Antiemetics & Prokinetics

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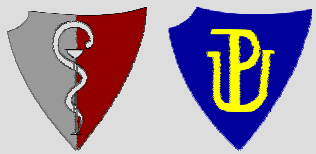

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Outline

Physiology

Vomiting: forceful expulsion of the contents of one's stomach through the mouth (wikipedia.org)

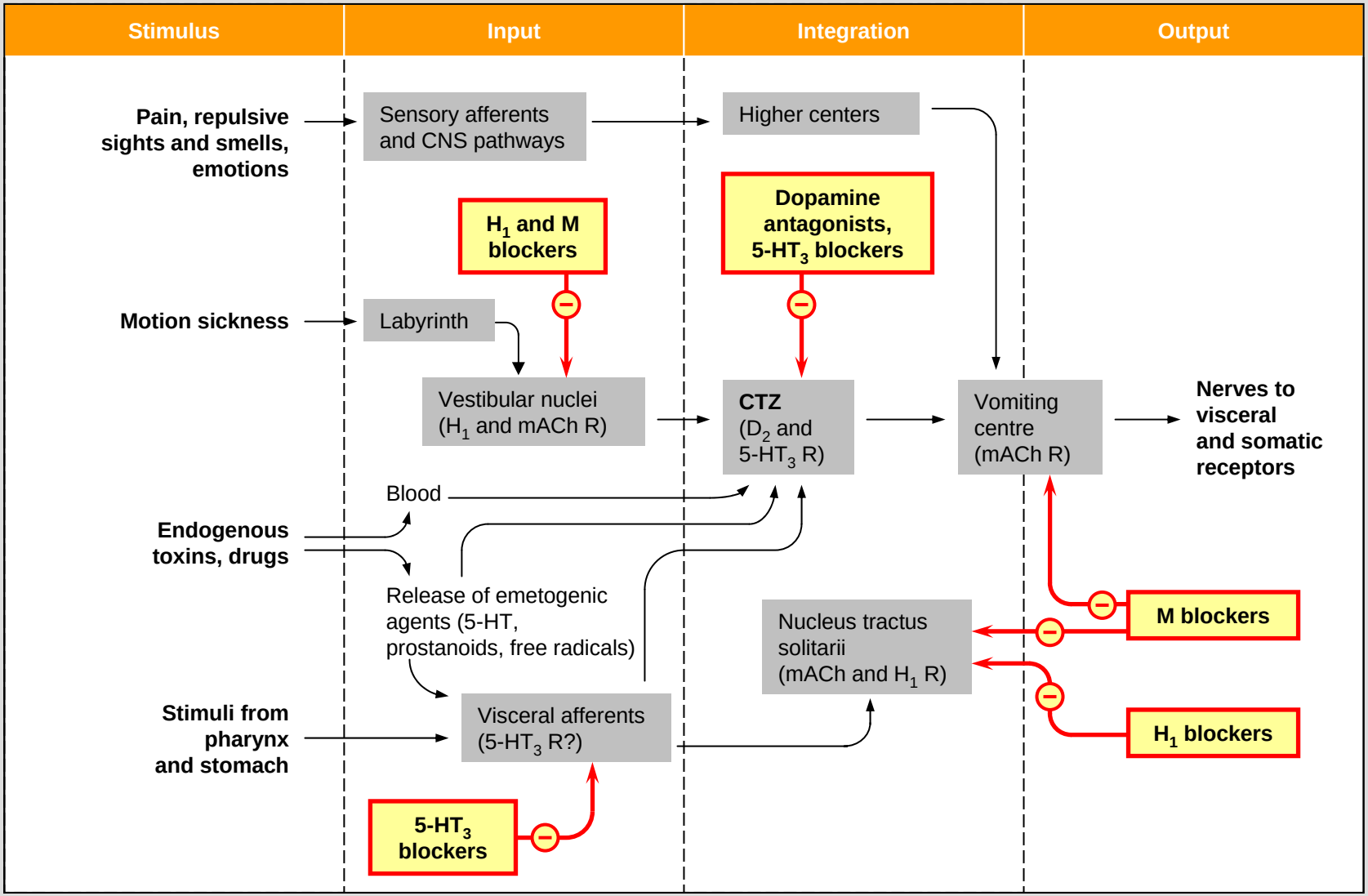
- good
  - poison ingestion
  - gastric irritation
- bad
  - kinetosis
  - gravidity
  - chemotherapy (or other drugs)
  - intracranial processes (↑ pressure)
  - vestibular disorders

