














Generic	Name -TRADE	Equivalent Dose/Class	Peak Level/ ABSORPTION RATE	Average [#] Half-life (hr)	Active Metabolites	Comments (√ = therapeutic use)	INITIAL & MAX DOSE	USUAL DOSE RANGE	\$  /Month
SHORT ACTING: more rebound anxiety effect & withdrawal reactions, better sedative/hypnotic; preferred over long acting in elderly (less accumulation) & in patients with liver disorders (easier metabolized)									
Alprazolam (0.25,0.5); (1xmg tab, TS 2xmg)	-XANAX	0.5mg	1-2 hr	12	Minor	√Anxiety, Panic attacks	0.25mg	0.25mg po tid	15
		 Triazololo	Medium	(9-20)	Oxidation #	Severe withdrawal & some ? antidepressant effect	4-10mg	0.5mg po tid	15
Bromazepam (1.5, 3, 6mg tab)	-LECTOPAM	3mg	1-4 hr	20	Minor	√Anxiety	3mg	3mg po hs	10
		 2-Keto	Medium	(8-30)	Oxidation	? May exacerbate depression	30-60mg	6mg po hs	12
Lorazepam (0.5,1,2mg po tab; 0.5x,1x,2xmg sl tab; 4mg/ml amp ^x)	-ATIVAN	1mg	PO 1-4 hr	15	None	√ Anxiety, Preanesthetic; Other: sedative,	0.5mg	0.5mg po tid	11
		 3-Hydroxy	Medium	(8-24)	Conjugation #	muscle relaxant,alcohol withdrawal;acute mania; Fewer DI's, √Status epilepticus -slower onset but longer duration vs diazepam;IM well absorbed	10mg	1mg po tid	12
Oxazepam (10,15,30mg tab)	-SERAX	15mg	1-4 hr	8	None	√ Anxiety, alcohol withdrawal	10mg	15mg po hs	10
		 3-Hydroxy	Medium	(3-25)	Conjugation	Other: sedative Less affected by liver dysfunction;Fewer DI's	120mg	30mg po hs	11
Temazepam (15,30mg cap)	-RESTORIL	10mg	2-3 hr	11	None	√ Sedative/hypnotic; Other: anxiolytic	15mg	15mg po hs	11
		 3-Hydroxy	Medium	(3-25)	Conjugation	May delay but not suppress REM sleep Fewer DI's	60mg	30mg po hs	11
Triazolam (0.125,0.25mg tab)	-HALCION	0.25mg	1-2 hr	2	None	√ Sedative/hypnotic; DI's as per alprazolam	0.125mg	0.125mg po hs	9
		 Triazololo	Rapid	(1.5-5)	Oxidation	Behavioral disturbances in elderly Prone to withdrawal / rebound effects	0.5mg	0.25mg po hs	10
LONG ACTING: less rebound symptoms;better choice when tapering off of BZs (e.g. clonazepam/diazepam); withdrawal may be delayed 1-2 wk for 2-Keto group; bedtime dose option for hypnotic & anxiolytic effect.									
Chlordiazepoxide (5,10,25mg cap)	-LIBRIUM	25mg	1-4 hr	100	Yes	√ Anxiety, preanesthetic, alcohol withdrawal	5mg	25mg po tid	20
		 2-Keto	Medium		Oxidation	Other: sedation; Slower onset vs diazepam	200-400mg	50mg po tid	32
Clonazepam (0.5,1,2mg tab)	-RIVOTRIL	0.25mg	1-4 hr	34	None	√ Anticonvulsant, Panic attack	0.25mg	0.5mg po tid	15
		 Nitro	Rapid	(19-60)	Oxidation & Nitro reduction	Other: sedative, social phobia, akathisia, acute mania, restless leg syndrome & neuralgic pain	10-20mg	1mg po bid	21
Clorazepate (3.75,7.5,15mg cap)	-TRANXENE	10mg	0.5-2 hr	100	Yes	Hydrolyzed in GI → ↓ clorazepate level by antacids	3.75mg	3.75mg po bid	13
		 2-Keto	Rapid	Inactive until Metabolized	Oxidation	√ Anxiety, panic, alcohol withdrawal, seizures	60-90mg	7.5mg po bid	18
Diazepam (2.5,10mg tab; 10mg/2ml amp; 5mg/ml rectal gel; 10mg/2ml emulsion inj ^x DIAZEMULS)	-VALIUM	5mg	PO 1-2 hr	100	Yes	√Anxiety, muscle relaxant, seizures, alcohol	2mg	2mg po tid	15
		 2-Keto	Medium		Oxidation	withdrawal & preanesthetic; Other: sedative Quicker onset & ↓ duration of action vs lorazepam, IM causes pain; Diazemuls [®] IV better tolerated.	40mg	5mg po tid	17
Flurazepam (15,30mg cap)	-DALMANE	15mg	0.5-1 hr	100	Yes	√ Sedative/hypnotic; Quick onset but	15mg	15mg po hs	10
		 2-Keto	Rapid	(40-250)	Oxidation	accumulates →hangover →confusion, etc.	60mg	30mg po hs	11
Nitrazepam (5,10mg tab)	-MOGADON	2.5mg	0.5-2 hr	30	None	√ Sedative/hypnotic, myoclonic seizures	5mg	5mg po hs	11
		 Nitro	Medium	(15-48)	Nitro reduction		10mg	10mg po hs	12

