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Table 14.—Comparison of Reactions to Chrysotile and Serpentine Injected Intratracheally

Dosage: Each animal was given an intratracheal injection of 0.5 cc. of a 5 per cent suspension of the dust. Two weeks later another similar injection was given. Total amount of dust injected was 50 mg

Animals used: Six groups of [illegible] guinea pigs each (one group for each type of dust).

Periods at which animals were killed: One or two animals in each group at 1, 2, 6, 9½ and 12 months after last injection.

Preparation of dust: Chrysotile (ball milled) unheated: Ball milled for 1,17[illegible] hr., dried and reground in agate mortar.
Chrysotile (ball milled) ignited: Ball milled chrysotile heated for 2 hr. at about [illegible] C., then ground in agate mortar [illegible].
Chrysotile (fibrous) unheated: Ground in agate mortar to pass 200 mesh.
Chrysotile (fibrous) ignited: [illegible] material heated for 2 hr. at about 700 C. No further grinding
Serpentine (ball milled) unheated: Ball milled for [illegible] hr., dried and reground in agate mortar.
Serpentine (ball milled) ignited. Ball milled serpentine heated for 2 hr. at about [illegible] C., then ground in agate mortar [illegible] min

Mineral	Size of Dust Particles	Results
Chrysotile (ball milled) unheated	[illegible] microns and less	Grinding destroyed capacity to cause fibrosis. At 1 mo., considerable inflammatory edema and cellular proliferation and localization of dust particles about bronchioles; at 2 mo., only a very slight proliferative reaction; at 6, 9½ and 12 mo., widely scattered small mononuclear phagocytes. At 12 mo., a few microscopic patches of thin alveolar wall thickening with some adenomatoid change in portion of air spaces abutting on thickened [illegible]. No asbestosis bodies seen.
Chrysotile (ball milled) ignited	[illegible] microns and less	Reaction limited to large foreign body giant cells without [illegible] of fibrous tissue.
Chrysotile (fibrous) unheated	20-50 microns approx.	A distinct fibrosis. Reaction localized to connective tissue about terminal bronchioles [illegible] those tubes. Contraction caused adenomatoid appearance of air spaces given off directly from terminal bronchioles. Reaction area became smaller with progress of time, no new regions involved. No chronic pleurisy even at points abutting intrapulmonary changes. At 1 mo. considerable inflammatory edema and foci of cellular proliferation; at 2 mo. well marked cellular proliferation and fibrosis occurring locally about respiratory bronchioles. The reaction [illegible] and was as advanced as that [illegible] of asbestos dust. At 6 mo., reaction less extensive than at 2 mo., apparently due to contraction of fibrous tissue; asbestosis bodies were absent. At 9½ mo., reaction still less extensive, confined to the immediate vicinity of the small terminal bronchioles, where the scar tissue was quite dense and was becoming hyaline in character. Sometimes it even obliterated the bronchiole. Asbestosis bodies had become scarce. At 12 mo., the well developed peribronchial and [illegible] adenomatoid areas of fibrosis had produced considerable distortion. More peripherally were patches of pneumonitis with mononuclear infiltration, some of which was being transformed into fibrous tissue. These seemed to be precursors of the localized [illegible] patches of thin alveolar wall fibrosis seen elsewhere.
Chrysotile (fibrous) ignited	20-50 microns approx.	Reaction limited to large foreign body giant cells without proliferation. Heating the fibers, which made them brittle, destroyed their capacity to produce significant reaction.
Serpentine (ball milled) unheated	[illegible] microns and less	Dust relatively inactive. At 1 and 2 mo., simple phagocytosis without proliferation; at [illegible] mo., no change except possibly lymphocyte infiltration; at 9½ mo., a slight chronic pneumonitis; at 12 mo., only a little pneumonitis without suggestion of fibrosis.
Serpentine (ball milled) ignited	[illegible] microns and less	Dust relatively inactive. Reaction essentially the same as for unheated serpentine. With ignited serpentine, less [illegible] for dust to be carried to lymphatic nodes