

Table 10 - 21: Effects of Drugs on Eye Movements

<u>Drug Class</u>	<u>Drugs</u>	<u>Reported Effects</u>
Antidepressants - SSRI	Citalopram (Celexa) Escitalopram (Lexapro) Fluvoxamine (Luvox) Fluoxetine (Prozac) Paroxetine (Paxil) Sertaline (Zoloft)	
Antidepressants - MAOI's	Phenelzine (Nardil) Tranylcypromine (Parnate) Isocarboxid (Marplan)	
Antidepressants - Tricyclics	Amitriptyline (Elavil) Clomipramine (Anafranil) Desipramine (Norpramine) Doxepin (Sinequan) Imipramine (Tofranil) Nortriptyline (Pamelor) Protriptyline (Vivactil) Venlafaxine (Effexor) Trazadone (Desyrel)	Internuclear ophthalmoplegia ^{398, 655} Partial or total gaze palsy ^{1116, 1310} Opsoclonus ⁵⁰
Antidepressants - Other	Bupropion (Wellbutrin) Duloxetine (Cymbalta) Mirtazapine (Remeron) Venlafaxine (Effexor)	
Antipsychotic - Phenothiazines	Chlorpromazine (Thorazine) Fluphenazine (Prolixin) Chlorprothixene (Taractan) Haloperidol (Haldol) Loxapine (Loxitane) Mesoridazine (Serentil) Molindone (Moban) Perphenazine (Trilafon) Pimozide (Orap) Prochlorperazine (Compazine)	Oculogyric crisis ⁸³⁰ Internuclear ophthalmoplegia ²⁹¹

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	Thioridazine (Mellaril) Thiothixene (Navane) Trifluoperazine (Stelazine) Promethazine (Phenergan)	
Antipsychotics - Atypical	Aripiprazole (Abilify) Clozapine (Clozaril) Olanzapine (Zyprexa) Quetiapine (Seroquel) Ziprasidone (Geodon) Risperidone (Risperdal)	Reduced peak velocity and increased latency of saccades ¹³⁴⁸
Antimanic	Lithium	Saccadic dysmetria Impaired smooth pursuit Gaze-evoked nystagmus Downbeat nystagmus Opsoclonus Oculogyric crisis Internuclear ophthalmoplegia Partial or total gaze palsy
Amphetamines	Adderall (Amphetamine and Dextroamphetamine) Benzphetamine (Didrex) Dextroamphetamine (Dexedrine)	Reduced saccadic latency ¹³⁶⁰ Increased accommodative convergence / accommodation ratio ¹⁴⁷⁵
Stimulants	Atomoxetine (Strattera) Caffeine Dexmethylphenidate (Focalin) Diethylpropion (Tenuate) Methylphenidate (Ritalin, Concerta) Modafinil (Provigil) Phendimetrazine (Bontril, Melfiat, Prelu-2) Phentermine (Adipex-P, Ionamine, ProFast) Sibutramine (Meridia)	

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Narcotics	Codeine Fentanyl (Duragesic) Hydromorphone (Dilaudid) Meperidine (Demerol) Methadone (Dolophone) Morphine Oxycodone (Oxycontin) Oxymorphone (Numorphan) Propoxphene (Darvon) Buprenorphime (Suboxone, Subutex)	Saccadic hypometria 1182 Impaired smooth pursuit 1183 Internuclear ophthalmoplegia 416
Beta Blockers	Acebutolol (Sectral) Atenolol (Tenormin) Bisoprolol (Zebeta) Carvedilol (Coreg) Labetalol (Trandate) Matoprolol (Lopressor, Toprol) Nadolol (Corgard) Penbutolol (Levatol) Propranalol (Inderal) Timolol (Blocarden)	Diplopia 1462 Internuclear ophthalmoplegia 306
Alcohol (Ethanol)		Reduced peak velocity, increased latency, and hypometria of saccades 83, 728, 967a Impaired smooth pursuit 83, 967a and VOR suppression 95 Gazed-evoked nystagmus 83 Positionally induced nystagmus 163, 436a Reversal of compensation of vestibular lesions 127
Tobacco and Nicotine		Decreased saccadic latency 1162 Upbeat nystagmus in darkness 1285, 1286 Square-wave jerks 1285, 1287, 1363 Impaired horizontal and vertical smooth pursuit 1286, 1287

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Cocaine		Opsoclonus 417, 1225
Phencyclidine (PCP)		Nystagmus 98
Choral Hydrate		Impaired smooth pursuit 862
Nitrous Oxide		Reduced saccadic peak velocity 898 Impaired smooth pursuit 898
Muscle Relaxants	Baclofen (Lioresal) Carisoprodol (Soma) Chlorzoxazone (Parafon Forte) Cyclobenzaprine (Flexeril) Dantrolene (Dantrium) Metaxalone (Skelaxin) Methocarbamol (Robaxin) Orphenadrine (Norflex) Tizanidine (Zanaflex)	Reduced VOR time constant 276 Partial or total gaze palsy 1072 For therapeutic effects see Table 10-8
Antiepileptic	Carbamazepine (Tegretol)	Decreased velocity of saccades 1014a,1361 Impaired smooth pursuit 334 Gaze-evoked nystagmus 1134, 1308, 1408 Oculogyric crisis 117 Downbeat nystagmus 250 Partial or total gaze palsy 978, 1016

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	Phenytoin (Dilantin)	Impaired smooth pursuit and VOR suppression 136 Gaze-evoked nystagmus 616, 1143 Downbeat nystagmus 121 Periodic alternating nystagmus 228 Partial or total gaze palsy 475 Convergence spasm 563
	Ethosuximide (Zarntin) Felbamate (Felbatol) Gabapentin (Neurontin) Lamotrigine (Lamictal) Levetiracetam (Keppra) Methsuximide (Celontin) Oxcarbazepine (Trileptal) Primidone (Mysoline) Tiagabine (Gabitril) Topiramate (Topamax) Valproic acid (Depakene, Depakote) Zosinamide (Zonegran) Zaleplon (Sonata) Zolpidem (Ambien)	
Phenobarbital and other Barbiturates	Luminal	Reduced peak saccadic velocity 1224, 1361 Gaze-evoked nystagmus 1129 Impaired smooth pursuit 1224 Impaired vergence 1475 Decreased VOR gain 331 Internuclear Ophthalmoplegia 97 Perverted caloric responses 1288 Vertical nystagmus 855 Partial or total gaze palsy 97, 414
Benzodiazepines	Alprazolam (Xanax) Clonazepam (Klonopin) Flurazepam (Dalmane) Diazepam (Valium)	Reduced velocity and increased duration of saccades 137, 427, 714, 1058, 1180, 1414, 1416 Impaired smooth pursuit 138, 1181, 1224 Decreased gain and change of time constant of VOR 142, 1057

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	Lorazepam (Ativan) Chlordiazepoxide (Librium) Estazolam (ProSom) Temazepam (Restoril) Chlorazepate (Tranxene) Oxazepam (Serax) Triazolam (Halcion)	Divergence paralysis 42

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