

## ELEVENTH COLLEGIUM RAMAZZINI STATEMENT

### CALL FOR AN INTERNATIONAL BAN ON ASBESTOS: STATEMENT UPDATE

#### **RICHIESTA DI MESSA AL BANDO INTERNAZIONALE DELL'AMIANTO: AGGIORNAMENTO DELLA POSIZIONE DEL COLLEGIUM RAMAZZINI**

To eliminate the continuing burden of disease and death that is caused worldwide by exposure to asbestos, the Collegium Ramazzini calls for an immediate ban on all mining and use of asbestos. To be effective, the ban must be international in scope and must be enforced in every country in the world.

Asbestos is an occupational and environmental hazard of catastrophic proportion. Asbestos has been responsible for over 200,000 deaths in the United States, and it will cause millions more deaths worldwide. The profound tragedy of the asbestos epidemic is that all illnesses and deaths related to asbestos were entirely preventable.

Safer substitutes for asbestos exist, and they have been successfully introduced in many nations. The grave hazards of exposure to asbestos and the availability of substitute materials have led a growing number of countries to eliminate all import and use of asbestos. In the United States asbestos usage has been drastically reduced but not eliminated. By the end of 2004 national asbestos bans are scheduled to be in place in all 25 member countries of the European Union as well as Chile, Argentina, El Salvador, Uruguay, Honduras, Australia, Gabon, Seychelles, Saudi Arabia, and Kuwait. South Africa and Japan have also announced the intention to ban asbestos, and public health campaigns for asbestos bans have been under way since the 1990s in Brazil, South Korea, Vietnam and India.

#### **The Collegium Ramazzini**

The Collegium Ramazzini is an international academic society that examines critical issues in occupational and environmental medicine. The Collegium is dedicated to the prevention of disease and the promotion of health. The Collegium derives its name from Bernardino Ramazzini, the father of occupational medicine, a professor of medicine of the Universities of Modena and Padua in the late 1600s and the early 1700s. The Collegium is in-

dependent of commercial interests, comprised of some 180 physicians and scientists from 30 countries, each of whom is elected to membership.

#### **Background**

The health consequences of the use of asbestos in contemporary industrial society have been amply documented in the world scientific literature. The toll of illnesses and deaths among asbestos workers in mining, construction, and heavy industry is well known. The pioneering work of British, South African, and Italian investigators<sup>1-3</sup> laid the foundation for the definitive investigations by Irving Selikoff and his colleagues of insulation workers in the United States. Selikoff's monumental studies showed initially the greatly increased mortality experience of insulation workers<sup>4</sup>, and later, the synergistic relationship between tobacco smoking and asbestos work<sup>5</sup>. Men who were followed more than 20 years from first onset of exposure sustained excessive risks of lung cancer and mesothelioma, as well as risks of other neoplasias<sup>6</sup>. These risks affected not only asbestos workers, but their families and neighbours (from material on clothing or plant emissions), users of products that contain asbestos, and the public at large<sup>7</sup>.

Asbestos is a general term applied to naturally occurring fibrous minerals long popular for their thermal resistance, tensile strength, and acoustic insulation. Asbestos minerals are divided into two groups: serpentine and amphibole. There is only one type of serpentine asbestos, chrysotile, also known as white asbestos. It is the most commonly used form of asbestos, accounting for over 90% of worldwide use. Amphibole minerals include five asbestos species: amosite, crocidolite, tremolite, anthophyllite, and actinolite. Two of these are the most commercially valuable forms: amosite, or brown asbestos, and crocidolite, or blue asbestos. The other amphibole minerals are of lesser commercial importance.

All forms of asbestos cause asbestosis, a progressive fibrotic disease of the lungs. All can cause lung cancer, malignant mesothelioma and gastrointestinal cancers<sup>8-10</sup>. Asbestos has been declared a proven human carcinogen by the US Environmental Protection Agency (EPA) and by the International Agency for Research on Cancer of the World Health Organization (WHO)<sup>9, 11</sup>. Early indications that chrysotile might be less dangerous than other forms of asbestos have not held up<sup>10</sup>. The preponderance of scientific evidence to date demonstrates that chrysotile too causes cancer, including lung cancer and mesothe-

lioma<sup>12, 13</sup>. Canadian chrysotile that is amphibole-free still is associated with mesotheliomas<sup>14, 15</sup>.

A leading asbestos researcher, Julian Peto and his colleagues, predict that deaths from mesothelioma among men in Western Europe will increase from just over 5,000 in 1998 to about 9,000 by the year 2018. Peto and colleagues have now further documented the expected cases in Great Britain through 2050, and expect 90,000 deaths from mesothelioma, 65,000 after 2001<sup>16</sup>. In Western Europe, past asbestos exposure will cause a quarter of a million deaths from mesothelioma over the next 35 years. The number of lung cancer deaths caused by asbestos is at least equal to the number of mesotheliomas, suggesting that there will be more than a half a million asbestos cancer deaths in Western Europe over the next 35 years<sup>17</sup>. In Sweden, Jarvholm<sup>18</sup> has reported that the number of deaths caused each year by malignant mesothelioma is greater than the number of deaths caused in that country by all workplace injuries. The International Labour Organization has estimated that the annual global toll from asbestos diseases is at least 100,000<sup>19</sup>. Leigh<sup>20</sup> and LaDou<sup>21</sup> have estimated that the eventual toll of deaths from asbestos may well reach 5-10 million, not counting additional deaths caused by continuing asbestos use. The toll in most countries still using large amounts of asbestos may never be fully recorded.

