



Gene Splash

Genes and Codeine: What is the connection ?

Ever care for a patient who did not respond to a 'usual' dose of codeine, hydrocodone, or oxycodone?



We all have enzymes in our liver that convert these medications to the active pain reliever (ie) codeine to morphine.

Some people inherit a mutant gene that results in too little or no enzyme production.

Approximately 5-10% of people inherit 2 enzyme-deficient genes and **CAN NOT CONVERT** codeine to morphine and receive NO pain relief from codeine or codeine-derivative drugs.

Clinical implication: Switch to morphine and morphine-derivative drugs.

Ever had a patient who exhibited signs of toxicity with normal codeine, hydrocodone or oxycodone dosing?

Other people inherit additional gene copies so they have TOO MUCH enzyme and may experience exaggerated codeine toxicity with respiratory depression etc.

Clinical implication: "One size fits all" dosing may not be appropriate.

Clinical Relevance

- Remember that genetic variability can significantly influence pain relief and side effects
- For patients who are not responding to standard dosing, it is more effective to explore other potential reasons for this rather than making judgments about patient's continued report of pain