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Debunking Medical Myths: Using Some Pharmaceutical Drugs After The Expiry Date

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USING SOME PHARMACEUTICAL DRUGS AFTER THE EXPIRY DATE

Rx

The expiration date is the final date that that the manufacturer guarantees the full potency and safety of a medication. A medication's expiration date assures that the drug has not lost its potency until the stated date. However, does this mean that the drug has a decrease in its efficacy and is dangerous?

1 SOLID DOSAGE FORMS ARE MORE STABLE

Researchers have investigated several variables that affect drug stability. A study performed in 2019 found that solid dosage drugs, i.e tablet or pill form, have the longest shelf life when compared to liquid dosage forms.

2 RX DRUGS GENERALLY HAVE LONGER THAN LISTED SHELF LIFE

Based on testing and stability assessment, 88% of the lots were extended at least 1 year beyond their original expiration date for an average extension of 66 months, but the additional stability period was highly variable. Based on testing and stability assessment, 88% of the lots were extended at least 1 year beyond their original expiration date for an average extension of 66 months, but the additional stability period was highly variable.

3 RX DRUGS LAST LONGER IN IDEAL STORAGE CONDITIONS

The FDA Shelf Life extension program (SLEP) has found that 88% of 122 different drugs stored under ideal conditions should have their expiration dates extended more than 1 year, with an average extension of 66 months, and a maximum extension of 278 months.

4 PHARMACEUTICAL MANUFACTURERS BENEFIT FROM SHORT EXPIRY DATES

Hospitals, governments, and pharmacies keep stockpiles of drugs for emergency use and as supplies for sales. There are financial benefits for pharmaceutical companies if these stockpiles must be replenished frequently. This is why expiration dates should be independently verified by third-party sources. Disposal of still viable medications for the financial gain of pharmaceutical conglomerates, while some countries go without access to medications, is immoral and unacceptable.
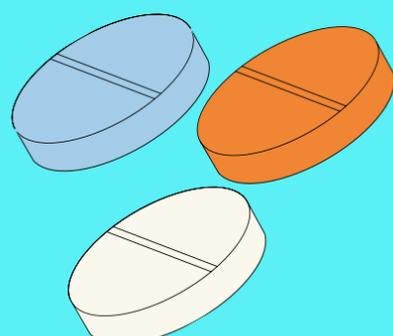
5 CURRENT LEGISLATION IS OUTDATED

A law passed in 1979 is currently what mandates that drug expiry dates be put on all medications. However, the dates are simply the time period that the MANUFACTURER can guarantee potency. Next steps should be to update policies so that expiration dates align with current scientific evidence of shelf life and not with the profit driven motives of pharmaceutical companies.

CALL TO ACTION

When stored in appropriate conditions, most pharmaceutical drugs are safe to use for **at least one year longer** than their provided expiration date. Expired drugs often have diminished function but over-the-counter medications rarely have any deleterious effects.

New legislation needs to be passed that requires pharmaceutical companies to provide expiration dates which reflect the drugs function and stability, rather than the guarantees of the company. A recommended solution to this issue could be to set a preliminary expiration date and update them based on results of ongoing long term trials.

Citations:
Gikonyo D, Gikonyo A, Luvayo D, Ponoth P. Drug expiry debate: the myth and the reality. Afr Health Sci. 2019;19(3):2737-2739. doi:10.4314/ahs.v19i3.49

Lyon RC, Taylor JS, Porter DA, Prasanna HR, Hussain AS. Stability profiles of drug products extended beyond labeled expiration dates. *J Pharm Sci*. 2006;95(7):1549-1560. doi:10.1002/jps.20636

Zilker M, Sörgel F, Holzgrabe U. A systematic review of the stability of finished pharmaceutical products and drug substances beyond their labeled expiry dates. *J Pharm Biomed Anal*. 2019;166:222-235. doi:10.1016/j.jpba.2019.01.016