Physiology

Consequences of repeated vomiting

- hypochloremic metabolic alkalosis
- secondary hypokalemia (kidneys)
- teeth damage
- aspiration

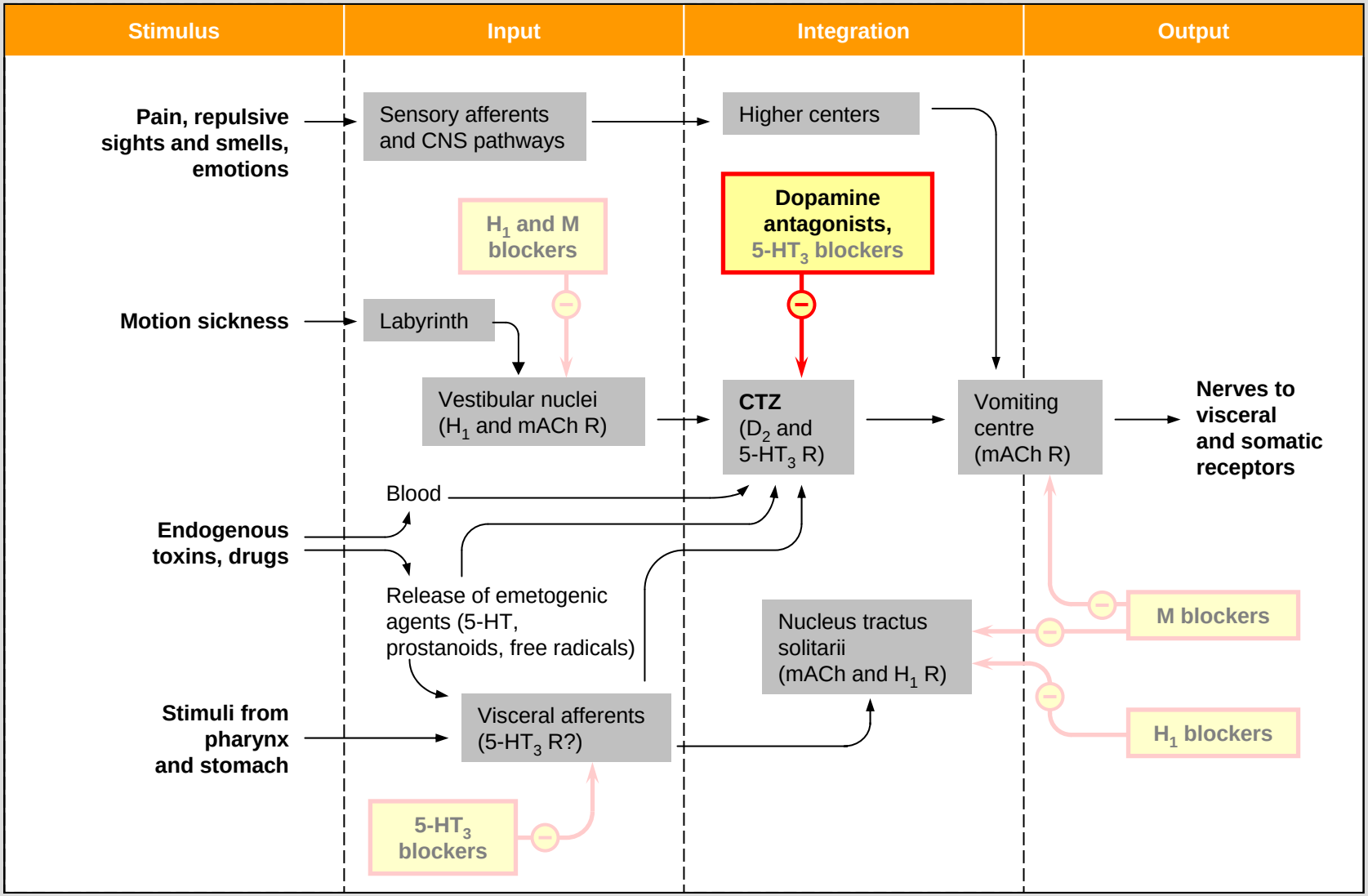
Physiology



Rang, Ritter, Dale & Moore, Pharmacology, 2003

Antidopaminergic

Physiology



Rang, Ritter, Dale & Moore, Pharmacology, 2003

Antidopaminergic - D_2 receptor blockers

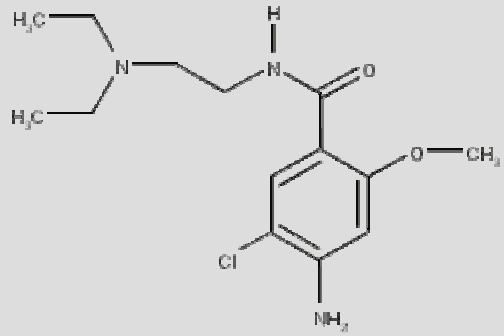
- mechanisms of action
  - block transmission in CTZ
  - cancel dopamine inhibition of the stomach
  - in high doses also 5-HT_3
- indications
  - PONV
  - drug induced N/V
  - migraine
  - gastric paresis in DM
