Guide to Using This Report

Welcome to your Pillcheck report! It shows how your DNA affects your response to many prescription medications. Your report can help determine safer, more effective medications and dosages to fit your unique genetic profile. It can also provide peace of mind that medications you're currently taking are the right ones for you.

There are three parts to your Pillcheck results:

1. **Summary of Your Test** - for you to review
2. **Information for Specialists** - for healthcare providers
3. **Pharmacist Opinion Letter** - take this to your doctor to discuss (available now as a separate document in your account)

How to use the Summary of Your Test

The colour-coded summary of your Pillcheck shows your predicted risk for all medications included on the test. These are key medical facts about you that should be considered by your doctor. Use it to check prescriptions you're taking now, and for any new medication being considered in the future. The summary shows which medications may be right for you, and which ones should be used with extra caution.

You may not recognize the names of the drugs in your report because they are 'generic' drug names. If you check the label of your prescriptions, you should be able to find the generic name and then find it in the report.

Meaning of the symbols in your report

Normal drug metabolism and response. No additional dose adjustment needed.

Altered drug metabolism. Can affect clinical response, may require dose adjustment or increased monitoring.

Substantially altered drug metabolism. Requires physicians to adjust dose or consider alternative medications.

Uncertain activity requires caution in drug use. A rare or indeterminate combination of genetic markers is present.

What to do with your Pillcheck Results

- Bring a copy of your Pharmacist Opinion Letter to your doctor or pharmacist (either print or bring on a mobile device).
- Discuss your Pillcheck results with your doctor to improve efficacy and safety of your treatment plan.
- Since your genetic make-up doesn't change, be sure to consult your Pillcheck Report whenever you are prescribed new medications.
- You can grant your doctor/pharmacist online access to your full Pillcheck report by sending us your provider's name, email, phone, and fax numbers.

You or your provider can contact us at support@pillcheck.com, 1-877-409-3629, or contact the pharmacist listed on your Pharmacist Opinion Letter if you have any questions about your Pillcheck. More information for healthcare providers can be found at www.pillcheck.ca/providers.

Other Notes

- It's possible that your report will indicate there are no issues with any of the medications you're taking (for example, they're all in the Green category), yet you may still feel you are having issues. There may be other factors involved in how you respond to medications (such as your medical condition, age, liver and kidney function, etc.). Your doctor is the best person to discuss this with.
- Although Pillcheck is a comprehensive pharmacogenetic test, not all medications are listed on the report, even ones you may currently be taking. This is because not all drugs can be assessed by pharmacogenetics or there is not enough clinical information yet to report on certain medications.
- We'll update your report as new information on medications become available. We'll contact you by email to let you know when your report is updated.

DO NOT CHANGE ANY MEDICATIONS OR DOSAGE PRIOR TO CONSULTING YOUR PHYSICIAN OR PHARMACIST, WHO SHOULD DETERMINE AN APPROPRIATE DOSE. Please note, this report is intended for educational purposes only and does not constitute medical advice.

Sample ID: TEST_SAMPLE
Report Date: Jan 23, 2020 10:10 AM

Summary of Your Test

TREATMENT AREA	USE WITH INCREASED CAUTION - CONSIDER ALTERNATIVES	USE WITH CAUTION - MORE FREQUENT MONITORING	USE AS DIRECTED - STANDARD PRECAUTION
Analgesics	Codeine Fentanyl Hydrocodone Hydromorphone Methadone Morphine Naloxone Naltrexone Oxycodone Piroxicam Tenoxicam Tramadol and acetaminophen	Celecoxib Flurbiprofen Ibuprofen Ketamine Lornoxicam Meloxicam Propofol	Diclofenac Lofexidine Naproxen
Antibacterial		Telithromycin	
Antiemetics		Aprepitant Dronabinol Fosaprepitant	Dolasetron Meclizine Ondansetron Palonosetron Tropisetron
Antifungals		Itraconazole Voriconazole	Terbinafine
Antiviral		Atazanavir Boceprevir Daclatasvir Dolutegravir Efavirenz Fosamprenavir Nevirapine Peginterferon Alpha-2b Simeprevir Telaprevir	Elbasvir and grazoprevir Ledipasvir and sofosbuvir Ombitasvir, paritaprevir and ritonavir Sofosbuvir Sofosbuvir and velpatasvir

