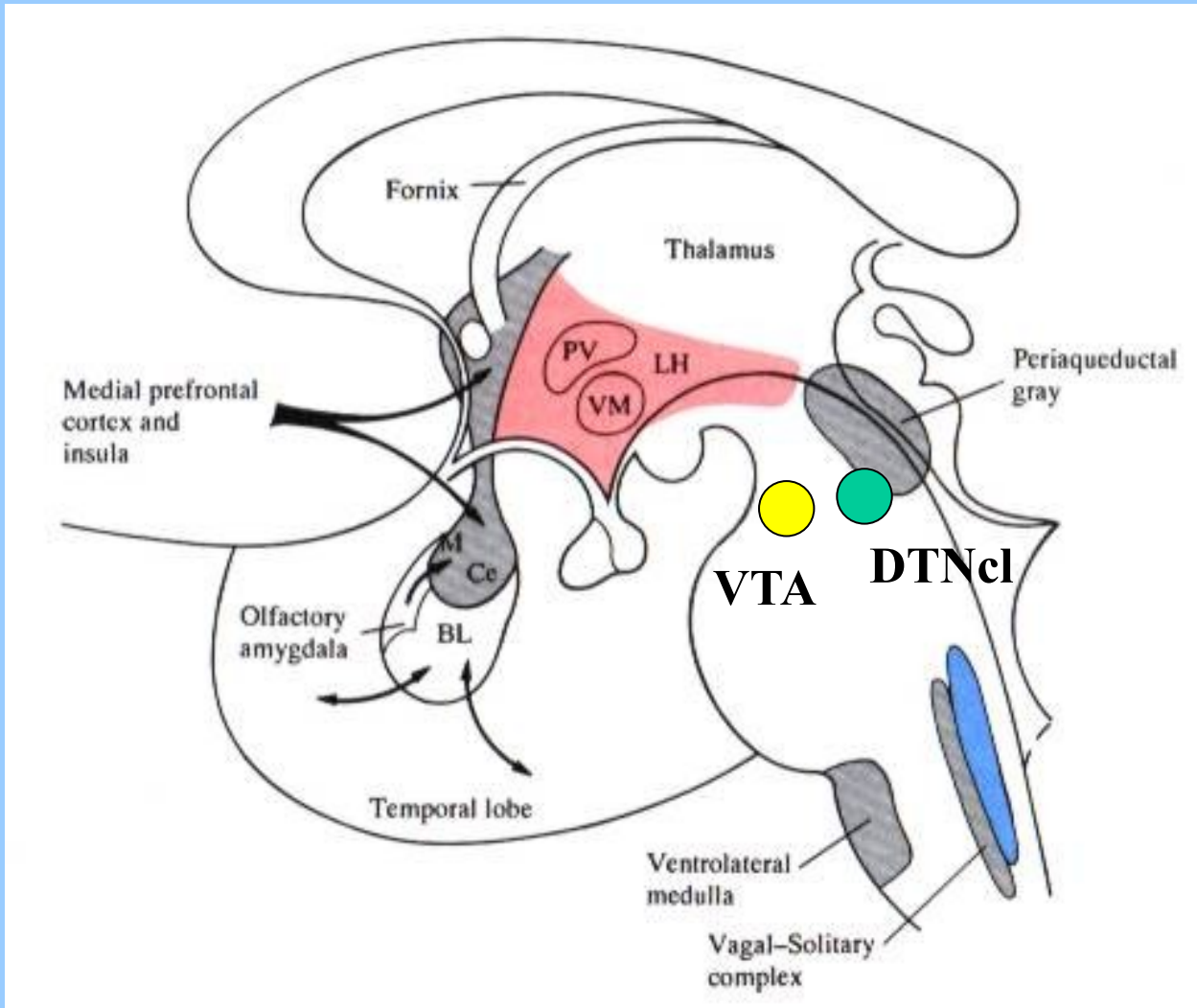


# SOME CENTRAL STRUCTURES FOR CONTROL OF ANS



cortex

hypothalamus

amygdalar nuclei

septal area

# STRUCTURES INFLUENCING PREGANGLIONIC PARASYMPATHETIC AND SYMPATHETIC NEURONS

**from cortex** – to FR by the way of **tr. cortico-reticularis**  
and then by **tr. reticulo-spinalis** to pregang. neurons of ANS

**from hypothalamus** – through **tr. hypothalamo-tegmentalis**  
and **tr. mammilo-tegmentalis**

**from hypothalamus and limbic forebrain** – through **FLD** and  
**dorsol tegmentum**

**from amygdalar nuclei** – through hypothalamus and PAG

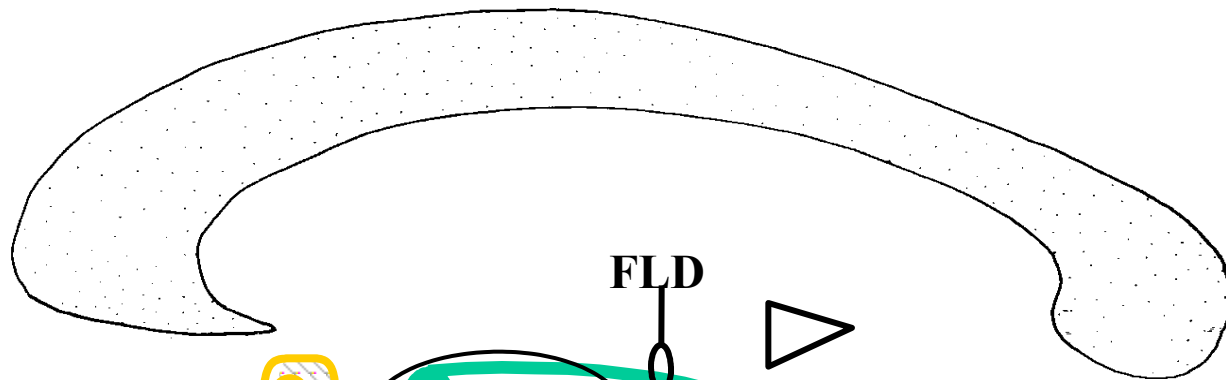
**periaqueductal gray** – coordination of somatic and autonomic  
answers to behavior, defensive reaction, to pregangl. symp. and  
parasymp. neurons

