

Priority agents for future *IARC Monographs*

An Advisory Group of 14 scientists from nine countries met in June 2008 to recommend topics for evaluation in future *IARC Monographs*. IARC periodically convenes such Advisory Groups to ensure that new *Monographs* reflect current research and public health priorities. The Advisory Group considered responses to a Call for Nominations on IARC's website plus additional outstanding topics.

The Advisory Group recommended several agents for evaluation with high priority.

- Acetaldehyde.** A chemical intermediate and food-flavouring agent, acetaldehyde derived from ethanol metabolism contributes to causing oesophageal cancer.
- Acrylamide, furan.** Previously evaluated as industrial chemicals that cause cancer in animals, acrylamide and furan have been found in common cooked foods.
- Asphalt/bitumen.** Inhalation exposure occurs when these hydrocarbon residues are heated for use in paving.
- Carbon-based nanoparticles.** Nanomaterials have been introduced into many consumer products and medical and industrial processes. Animal studies suggest that carbon nanotubes can act like asbestos and induce irreversible lung fibrosis and mesothelioma.
- Crystalline fibres other than asbestos.** Asbestiform minerals appear to be associated with mesothelioma clusters in people not exposed to asbestos. Ceramic fibres that become crystalline when heated may act similarly.
- Growth hormone.** This pituitary hormone is used to increase muscle mass; bovine growth hormone, to increase cows' milk production. Experimental studies suggest that growth hormone may influence tumour development at several sites.
- Iron and iron oxides.** Some cancers may be linked to iron overload and oxidative stress.
- Malaria.** The parasites that cause malaria infect several hundred million people and have been associated with Burkitt lymphoma in African children and perhaps other cancers.
- Motor vehicle emissions (includes diesel, gasoline, biofuel exhausts).** More results will soon be published on these mixtures that include many known and suspected carcinogens.
- Nucleoside-analogue antiviral drugs.** Used against HIV, some of these drugs are carcinogenic in animals.
- Outdoor air pollution (includes sulfur oxides, nitrogen oxides, ozone, dusts).** This is a high priority in an ongoing series of *Monographs* on air pollution.
- Perfluorooctanoic acid (PFOA) and other perfluorinated compounds.** These persistent compounds are used to manufacture stick-resistant cookware and stain- and water-resistant fabrics. PFOA induces cancer at several sites in animals.
- Polyomaviruses (SV40, BK, JC, Merkel cell virus).** Hundreds of millions of people worldwide were infected with SV40 as a contaminant of live poliovirus vaccine. Some studies suggest associations with various human cancers.
- Radiofrequency electromagnetic fields and radar (includes mobile telephones).** Use of mobile telephones is nearly universal in many countries and pooled results of a large multi-centric study are being prepared for publication.
- Sedentary work.** Increasing numbers of workers are engaged in sedentary work, which is linked with physical inactivity, energy imbalance, and obesity. These factors have been associated with various cancers and IARC will determine how to focus a *Monograph* appropriately.
- Statins.** These widely prescribed drugs have cancer-preventive and cancer-causing effects in animals; meta-analyses of human studies show somewhat mixed results.
- Stress.** Numerous studies associate stress with cancer and many papers discuss reducing stress through workplace modification. IARC will consult experts to determine how to proceed with a *Monograph* on this complex topic.
- Testosterone and other androgenic steroids.** Commonly prescribed for older men and some women, androgenic (anabolic) steroids are also abused and have been associated with various human cancers.
- Ultrafine particles.** Cancer concerns arise from the core particles and the chemicals that adhere to their surfaces. Physical chemistry and dosimetry issues overlap those of combustion by-products and nanoparticles.
- Welding.** New workplace studies support earlier cancer findings and suggest additional cancer sites.

Agents recently tested in experimental animals. Many widely used chemicals shown recently to cause cancer in experimental animals were recommended for evaluation in the same *Monographs* volume.

The Advisory Group also recommended several agents for evaluation with medium priority.

Artificial sweeteners

Atrazine

Di(2-ethylhexyl)phthalate (DEHP) and other phthalates

Dyes metabolized to 3,3'-dimethylbenzidine or 3,3'-dimethoxybenzidine

Herbs and alternative medicines

2-Mercaptobenzothiazole

Metalworking fluids and lubricants

Methotrexate and anti-tumour necrosis factor antibody therapy

Methyl *tert*-butyl ether (MTBE) and other fuel additives

***N*-nitrosamines with widespread exposure (e.g. *N*-nitroso-*n*-propylamine)**

Polybrominated biphenyls (PBBs)

Polybrominated diphenyl ethers (PBDEs)

Polychlorinated biphenyls (PCBs)

Primidone

Salicylazosulfapyridine

Styrene

Trichloroethylene (TCE) and other chlorinated solvents

In addition, IARC may schedule other agents for review in response to new scientific information or an urgent public health need.