

California Medical Association Nanoparticle Testing, Monitoring, and Regulation

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Resolution: 121-11

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WHEREAS, nanotechnology is a new class of materials created and manipulated on the scale of atoms and molecules with a structure that is less than 100 nanometers and which can only be seen with an electron microscope; and

WHEREAS, nanotechnology is already a rapidly growing sector of the economy with engineered nanoparticles used in a wide array of industrial, medical and household products including sunscreens, cosmetics, antibacterial products, food packaging, and health drinks; and

WHEREAS, the small size and greater surface area per mass of these particles gives them unique chemical and physical properties that can render them toxic to living systems, and nanoparticles can enter the body via inhalation, and ingestion and can cross the blood brain barrier to diffuse to all organs of the body; and

WHEREAS, in vitro and animal studies have shown some nanoparticles to adversely affect brain development, reduce neurotransmitter production, cause neuronal degeneration and cause oxidative stress, and have shown inhaled carbon nanotubes to act similar to asbestos with persistence in the lung and pleural granuloma formation; and

WHEREAS, nanoparticles are now found in wastewater that is recycled and in sewage sludge placed on agricultural lands with significant concern for ecotoxicity; and

WHEREAS, Canada in 2010 joined several other countries banning nanotechnology as a prohibited substance or method in organic food production; and

WHEREAS, there is inadequate data on toxicology of these diverse particles, lack of exposure data and biomonitoring as well as a lack of adequate regulation as defined by a comprehensive 2011 report by the Office of Environmental Health Hazard Assessment Cal/EPA and the University of California San Francisco; therefore be it

RESOLVED: That CMA recognize both the benefits and the potential risks to public health and the environment from the widespread use of nanoparticles; and be it further

RESOLVED: That CMA endorse responsible regulation of existing or new nanoparticles prior to their introduction in industrial or consumer products, such as, but not limited to, standardized research, toxicological testing, biomonitoring and product labeling; and be it further

RESOLVED: That this matter be referred for national action.