An immediate international ban on the mining and use of asbestos is necessary because the risks cannot be controlled by technology or by regulation of work practices. The strictest occupational exposure limits in the world for chrysotile asbestos (0.1 f/cc) are estimated to be associated with lifetime risks of 5/1,000 for lung cancer and 2/1,000 for asbestosis<sup>22</sup>. These exposure limits, while technically achievable in the United States and in a few other highly industrialized countries, still result in unacceptable residual risk. In newly industrializing countries engaged in mining, manufacturing, and construction, asbestos exposures are often much higher, and the potential for epidemics of asbestos disease is greatly increased<sup>23, 24</sup>.

Scientists and responsible authorities in countries still allowing the use of asbestos should have no illusions that "controlled use" of asbestos may be a realistic alternative to a ban. Environmental exposure from the continued use of asbestos still is a serious problem. A recent study of women residing in communities in Canadian asbestos mining areas found a sevenfold increase in the mortality rate from pleural cancer<sup>25</sup>. Large quantities of asbestos remain as a legacy of past construction practices in many thousands of schools, homes, and commercial buildings in developed countries, and are now accumulating in thousands of communities in developing countries.

An international ban on mining and use of asbestos is necessary because country-by-country actions have shifted rather than eliminated the health risks of asbestos. The asbestos industry has had a powerful influence over many countries. Even in the United States, the asbestos industry succeeded in 1991 in overturning the EPA's recommended ban and phase-out of asbestos by a technical ruling in the courts. Canada, Russia, and other asbestos-exporting countries have developed major markets in newly industrializing nations. Canada, in particular, has tried to use its influence at a number of international scientific organizations by downplaying the dangers of chrysotile asbestos. It unsuccessfully brought a case to the World Trade Organization (WTO) to overturn national bans on asbestos<sup>26</sup>. Such industrial-sponsored attempted influence has been exerted for many years by trying to control the outcome of scientific organizations such as the WHO<sup>27</sup>. Conditions of current asbestos use in developing countries now resemble those that existed in the industrialized countries before the dangers of asbestos were widely recognized.

The commercial tactics of the asbestos industry are similar to those of the tobacco industry. In the absence of international sanctions, losses resulting from reduced cigarette consumption in the developed countries are offset by heavy selling to the Third World. In similar fashion, the developed world has responded to the asbestos health catastrophe with an enlightened ban on the use of asbestos. In response, the asbestos industry is progressively transferring its commercial activities and the health hazards to the Third World.

Multinational asbestos corporations present a deplorable history of international exploitation. These firms opened large and profitable internal and export markets in Brazil, elsewhere in South America, and in India, Thailand, Nigeria, Angola, Mexico, Uruguay, and Argentina. Brazil is now the fifth largest producer of asbestos in the world, after Russia, Canada, Kazakhstan, and China<sup>28</sup>. While asbestos use in the United States amounts to less than 20 g per person per year, asbestos use in Brazil averages more than 680 g per person per year; in Thailand the figure is 1,500 g per person per year, in Ukraine it is 1,800. *Per capita* asbestos consumption is over 2000 g annually in Russia, Kazakhstan, and Zimbabwe. In India, Kazakhstan, Zimbabwe, Algeria, and Colombia, use of asbestos has been increasing according to data through 2002<sup>28</sup>.

About 90% of global asbestos use today is in asbestos cement construction materials, mainly flat sheet corrugated roofing panels and pipes. Installation, renovation, maintenance, and demolition of these materials gives rise to very high exposures for millions of workers and members of the general public every day all over the world<sup>29</sup>.

By the time the issue of national asbestos bans was brought before the WTO, the only type of asbestos remaining in international commerce was chrysotile. WTO ruled in 2001 that national asbestos bans were justified because of the non-threshold cancer risk of asbestos exposure, the practical impossibility of “controlled use” of asbestos products in construction and the availability of safer substitute materials<sup>30</sup>. Even so, world asbestos use has levelled off at around 2 million metric tons per year over the last 5 years, and is concentrated in countries where prevention and compensation of asbestos disease are minimal.

In 2005, most asbestos products are sold by national companies, there are no longer asbestos-based multinational corporations. These companies under-price makers of safer, competitive materials by not bearing the costs of occupational and environmental illness their products are causing. These companies are a formidable threat to public health scientists who investigate asbestos hazards and seek to bring about corrective measures and raise awareness. Scientists and public officials have faced death threats and attacks on their professional career and reputations in the court and through political processes. International campaigns of support have been needed to prevent the victimization of public health workers advocating asbestos bans in Brazil and India. The corrupting influence of the asbestos interests is a worldwide threat to the goal of developing expertise and public health programmes in toxic substances control, which will be necessary to achieve more substantial economic development in every country in the new century<sup>31</sup>.

## Conclusion

Because of economic and technologic considerations, the safe use of asbestos is not practicable. With the proven availability of safer substances, there is no reason to tolerate the public health disaster arising from the production and use of asbestos. The total ban already introduced in a number of countries is spreading and should be extended worldwide.

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