

TREATMENT OF NYSTAGMUS AND OTHER UNWANTED OCULAR OSCILLATIONS



Disclosure and Conflict of Interest



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Pharmacological Rx of Nystagmus (off label)



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- Drug therapy for jerk nystagmus

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- baclofen (periodic alternating nystagmus)

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- 4-aminopyridine (downbeat nystagmus), (acetazolamide for episodic ataxias)

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- clonazepam, chlorzoxazone (downbeat nystagmus)

- Drug therapy for pendular nystagmus:

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- memantine, gabapentin

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- levetiracetam, clonazepam

- Drug therapy for congenital nystagmus:

+

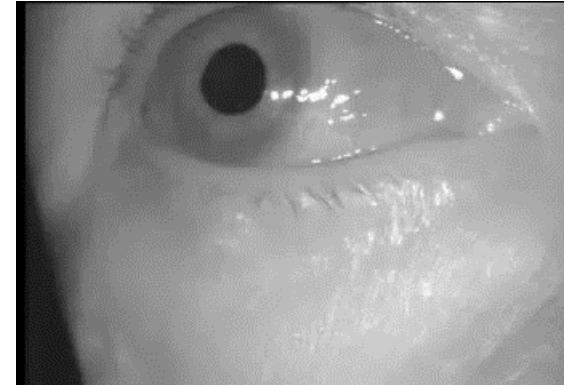
- memantine, baclofen, clonazepam

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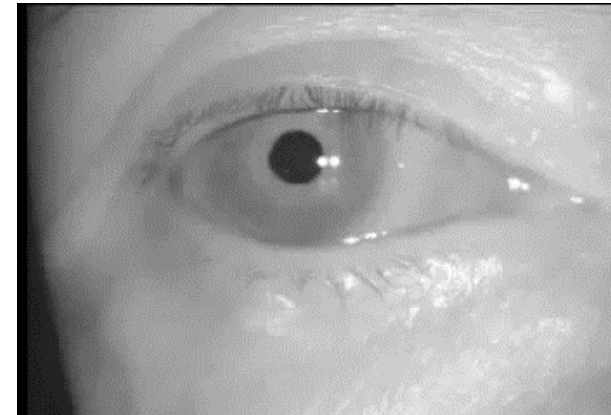
- Drug therapy for saccadic oscillations: memantine, betablockers, ethosuximide, clonazepam

Drug Treatments Downbeat Nystagmus – Aminopyridines

- **4-aminopyridine (ampyra)
(Compounding Pharmacy)**
- **NOTE may also lessen gaze-evoked nystagmus, improve pursuit and improve balance**