Side effects: drowsiness, dizziness, ataxia, dependence, CNS depression, disorientation, psychomotor impairment, confusion, aggression, excitement, ↑ falls & vehicle accidents in elderly & anterograde amnesia. **Tolerance** to sedative/hypnotic, muscle relaxant & anticonvulsant, but less tolerance for the anxiolytic & antipanic effects. No cross-tolerance with buspirone & SSRI'S; as well often lacks cross-tolerance with alprazolam. **Benzodiazepine withdrawal:** Depends on: duration of therapy, dose, rate of tapering & the BZ t½ life; **Onset:** 1-2d with short t½; 3-8d with long t½ BZ'S; **S/Sx:** insomnia, nausea/vomiting, twitching, irritability, ↑ anxiety, paresthesias, tinnitus, delirium & even seizures. **When D/C BZ:** If Tx >12 weeks taper at a rate of +/-25%/week & consider changing to equivalent dose of clonazepam/diazepam (except alprazolam) & then taper off the BZ. **Length of therapy:** **Anxiety:** use as an adjunct only & re-evaluate q4-6 weeks; **Hypnotic:** not to exceed 4 week. **Caution:** BZ & clozapine may lead to marked sedation, ↑ salivation, & rare respiratory arrest. **Drug interactions (DIs):** ↑CNS depression: antidepressants, antihistamines, barbiturates, ethanol; Antacids ↓ absorption; ↑d BZ levels by: allopurinol, oral contraceptives, cimetidine, estrogen, erythromycin, fluoxetine, isoniazid, omeprazole, valproic (less DI effect on lorazepam, oxazepam, temazepam, but ↑effect on 2-Keto BZ); **BZ may ↑levels of:** digoxin & phenytoin. **BZ levels ↓d by:** carbamazepine, phenobarbital, rifampin & smoking. **# Oxidation** is a high-energy metabolic pathway impaired in liver disease & reduced in elderly; whereas **conjugation** to more water soluble glucuronide derivative allows for excretion (less intensive), thus less affected by DIs. **Overdose:** safe when taken alone; Treat: flumazenil. **Precautions:** hx of substance abuse, sleep apnea, cognitive disorder, renal/hepatic dx, elderly, porphyria, CNS depression, myasthenia & pregnancy (possible teratogen & can precipitate withdrawal in newborns if used in 3rd trimester). **BZ=**benzodiazepine **DI=**drug interaction **Dx=**disease **t½** average (range) can be ↑↑ in geriatric patients & altered by drug interactions **x** Non-formulary in Sask

¹ Micromedex 2003

² Nelson J, Chouinard G. Guidelines for the clinical use of benzodiazepines: pharmacokinetics, dependency, rebound and withdrawal. Canadian Society for Clinical Pharmacology. Can J Clin Pharmacol. 1999 Summer;6(2):69-83.

³ Rickels K, DeMartinis N, Rynn M, Mandos L. Pharmacologic strategies for discontinuing benzodiazepine treatment. J Clin Psychopharmacol. 1999 Dec;19(6 Suppl 2):12S-16S.

⁴ Teboul E, Chouinard G. A guide to benzodiazepine selection. Part II: Clinical aspects. Can J Psychiatry. 1991 Feb;36(1):62-73.

⁵ Teboul E, Chouinard G. A guide to benzodiazepine selection. Part I: Pharmacological aspects. Can J Psychiatry. 1990 Nov;35(8):700-10.