

# NutraHacker

Depression Side Effects Report for Customer: 16b3a1d2-1cc8-4b35-972c-b83fceb0a109

## Instructions:

This report analyzes polymorphisms that have been found to indicate side effects correlated with antidepressant treatments.

NOTICE: NutraHacker reports are for scientific, educational and nutritional information only and are not intended to diagnose, cure, treat or prevent any disease, disorder or condition. Consult your doctor before beginning any treatment.

## Definitions:

MDD - Major Depressive Disorder

HAM-D (or HDRS) - Hamilton Rating Score for Depression. The higher the score the more severe the depression.

MADRS - Montgomery-Asberg Depression Rating Scale. The higher the score the more severe the depression.

CDRS-R - Childrens Depression Rating Scale-Revised. Scale for depression in minors, the higher the score the more severe the depression.

Remission - resolution of the symptoms of depression

Response - a 50% reduction in the symptoms of depression

SSRI - Selective serotonin reuptake inhibitor

SNRI - Serotonin-norepinephrine reuptake inhibitor

NRI - Norepinephrine reuptake inhibitor

TCA - Tricyclic antidepressant

TeCA - Tetracyclic antidepressant

ECT - Electroconvulsive therapy

tDCS - Transcranial direct current stimulation

rTMS - Repetitive transcranial magnetic stimulation

PSD/TSD - Partial/Total sleep deprivation

Thank you for using NutraHacker. To your health!

Gender of customer: Male

rsID	Gene	Variant	Risk Allele	Your Genotype	Class	Treatment	Side Effects	Risk	Publication Highlight	Citation
rs2129785/ rs11867581	5HTTLPR	L/S	S	SS	SSRI	citalopram, escitalopram, fluoxetine, paroxetine, sertraline	mania	Increased	There was an association of the short (s) variant of 5-HTTLPR and AIM [risk ratio (RR) = 1.35, 95% confidence interval (CI): 1.04-1.76, p=0.02]. There was a higher frequency of s carriers (sl and ss genotypes) in those who developed AIM [RR = 1.38, 95% CI: 0.98-1.93], p=0.06].	Ref #1
rs2129785/ rs11867581	5HTTLPR	L/S	S	SS	SSRI	paroxetine	discontinuation	Increased	Among paroxetine-treated subjects, S allele carriers experienced more severe adverse events during the course of the study, achieved significantly lower final daily doses, and had more discontinuations at days 14, 21, 28, 42, and 49.	Ref #2
rs2129785/ rs11867581	5HTTLPR	L/S	LL	SS	TeCA	mirtazapine	discontinuation	Decreased	Surprisingly, among mirtazapine-treated subjects, S allele carriers had fewer discontinuations due to adverse events, experienced less severe adverse events, and achieved higher final daily doses.	Ref #3
rs2129785/ rs11867581	5HTTLPR	L/S	S	SS	SSRI	citalopram, escitalopram, fluoxetine, paroxetine, sertraline	discontinuation	Increased	With regard to the HTTLPR polymorphism, patients predominantly on HTT-blocking antidepressants with the s/s genotype suffered more frequently from side effects (50.0%) than heterozygotes (40.0%) and homozygotes for the l-allele (0%) (p = 0.002).	Ref #4
rs2129785/ rs11867581	5HTTLPR	L/S	SS	SS	SSRI	fluoxetine	insomnia, agitation	Increased	Of nine subjects homozygous for the "S" allele, seven (78%) developed new or worsening insomnia, versus 6 of 27 (22%) non-"S"-homozygous subjects (Fisher's exact p = .005). Similarly, six of nine subjects homozygous for the "S" allele (67%) developed agitation, versus 2 of 27 (7%) of non-"S"-homozygous subjects (Fisher's exact p = .001).	Ref #5
rs6311	HTR2A	G-1438A	C	CT	SSRI	escitalopram	decreased sexual desire	Increased	Diminished sexual desire was experienced significantly more by high-expressing genotypes in the serotonin transporter, 1A, or 2A receptors.	Ref #6