Downbeat_Before34DAP

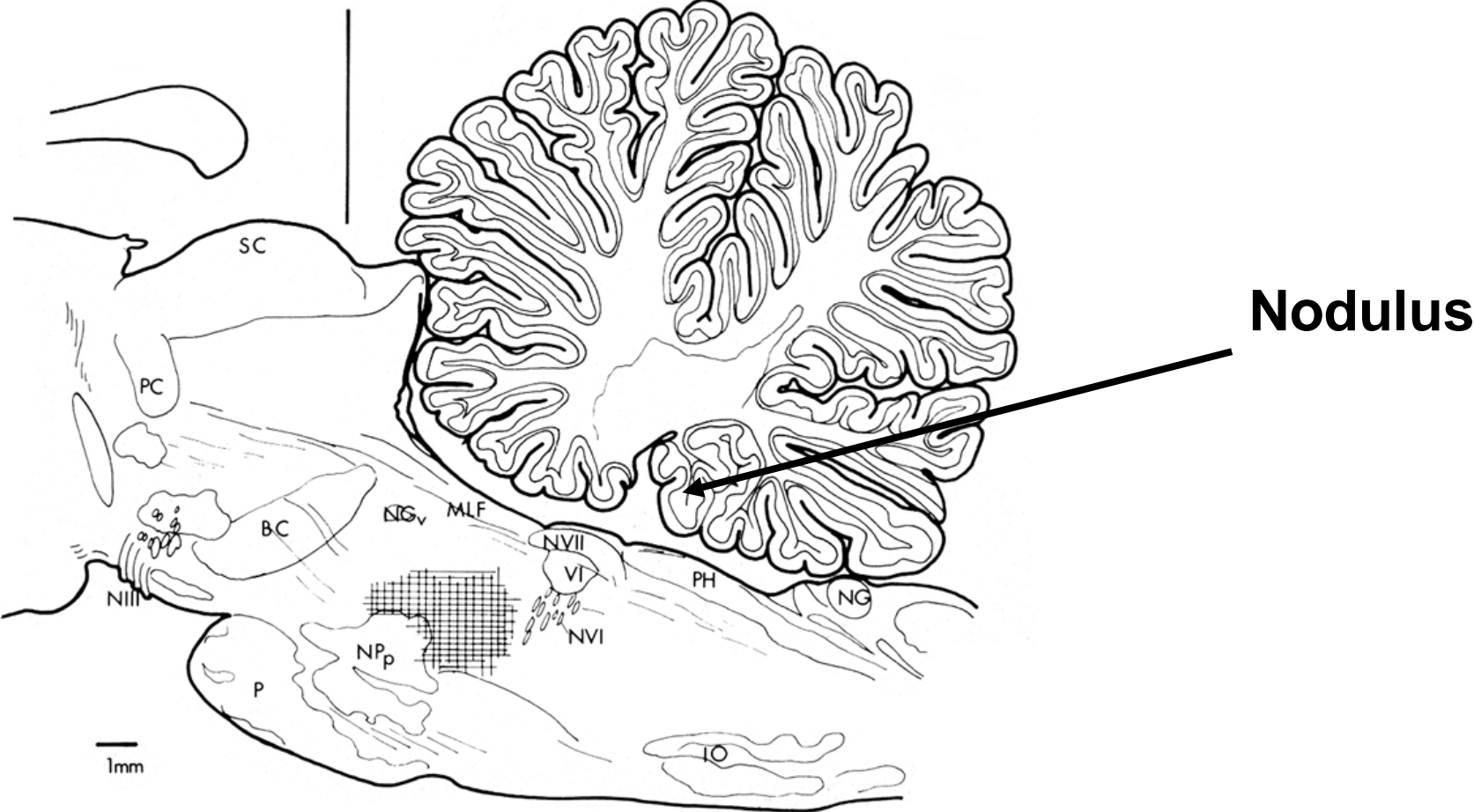


Downbeat_After34DAP

Strupp M, Schuler O, Krafczyk S, Jahn K, Schautzer F, Büttner U, Brandt T (2003) Neurology 61:165-170



Anatomical Locus of PAN



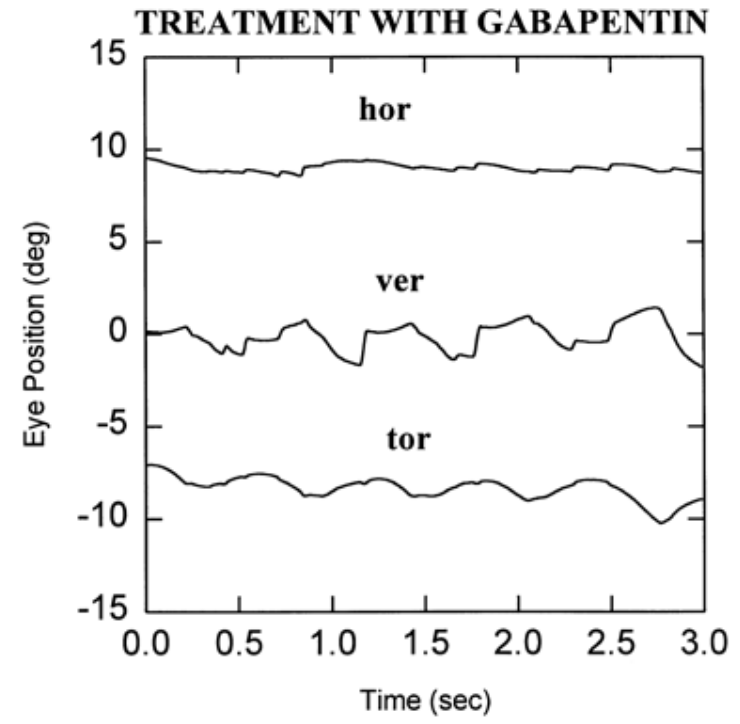
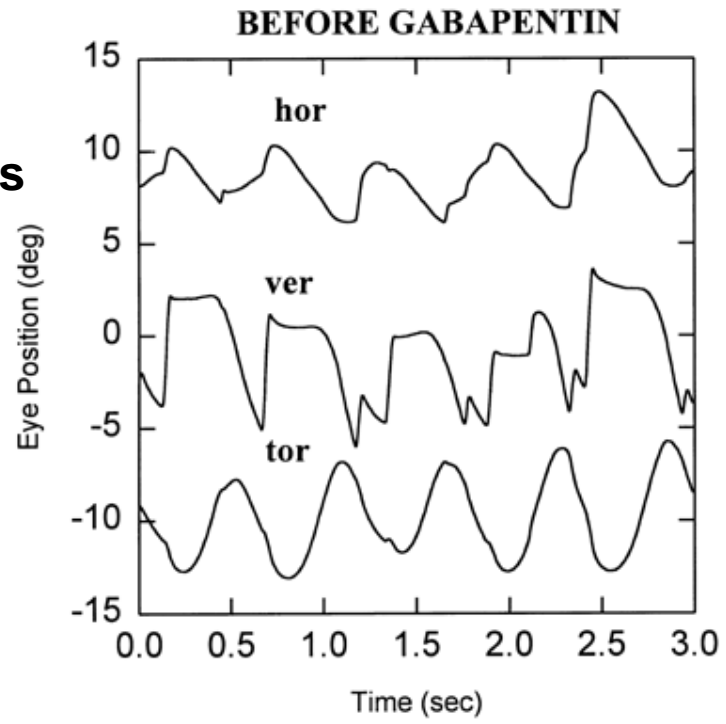
PAN: Treatment