  - before GI radiology (prokinetic)

Antidopaminergic - side effects

- side effects
  - extrapyramidal
  - ↑ prolactin
  - malign neuroleptic syndrome
  - dizziness
- contraindications
  - prolactinoma
  - Parkinson's
- interactions
  - can improve absorption

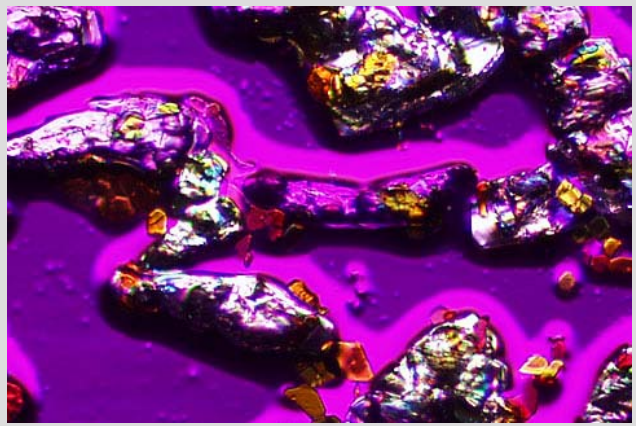
Antidopaminergic - drugs

- metoclopramide (Reglan® [USA], Maxolon® [UK])
  - 10-20 mg p.o., i.m., i.v.
  - crosses BBB
- itopride (Ganaton® [D], Itax® [USA])
  - also some i-ACHE activity
  - better prokinetic
- cisapride (Propulsid®)
  - QT prolongation
  - discontinued
- alizapride, domperidone (Motilium®)
  - do not cross BBB



