DIENCEPHALON

epithalamus

thalamus (metathalamus)
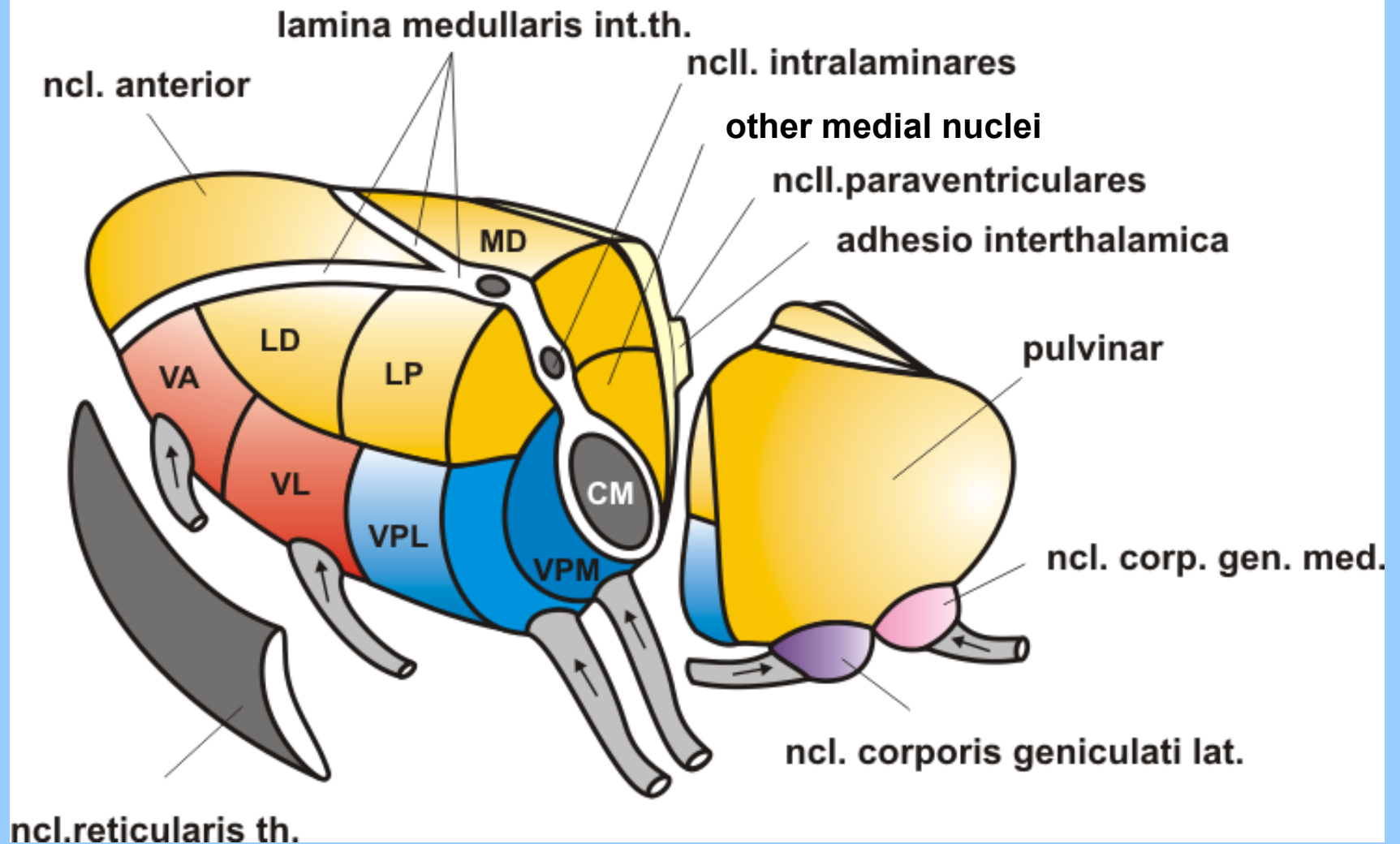
sulcus hypothalamicus

