

Daniel Powers, M.D.

R A D I O L O G Y

Licensed to Practice Medicine in 48 States and Washington, D.C.

B Reader

Board-Certified Diagnostic and Nuclear Radiologist

Certified by the American Board of Radiology

August, 2017

Russell R. Beaudoen
Elizabeth Zellner
Attorneys At Law
6715 Park Ave.
Allen Park, MI 48101

Dear Attorneys Beaudoen and Zellner,

Below is an explanation of imaging studies used in the evaluation of asbestosis and asbestos related disease, including its associated thoracic malignancies.

I (Daniel Powers, M.D.), am a board-certified Diagnostic Radiologist, certified by the American Board of Radiology, licensed to practice medicine in multiple states including Michigan and a Federally Certified B-Reader by NIOSH/CDC for interpreting imaging in occupationally exposed persons. I was certified as a B-Reader (a B-Reader is better than an A-Reader by Federal Government standards) in 1984 and have re-certified every four years, since then, the last time being in 2016, good through 2020. I have extensive CT/HRCT experience, which dates back to the beginning of when CT was first used routinely for occupational dusts and fiber exposure in the 1980s. For more information, please visit my website at www.breader.com. This letter is not intended to be specific medical advice for a specific patient/client.

It is well known that the risk of lung malignancy, both cancer and mesothelioma, is increased among asbestos-exposed individuals. Most concerning, is that asbestos exposure and smoking combined, can substantially increase the risk of lung cancer.

Mindful that many providers are not trained in this narrow area of medicine, early detection is the key to beneficial lung cancer treatment options. A **low-dose CT scan of the chest** without contrast can help detect early signs of asbestos-related pleural abnormalities as well as identify pulmonary nodules/cancer as a screening study. Alternatively, for a more comprehensive imaging test, a higher dose **standard supine spiral CT scan of the chest without contrast** along with supine axial HRCT, routine sagittal and coronal and axial and coronal Maximum Intensity Projection (MIP) reformations can be acquired. In addition, if the individual has a positive history and/or clinical examination for shortness of breath, not felt to be due to congestive heart failure or other definite medical conditions and/or has increased diffuse fine lung markings/scarring in the middle and lower lung zones on a chest x-ray and/or positive

Providing Nationwide Diagnostic Imaging Services and Second Opinions

Practice Address: 6200 Wilshire Blvd., Suite 1006, Los Angeles, CA 90048

Telephone Number: (800) 222-6768 Nationwide

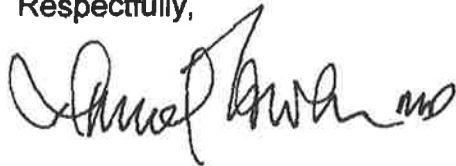
Fax Number: (800) 272-2713 Nationwide

e-mail: powersmd@gmail.com

restrictive pulmonary function tests, he/she would do well to have a Prone HRCT without contrast (lying on one's stomach – which is a sampling study, not contiguous slices, and thus, less radiation). This is the imaging "gold standard" for the detection of early asbestosis. (This HRCT scan should not be done supine, because gravitational dependent density can also cause haziness at the back bottoms of the lungs where mild asbestosis also occurs. By placing the patient prone, the gravitational dependent density changes go anteriorly, clearing out any posterior gravitational haziness and if such haziness remains, then it is often mild asbestosis, if having the appropriate pattern and distribution). The CT and HRCT scans and routine coronal and sagittal reformations should be processed and presented in both the high resolution, lung ("Bone" on a GE scanner) and smoothed, chest wall/mediastinal ("Standard" on the GE scanner) images.

It is hoped that if and when asbestos-related abnormalities are identified, meaningful medical monitoring protocols will also be implemented.

Respectfully,

A handwritten signature in black ink, appearing to read "Daniel Powers, M.D.", written in a cursive style.

Daniel Powers, M.D.
American Board of Radiology Certified
Federal Government Certified "B-Reader"

Daniel Powers, M.D.

R A D I O L O G Y

Licensed to Practice Medicine in 48 States and Washington, D.C.