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rs6311	HTR2A	G-1438A	C	CT	SSRI	escitalopram	decreased attention	Increased	Individuals with high-transcription variants in the receptors 5-HTR2A rs6311 and 5-HTR1B rs11568817 had greater reductions in attention with SSRI treatment compared to placebo	Ref #7
rs6311	HTR2A	G-1438A	CC	CT	SSRI	citalopram, escitalopram, fluoxetine, paroxetine, sertraline	sexual dysfunction	Decreased	After controlling for age, gender, anxiety scale scores, and depression scale scores, persons with a GG genotype of the 5HT2A -1438 single nucleotide polymorphisms (SNP) were significantly more likely to be categorized as having sexual dysfunction than persons with a GA or AA genotype (OR=3.6; 95% CI 1.03, 12.6; p=0.046).	Ref #8
rs6311	HTR2A	A-1438G	C	CT	SSRI	fluvoxamine	gastrointestinal distress	Increased	Cox regression analysis showed that lower metabolizers (LMs) of CYP2D6 with the G/G genotype of the 5-HT2A A-1438G polymorphism had a 4.242-fold (P = 0.009) and LMs with the A/G genotype had a 4.147-fold (P = 0.004) higher risk of developing gastrointestinal side effects than normal metabolizers with the A/A genotype.	Ref #9
rs6311	HTR2A	-1438G/G	CC	CT	SSRI	paroxetine	nausea	Decreased	The -1438G/G genotype of HTR2A was associated with a good response to SSRIs (p = 0.010-0.039), especially to fluvoxamine, and significantly with severe nausea in paroxetine-treated patients (p = 0.013).	Ref #10
rs6313	HTR2A	102 T/C	G	AG	SSRI	paroxetine	discontinuation	Increased	Survival analysis showed discontinuations due to paroxetine-induced side effects were strongly associated with the HTR2A C/C genotype. There was a significant linear relationship between the number of C alleles and the probability of discontinuation. Side effect severity in paroxetine-treated patients with the C/C genotype was also greater.	Ref #11

rsID	Gene	Variant	Risk Allele	Your Genotype	Class	Treatment	Side Effects	Risk	Publication Highlight	Citation
rs2032583	ABCB1	N/A	A	AG	SSRI	citalopram, paroxetine, amitriptyline, venlafaxine	insomnia, gastrointestinal distress, sexual dysfunction	Increased	We found a significant association between the number of SSRI-related adverse drug effects and rs2032583 (P=0.001), rs2235040 (P=0.002) and a haplotype (P=0.002). Moreover, serotonergic effects (sleeplessness, gastrointestinal complaints and sexual effects) were significantly predicted by these variants	Ref #12
rs2235040	ABCB1	N/A	C	CT	SSRI	citalopram, paroxetine, amitriptyline, venlafaxine	insomnia, gastrointestinal distress, sexual dysfunction	Increased	We found a significant association between the number of SSRI-related adverse drug effects and rs2032583 (P=0.001), rs2235040 (P=0.002) and a haplotype (P=0.002). Moreover, serotonergic effects (sleeplessness, gastrointestinal complaints and sexual effects) were significantly predicted by these variants	Ref #13
rs1045642	ABCB1	3435C>T	AA	GG	TCA	nortriptyline, amitriptyline	postural hypotension	Decreased	Our results suggest that homozygosity for 3435T alleles of ABCB1 is a risk factor for occurrence of nortriptyline-induced postural hypotension (OR = 1.37, P = 0.042, 95% CI 1.01-1.86).	Ref #14
rs1176744	5HTR3B	Tyr129Ser	AA	AC	SSRI	paroxetine	nausea	Decreased	The Tyr129Ser polymorphism of the HTR3B gene had a significant effect on the incidence of nausea (P=0.038). Logistic regression analysis also showed that patients with the Tyr/Tyr genotype had a 3.95-fold (P=0.048) higher risk of developing nausea than patients with the Ser allele.	Ref #16
rs6295	HTR1A	N/A	CC	CG	SSRI	escitalopram	gastrointestinal distress	Decreased	The HTR1A is widely distributed in the enteric nervous system making it plausible that the rs6295 polymorphism low expressing genotype (CC) is linked to diarrhea from SSRIs.	Ref #17
rs11568817	HTR1B	T-161G	C	AC	SSRI	escitalopram	decreased attention	Increased	Individuals with high-transcription variants in the receptors 5-HTR2A rs6311 and 5-HTR1B rs11568817 had greater reductions in attention with SSRI treatment compared to placebo	Ref #18