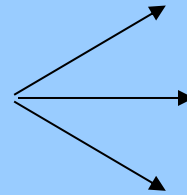**hypothalamus**

subthalamus

THALAMIC NUCLEI

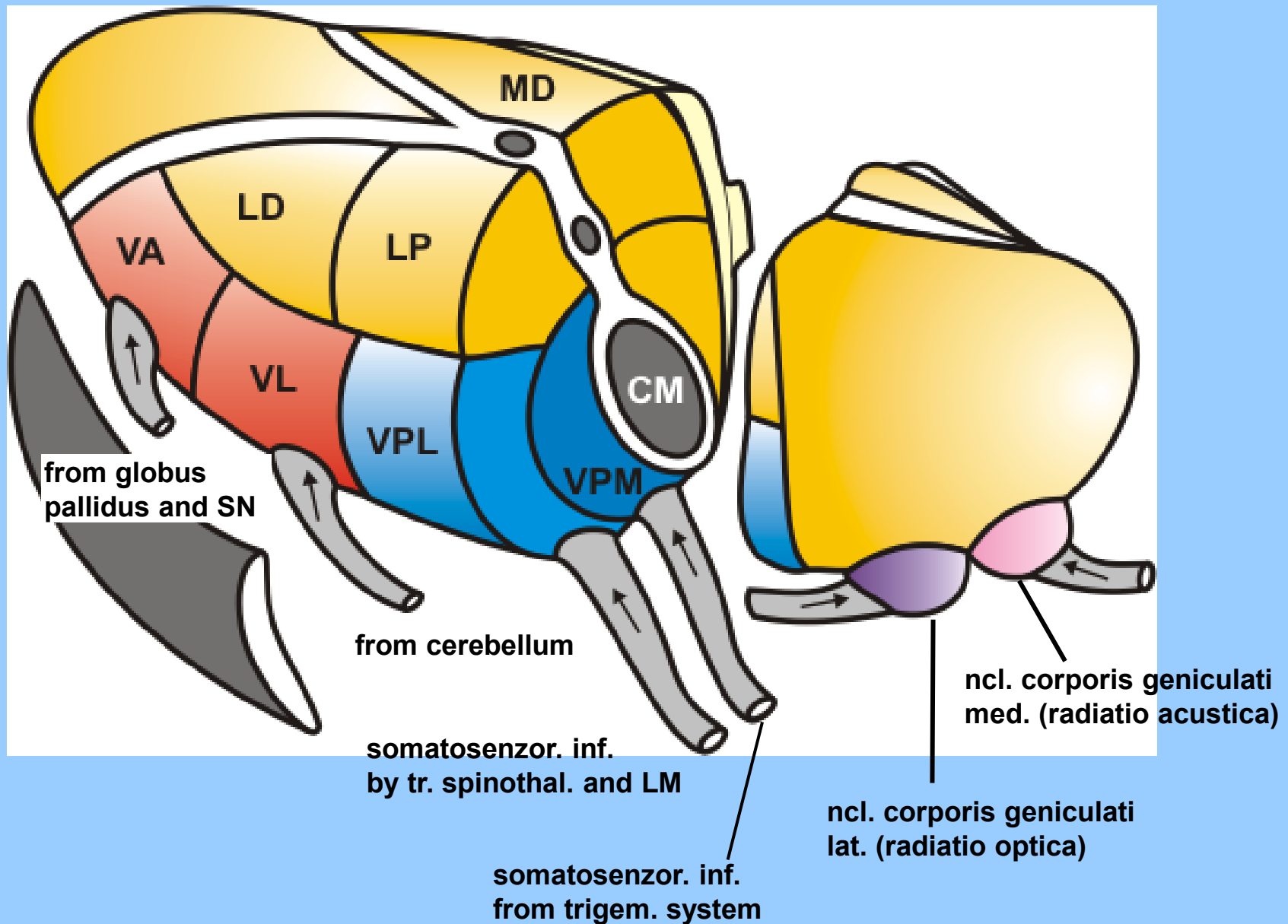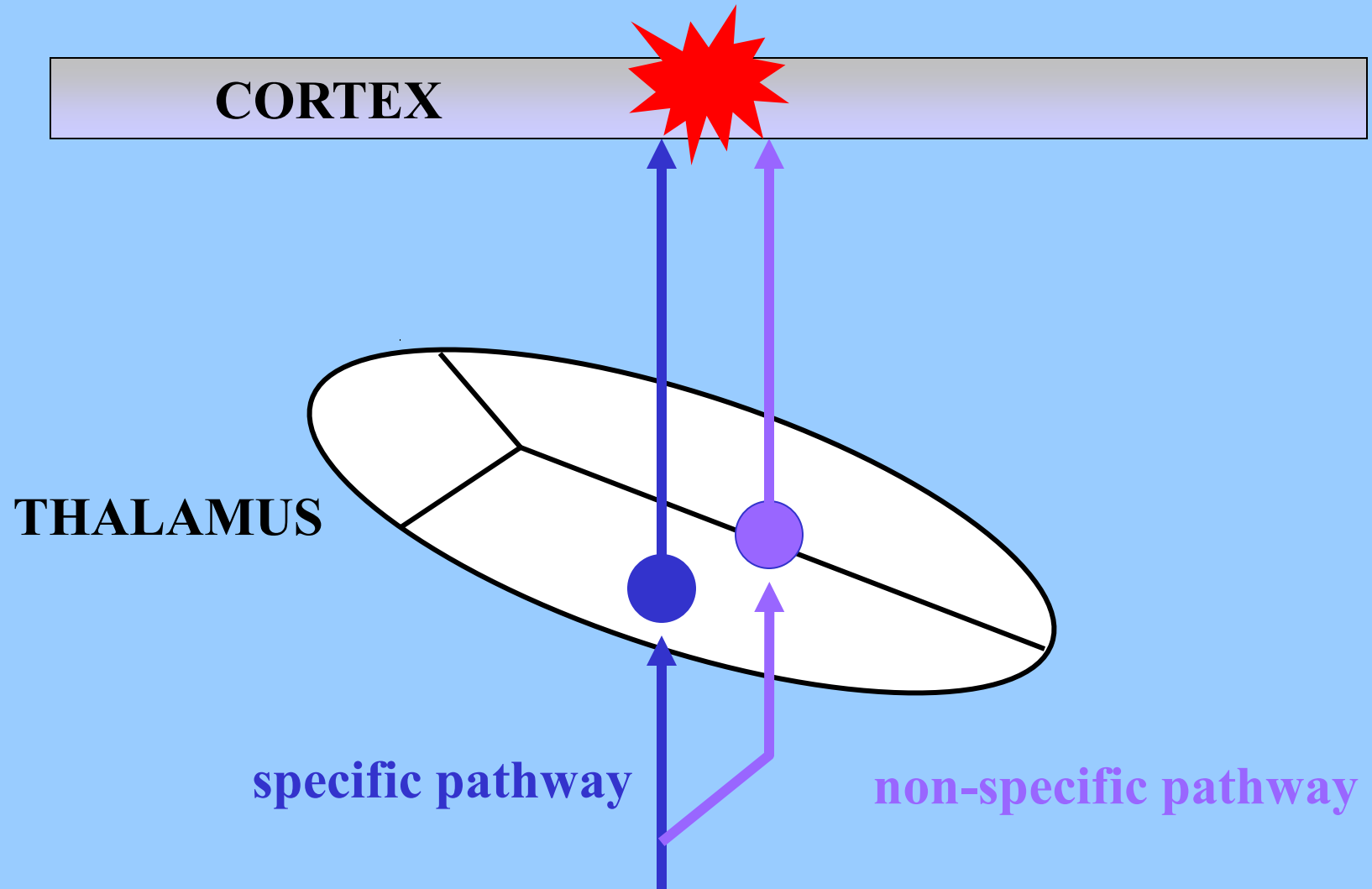# FUNCTIONAL CLASSIFICATION OF THALAMIC NCLL.