B-Reader

Board Certified Diagnostic and Nuclear Radiologist

Certified by the American Board of Radiology

Daniel Powers, MD Asbestos Protocols:

Supine Spiral CT: 5 mm thick slices, 5 mm apart

Lung: 1500/-700 Acquire in "Bone"/Hi Resolution Algorithm

Chest Wall: 450/20 Reformat in "Standard"/Mediastinal

Algorithm

Also provide:

- **Supine HRCT Axial Reformations at 1.25 mm thick, 1.25 mm apart (Standard and Bone algorithm presentations)**
- **Sagittal and Coronal Reformations (Standard and Bone presentations)**
- **Maximum Intensity Projection Axial (1400/-650) and Coronal Reformations (Bone presentation)**
- **Minimum Intensity Projection (700/-800) Axial Reformations (Bone presentation)**

Prone HRCT: 1 or 1.25 mm thick slices, 15 mm apart

Lung: 1500/-700 Acquire in "Bone"/Hi Resolution Algorithm

Chest Wall: 450/20 Reformat in "Standard"/Mediastinal

Algorithm

Understand that **each CT and HRCT study is acquired once, but each is sent as two sets** and not one set of images/study – one utilizing the Hi-Res Lung ("Bone" by GE) and the other in slightly smoothed Mediastinal/Chest Wall ("Standard" by GE) algorithm processing.

If the study cannot be sent by tele-imaging, then provide me with **non-compressed DICOM images** on a CD.

Providing Nationwide Diagnostic Imaging Services and Second Opinions

Practice Address: 6200 Wilshire Blvd., Suite 1006, Los Angeles, CA 90048

Telephone Number: (800) 222-6768

Fax Number: (800) 272-2713

e-mail: powersmd@gmail.com

Understanding Imaging Tests for Asbestos Markers

The official **ILO profusion grading** or amount/quantity of disease is a rating that relates to **chest x-rays only**. However, CT can quantify moderate (2/2) to severe (3/3) profusion and Prone HRCT can quantify mild (1/0, 1/1), moderate (2/2) and severe (3/3) profusion or lesser or greater variations of such amounts, into a parallel profusion scores, similar to chest x-rays, based upon peer reviewed article and textbook examples, although there are not ILO based standard images for such, yet.

CT scans are primarily for the identification of plaques and cancer and moderate to severe interstitial fibrosis/asbestosis (lung tissue or parenchymal scarring or interstitial lung disease = ILD). It can identify moderate to severe interstitial disease, but not mild disease. Most CT scans are **done supine** - lying on one's back. Mild ILD in asbestosis occurs at the back bottom parts of the lungs. But, so does gravitational haze caused by atelectasis - partial collapse of the lungs due to the pressure of the anterior (front) parts of the lungs pushing down on the posterior (back) parts of the lungs - this gravitation density or haze is called **Dependent Density** (density at the dependent or lower portions of the lungs). Since most asbestosis cases today have mild or low profusion ILD - it becomes impossible to determine if the haziness at the back bottoms parts of the lungs is due to gravity or ILD or both. Therefore, to tell if there is ILD at the back bottom parts of the lungs, one has to put the patient/client on his/her stomach = prone position so the gravitational haze goes to the anterior or front of the lungs and the posterior or back parts of the lungs clear out if only due to gravity, but maintain their haze if there is ILD. For ILD it is best to use even thinner and high definition images to see the ILD and thus, the study of choice for asbestosis (a type of ILD) is a **Prone HRCT**. If ILD is present, that can be subjectively, by the B-reader (no standard images yet, but examples in many peer reviewed text books) categorized into mild = 1; moderate =2, or severe = 3 profusion or lesser or greater variations of such amounts.

Concepts:

Chest x-rays are good for an overview of ILD, plaques and any cancer.

Supine (lying on one's back) Spiral CT is better for Plaque and Cancer identification

Prone (lying on one's stomach) HRCT is best for asbestosis/ILD identification.

Since only 10 to 40% of plaques are seen on chest x-rays, if not seen or for more conclusive proof, supine spiral CT is used to look for the plaques and calcification in them and to identify the cancer. Therefore on any cancer case, one usually looks not only at the chest x-ray, but the CT as well - any CT, but preferably for both the chest x-ray and CT - those obtained **BEFORE chemotherapy or radiation treatment**. But, if not available, any CT. Prone HRCT is always ideal to have, but is seldom done as a routine procedure and so, if the cancer case is new and the patient/client can still cooperate for the exam, always try to obtain a PRONE HRCT to attempt to show and prove with an imaging marker, findings of asbestosis.

Daniel Powers, MD
powersmd@gmail.com