





Avera Institute for Human Genetics

- Assessment prior to elective surgery
- Guides perioperative pain management
- Available for psychotropic meds & **AEDs**

Result Comment:

This patient is predicted to be a CYP2D6 intermediate (reduced) metabolizer and may be at risk for insufficient pain relief. The medications listed in the Use Caution category undergo metabolism through CYP2D6 to an active metabolite which contributes to analgesia. See alternative medication options listed in the Use as Directed column.

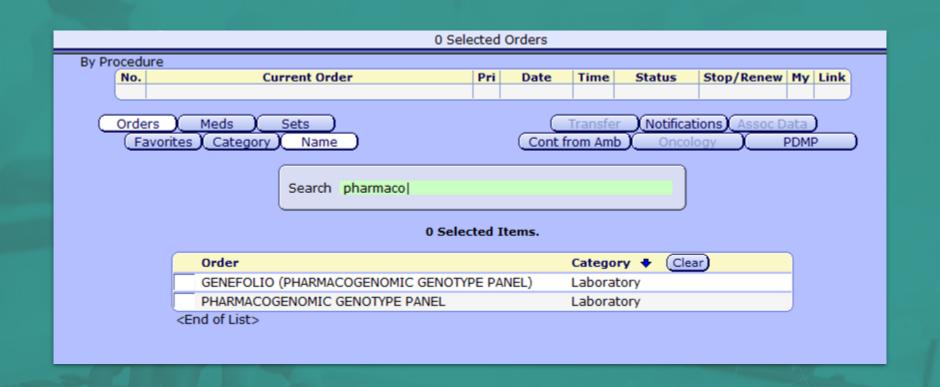
USE AS DIRECTED hydromorphone morphine

oxymorphone tapentadol

USE CAUTION

codeine hydrocodone oxycodone tramadol

The patient is predicted to be a CYP2C9 extensive (normal) metabolizer. Proceed with NSAID options per clinical parameters.



Thank you for the opportunity to participate in your patient's care through this pharmacogenomic report. Please note that if any of the medications that the patient is currently taking change, this report could be altered significantly and should be recalculated. Please feel free to contact the Avera Institute for Human Genetics Personalized Medicine Laboratory at (605) 322-3050 with any pharmacogenomic interaction questions on current or future medications.

Current Medications (10/19/17)

amlodipine	\
aspirin	\
calcium carbonate	\
cholecalciferol	1
estrogen (topical)	1
levothyroxine	\
metoprolol	\
Preservision AREDS®	\

✓	Minimal or No Drug-Drug-Gene Interaction: Use as Directed	
İ	Moderate Drug-Drug-Gene Interaction: Use with Caution	
#	Significant Drug-Drug-Gene Interaction: Use with Increased Caution and with More Frequent Monitoring	
?	Drug-Drug-Gene Interaction Not Studied	

Pain Medications

Acetaminophen

Minimal or No Drug-Drug-Gene Interaction1

Opioids

Minimal or No Drug-Drug-Gene Moderate Drug-Drug-Gene Significant Drug-Drug-Gene			
Moderate Drug-Drug-Gene	Significant Drug-Drug-Gene		
Interaction	Interaction		
	Moderate Drug-Drug-Gene Interaction		

Driving Down Costs

2009

Avera launches genetic testing

Cost per test: \$1700

Time to result: I week

2017

Avera announces GeneFolio, a personal genetic test

Cost per test: \$179

Time to result: 24 hours

The reduction in testing costs has allowed us to integrate genetic testing into EHR workflow and develop care pathways.

