From Canary Girls and chimney sweeps to miners, stone cutters and silo fillers, these are classic exemplars of the subtle (and in some cases not so subtle) effects that substances, environments and practices can have on individual health.

**Non-laboratory healthcare and other workers**

- In 1957 Ralid researched the incidence of TB in non-laboratory healthcare workers and found cases/1000 as follows:
  - Pathologists - 5.5
  - Chest physicians and surgeons - 4.0
  - Other medical - 0.66
  - Auxiliary Staff - 1.4
- In 2016 in France, Guemara found the incidence of TB in nurses to be 0.075/1000, similar to the general population.

**Podiatrists**

- Susceptible to hypersensitivity reactions to dust from nails resulting from the use of grinding bars.
  - Includes asthma, allergic rhinitis and conjunctivitis
  - Podiatrists have high levels of precipitating antibodies to the most common cause of nail dystrophy, Trichophyton rubrum.

**Radium Girls**

- In 1908, radium was discovered by Marie and Pierre Curie and purified as a metal in 1911.
- In 1917, the US Radium Company produced a radium-imbued paint.
- Used to paint numbers on clock and watch dials that glowed in the dark.
- In order to produce fine detail, the women undertaking this work licked their brushes.
- They developed jaw abnormalities, severe anemia, leukemia and sarcomas.
- In 1927, the valiantly affected ‘Radium Girls’ were awarded $10,000 compensation and $500 a year for medical and living expenses.

**Chimney sweeps**

- Percival Pott, a surgeon at St Bartholomew’s Hospital in London, published his findings on the high incidence of scrotal cancer in young chimney sweeps, which he attributed to contamination with soot.
- This excellent epidemiological study is considered to be the first report of a potential carcinogen.
- Pott’s work led to the foundation of occupational medicine and the 1834 Chimney Sweep Act.

**Canary Girls and Canary Babies**

- During the First World War, a shortage of munitions led in 1915 to the ‘shell crisis’.
- The Munitions of War Act 1915 brought all private armament companies under Government control.
- Four-thousand munitions companies employed over 1,000,000 women, whose conditions of work, wages and hours were strictly controlled.
- Over 300 deaths occurred as a result of the high incidence of explosions.
- Silk clothing was banned to prevent sparks from static electricity, as were metal hair clips.
- TNT manufacture involved nitric and sulphuric acids, the fumes from which turned both skin and hair yellow; thus, ‘Canary Girls’.
- Toxic poisoning was reported in 400 women, 100 of whom died.
- Pregnancy gave rise to yellow babies, ‘Canary Babies’.

**Hypersensitivity pneumonia**

- Pneumonia is an occupational disease of farmers (Farmer’s lung), compact workers and bird fanciers (Pigeon and Bird fancier’s lung).
- Farmer’s lung was first reported in 1732. In 1922, Campbell described the condition in dairy farm workers handling mouldy hay.
- Hypersensitivity pneumonia affects 0.4-0.7% of the farming community in the United States.
- In the UK, the incidence is reported to be 400-800 cases per 100,000 with a mortality rate of 0-20%.
- Owing to improvements in farming techniques, Farmer’s lung is on the decline.

**Silo filler’s disease**

- Silo fillers are at particular risk from chemical pneumonitis from exposure to oxides of nitrogen (particularly nitrous oxide) that build up within the grain silo.
- First described in 1900 it was not named.
- Large silos were first constructed in 1915 and the first fatalities associated with silo gases were recorded in 1914.
- The amount of gas produced depends on the amount of nitrate within the stored seed.
- Nitrate concentrations are found at rates of 7.5% in wheat, 5.5% in corn, 4.5% in oats, wheat, barley and rye, 2.6% in barley and 1.9% in rye.

**Miners and stone cutters**

- Miners and stone cutters have suffered over the years from pneumoconiosis and silicosis.
- Respiratory problems from breathing dust dates back to the ancient Greeks and Romans. Agricola in 1550 wrote about lung problems from dust inhalation in miners.
- These diseases have been known in history as miners’ phthisis, grinders’ asthma and potter’s rot.
- Bepanini in 1713 noted asthma-like symptoms and hard-like substances in the lungs of stone cutters.
- The pneumoconiosis drill (1897) and sandblasting (1904) led to an increase in the prevalence of silicosis.
- The UK silica dust requirements resulted in 29,000 deaths in 1910 and 25,000 deaths in 2010.
- Pneumoconiosis and silicosis have been associated with an increased risk of tuberculosis, lung cancer, and some autoimmune diseases including rheumatoid arthritis.

**Electricians and construction workers**

- Exposure to asbestos has been recognized as extremely dangerous.
- More recently, the government has attempted to tighten restrictions on asbestos.
- All asbestos types carry the risk of developing lung disease.
- In 1981, a total of 127,000 persons were reported to be suffering from asbestosis, and 3,000 had died.

**Sewer workers**

- Sewer workers are an occupation at particular risk because of the nature of the environment in which they work.
- Gastrointestinal illness is likely to be the most common risk but the serious problem historically has been infection with hepatitis B (the sewer worker form of hepatitis), resulting in serious jaundice, liver failure and death.
- Two other disease risks include hepatitis A and an allergic cholangitis.

**Was Lewis Carroll’s ‘Hatter’ Mad or Poisoned?**

- In the 19th century, mercuric nitrate was used to remove hair from the tails of animals such as rabbits.
- The hair was shaped into felt caps, then shrunk by boiling water.
- Treated felts released volatile mercury, which had a toxic effect on haters and milliners, resulting in encephalitis.
- Symptoms of encephalitis include delirium, hallucinations, irritability and excitability.

**Occupational Health: Work and Play Can Make You Sick**

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**Norie Curie was a double Nobel Laureate in Physics (1903) and Chemistry (1911).**