



Are you on Antidepressants?

IN MEDICINE,
ONE SIZE DOES
NOT FIT ALL.
TWO PEOPLE
WHO TAKE
THE SAME
ANTIDEPRESSANT
MEDICATION
MAY HAVE
VERY
DIFFERENT
RESPONSES.

Environment, diet, age, lifestyle and state of health can all influence a person's response to medicines, however strong evidence now suggests that genetic factors play an important role.

The response to antidepressant treatment requires 4-6 weeks of daily medication. Moreover, the average drug has only a 60-70% positive response. It would therefore be highly desirable to match you to your most compatible antidepressant prior to initiation of therapy and to avoid exposing you to a long period of trial and error.

A genetic test called DNAdose can identify gene variants that may effect the way you respond to antidepressants.

WHAT IS DNAdose?

DNAdose identifies specific genetic variations in genes that code two enzymes: Cytochrome P450 2D6 (CYP2D6) and Cytochrome P450 2C19 (CYP2C19).

Many medications used to treat depression are metabolised or cleared from your body as a result of these enzymes. Your genes are the main factor determining the activity of these enzymes in your liver – if you have too much of the enzyme (known as an ultra-rapid metaboliser) you will process the medication too quickly, too little of the enzyme (known as a poor metaboliser) and the medication builds up in your bloodstream, potentially causing adverse reactions or side effects.

HOW SIGNIFICANT ARE THESE VARIATIONS?

Approximately 10% of the population are poor metabolisers and will be unable to clear certain antidepressants efficiently. Approximately 1% of the population are ultra-rapid metabolisers and process the drugs at a much faster rate, receiving little or no benefit from the medication.

BENEFITS OF DNAdose

- Better, safer drugs the first time.
 - Doctors will be able to prescribe the best available drug therapy from the beginning. This will speed up the recovery and increase safety as the likelihood of adverse reactions is reduced.
- Testing need only be done once in a lifetime.
 - It can be done before the patient even gets ill. Clinicians can keep the DNAdose report in the patient's medical records for future reference.

POPULATION FREQUENCY OF CYTOCHROME P450 (CYP450) ULTRA-RAPID METABOLISERS

	Poor (little or no enzyme activity)	Intermediate (reduced enzyme activity)	Extensive (normal enzyme activity)	Ultra-Rapid (high enzyme activity)
CYP2D6	10%	35%	48%	1%
CYP2C19	3-21%	24-36%	79-97%	18%

focused on you



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WHAT DRUGS ARE METABOLISED BY CYP2D6?

The CYP2D6 gene affects 25% of drugs in clinical use. Below is a list of medications metabolised or cleared from your body as a result of CYP2D6.

DRUGS METABOLISED BY CYP2D6

Antidepressants	Amitriptyline, Clomipramine, Duloxetine, Fluoxetine, Fluvoxamine, Imipramine, Paroxetine, Venlafaxine
Antipsychotics	Aripiprazole, Chlorpromazine, Haloperidol, Risperidone, Thioridazine
Beta Blockers	Carvedilol, Metoprolol, Propafenone, Timolol
Others	Atomoxetine, Codeine, Dextromethorphan, Flecainide, Mexiletine, Ondansetron, Tamoxifen, Tramadol

In addition, some medications (including some antidepressants), can interfere with and inhibit the metabolism of other CYP2D6 processed drugs and result in adverse side effects or lowered therapeutic benefit.

Providing services since 1936, Healthscope Pathology is part of Healthscope Ltd., a publicly listed company that employs over 18,000 people throughout Australia, New Zealand, Singapore and Malaysia.

Healthscope has purpose built, state-of-the-art service and molecular research laboratories which ensure the highest standard of testing.

Below is a list of medications that inhibit CYP2D6 activity.

DRUGS THAT INHIBIT CYP2D6

Amiodarone, Bupropion, Cimetidine, Duloxetine, Fluoxetine, Paroxetine, Quinidine, Sertraline and Terbinafine.

WHAT DRUGS ARE METABOLISED BY CYP2C19?

The CYP2C19 gene affects 15% of drugs in clinical use. Below is a list of medications metabolised or cleared from your body as a result of CYP2C19.

DRUGS METABOLISED BY CYP2C19

Antidepressants	Amitriptyline, Citalopram, Clomipramine, Escitalopram, Moclobemide, Sertraline
Proton Pump Inhibitors	Lansoprazole, Omeprazole, Pantoprazole, Rabeprazole
Antiepileptics	Diazepam, Phenobarbitone, Phenytoin

In addition, some medications can interfere with or 'inhibit' the metabolism of 2C19-processed drugs and result in adverse side effects or lowered therapeutic benefit.

DRUGS THAT INHIBIT CYP2C19

Fluoxetine, Fluvoxamine, Ketoconazole, Lansoprazole, Omeprazole and Ticlopidine.

WHAT SHOULD I DO NOW?

Discuss DNAdose with your doctor to see whether this test is right for you.

All pharmacogenetic test results are interpreted and reported by clinical geneticists at GenesFX Health. The GenesFX Health scientific advisory board comprises clinicians, geneticists, pharmacists and clinical pharmacologists.

More information can be found at www.genesfx.com.au

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healthscopepathology.com.au

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