Household detergents, shampoos may form harmful substance in waste water

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Scientists are reporting evidence that certain ingredients in shampoo, detergents and other household cleaning agents may be a source of precursor materials for formation of a suspected cancer-causing contaminant in water supplies that receive water from sewage treatment plants. The study sheds new light on possible environmental sources of

this poorly understood water contaminant, called NDMA, which is of ongoing concern to health officials. Their study is in ACS' *Environmental Science & Technology*.

William Mitch and colleagues note that scientists have known that NDMA and other nitrosamines can form in small amounts during the disinfection of wastewater and water with chloramine.

Although nitrosamines are found in a wide variety of sources — including processed meats and tobacco smoke — scientists know little about their precursors in water. Past studies with cosmetics have found that substances called quaternary amines, which are also ingredients in household cleaning agents, may play a role in the formation of nitrosamines.

Their laboratory research showed that when mixed with chloramine, some household cleaning products — including shampoo, dishwashing detergent and laundry detergent - formed NDMA. The report notes that sewage treatment plants may remove some of quaternary amines that form NDMA. However, quaternary amines are used in such large quantities that some still may persist and have a potentially harmful effect in the effluents from sewage treatment plants.

More information: "Quaternary Amines As Nitrosamine Precursors: A Role for Consumer Products?", *Environmental Science & Technology*.

Provided by American Chemical Society