rsID	Gene	Variant	Risk Allele	Your Genotype	Class	Treatment	Side Effects	Risk	Publication Highlight	Citation
rs6265	BDNF	Val66Met	CC	CT	SSRI	fluoxetine	insomnia, decreased sexual desire	Decreased	Insomnia and decreased sexual desire, side effects of fluoxetine, may have an association with the BDNF Val66Met polymorphism, and Met allele carriers showed a lower incidence of these side effects.	Ref #20
rs4680	COMT	Val158Met	AG	GG	SSRI	citalopram, escitalopram, fluoxetine, paroxetine, sertraline	weight gain	Decreased	The AG genotype of catechol-O-methyltransferase rs4680 and the AA genotype of TPH1 rs18532 were significantly associated with bodyweight gain during antidepressive treatment, when adjusted for age and sex.	Ref #21
rs1801260	CLOCK	3111 T/C	GG	AA	SSRI	paroxetine, fluvoxamine	insomnia	Decreased	We observed a significantly higher presence of insomnia throughout the trial in homozygotes for the C variant (P = 0.026).	Ref #23
rs5443	GNB3	C825T	C	CC	TCA	nortriptyline	insomnia	Increased	The TT genotype was significantly associated with a superior response to nortriptyline and these effects were specific to improvements in neurovegetative symptoms. In addition, the same genotype predicted fewer incidents of treatment-emergent insomnia and greater weight gain on the same drug.	Ref #25
rs5443	GNB3	C825T	TT	CC	TCA	nortriptyline	weight gain	Decreased	The TT genotype was significantly associated with a superior response to nortriptyline and these effects were specific to improvements in neurovegetative symptoms. In addition, the same genotype predicted fewer incidents of treatment-emergent insomnia and greater weight gain on the same drug.	Ref #26

rsID	Gene	Variant	Risk Allele	Your Genotype	Class	Treatment	Side Effects	Risk	Publication Highlight	Citation
rs1323423	GRIN3A	N/A	C	TT	SSRI	citalopram	erectile dysfunction	Decreased	Table 2 shows results from the set-based test for association between the included genes and presence of ED. GRIN3A was associated with difficulty achieving erection (experiment-wise permuted $p < 0.05$ for rs1323427, rs1323423, and rs2050641) and met the threshold for further examination.	Ref #27
rs513216	GRIK2	N/A	T	CC	SSRI	citalopram	decreased sexual desire	Decreased	For the three top SNPs in GRIK2, risk of decreased libido was 30 to 40 greater among those with the risk allele, and for GRIA3, risk was 20 to 30 greater.	Ref #29
rs550640	GRIA3A	N/A	C	TT	SSRI	citalopram	decreased sexual desire	Decreased	For the three top SNPs in GRIK2, risk of decreased libido was 30 to 40 greater among those with the risk allele, and for GRIA3, risk was 20 to 30 greater.	Ref #33
rs1864205	GRIA1	N/A	C	CT	SSRI	citalopram	orgasm difficulty	Increased	Overall, odds of difficulty with orgasm were ~40-50 percent greater among those with the risk allele.	Ref #36

#### References:

- #1: <http://www.ncbi.nlm.nih.gov/pubmed/21040287>
- #2: <http://www.ncbi.nlm.nih.gov/pubmed/15520364>
- #3: <http://www.ncbi.nlm.nih.gov/pubmed/15520364>
- #4: <http://www.ncbi.nlm.nih.gov/pubmed/16515395>
- #5: <http://www.ncbi.nlm.nih.gov/pubmed/14573314>
- #6: <http://www.ncbi.nlm.nih.gov/pubmed/24021217>
- #7: <http://www.ncbi.nlm.nih.gov/pubmed/22717018>
- #8: <http://www.ncbi.nlm.nih.gov/pubmed/16710319>
- #9: <http://www.ncbi.nlm.nih.gov/pubmed/16205777>
- #10: <http://www.ncbi.nlm.nih.gov/pubmed/16874005>
- #11: <http://www.ncbi.nlm.nih.gov/pubmed/14514498>
- #12: <http://www.ncbi.nlm.nih.gov/pubmed/22641028>
- #13: <http://www.ncbi.nlm.nih.gov/pubmed/22641028>
- #14: <http://www.ncbi.nlm.nih.gov/pubmed/12082591>
- #16: <http://www.ncbi.nlm.nih.gov/pubmed/16534507>
- #17: <http://www.ncbi.nlm.nih.gov/pubmed/24021217>
- #18: <http://www.ncbi.nlm.nih.gov/pubmed/22717018>
- #20: <http://www.ncbi.nlm.nih.gov/pubmed/20016225>

#21: <http://www.ncbi.nlm.nih.gov/pubmed/19474754>

#23: <http://www.ncbi.nlm.nih.gov/pubmed/15952199>

#25: <http://www.ncbi.nlm.nih.gov/pubmed/20826553>

#26: <http://www.ncbi.nlm.nih.gov/pubmed/20826553>

#27: <http://www.ncbi.nlm.nih.gov/pubmed/19295509>

#29: <http://www.ncbi.nlm.nih.gov/pubmed/19295509>

#33: <http://www.ncbi.nlm.nih.gov/pubmed/19295509>

#36: <http://www.ncbi.nlm.nih.gov/pubmed/19295509>

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