October 27, 1955

Mr. Jerome Colman
[illegible] North Street
Paterson, New Jersey

re: STUART, Henry

Dear Sir:

Mr. Henry Stuart of 162 Barber Street, Haledon, was examined by me on December 29, 1954, December 1, 1954 and December 7, 1954.

Mr. Stuart is a 63 year old general maintenance worker who went to work at the age of 12 on a farm. He then worked as a dairy worker, a truck driver, a packing house worker, a liver stable worker, a grocery wagon driver, a delivery wagon driver, a lathe worker in a pipe works, a chauffer, American Railway Express, iron worker, and a millwright. On January 3, 1941, he went to work for the Union Asbestos and Rubber Company, first as a carpenter's helper and then in maintenance work for four years. Because of the great deal of dust in the area in which he worked, he wore a mask. Then he was a fireman for the rest of his time being out of the dusty atmosphere for most of the time but not completely. Every day he had to examine sprinkler heads in the plant, and pump them up twice daily. Thus, he was actually in the dust for about half the day and wore no mask on these occasions. At the time of our examination, he stated that he had never had lung trouble except for bronchitis about four years ago. Also at the time of my examination he stated that he had a minimal cough but no sputum. He was not short of breath on exertion, suffered no chest pain, had no hemoptysis and had noted no change in his fingers.

Review of systemic history was similarly not unusual with very little noted. He stated that he did have some dizziness in hearing for the previous two years, he was aware of a hernia on the left and had some early symptoms of prostatic obstruction. A previous fracture of the left skull too had occurred. He told me he had occasional headaches and was a pipe smoker. A right hernia operation had been done in 1931 and a spur had been removed from his left heel.

My examination revealed very little of note apart from the lungs. He was a rather obese man(206 pounds, 67½ inches) and his blood pressure was somewhat elevated, being 130/110 in the right arm, 166/114 in the left arm. A left inguinal hernia was questionably present and an epigastric hernia. Physical examination did show benign prostatic hypertrophy, but no obstruction. Significant changes, however, were present in the lungs. Both bases were the sites of fine, medium and coarse rales and on fluoroscopy, stippling was present in both lower lung fields as well as hilar accentuation. Cardiovascular fluoroscopy also showed left ventricular hypertrophy, well marked in the left anterior oblique position.

Laboratory examinations showed a circulation time(decholin) of 19 seconds, a normal urine, negative serological studies for syphilis, a normal blood count, a negative sputum study for acid fast bacteria and an electrocardiogram which also showed left ventricular hypertrophy. X-ray of the chest showed a significant but moderate abnormality. In addition to an enlarged heart, (which I consider completely unrelated to his present industrial illness) there was a minimal amount of fine, granular stippling in both lungs particularly on the right as well as larger nodular stippling with these nodules ranging from one to four mm in diameter. Pleuro-pericardial adhesions were present over the right mediastinal border of the right lung but very few diaphragmatic adhesions. There was distortion in vascular markings in both lower lobes but this is not marked over the upper lobes.

Pulmonary function studies were performed at the Cardio-Pulmonary Research Laboratory of The Mount Sinai Hospital in New York City by Dr. Richard A. Bader and Dr. Mortimer E. Bader on August 10, 1955. These show only a minimal abnormality. There was considerable reduction in vital capacity. There was a reduction in the total capacity of his lungs due to the reduction in the vital capacity. However, both ventilatory and perfusion studies were well within normal limits and we can therefore state that these studies indicate minimal functional abnormality insofar as they can be tested by these presently available functional studies.

Mr. Stuart is suffering from pulmonary asbestosis, secondary to the industrial exposure suffered at his work. However, this has to date produced few functional abnormalities, although structural changes have

occurred as noted both on x-ray and on physical examination. Nevertheless, these structural abnormalities have not been translated to significant disability as evidenced by the absence of significant dyspnoea, cough, sputum, etc.

Therefore, although I consider Mr. Stuart is suffering from pulmonary asbestosis, I should estimate that his total permanent disability as a result of this damage is only 20 % of total disability. In this estimate I make no allowance for the increased possibility of this man suffering in the future from pulmonary tuberculosis or carcinoma of the lung, the incidence of both of which is significantly increased in the presence of pulmonary asbestosis.

Very truly yours,

Irving J. Selikoff, M.D.

IJS: ad
enc.

Report on Henry Stuart
Age 64
B.S.A. - 2.10 Sq. Meters
Studied: 8/20/55

	Predicted	Lying	Standing
Expiratory Reserve Volume		280 cc	605 cc
Inspiratory capacity		2830 cc	2610 cc
Vital capacity (calc)	4505 cc	3110 cc	3215 cc
(obs)	4505 cc	2910cc	
Functional Residual Vol.		1850 cc	
Residual volume	1455 cc	1450 cc	
Total capacity	5950 cc	4363 cc	
Residual Vol/Tot. Cap. Ratio	24.4%	33%	
Max. Breathing Capacity	110 L/Min	121 L/Min	111 L/Min
Residual N_2 after 7 min. O_2	2.5%	2.4%	

BREATHING RESERVE

			RECOVERY			
	Rest	Exercise	1 min	2 min	3 min	4 min 5 min
Ventilation	7.72	22.4	28.6	28.4	24.5	22.8
Breathing Reserve	103.3	83.6	82.4	82.6	86.5	88.2
Breath Re. %	94	81	75	75	79	80

Dyspnea time - 15 seconds

	Rest
VO_2 (O_2 consumption) cc/min	246
VO_2/M^2 in cc	117
VCO_2 (CO_2 production) cc/min	173
" $/M^2$ in cc	83
Respiratory Quotient	0.70
VE (ventilation in Liters/Min)	6.54
VE/M^2 in Liters/Min	3.11
Respiratory Rate/min	20
Tidal volume in cc	327
F_E CO_2 %	3.19
pE CO_2 in mm Hg	22.9
Dead Space	122
" " /Tidal volume	37%

ARTERIAL BLOOD STUDY

	Normal	Rest	Exercise
O_2 content vol %	19.5	19.3	19.8
" capacity " "	20.0	20.5	21.0
" saturation %	95%	95	95%
CO_2 content Vol % (whole blood)	45-50	43.7	
" " " (serum)	55-60	55.8	
pH	7.37-7.41	7.40	
pCO_2 mm Hg	37-41	40	

INTERPRETATION:

1 - LUNG VOLUMES - There is a considerable reduction in vital capacity with a normal residual volume. The total capacity is reduced due to the reduction in the vital capacity. The ratio of the residual volume to total capacity is within normal limits.

2 - VENTILATION - (a) the minute ventilation is normal
(b) the maximum breathing capacity is normal

3 - INDEX OF INTRAPULMONARY MIXING (residual nitrogen after 7 minutes O_2 breathing) is within normal limits.

4 - EXCHANGE LIMITS - is normal

5 - RESPIRATORY DEAD SPACE - The physiological dead space is not materially increased except that its ratio to the tidal volume is slightly increased.

6 - ARTERIAL BLOOD - There is no abnormality in the arterial blood pH, CO_2 and O_2

CONCLUSIONS:

Except for the reduction in the vital capacity, the pulmonary function values are normal.

/s/ Richard A. Bader, M.D.
Mortimer E. Bader, M.D.

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