

The concentration of three anti-seizure medications in hair: the effects of hair color, controlling for dose and age

## ABSTRACT

The data suggests that hair color is not influenced by carbamazepine concentration and therefore does not appear to be affected. Valproic acid concentration may be slightly linked to hair colour, which could be impacted by age. There is also a significant, moderate relationship between phenytoin concentrations and hair dyeing, with darker hair having higher concentration values than those with lighter hair.

## INTRODUCTION

This article is an introduction to the study of hair color. The author Human hair has been used extensively in a range of settings to test for the presence of ingested chemical substances, including being used to determine the level of exposure to heavy metals post-mortem or during living hours. Other areas have seen significant progress in recovering illicit psychoactive substances and their metabolites from human hair. The enhanced ability to detect and quantify routine drug use enables hair analysis to serve as a valuable diagnostic tool in clinical trials of anti-eizure drugs. There is a debate about whether hair analysis can accurately measure the presence or absence of compounds, with some suggesting that it cannot be applied to all patients. There is a lack of clarity regarding the extensive biovariability that can be observed among individuals given the same medication. Clinicians acknowledge that multiple factors can affect drug concentrations in an analytic matrix, and they recognize that hair samples can provide valuable information about possible effects caused by color differences, cosmetic treatments, or hair hygiene practices. However, there are still concerns about whether systematic influences can influence drug dosages and compliance with self-reported drugs. A common flaw in the analysis of hair assay data is the inadequacy of the statistical models used to assess experimental information, which can lead to false claims or conclusions based on unsupported statistical data. In some cases, the analyses of experimental hair analysis data reveal that these conclusions are far from correct. Nor have any available sophisticated and sensitive statistical techniques been applied to multivariate phenomena. Despite this, there is a general consensus that the relationship between dose and assync is likely to be mediated by complex series of intervening events.

## CONCLUSION

Remarkable conclusions The assessment of the recovery of CBZ, VPA, and PHT compounds from hair samples indicates that hair color affects drug type significantly, with some effects only slightly different.