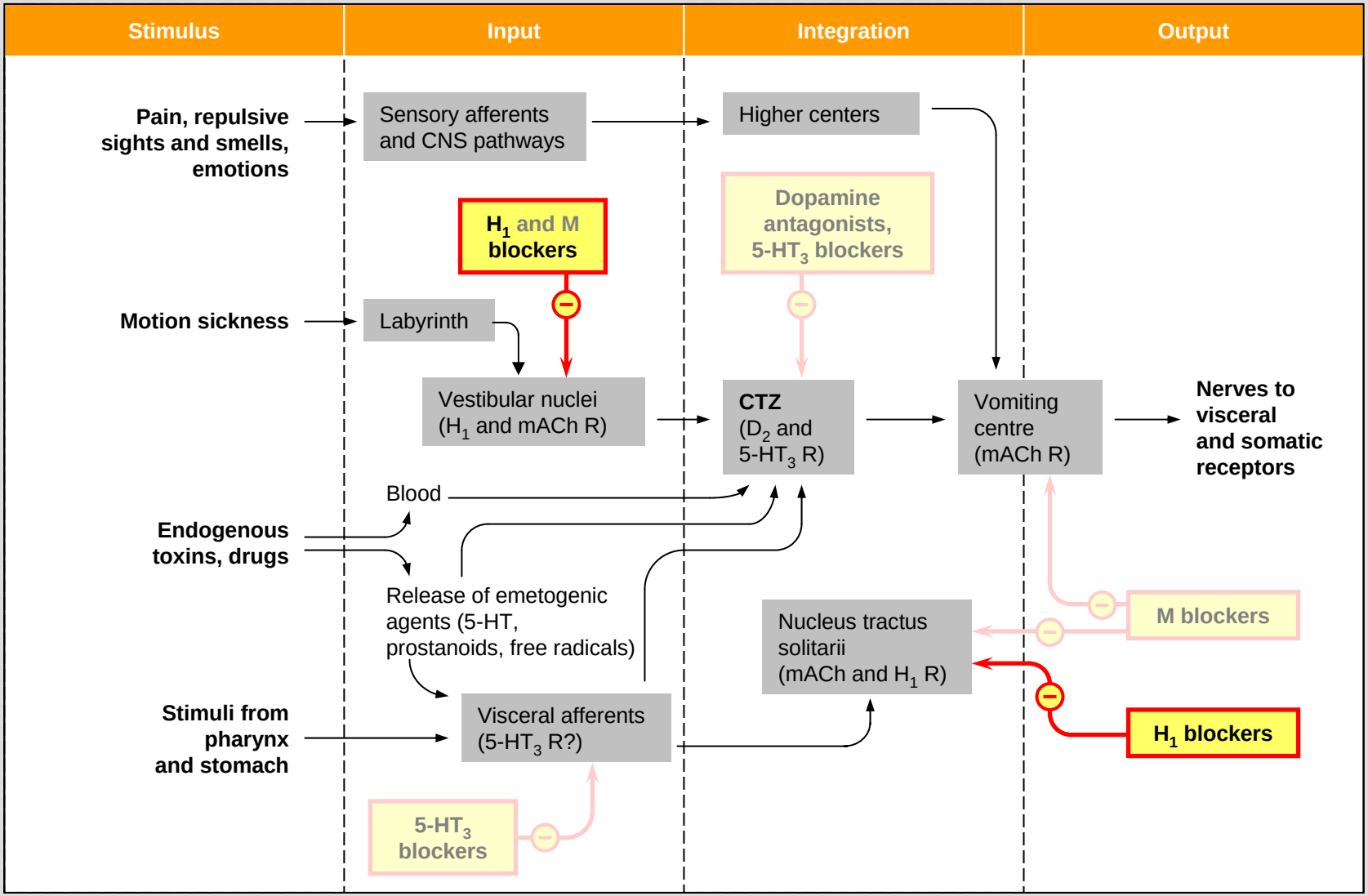
Antidopaminergic - drugs

- antipsychotics
  - **chlorpromazine**
  - methotrimeprazine
  - perphenazine
  - prochlorperazine
  - trifluoperazine
  - **triflupromazine**



Antihistamines

Antihistaminic - physiology



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Antihistaminic - H_1 receptor blockers

- mechanisms of action
  - block vestibular and visceral system
  - also sedative action
  - many have anti M as well
- indications
  - kinetosis (motion or sea sickness)
  - gravidity
  - Meniér's disease