- **Baclofen (GABA-b)** provides the missing inhibition and stops the nystagmus.
 - Usually need only 10 mg PO TID.
 - Avoid precipitous discontinuation.
 - May work synergistically with memantine
 - Baclofen does not work as well in congenital PAN.

Elliptical Nystagmus



**Rx of
pendular
nystagmus**



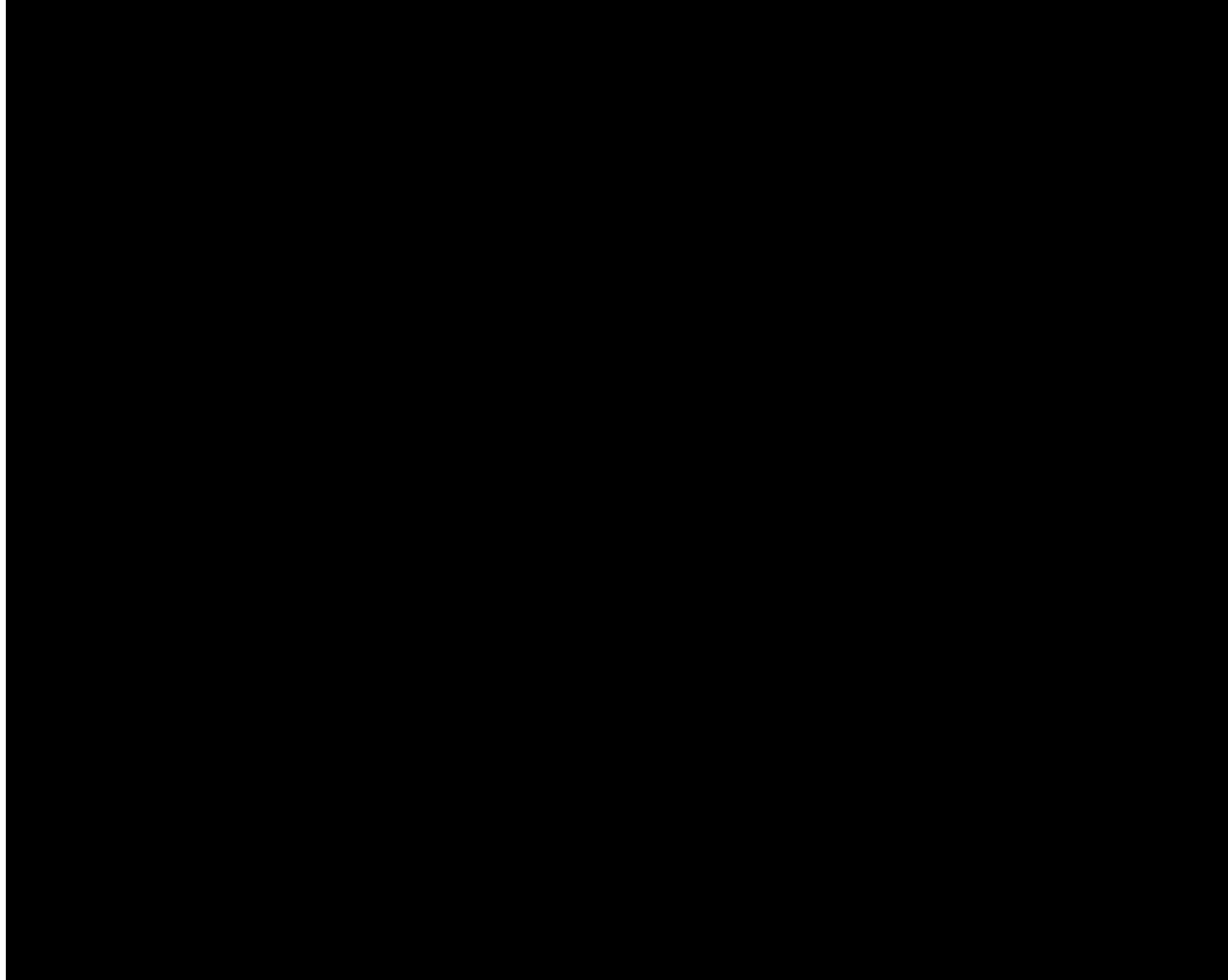
Effects of saccades and blinks on pendular nystagmus



