Therapeutic Use of Drugs

The effect in which a drug exerts is directed toward one of three goals: to prevent, diagnose, or treat a disease or condition. A drug’s effect can also be altered by an interaction with other drugs or foods taken at the same time.

A **systemic effect** is something that is felt throughout the entire body. Drugs taken orally usually exert a system effect. Other routes for systemic effects are subcutaneously, intramuscularly, or intravenously. The same drug given by different routes can exert either a local or a systemic effect.

A **therapeutic effect** is the drug’s main action for which it was prescribed by the physician. Side effects can be mild and temporary, moderate and annoying, or severe enough that the patient must stop taking the drug. Sometimes the therapeutic effect is actually one of the side effects of the drug. No drug is entirely safe and without potential side effects and risks. Any time you are putting something into your body that is considered foreign, there is a potential for your body to take a second look and reject it. Once a drug is approved by the FDA, its advertisements, informational literature, prescribing information, and package inserts must list the drug’s side effects.

Another name for side effects is **adverse effects**. The FDA can remove a drug from the market even after it has been approved, if there are reports of severe adverse effects. Adverse drug reactions account for 1.5 million hospitalizations each year which equates out to about 4,000 every day. As many as 100,000 Americans die each year as a result of an adverse drug reaction.

When a **toxic effect** happens it is because the serum level of a drug rises above the therapeutic level to a higher level that is toxic. It is not uncommon to see toxic symptoms, particularly in elderly patients whose liver and kidneys are less able to metabolize and excrete drugs. Patients who take drugs known to frequently cause toxic effects are scheduled for blood tests to monitor the drug level as well as other laboratory tests to monitor the function of particular organs that might be affected.

An **allergic reaction** is a type of side effect that differs from other side effects because of its specific underlying cause which is the release of histamine. Histamine produces mild-to-severe allergic symptoms, depending on the amount released. The most severe symptoms of allergic reaction are collectively known as anaphylaxis or anaphylactic shock.

**Idiosyncratic reactions** are a type of drug reaction that is not a side effect and is not based on an allergic reaction. It is based on the individual’s unique reaction to a drug, and it differs from side effects commonly associated with that drug.

Food, even though we need it to survive, can cause interactions. Grapefruit juice may turn into toxic effects if you are taking certain drugs. It blocks an enzyme in the intestine that normally breaks down part of a drug dose before it even enters the blood and this can result in a toxic level of the drug. So, some of your favorite foods may actually hurt you if you’re not careful.
Remember to always ask your healthcare provider for guidance on anything you don’t understand. Pay attention to any warning labels on over the counter drugs as well as any precautions that the pharmacy may discuss with you. It’s better to be safe than sorry.

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