Antihistaminic - side effects

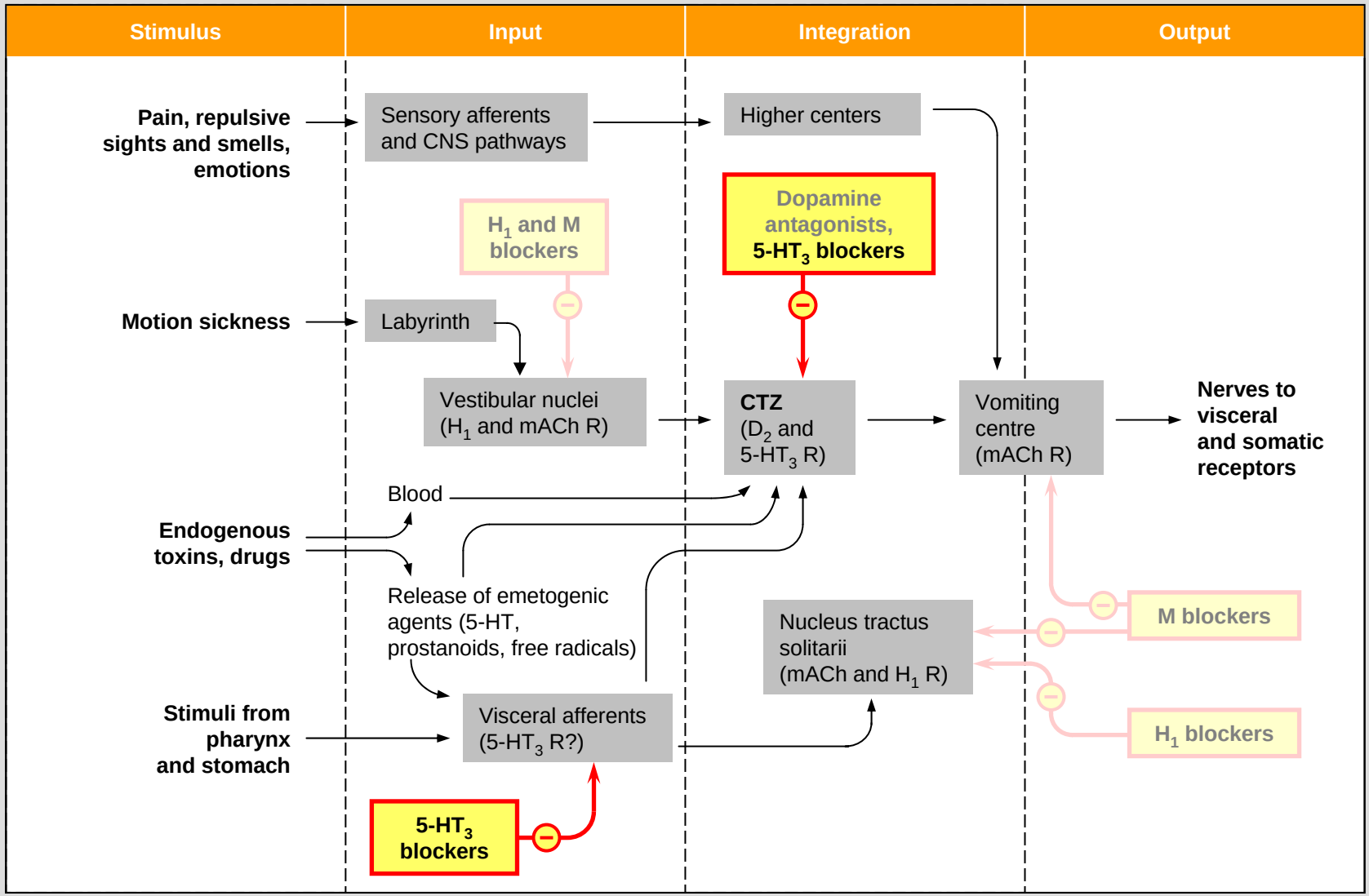
- side effects
  - sedation
  - can mask symptoms of aminoglycoside damage
  - parasympatolytic
  - dizziness
- contraindications
  - asthma
  - ileus
- interactions
  - i-MAOs

Antihistaminic - drugs

- dimenhydrinate (Travel-Gum®)
  - unsuitable for drivers
- embramine (Medrin)
  - vertigo
  - Meniér's
- meclozine (meclizine) (Antivert®, Bonine®)
  - same as dimenhydrinate

Anti 5-HT_3

Anti 5-HT$_3$ - physiology



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5-HT$_3$ receptor blockers

- mechanisms of action
  - serotonine block (mainly in CTZ)
  - very effective
- indications
  - chemotherapy N/V (cis-platine)
  - postradiotherapy N/V
  - PONV
  - most other causes

5-HT$_3$ receptor blockers - side effects

- side effects
  - usually mild
  - obstipation
- contraindications
  - no info on children and pregnant women
- interactions
  - none known

