



Asbestos Epidemiology
History
Legacy

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Charing Cross Hospital London

Dr. Montague Murray Reported a Case of Fatal Lung Disease in a 33 Year old Male Textile Worker during Rounds at the Charing Cross Hospital In 1906. The patient had died in 1900.





Patient worked first 10 years in carding Asbestos. He reported he was only survivor of 10 workers he started with, who all died around 30 years of age.

ASBESTOS LUNG DISEASE




First x-ray descriptions of asbestos induced Lung disease by Pancoast & Pendergrass In the American Journal of Roentgenology And Radium Therapy - 1918.



In 1918 the Bulletin of U.S. Labor Statistics - Reports both U.S. & Canadian Insurance Companies would not insure Asbestos Workers Due to unhealthy conditions in the Industry.


Nellie Kreshaw




Dr. William Edmund Cooke names the lung disease caused by asbestos - Asbestosis - when Describing the case of this disease in a 33 year old woman named Nellie Kreshaw of Rochdale, England.

Age 12 - worked in a cotton mill
Age 13 - worked at Garsides asbestos mill
Age 26 - worker at Turner Brothers Asbestos in Spinning department
Age 33 - Died 06:30 14 March 1924

c.1891 - 14 March 1924



Dr. E.R.A. Merewether

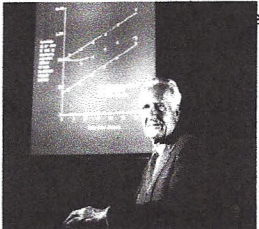


First Epidemiology Study of Asbestos Workers Conducted in the British Asbestos Textile Industry in 1930 finding 28.1 % of 374 workers with Pulmonary Fibrosis (Asbestosis) and after 20 years of exposure 80 %.

JAMA⁺ The JAMA Reported results of the Merewether & Price Epidemiology Study to American Physicians

In Factory Inspector's Report of 1948 reports excess of lung cancer in both men and women registered to have asbestosis


Sir Richard Doll



A 1955 study by Doll involved the study of the mortality experience of a cohort of 113 asbestos textile workers employed more than 20 years.

Among this group, there were 11 lung cancer deaths observed compared to only 0.8 expected, when based upon the mortality experience of England and Wales.

Over all studies the RR for lung cancer has varied from 1.0 to 17.6 with an average RR of 9.8.



Dr. J.C. Wagner

In 1960, J. C. Wagner et al. study of miners, millers, and transporters of asbestos and of non-mining residents.

33 (22 men, 11 females) cases of mesothelioma occurring between 1956 and 1960.

These cases were occurring in one part of South Africa, the northwestern portion of the Cape Province, known to have many asbestos mines. The mining in this area was mainly crocidolite asbestos.


Filters end up here where tumor develops
 Mesothelioma can account for up to 7-9% in heavily exposed cohorts. One cohort manufacturing Kent Cig. Filters had over 17% develop mesothelioma.

Dr. Thomas F. Mancusco

Carried out the first epidemiological study of asbestos Workers to identify mesothelioma.

Finding Mesothelioma, lung cancer and asbestosis in excess in an asbestos manufacturing plant in Ohio.

He identified by Death Certificate 19 lung cancers (3.4; 95% CI = 2.0-5.3); 28 asbestosis; and upon evaluation of death record found 7 mesothelioma, 25 lung cancers and 30 asbestosis cases.




Phillip-Carey Plant Loveland, OH @ 1968

Dr. Irving J. Selikoff


Was the first to conduct a large scale mortality Study of end-product users of asbestos when he Evaluated the records of asbestos union members Applying asbestos-containing products.

His study concluded that asbestos end-product Workers were at risk of asbestosis; lung cancer; Mesothelioma; and gastrointestinal cancers and That the recommend guidance limit was far too High.




OSHA Act 1970

Selikoff and others lobbied the U.S. Congress about workplace Safety and health problems and As a result the Occupational Safety and Health Act of 1970 Was passed creating OSHA & NIOSH.

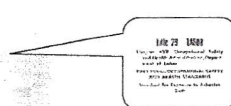


First Standard - 1972

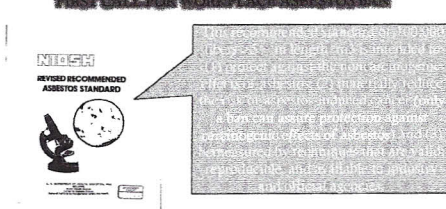
First REL by NIOSH
2 f/cc TWA



First OSHA Standard
5 f/cc TWA
automatically drops to 2f/cc July 1, 1976



HISTORICAL COMPLIANCE ASBESTOS DATA



OSHA Asbestos today is 0.1 f/cc (100,000 f > 5µ/m³)

