

ALPRAZOLAM
(Xanax)



CLONAZEPAM
(Klonopin)



CHLORDIAZEPOXIDE
(Librium)



DIAZEPAM
(Valium)



LORAZEPAM
(Ativan)



TEMAZEPAM
(Restoril)



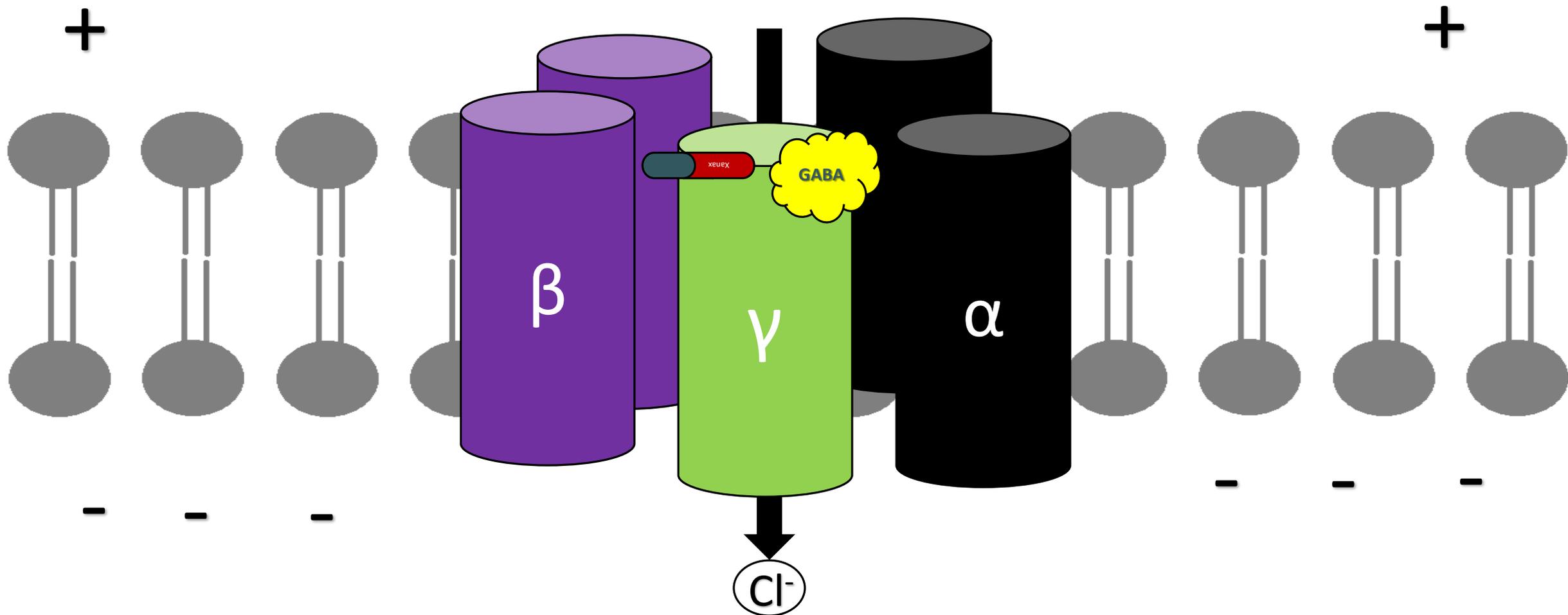
TRIAZOLAM
(Halcion)