5-HT$_3$ receptor blockers - drugs

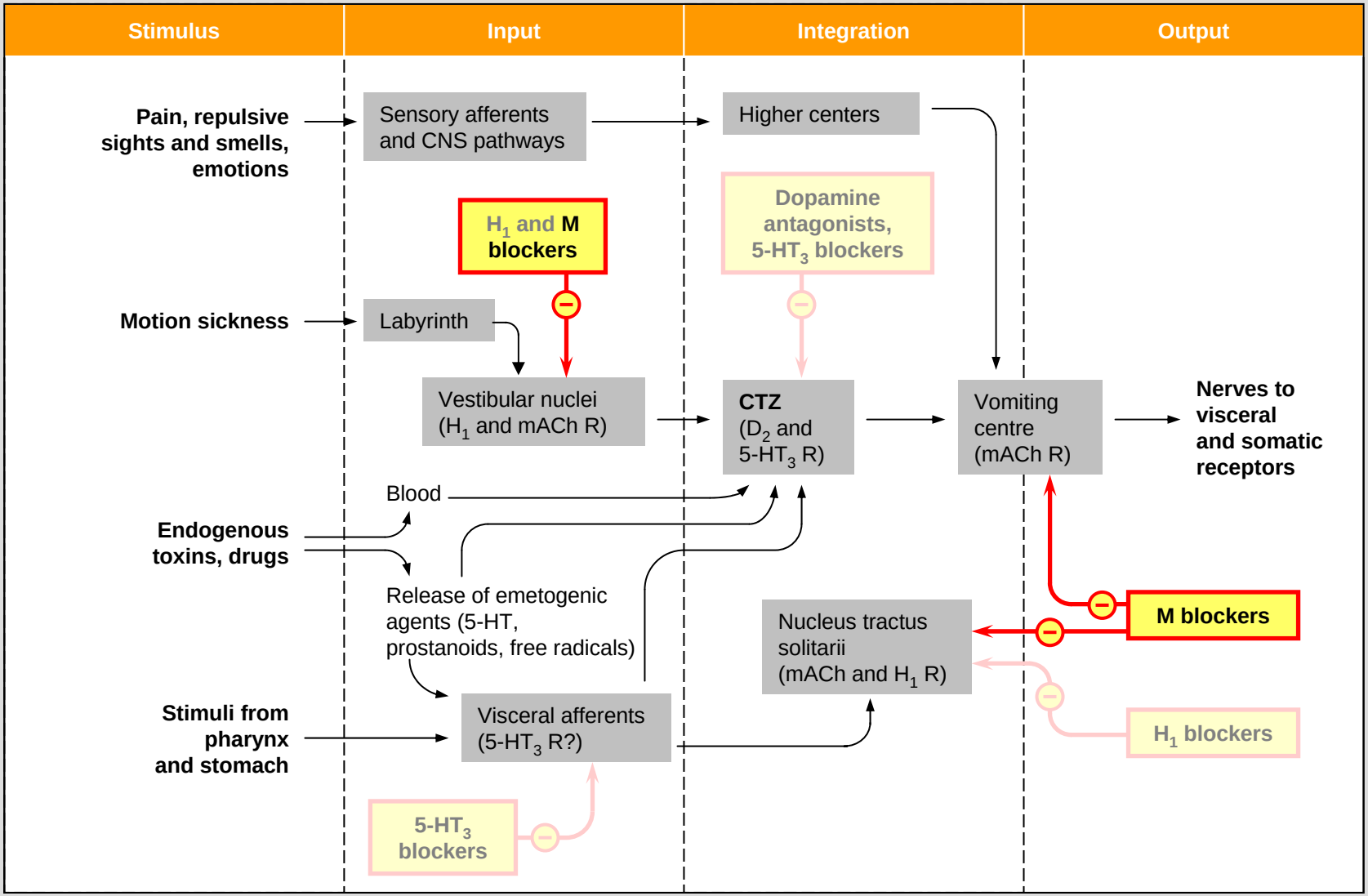
- ondansetron (Zofran®, Ondemet®)
  - a breaktrough in chemotherapy
  - short $T_{½}$ (3 hours)
- tropisetron, dolasetron
  - longer $T_{½}$
- palosetron, granisetron
  - parenteral application

- beneficial combination with dexamethasone

- alosetron used in IBS

Antimuscarinic

Antimuscarinic - physiology



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Antimuscarinic

- mechanisms of action
  - M receptor block
  - mainly vestibular
- indications
  - kinetosis

Brugmansia x insignis

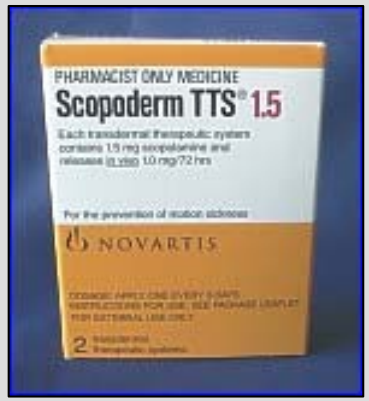
Antimuscarinic - side effects

- side effects
  - sedation
  - parasympatolytic
- contraindications
  - glaucoma

- MKULTRA project

Antimuscarinic - drugs

- skopolamin (hyoscine)
  - maily for kinetosis
  - several mg per os
  - today in the form of TTS (0,5 mg)