# DESCENDING PATHWAYS FOR MODULATION OF ANS

**Tr. mamillo-tegmentalis**

**Fasciculus longitudinalis dorsalis (FLD)**

**Fasciculus telencephalicus medialis - MFB** (medial forebrain bundle)



area  
septalis

FLD

tr.mam.-tegm.  
ncl. tegmentalis  
dors.

**Fas. telencephalicus med.  
Medial Forebrain Bundle**

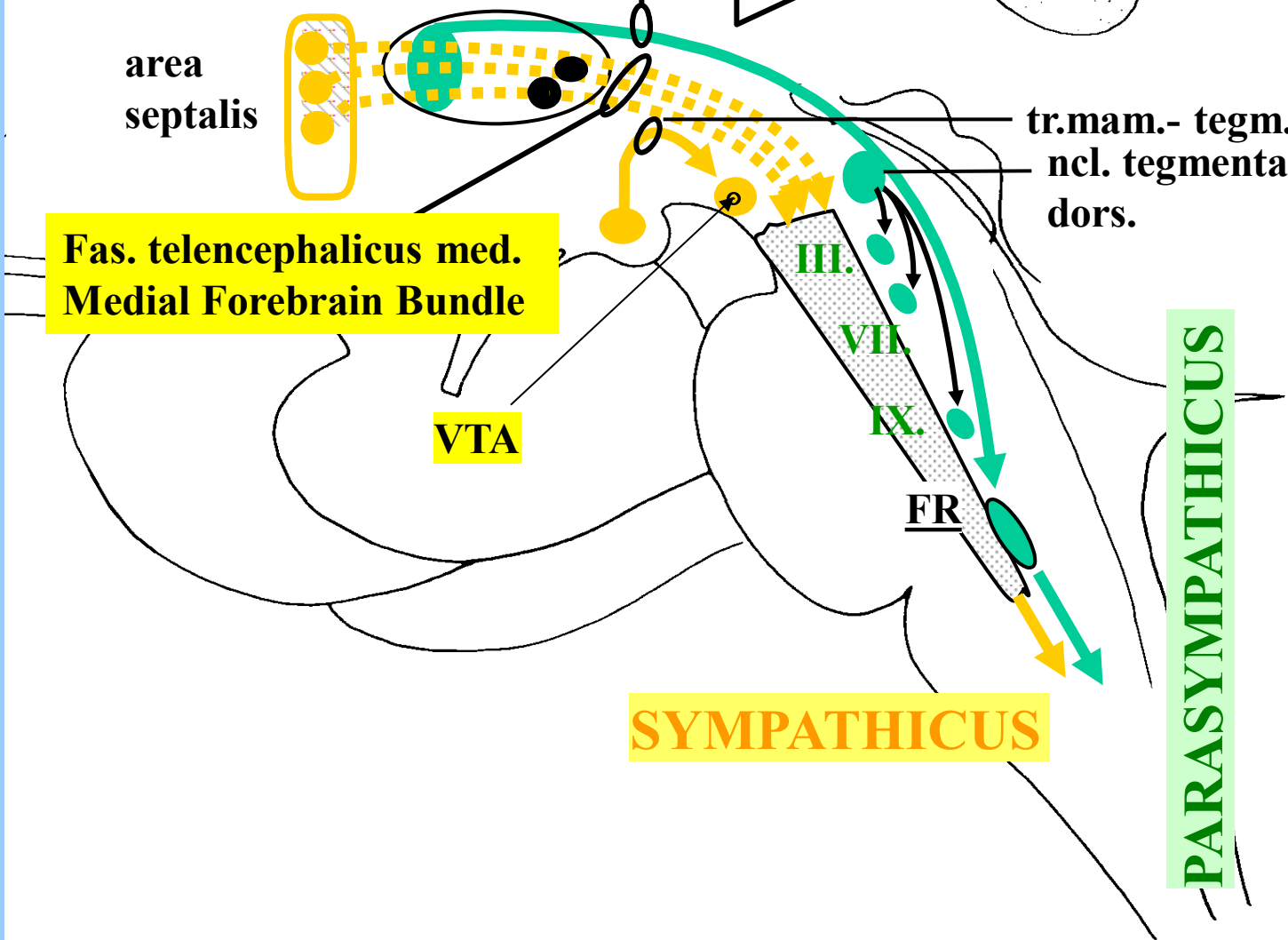
**VTA**

III.  
VII.  
IX.

FR

**SYMPATHICUS**

**PARASYMPATHICUS**



# HYPOTHALAMUS

**Nuclei of anterior hypothalamus** (ncl. preopticus and supraopticus)  
influence of parasympathicus - vagotonia

Stimulation of anterior hypothalamus results in:

- **constriction of pupil**
- **decrease of heartbeat (bradycardia) and blood pressure**
- **dilation of skin arteries**
- **increase of peristaltic movement, motility and secretion of GIT**

# HYPOTHALAMUS

**Nuclei of posterior hypothalamus** (ncl. mamillaris and hypoth. post.)  
influence of sympatheticus

- **dilation of pupil**
- **increase of heartbeat (tachycardia) and blood pressure**
- **constriction of skin arteries**
- **decrease of peristaltic movement, motility and secretion of GIT**
- **hair erection**