



On the Frontier of Personalized Medicine

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Avera 



About Avera

- South Dakota and surrounding areas of Minnesota, Iowa, Nebraska and North Dakota
- 33 hospitals, 1000 providers
- 208 primary and specialty care clinics
- 40 senior living facilities
- Home care and hospice, sports and wellness facilities, home medical equipment outlets, and more

About Avera

- Patient population of roughly 1 million over 72,000 square miles (86 counties)
- World-class telemedicine program
- Expert care in over 60 specialties
- 17,500 employees
- 2.5B annual revenue



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.

0 Selected Orders

By Procedure

No.	Current Order	Pri	Date	Time	Status	Stop/Renew	My	Link

Orders

Meds

Sets

Transfer

Notifications

Assoc Data

Favorites

Category

Name

Cont from Amb

Oncology

PDMP

Search

0 Selected Items.

Order	Category	Clear
GENEFOLIO (PHARMACOGENOMIC GENOTYPE PANEL)	Laboratory	
PHARMACOGENOMIC GENOTYPE PANEL	Laboratory	

<End of List>

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	✓
estrogen (topical)	✓
levothyroxine	✓
metoprolol	✓
Preservision AREDS®	✓

✓	Minimal or No Drug-Drug-Gene Interaction: Use as Directed
!	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 Interaction	Moderate Drug-Drug-Gene Interaction	Significant Drug-Drug-Gene Interaction
alfentanil ²		
buprenorphine ²		
butorphanol ³		
codeine ⁴		
fentanyl ²		
hydrocodone ⁵		
hydromorphone ³		
levorphanol ³		
meperidine ³		
methadone ⁶		
morphine ⁷		

Driving Down Costs

2009

Avera launches genetic testing
Cost per test: \$1700
Time to result: 1 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.



**Thank
you**

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