Congenital Nystagmus



**Rx of CN with memantine
McLean et al, 2007**



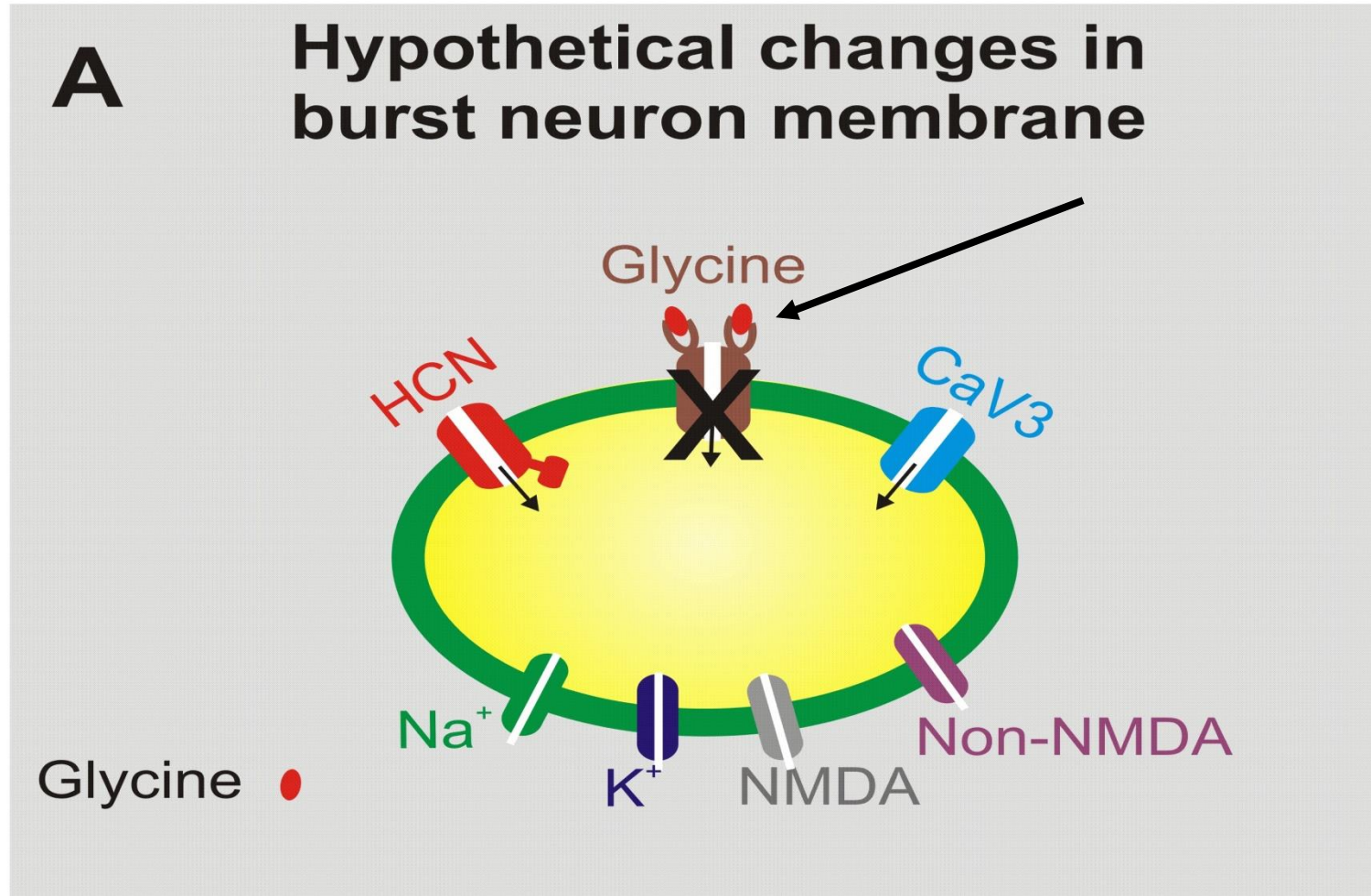
Saccadic oscillations: Opsoclonus





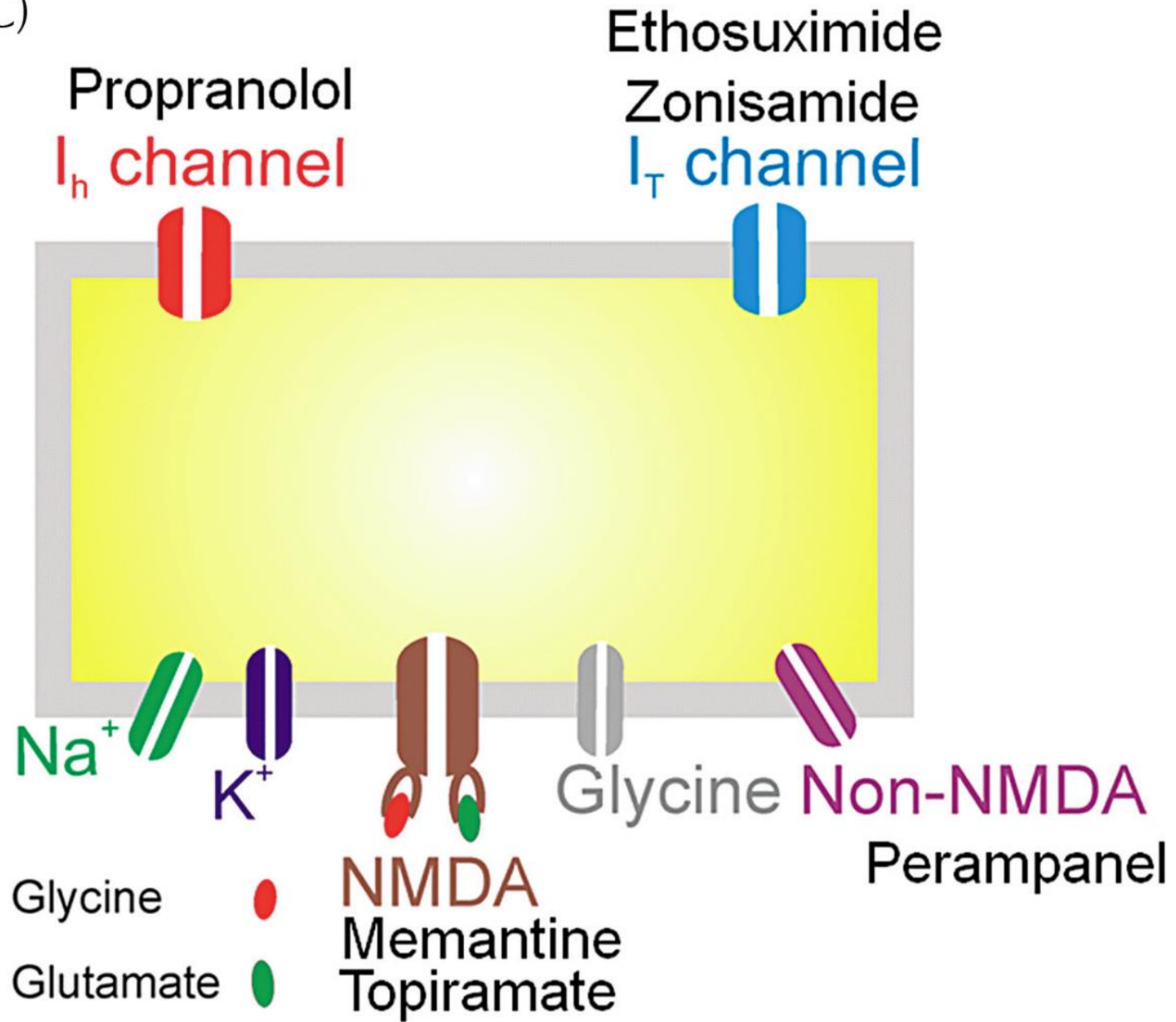
Opsoclonus

Updating our circuit models with 'real' neurons with membrane kinetics, ion channels and neurotransmitters



Understanding the ion channels involved leads to
TARGETED PHARMACOTHERAPY

(C)



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