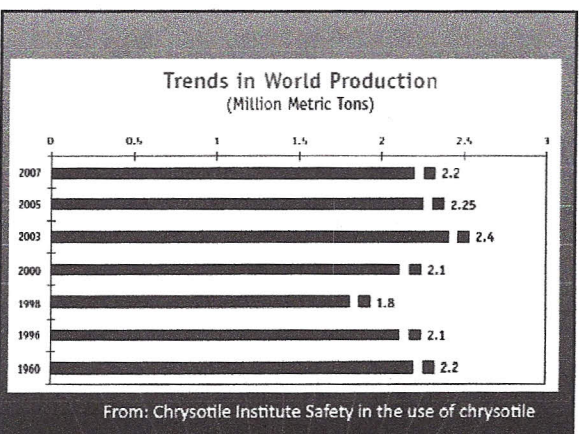
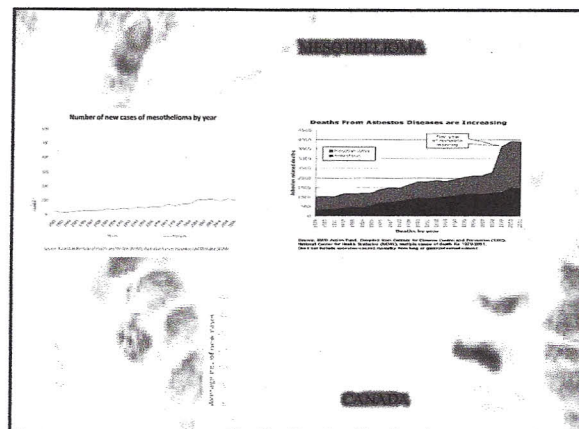
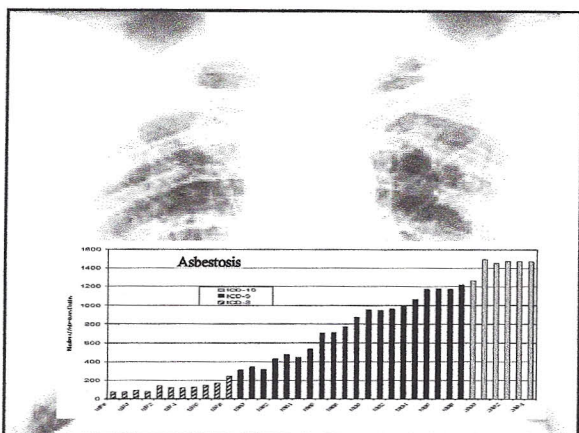
WHO Estimates (2006)*

- Worldwide ~90,000 people die annually from diseases related to occupational asbestos exposures:
 - 43,000 Mesothelioma
 - 39,000 Lung Cancer
 - 7,000 Asbestosis

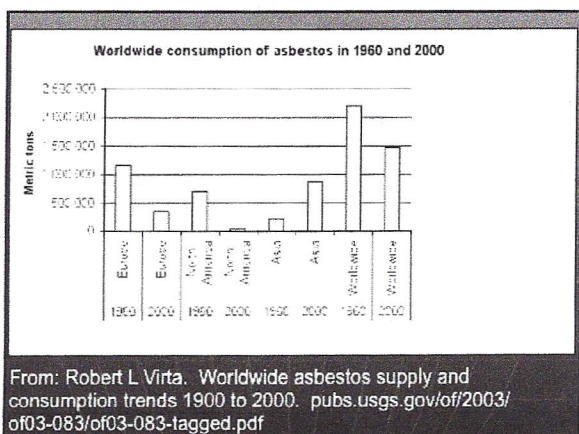
Report on the Elimination of Asbestos Related Disease

Are Asbestos Related Diseases a Pandemic?

- A pandemic is the excessive occurrence of a disease in a large portion of the world
 - H1N1 Pandemic - **14,142** Deaths worldwide (WHO 2009, Update 84)
 - Which is <<< **90,000** Asbestos related deaths
- *Note 90,000 is probably an underestimate because it doesn't include other cancers (e.g. Larynx and Ovary)




From: Chrysotile Institute Safety in the use of chrysotile




From: Robert L Virta. Worldwide asbestos supply and consumption trends 1900 to 2000. pubs.usgs.gov/of/2003/of03-083/of03-083-tagged.pdf


How to Stop an Epidemic




In the case of the great Typhoid epidemic in London of 1854 John Snow removed the pump handle to stop the source – Contaminated Water containing *Vibrio cholerae*.



How to Stop an Epidemic - Global Eradication





Smallpox
vaccinate





Key Elements
 1- Mass Vaccination
 2- Surveillance & Containment

1796 – Edward Jenner invented Smallpox Vaccine
 1950 – PAHO initiated Program to Eradicate in Western Hemisphere
 1958 – WHO initiated Global Eradication Program
 1979 – Who Announces Global Eradication of Smallpox


ASBESTOS

ITS
LEGACY
will
CONTINUE
UNLESS . . .

WE PUT ON THE BRAKES*




* Asbestos Free Of Course


Putting the BRAKES on asbestos-related disease

- Ban asbestos
- Recognize remaining sources of asbestos
- Access asbestos release from these sources
- Keep records of these sources and
- Eliminate remaining sources where asbestos can be released
- Survey patterns of asbestos-related disease

What Many Hear



There are two types of asbestos:
 One is potentially lethal
 and one is as harmless as a Cheez Doodle....
 The Cheez Doodle variety of asbestos
 is known as chrysotile. It accounts for
 95 percent of the asbestos used
 in the United States.
 And it is utterly, totally harmless."



Rush Limbaugh, TV, 9/20/93
 From: The Way Things Aren't: Rush Limbaugh's Reign of Error
 by Steve Rendall, Jim Naureckas, and Jeff Cohen

