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**DEVELOPMENT OF SILICOSIS IN A COHORT  
OF SOUTH AFRICAN GOLD MINERS  
—RADIOLOGICAL AND AUTOPSY BASED STUDY**JILL MURRAY<sup>1,2</sup>, EVA HNIZDO<sup>3</sup>

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**Key Words** silicosis, radiology, autopsy

In this study a cohort of 2,260 South African gold miners who started mining in 1940 was followed for silicosis onset using radiological data up to 1989 and autopsy data up to 2003. The objective was to relate the age of onset of radiological silicosis to exposure pattern, and to compare radiological and autopsy findings. A first epidemiological reading of the annual chest radiographs (ILO Classification) was done in 1970 at 45-54 years of age, by an experienced reader, No. 1. A second independent reading for silicosis onset was done in 1989 by three readers, including reader No. 1. Based on reader No. 1, the number of miners with radiological signs of silicosis ILO category  $\geq 1/0$  was 149 by the year 1970 and 351 by 1989. By 2003, there were 1,464 (65%) miners who had an autopsy: 677 (46%) had no silicosis, 339 (23%) had insignificant, 204 (14%) slight, 180 (12%) moderate, and 64 (4%) marked degree of silicosis at autopsy. The study shows the development of silicosis from the start of employment up to death and its relation to exposure. The exposure-response relationship for autopsy silicosis was similar to that observed for radiological silicosis.

**南非金矿工人矽肺进展的队列研究—放射学和尸检研究**  
(作者及单位见原文)**关键词** 矽肺, 放射学, 尸检

本研究队列由 2260 名南非金矿工组成, 均为 1940 年开始采矿, 为观察矽肺的发生, X 射线检查随访资料至 1989 年, 尸检随访资料至 2003 年。本文目的是研究发生矽肺影像学改变的年龄与暴露模式的关系, 并对影像学结果与尸检结果作比较。1970 年, 一位有经验的读片者, 即第一位读片人, 对 45-54 岁的工人进行年度读片 (ILO 分类法)。为观察矽肺的发生, 1989 年进行了第二次独立阅片, 有三个读片人参与, 包括第一位。根据第一位读片人的读片结果, 按照 ILO 分类, 1970 年有 149 人矽肺影像学表现  $\geq 1/0$ , 1989 年有 351 人。至 2003 年, 有 1464 名矿工 (65%) 进行了尸检, 677 人 (46%) 无矽肺, 339 人 (23%) 无明显改变, 204 人 (14%) 有轻微改变, 180 人 (12%) 为中度改变, 64 人 (4%) 矽肺改变较严重。研究说明了工人从雇佣到死亡过程中矽肺的发展历程及其与暴露的关系。通过尸检发现矽肺的暴露反应关系与应用影像学研究矽肺所观察的暴露反应关系是相似的。





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## Abstracts 论文摘要集

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