Information for Specialists

Customer Genetic Profile

Marker	Value
ADRB2	GA
CYP1A2	*1A/*1F
CYP2B6	*1/*2
CYP2C19	*1/*17
CYP2C8	*1A/*3
CYP2C9	*1/*3
CYP2D6 CYP2D6CNV	*1/*1 2N
CYP3A4	*1/*6
CYP3A5	*1A/*3A
DPYD	*1/*2A

Marker	Value
F2	GA
F5	CC
IFNL3	TC
OPRM1	GG
SLCO1B1	*1A/*5
TPMT	*1/*2
UGT1A1	*1/*6
UGT2B15	CA
VKORC1	GA

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Technology used in the testing process

Gene	Alleles Tested
ADRB2	rs1042713 A/G
CYP1A2	*1E, *1F, *1J, *1K, *6, *7, *8, *15
CYP2B6	*2, *5, *6, *7, *8, *13, *16, *22, *34
CYP2C19	*2, *3, *4, *6, *8, *10, *17
CYP2C8	*2, *3, *4
CYP2C9	*2, *3, *8, *9, *11, *12, *27
CYP2D6	*3, *4, *5, *6, *7, *10, *17, *29, *41, *64, *69
CYP3A4	*1B, *3, *6, *11, *12, *16, *17, *18, *19, *22
CYP3A5	*2, *3A, *3B, *6
DPYD	*2A, *4, *5, *6, *9A, rs67376798A
F2	rs1799963 A/G
F5	rs6025 C/T
IFNL3	rs12979860 C/T
OPRM1	A118G
SLCO1B1	*1B, *5, *9, *15, *31
TPMT	*2, *3A, *8
UGT1A1	*6, *27, *80
UGT2B15	rs1902023 A/C
VKORC1	c.-1639G>T

Technology: Genotyping was performed using the Applied Biosystems™ QuantStudio™ platform and this report is powered by GeneYouIn Pillcheck technology.

Limitations: This test will not detect all known mutations that result in altered gene activity. *1 or wild-type alleles are reported by default if those listed were not detected. IND values are conservatively assigned to alleles that could not be determined with complete certainty. Only listed mutations are tested for and absence of a detected mutation does not rule out the possibility of sensitivity to a specific drug due to the presence of other mutations or other environmental factors.

Additional genetic testing by sequencing might uncover other functional variations that the individual may carry that also affect the medication response, but were not detected in this analysis.

FDA Monograph

Acenocoumarol

General Information

Acenocoumarol is an oral anticoagulant drug that blocks the synthesis of vitamin K dependent coagulation factors II, VII, IX and X. Acenocoumarol is a drug that decreases blood clotting. It is used to treat thrombosis and pulmonary embolism.

Indications for Genetic Testing

Adverse side effects include intracranial bleeding. Acenocoumarol efficacy and risk are determined by variations in the Vitamin K receptor and CYP2C9 genes.

CAUTION: Do not change any medications or dosage prior to consulting your physician or pharmacist, who should determine an appropriate dose.

Recommendations

Reduced drug clearance and reduced Vitamin K levels. The risk of bleeding may be increased due to slower drug clearance; consider starting treatment at a low dose and check INR more frequently. Monitor blood coagulation (INR) when initiating or discontinuing medications that may interact with acenocoumarol.

Functional Consequences

Biomarker	Value	Interpretation
CYP2C9	*1/*3	Intermediate metabolizer
VKORC1	GA	Reduced Vitamin K

Additional Information

Refer to full drug monograph for additional information.

