

# 4 Surprising Things That Can Affect Your Medications

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**You won't believe these everyday factors that can impact the effectiveness of common medications.**

You've consulted with your doctor, filled your prescription, and carefully read the instructions about taking the medication safely. Now all you need to do is remember to swallow that pill every day, and you're set, right? Not so fast.

Many things can affect the way your body responds to a certain drug from your age and body weight to what you ate for breakfast. Read on to learn some surprising factors that may impact how your body absorbs, metabolizes, and transports medicines.

## **1. What's the Deal with Grapefruit Juice?**

This bittersweet fruit and its juice is packed with good-for-you vitamin C and fiber, but it can have potentially dangerous interactions with some common prescription drugs.

Many drugs are broken down and absorbed in the small intestine by an enzyme called CYP3A4. Grapefruit contains compounds called furanocoumarins, which block the functioning of this vital enzyme. As a result, more of the drug enters your bloodstream and lingers in your body, which can lead to toxic levels of the drug in your system. Common drugs that interact with grapefruit this way include cholesterol-lowering statins, some anti-anxiety drugs, and blood pressure medications.

For some other drugs, grapefruit can have the opposite effect by blocking the work of special membrane proteins known as drug transporters. Found in various tissues such as the intestine, liver, kidney, and central nervous system, these transporter proteins help deliver drugs into cells for absorption. In a study of an antihistamine used to fight allergies, researchers found that an active ingredient called naringin in grapefruit juice blocks a key drug transporter needed to shuttle the medicine from the small intestine to the bloodstream. By reducing the amount of drug absorbed in the body, the medicine's effectiveness is decreased.

## **2. But Kale Is So Good for You**

Kale, spinach, and leafy greens are high in vitamin K, which plays an important role in your body's natural blood clotting process.

But many heart patients on a common blood thinner need to monitor their vitamin K intake, because the two work against one another. Common blood thinners often work by reducing the ability of your liver to use vitamin K to make blood-clotting proteins—thus preventing blood clots or keeping a clot from getting bigger. A sudden increase in vitamin K in your diet, however, may reduce the effectiveness of the drug, and increase your risk of blood clot formation.

## **3. Once A Day Isn't One Time Fits All**

While your pill bottle may say take once daily, for many drugs there is an ideal time of day to take it based on your body's natural rhythms and cycles.

In an emerging field called chronotherapy, experts say taking drugs at the right time can maximize its benefits and lower the risk of side effects. Patients with rheumatoid arthritis, for example, often experience the most joint pain and stiffness in the morning. With this autoimmune disease, the body's immune system—specifically its T-cells—attack joint tissues and cause inflammation. Recent studies have found that these cells have their own biological clock, peaking in the morning. Thus taking anti-inflammatory drugs at night can help reduce stiffness in the morning.

## **4. What Is, or Isn't, in Your Stomach?**

Some medicines need to be taken on an empty stomach or at least two hours after your latest meal. Many of these drugs may need the acid in your stomach in order to be metabolized properly and are not absorbed in the bloodstream adequately if there is food present. Other medicines may interact with certain nutrients in foods so you're better off taking them without any food.

On the flip side, some medicines may upset your stomach and taking them with food can reduce this effect. Non-steroid anti-inflammatory drugs, like ibuprofen, are best taken with food, because these drugs inhibit the body's production of prostaglandins, a group of fatty acids in the gut that protect the stomach lining from its own

acid. When anti-inflammatories are taken regularly without food they can lead to stomach irritation.

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