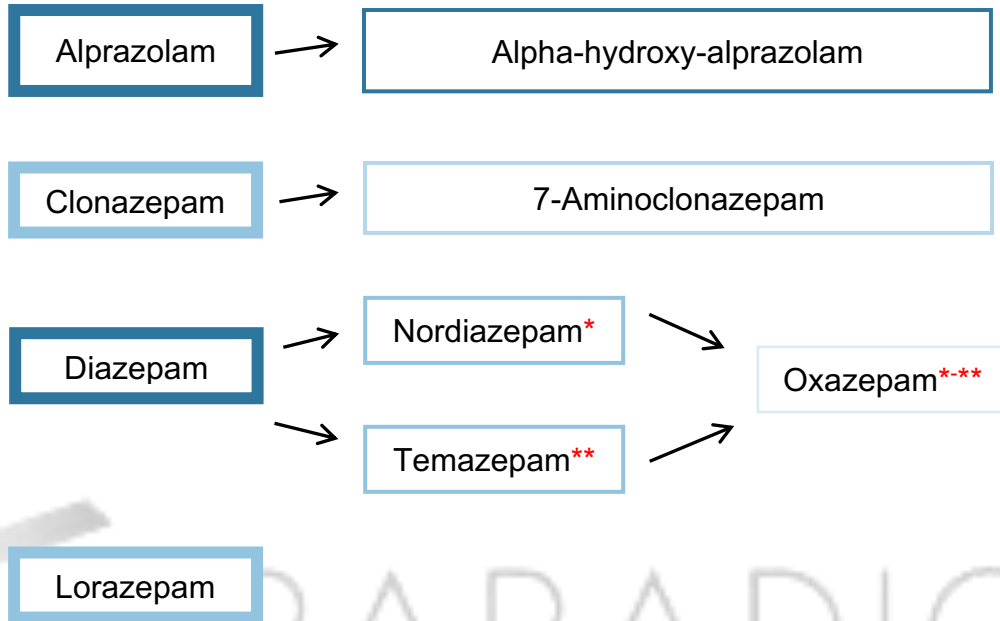


## Simplified Scheme of Metabolic Pathways of Benzodiazepines



BENCHMARK PRESUMPTIVE LC/MS/MS TEST MENU FOR BENZODIAZEPINES				
AMA CPT® DEFINED DRUG CLASS	BENCHMARK UDT™ MENU AND CUTOFF LEVELS (ng/mL)		BENCHMARK OFT™ MENU AND CUTOFF LEVELS (ng/mL)	
Benzodiazepines	7-Aminoclonazepam	50	NA	NA
	Alprazolam, alpha-Hydroxyalprazolam	50	Alprazolam	4
	Diazepam, Nordiazepam	50	Diazepam, Nordiazepam	4
	Lorazepam	50	Lorazepam	20
	Oxazepam	50	Oxazepam	4
	Temazepam	50	Temazepam	4

\*Note: Nordiazepam and Oxazepam are also primary metabolites of other benzodiazepines not shown.

\*\* Note: Both Temazepam and Oxazepam are not exclusively metabolites. Temazepam may be prescribed (Restoril) and Oxazepam may be prescribed (Serax). When these analytes are detected, there is no way for the laboratory to conclusively determine if they are present as metabolites, stand-alone prescriptions, or a combination of the two.

### Resources:

National Institute of Health, <https://www.drugabuse.gov/drug-topics/opioids/benzodiazepines-opioids>, accessed 08/25/21.

Hirschtritt ME, Olfson M, Kroenke K. Balancing the Risks and Benefits of Benzodiazepines. JAMA. 2021;325(4):347–348. doi:10.1001/jama.2020.22106, available online at <https://jamanetwork.com/journals/jama/article-abstract/2775180>.

Griffin CE 3rd, Kaye AM, Bueno FR, Kaye AD. Benzodiazepine pharmacology and central nervous system-mediated effects. Ochsner J. 2013;13(2):214-223. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3684331/>.