Disclaimer

Additional genetic testing by sequencing might uncover other functional variations that you may carry that also affect the medication response, but were not detected in this analysis.

If you are already taking a medication listed in this report, we encourage you to revisit the drug safety information sheet provided by your pharmacist, as well as other educational resources on drug and food interactions.

Reference: http://www.ncbi.nlm.nih.gov/pubmed/21412232

Alirocumab

General Information

Alirocumab is a PCSK9 (Proprotein Convertase Subtilisin Kexin Type 9) inhibitor antibody indicated as an adjunct to diet and maximally tolerated statin therapy for the treatment of adults with heterozygous familial hypercholesterolemia or clinical atherosclerotic cardiovascular disease, who require additional lowering of LDL-cholesterol. Alirocumab is prescribed to adult patients with primary hypercholesterolemia (non-familial and heterozygous familial) or mixed dyslipidemia.

Indications for Genetic Testing

Variations in the SLCO1B1 gene can indicate the risk of statin-induced myopathy.

CAUTION: Do not change any medications or dosage prior to consulting your physician or pharmacist, who should determine an appropriate dose.

Recommendations

The variation you carry in the SLCO1B1 gene indicates that you have intermediate myopathy risk with statins. Consider low dose statin therapy (not simvastatin or atorvastatin); if symptoms of myopathy persist, consider switching to PCSK9 inhibitors.

Functional Consequences

Biomarker	Value	Interpretation
SLCO1B1	*1A/*5	Intermediate metabolizer

Additional Information

Population pharmacokinetic analysis indicated that weight, gender, race and creatinine clearance do not significantly influence alirocumab pharmacokinetics; however, alirocumab has not been studied in pediatric patients. As monoclonal antibodies are not known to be eliminated via renal pathways, renal function is not expected to impact the pharmacokinetics of alirocumab.

Disclaimer

Additional genetic testing by sequencing might uncover other functional variations that you may carry that also affect the medication response, but were not detected in this analysis.

If you are already taking a medication listed in this report, we encourage you to revisit the drug safety information sheet provided by your pharmacist, as well as other educational resources on drug and food interactions.

Reference: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5055560/

Avatrombopag

General Information

Avatrombopag is an oral thrombopoietin receptor agonist approved for the treatment of thrombocytopenia in adult patients with chronic liver disease who are scheduled to undergo a procedure.

Indications for Genetic Testing

The risk for thrombosis should be considered in patients with risk factors for thromboembolism, including genetic prothrombotic conditions such as Factor V Leiden (F5), Prothrombin 20210A (F2), Antithrombin deficiency (SERPINC1) or Protein C (PROC) or S (PROS1) deficiency. Also, avatrombopag is metabolized via CYP2C9 and CYP3A4; CYP2C9 poor and intermediate metabolizers may have an increased exposure to the drug.

CAUTION: Do not change any medications or dosage prior to consulting your physician or pharmacist, who should determine an appropriate dose.

Recommendations

Reduced drug clearance is anticipated. Carrier of Prothrombin 20210A-patient is at increased risk of thrombosis. Consider the potentially increased thrombotic risk when administering avatrombopag to patients with known risk factors for thromboembolism.

Functional Consequences

Biomarker	Value	Interpretation
CYP2C9	*1/*3	Intermediate metabolizer
F2	GA	Heterozygous carrier
F5	CC	Non-carrier

Additional Information

Avatrombopag is associated with thrombotic and thromboembolic complications in patients with chronic liver disease. Avatrombopag should not be administered to patients with chronic liver disease in an attempt to normalize platelet counts.

Disclaimer

Additional genetic testing by sequencing might uncover other functional variations that you may carry that also affect the medication response, but were not detected in this analysis.

If you are already taking a medication listed in this report, we encourage you to revisit the drug safety information sheet provided by your pharmacist, as well as other educational resources on drug and food interactions.

Reference: https://www.accessdata.fda.gov/drugsatfda_docs/label/2019/210238s002lbl.pdf