Some drugs may remain potent long after expiration dates

By ACSH Staff — October 9, 2012

When it comes to perishable food items, consumers often rely on expiration dates to determine when a product will spoil. But does the same rule of thumb hold for labeled expiration dates on medications? Not necessarily, according to a new study [1] published in the *Archives of Internal Medicine*, which shows that drugs actually stay potent long after the printed expiration date.

Researchers from the California Poison Control System at the University of California San Francisco School of Pharmacy studied eight medications that had expired 28 to 40 years prior to analysis and had not been previously opened. Three tablets or capsules of each drug were analyzed, and the results showed that 12 of the 14 active ingredients in each medication tested were found in concentrations at least 90 percent of the labeled amounts, which is recognized as the minimum level of acceptable potency. The only medications tested whose efficacy had dropped below the 90 percent level were aspirin andamphetamine.

Typical drug expiration dates range from one to five years after their production, but the FDA does not require drug makers to determine how long after that date medications may remain potent. The federal Shelf-Life Extension Program does, however, check long-term stability of federal drug stockpiles and has previously extended expiration dates by more than a year. Based on these analyses and their own research, the authors support broadly extending expiration dates for many drugs.

ACSH’s Dr. Josh Bloom generally agrees and points out that most medications found in solid (pill or capsule) form remain unchanged long past their expiration date, but this is not the case with liquid medications, since they are much more likely to spoil and lose potency. One exception to this guideline is tetracycline, which can decompose even in the solid state, forming a toxic byproduct. He continues, This is not carte blanche to start firing down all kinds of expired pills, but given the cost of drugs, this study is a good start to identifying old medicines that are OK to take yet are being thrown away for no good reason.
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