Benzodiazepines



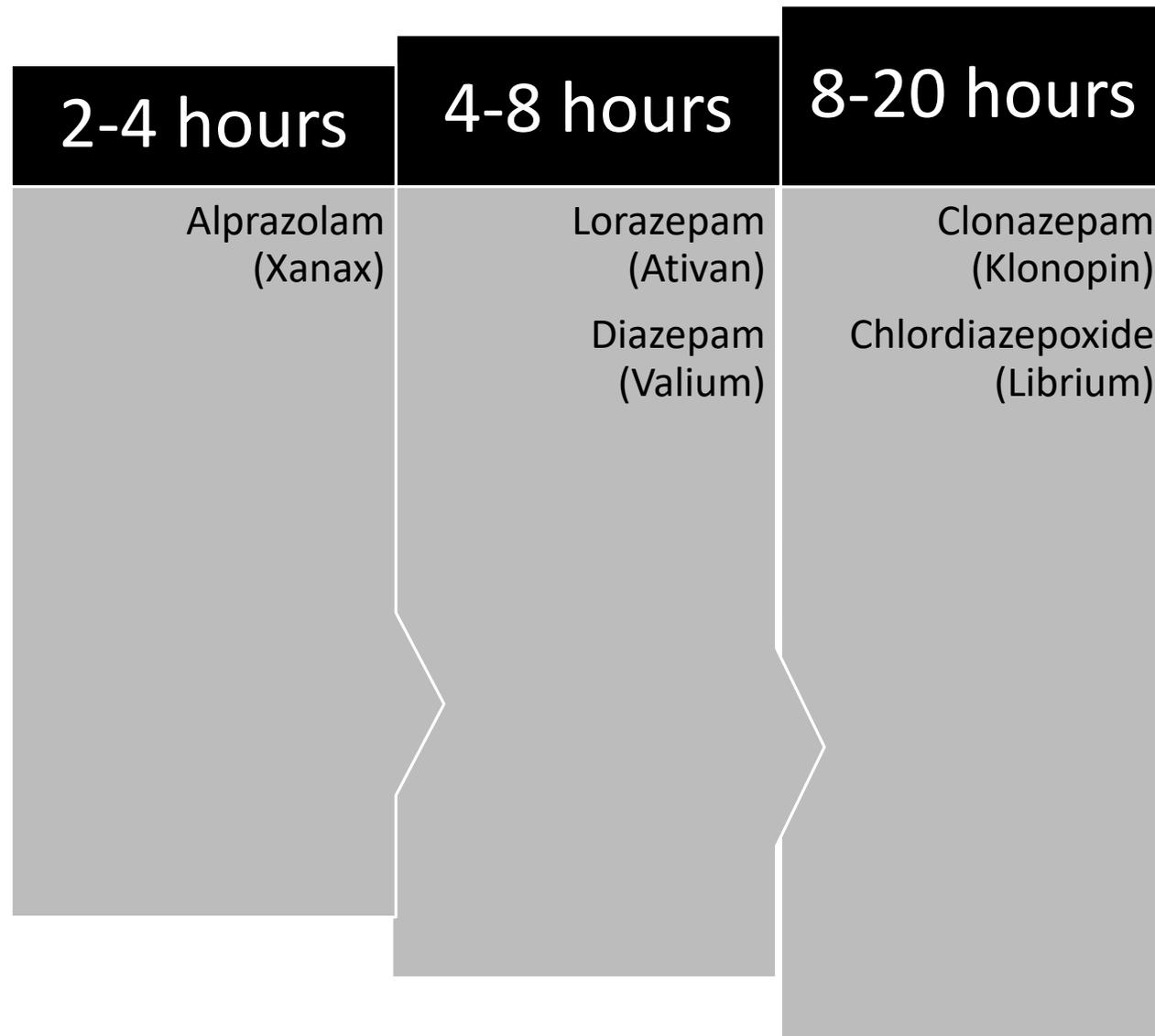
Benzodiazepine



- Benzodiazepines help “GABA receptors” function in the brain**
 - GABA receptors are located on neurons and when they are activated by GABA, a neurotransmitter, they inhibit other neurons**
 - Therefore, benzodiazepines generally inhibit brain activity**

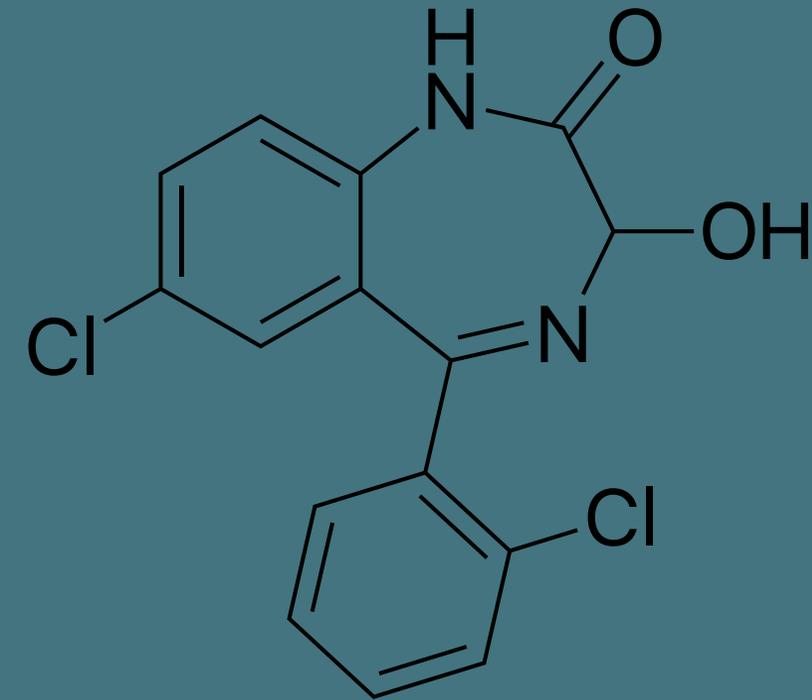
	Dosage Equivalency (mg)	Onset of Action (hrs)	Duration of Action (hrs)	Half-Life (hrs)
Alprazolam (Xanax)	0.5	0.5-1	3-4	11-16
Chlordiazepoxide (Librium)	10-25	1-2	---	5-200 (with active metabolite)
Clonazepam (Klonopin)	0.25-0.5	1	4-8	20-80
Diazepam (Valium)	5	0.5	4-6	>100
Lorazepam (Ativan)	1	0.5-1	4-6	10-20
Temazepam (Restoril)	15-30	0.5-1	4-6	9-18

