

In 2013, the Mayo Clinic released a study revealing that 70% of Americans were prescribed at least one prescription medication in the previous year, 50% were prescribed two or more medications, 20% took five or more different drugs. Furthermore, “the percentage of people who took at least one prescription drug in the past month increased from 44 percent in 1999-2000 to 48 percent in 2007-2008.”¹ [The reasons for this increase in prescription drug use are multiple and complex, representing factors such as the increased availability of effective medications, an aging population, and a growing willingness to seek treatment for historically stigmatized or under-recognized conditions such as depression and ADHD. In fact, antidepressants represented a full 13% of annual prescriptions and use of ADHD medications have increased by 53% between 2008 and 2012.](#)²

As reliance on prescription pharmaceuticals for the treatment of both long and short-term medical conditions grows, so too does the need for vigilance regarding accurate prescription and drug use practices. With the advent of internet and mobile technologies, a number of drug information websites and apps have been developed to give patients the information they need to understand and identify prescription medications. Although pharmaceutical companies have long understood the importance of color in [shaping perception and facilitating adherence](#), these websites and apps are making accurate drug color more important than ever.

Drug Color as a Safety Mechanism

Drug color acts as one of the most simple and widely-used pharmaceutical safeguards; unique colors can be used to [protect against counterfeiting](#), color changes can act as a symptom of [degradation, potency change, or contamination](#), and different dosages of the same drug can be given discrete hues to help clinicians and patients discriminate between strengths. In the past, however, patients have typically had no basis for which to compare the medication they have received with the standard appearance of a drug. Even long-term users who have become accustomed to the color of a particular medication often don't know what to look for if they are given a version of the medication from a different manufacturer or if the pharmaceutical company has made design changes since their last prescription. As such, one of the most important features of drug information websites and apps is the inclusion of full color, up-to-date photographs that allow patients to see what their medication is supposed to look like, potentially alerting them to incorrectly prescribed or dispensed, contaminated, or counterfeit drugs.

Drug Identification

Color can also play a vital role in identifying unknown drugs. While it is best to keep medications in the labeled containers in which they were dispensed, in practice many people transfer medications to different containers such as calendarized pill organizers. If a patient is taking multiple medications, it can be easy to forget which drug is which in the absence of correlating written information, interfering with their ability to [adhere to prescribed use](#), particularly if there are changes to their usage instructions. Many of the most popular drug information websites and apps, such as WebMD, Drugs.com, Healthline, and RxList, have drug identification tools that allow users to search for medications using only drug color, shape, and imprint information. The ability to identify these medications can be critical to protecting patient health and guarding against incorrect drug use.

Monitoring Drug Color

As drug color takes on ever-growing importance in correct medication use practices, the monitoring of color during the pharmaceutical manufacturing process becomes more vital than ever before. Spectrophotometric instrumentation offers the most precise, accurate, and economical method of monitoring a broad range of pharmaceutical variables, enhancing all aspects of drug production. While spectral analysis plays a central role in monitoring drug quality by giving operators the ability to determine chemical composition and verify [quality parameters such as batch concentration](#), spectral data is also essential for monitoring visual

appearance to ensure that the drug looks the way patients expect and closely matches the images displayed by drug information websites and apps. In-process spectrophotometric color measurement allows drug manufacturers to monitor product color at each stage of the production process, instantly alerting operators to color variation that falls outside of your chosen tolerance range. As such, inaccurately pigmented pharmaceuticals can be easily quarantined and process malfunction can be quickly identified to prevent the release of unsuitably pigmented medications that may cause confusion or misuse. Not only can this help you realize significant cost savings, it also augments your ability to protect patient health and safety.

Full article with photos available here:

<https://www.hunterlab.com/blog/color-pharmaceuticals/why-spectrophotometric-technology-for-drug-color-is-more-important-than-ever-before/>