



## Research Update

### Urban anglers encouraged to eat their catch

Most Montrealers regard fish from the St. Lawrence River as unfit for consumption because of chemical pollution. But a study shows that anglers who catch and eat fish in the Montreal area — even the 2% to 5% of consumers who eat sportfish 3 or more times a week — do not have excessive tissue levels of toxic chemicals.

An estimated 4000 to 10 000 residents catch and eat perch, pike, wall-eye (also known as pickerel and doré) and other species from locations in the vicinity of the Island of Montreal. Recently, under the auspices of the St-Laurent Vision 2000, the Montreal Regional Public Health Program (MRPHP) and McGill University, researchers investigated the intake of contaminants by local anglers (*Environ Res* 1999;80[2 pt 2]:S150-8). A summary of the findings of the full report, *Risks and Benefits Related to Consumption of St. Lawrence River Sport Fish*, was released in February.

Although a host of pollutants become concentrated in fish, the provincial advisories on sportfish consumption are specifically developed to limit exposure to methylmercury, the contaminant in fish most likely to reach levels affecting human health. “Many St. Lawrence fishers exceed the dietary

recommendations in the fish advisories, but they rarely exceed the Health Canada tolerable levels for mercury in blood,” says Tom Kosatsky, the MRPHP epidemiologist who led the study. He notes that the Health Canada blood guideline corresponds to an exposure that is approximately one-fifth of the dose associated with the first neurological signs of methylmercury poisoning.

The MRPHP study recruited 192 anglers from a pool of 1654 individuals who could be characterized as either high or low consumers of St. Lawrence River sportfish. Participants provided urine, hair and blood samples for analysis of mercury, lead, arsenic, polychlorinated biphenyls (PCBs) and selected organochlorine pesticides.

Although all exposures were far below toxic levels, the study team found that one angler exceeded Health Canada’s tolerable population level for blood mercury, 8 anglers exceeded the level for plasma Aroclor 1260 (PCB) and 12 exceeded the level for blood lead. Blood mercury levels correlated well with recent fish consumption, but in the case of PCBs, the researchers found that age — and thus long-term PCB ingestion — was a more impor-



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tant determinant of plasma concentrations than current sportfish consumption. The elevated blood lead concentrations among high sportfish consumers were surprising, as lead levels in fish are low. The researchers suggest that, since many of the high sportfish consumers also hunt, the elevated lead levels may be the result of eating game birds containing lead shot.

The study also measured lipid levels, and did not find any cardiovascular health benefits resulting from increased sportfish consumption. However, nutritional calculations showed that sportfish contribute significant quantities of protein, calcium, iron and vitamin B<sub>12</sub> to the diets of high consumers.

Although contaminant levels in St. Lawrence fish have declined over the last 30 years, methylmercury concentrations are still high, particularly in predatory species such as pike and walleye. “You shouldn’t eat sportfish 3 times a day,” concludes Kosatsky. “But if a person is eating sportfish 2 or 3 times per week and wants to know whether to continue, as a physician I’d say to go ahead.” — *Deborah Schoen*

#### Research news . . .

##### Clue to anticancer properties of green tea

Researchers have found that a component of green tea prevents the growth of new blood vessels in animals (*Nature* 1999;398:381). Hence, green tea may act to prevent angiogenesis, the creation of blood vessels that feed new tumours. Previous studies have linked consumption of tea with a lower incidence of cancer in humans.

##### “Fetal origins hypothesis” contested

It has been widely believed that poor nutrition in the womb leads to high blood pressure later in life (the “fetal origins hypothesis”). But a new study from New Zealand shows that twins, who have a lower mean birth weight, tend to have lower blood pressure later in life than singletons (*BMJ* 1999;318:897). In fact, birth weight has a very small effect on blood pressure. However, smoking during pregnancy reduces birth weight and increases blood pressure later in life.