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Magnitude and sources of methylmercury exposure among recreational anglers in coastal Louisiana

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Background: The goal of this study was to characterize mercury exposure among recreational anglers in coastal Louisiana. While the average US population consumes relatively few fish species, recreational anglers may consume a wide variety of species at a comparatively higher frequency. In addition to their unique exposure pattern, anglers are a useful group to study because of their expert knowledge of the source and types of fish they eat.

Methodology: In summer-fall of 2006, 402 recreational anglers were recruited in coastal Louisiana. Anglers completed a survey detailing their species-specific fish consumption and describing the people with whom they share their catch. Hair samples were collected and analyzed for total mercury using US EPA Method 7473.

Results: Anglers' median hair mercury concentration was 0.81 mcg/g (range: 0.1-10.7 mcg/g). Calculated mercury intake (mcg/day), based on existing species-specific concentration data, was a significant predictor of hair mercury concentration (beta=0.015, $p<0.0001$). For this population of anglers, we estimate that more than 60% of mercury intake resulted from consumption of locally caught fish. 40% of participants reported sharing their catch with young children or women of childbearing age.

Implications: Recreational anglers in coastal Louisiana have a mercury exposure pattern that is different in amount and source from the general population, and mercury intake rates may exceed levels currently considered safe. This study provides new insight into the impact of specific fish species on anglers' mercury exposures, and identifies sensitive subpopulations that may be exposed by sharing anglers' catch.