMENTS: _____

PHYSICIAN'S PRINTED NAME _____

PHYSICIAN'S SIGNATURE _____

DATE _____

Part III - Appendix I: Arterial Blood Gas Studies (Monitored Exercise)

Telephone: 800-282-2690

Claimant: John A. Smith

A/N: ###-##-####

Case: 1234567

ARTERIAL BLOOD GAS STUDIES (MONITORED EXERCISE)

DIRECTIONS FOR COMPLETING TEST

- The testing facility should determine whether exercise testing is clinically contraindicated. If exercise would result in significant risk to the claimant, it is contraindicated. The physician monitoring the test should use good clinical judgment in this matter. If exercise is contraindicated, do a resting arterial stick and complete the chart below. The specimen, if not analyzed immediately, should be sealed, packed in ice, and analyzed within 30 minutes.

**COMPLETE THIS SECTION ONLY IF EXERCISE IS CONTRAINDICATED
(SIGNATURE AND COMMENTS REQUIRED ON REVERSE SIDE OF THIS FORM)**

Exercise was contraindicated because _____

	NORMAL VALUE	RESTING VALUE
Time specimen drawn _____	_____	_____
Time analyzed _____	_____	_____
Barometric Pressure _____	_____	_____
Altitude of test site is less than 3000 feet above sea level	_____	_____
pH	_____	_____
paCO ₂	_____	_____
paO ₂	_____	_____
O ₂ Saturation	_____	_____
Hematocrit	_____	_____

- Methodology - Individual considered for exercise testing should first have the hematocrit done as well as the resting pH, paCO₂, paO₂ and O₂ saturation. The claimant is to be off any supplemental O₂, if used, and breathing room air for at least 20 minutes prior to obtaining the resting specimen. If not possible to remove the supplemental O₂, the test is to be aborted and no resting specimen drawn. If the results of the resting values are at or below the values in the table to the right (paO₂), exercise is **contraindicated**. The resting sample should be obtained in the sitting or standing position. Separate arterial sticks or cannulation can be done at the discretion of the facility. See #1 for analyzing the specimens. **IF EXERCISE IS ATTEMPTED, BOTH THE RESTING AND EXERCISE VALUES ARE TO BE RECORDED ON THE REVERSE SIDE OF THIS FORM.**
- | | (Applicable at test sites less than 3,000 feet above sea level) | |
|---|---|---|
| Arterial PCO ₂ (mm.Hg) AND 30 or below | 31 | Arterial PO ₂ equal to or less than (mm.HG) 65 |
| | 32 | 64 |
| | 33 | 63 |
| | 34 | 62 |
| | 35 | 61 |
| | 36 | 60 |
| | 37 | 59 |
| | 38 | 58 |
| | 39 | 57 |
| 40 or above | | 56 |
| | | 55 |

The individual should be exercised under **steady state** conditions, preferably on a **treadmill** for a period of six minutes at a speed and grade providing a workload of approximately 17 ml O₂/Kg./min. If a **bicycle** ergometer is used, an exercise equivalent of 450 kpm./min., or 75 watts, should be used. There is a place in the table on the reverse side of this form to indicate which form of exercise was employed and the level of exertion for each minute of exercise.

At the option of the facility, a **warm-up period** of treadmill walking may be performed to acquaint the individual with the procedure. If during the warm-up period the individual cannot exercise at the designated level, a lower speed and/or grade may be selected in keeping with the exercise capacity estimate. It is better to achieve a steady-state six minute exercise at less than the target 17 ml O₂/Kg./min. than to attain this level only to have to stop with less than six minutes of exercise.

The individual must be **monitored by electrocardiogram** throughout the exercise and representative strips taken. Heart rate and BP must be shown for each minute of exercise. Any lead(s) may be used at the discretion of the facility. The ECG strips must be included with the report. **During** the fifth or sixth minute of exercise, an arterial blood gas sample should be drawn and **analyzed**. The values should be placed in the table on the reverse side of this form. If the individual fails to complete the six minutes of exercise, the reason(s) should be given.

Part III - Appendix I: Arterial Blood Gas Studies (Monitored Exercise)

		TREADMILL <input type="checkbox"/>		BICYCLE <input type="checkbox"/>		HEART RATE	BLOOD PRESSURE	EXERCISE ARTERIAL SPECIMEN DRAWN	SYMPTOMS	ECG CHANGES	
		S P E E D	G R A D E	K P M	W A T S						
M E I X N E U R T C E I S S E D	REST	XXX	XXX	XXX	XXX			XXXXXXXX			
	WARM-UP							XXXXXXXX			
	1 MIN.										
	2. MIN										
	3 MIN.										
	4 MIN.										
	5 MIN.										
6 MIN.											
RECOVERY				1 MIN.							
				2 MIN.					XXXXXXXX		
				3 MIN.					XXXXXXXX		

Duration of Exercise _____ Maximum Level of Exercise _____
 (minutes) VO2 METS

REMEMBER TO ATTACH ECG STRIPS TAKEN DURING EXERCISE

The altitude of the test site is less than 3,000 feet above sea level.
 Barometric Pressure _____ Weight _____ (in pounds)

	NORMAL	RESTING	EXERCISE		TIME DRAWN	TIME ANALYZED
pH	_____	_____	_____			
paCO ₂	_____	_____	_____	RESTING	_____	_____
paO ₂	_____	_____	_____			
O ₂	_____	_____	_____	EXERCISE	_____	_____
Saturation	_____	_____	_____			
Hematocrit	_____	_____	_____			

The exercise specimen was obtained: during the _____ minute of exercise OR _____ seconds following the cessation of exercise.

If test could not be completed, please give reasons(s) _____

Technician's Comments: _____

Technician's Printed Name: _____

Technician's Signature: _____ DATE _____

Physician's Interpretations and comments: _____

PHYSICIAN'S PRINTED NAME: _____

PHYSICIAN'S SIGNATURE: _____ DATE _____

BY SIGNING ABOVE, THE PHYSICIAN CERTIFIES THAT THE SPECIMEN(S) HAS (HAVE) BEEN ANALYZED IN A LABORATORY CERTIFIED BY THE STATE OR FEDERAL AGENCY RESPONSIBLE FOR SUCH CERTIFICATION.

Part III – Appendix J: Pulse Oximetry Form

Telephone: 800-282-2690

Claimant: John A. Smith

A/N: ###-##-####

Case: 1234567

Pulse Oximetry Form

Pulse oximetry may be substituted for arterial blood gases in children under 12 years of age. The oximetry unit should employ the basic technology of spectrophotometric plethysmography as described in Taylor, M.B., and Whitwain, J.G., "Current Status of Pulse Oximetry," "Anesthesia," Vol. 41. No. 9. pp. 943-949, 1986. The unit should provide a visual display of the pulse signal and the corresponding oxygen saturation. A hard copy of the readings (heart rate and saturation) should be provided. Readings should be obtained for a minimum of five (5) minutes. The written report should describe patient activity during the recording; i.e., sleep rate, feeding, or exercise. Correlation between the actual heart rate determined by a trained observer and that displayed by the oximeter should be provided. A statement should be made in the report of the child's effort and cooperation during the test.