Benzodiazepines Table



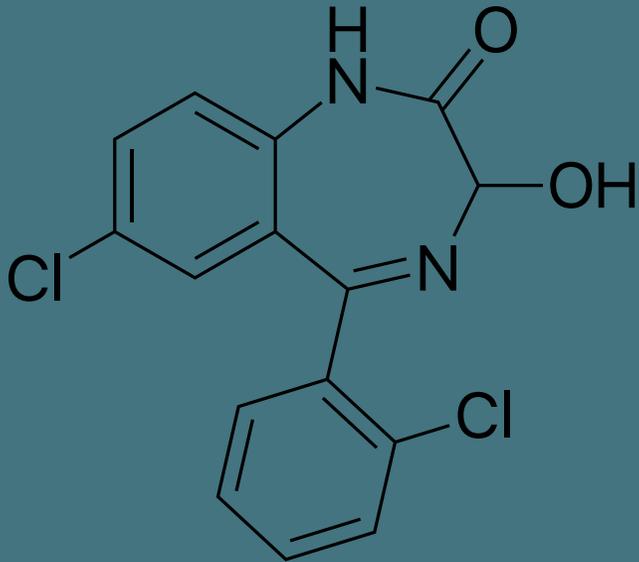
Duration of Action of Benzodiazepines

Benzodiazepines



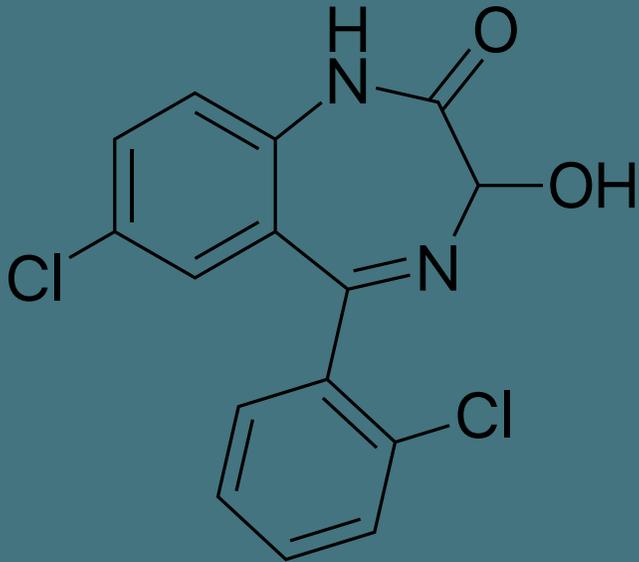
- ❑ **The duration of action of a benzodiazepine is determined by two related things:**
 1. The rate of distribution (how fast the drug distributes through your body)
 2. Lipid solubility (how soluble the medication is in fatty liquids)
- ❑ The first benzodiazepines were Chlordiazepoxide (1959) and Diazepam (1963)
- ❑ Alprazolam (1981), brand name Xanax, was the first benzodiazepine approved for panic disorder
- ❑ All benzodiazepines have structural similarity in that they all have a 1,4-benzodiazepine ring system
- ❑ Diazepam has a rapid onset of action due to its rapid absorption and distribution (very lipid-soluble)
- ❑ Diazepam has a shorter duration of clinical action than lorazepam after one dose
- ❑ Intramuscular administration of diazepam and chlordiazepoxide have unreliable and unpredictable absorption

Benzodiazepines



- ❑ When benzodiazepines are given to an individual suffering from acute stress disorder, the probability of conversion to PTSD is roughly doubled (i.e., benzodiazepines may interfere with post trauma adaptation).
- ❑ Exposure therapies for anxiety disorders and PTSD do not work as well if performed in the presence of a benzodiazepines.
- ❑ Short course of benzodiazepines are commonly prescribed when starting SSRIs/SNRIs in patients with high anxiety to minimize activating side effects that can occur when initiating these agents

Benzodiazepines



Common Side Effects:

- Sedation/Drowsiness
- Dizziness
- Nausea
- Headaches
- Altered motor coordination
- Slurred speech
- Gait disturbances
- Altered attention

Benzodiazepines have been associated with:

- *Tolerance, physical dependence, withdrawal*
- *Abuse potential*
- Respiratory depression
 - **Especially when combined with alcohol and/or opioids**
- *Ataxia*
- *Diminished attention*
- *Failure of memory consolidation*
- *Increased risk of falls in the elderly*
- *Increased risk of delirium and confusion in the elderly*

Benzodiazepines are mainly used for

- Aborting Panic Attacks and Seizures
- Generalized Anxiety Disorder
- Minimizing initial side effects from SSRIs/SNRIs
- Alcohol/benzodiazepine withdrawal
- Acute Agitation and Akathisia (restlessness)
- REM Sleep Behavior Disorder
- Sedation prior to surgery or conscious sedation for minor procedures