Antimuscarinic

Other

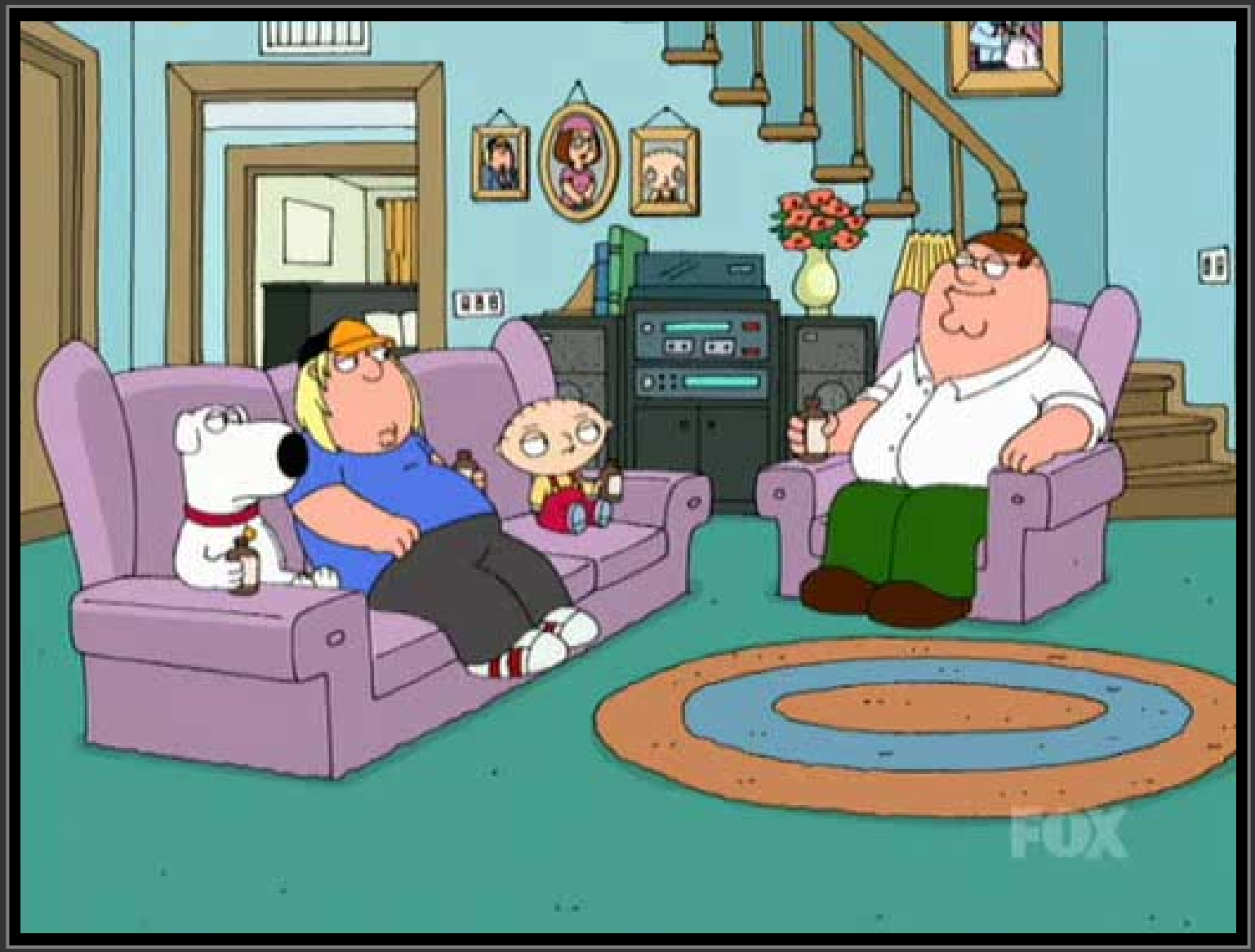
- NK-1 receptor blockers
  - aprepitant
  - central action
  - in combination with 5-HT_3 and dexamethasone
- steroids
  - dexamethasone
- BDZ
  -
- magnesium

Prokinetics - summary

- D_2 blockers
  - e.g. metoclopramide, itopride
  - GERD, diabetic gastroparesis, radiology
- iACHE
  - stigmines
- motilin
  - natural substance (erythromycin)

Emetics

- Tinctura ipecacuanhae
  - strong emetic
  - deprecated
  - only certain indications
  - not as effective as lavage
- emetics in small doses
  - expectorans


FOX

Thank you for your attention