



Is Tamoxifen an effective treatment for you?

SOME WOMEN WITH BREAST CANCER MAY NOT RECEIVE THE FULL MEDICAL BENEFIT FROM TAKING TAMOXIFEN DUE TO THEIR UNIQUE GENETIC MAKE-UP.

Some women have been shown to have a genetic variant that reduces the effectiveness of Tamoxifen.

HOW DOES TAMOXIFEN WORK ON BREAST CANCER?

Oestrogen promotes the growth of breast cancer cells. Tamoxifen works against the effects of oestrogen on these cells and so it is often called an 'anti-oestrogen'. As a treatment for breast cancer, the drug slows or stops the growth of cancer cells that are present in the body.

As adjuvant therapy, Tamoxifen helps prevent the original breast cancer from returning and also helps prevent the development of new cancers in the other breast. Tamoxifen is only effective if the body can properly convert it to its active form.

A small percentage of women carry a genetic variation that prevents this conversion.

WHAT IS TAMOXIFEN PredictAR?

Tamoxifen PredictAR can tell whether Tamoxifen is likely to be an effective treatment for you. It identifies specific genetic variations in a gene called cytochrome P450 2D6 (CYP2D6) and determines whether your body can fully convert Tamoxifen to its active form.

If Tamoxifen PredictAR indicates that you are a 'CYP2D6 poor metaboliser' studies show that you may not receive the full medical benefit from taking Tamoxifen.

WHO SHOULD BE TESTED FOR TAMOXIFEN PredictAR?

Tamoxifen PredictAR is considered appropriate for postmenopausal women who are taking or considering taking Tamoxifen to prevent the recurrence of breast cancer. It is especially important if the patient is also taking or considering co-administration with antidepressants.

At present Tamoxifen PredictAR may not be appropriate for:

- Women who are pre or perimenopausal. Because there are no hormonal treatments that are equally as effective as Tamoxifen for these women.
- Women with hormone-negative cancers. Tamoxifen is only recommended as a treatment for hormone positive cancers.

WHAT IS THE IMPORTANCE OF TESTING IF PRESCRIBED ANTIDEPRESSANTS?

'Hot flashes' are a common side effect of Tamoxifen treatment and may be treated with antidepressants, some of which interfere with the body's ability to convert Tamoxifen. As a result, taking these medications can reduce your ability to convert Tamoxifen to its active form and receive the full benefit your treatment.



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BENEFITS OF TAMOXIFEN

PredictAR?

- Better, safer drugs the first time.
Your doctor will be able to determine your ability to convert Tamoxifen and decide on the most effective treatment option for you. This will ensure that you receive the full benefit from your treatment and reduce your risk of relapse.
- Testing need only be done once in a lifetime.
Clinicians can keep your Tamoxifen PredictAR report in your medical records for future reference. The CYP2D6 gene is involved in the metabolism of many drugs, including some over-the-counter medications. Knowing your genetic status may be useful to you in the future, should you be prescribed or consider taking other medications that are processed by CYP2D6.

THE CYP2D6 GENE

The CYP2D6 gene affects 25% of drugs in clinical use. Tamoxifen PredictAR identifies specific genetic variations in genes that code for CYP2D6.

The following is a list of medications metabolised or cleared from your body as a result of CYP2D6. Your genes are the main factor determining the activity of CYP2D6 in your liver. If you have too much of CYP2D6 (known as an ultra-rapid metaboliser) you will process the medication too quickly. Too little of CYP2D6 (known as a poor metaboliser) and the medication builds up in your bloodstream, potentially causing adverse reactions or side effects. The medications on the opposite panel are strongly affected by CYP2D6 gene variations, according to current research.

DRUGS METABOLISED BY CYP2D6

Beta Blockers	S-metoprolol, Timolol
Antidepressants	Amitriptyline, Clomipramine, Desipramine, Duloxetine, Imipramine, Paroxetine
Pain Medications	Codeine, Tramadol
Others	Dextromethorphan, Flecainide, Metoclopramide, Ondansetron, Tamoxifen

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. 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 SHOULD I DO NOW?

Discuss Tamoxifen PredictAR 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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HAP-1068-W-001 (06/10)
Clinical Laboratories Pty Ltd ABN 62 006 823 089