Are expired medications OK to take?

By ACSH Staff — August 27, 2014

Today’s Wall Street Journal examines an age-old question [1]: What does the expiration date on a drug mean? Is it safe to take drugs after this date? Do they still work?

The Journal piece gives some general guidelines most of which are correct but there is information that is not included, says ACSH’s Dr. Josh Bloom, and what is not there is probably more interesting.

The take home messages from the WSJ piece are:

1. Most medicines are safe and effective beyond their expiration date a very conservative number, usually one year.
2. Liquids are much more likely to decompose than solids, so the expiration dates for solutions and liquid suspensions should be taken seriously.
3. A strong smell is an indicator that something has gone wrong.

Dr. Bloom says, Number three is not necessarily true. For example, the antibiotic amoxicillin has an awful, sulfur-like smell. This is a property of the drug itself not an indication that there is anything wrong. Another example is aspirin. We have been told forever that when aspirin decomposes, it smells like vinegar. This is true one of the breakdown products of aspirin is acetic acid (vinegar). Even the slightest decomposition of aspirin will give this smell, even though the aspirin may still be 99+% pure.

Perhaps the most helpful information about this comes from a former colleague of Dr. Bloom, whose specialty is quality control and drug stability. He provides information that is somewhat different, and more detailed than the WSJ article:

1. By far, most drugs are extremely stable, especially in capsule and tablet form. Many of them will remain unchanged for dozens (hundreds?) of years.
2. There is one important exception to this: antibiotics, especially those in the penicillin, cephalosporin and tetracycline classes. These should not be used beyond the expiration
date, since they can decompose and become inactivated even in a solid form.

3. The FDA is very conservative with expiration dates. They are usually not based on real life, but rather worst case scenarios.

4. The conditions that the drugs are subjected to during stability testing are much harsher than anything the drug will encounter under normal conditions.

5. The worst enemies of drug stability are light and moisture. Even solid pills can be affected by these.

Dr. Bloom says, Keep in mind that I am not recommending that people ignore expiration dates. However, while I would toss out old antibiotics, I would have no concern with taking a ten-year old Lipitor pill. This is something that non-chemists would not be expected to know, so playing it safe is not a terrible idea, even though most of the time safe is really overly-safe.