specific ncll.

non-specific ncll.

association ncll.

senzory

somatosenzory

motor

SPECIFIC THALAMIC NUCLEI

MD

LD

LP

VA

VL

VPL

VPM

CM

from globus pallidus and SN

from cerebellum

somatosenzor. inf. by tr. spinothal. and LM

somatosenzor. inf. from trigem. system

ncl. corporis geniculati lat. (radiatio optica)

ncl. corporis geniculati med. (radiatio acustica)

AFFERENTATION OF CORTEX BY
SPECIFIC AND NON-SPECIFIC THALAMIC NCLL.

CORTEX

THALAMUS

specific pathway

non-specific pathway

NON-SPECIFIC THALAMIC NUCLEI

ncll. intralaminares

ncll. paraventriculares
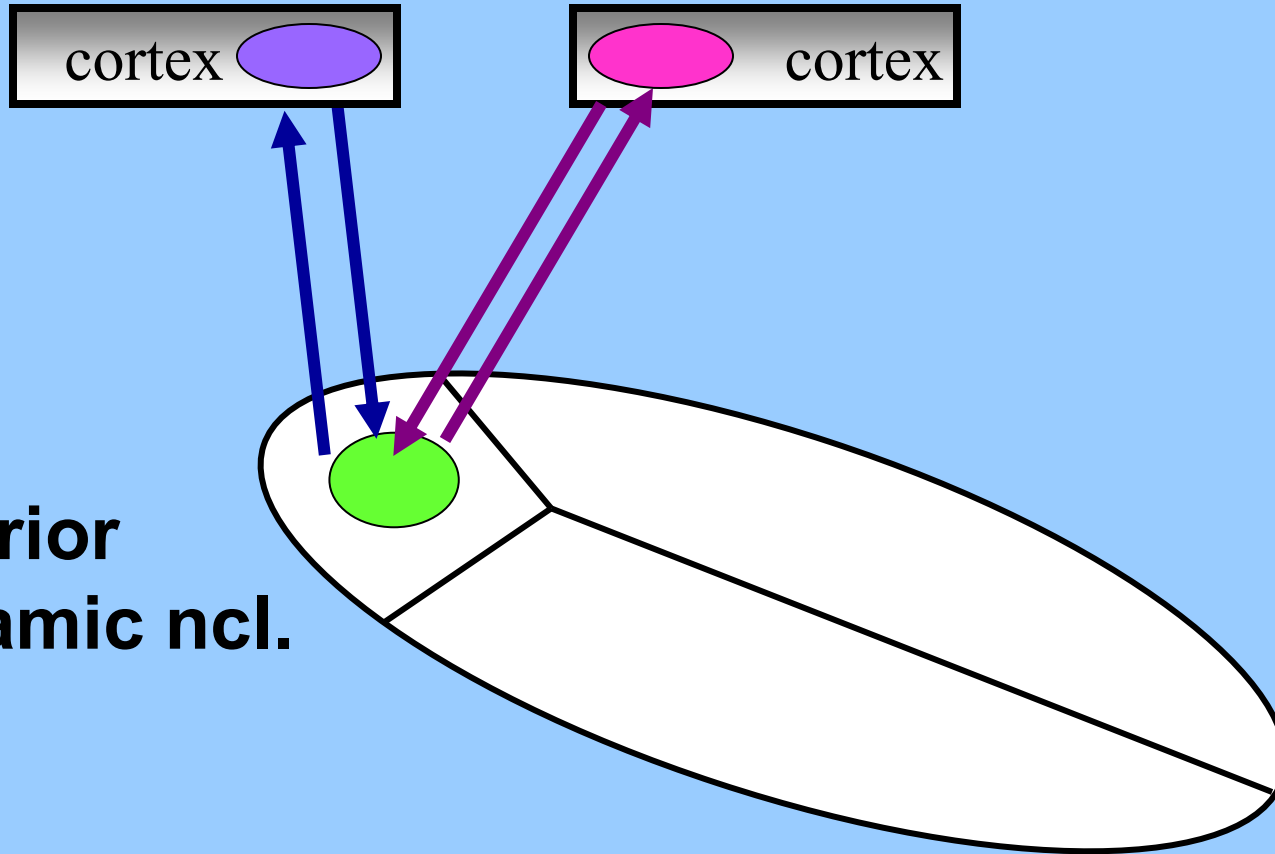
MD

LD

LP

VA

VL

VPL

VPM

CM

ncl. reticularis th.
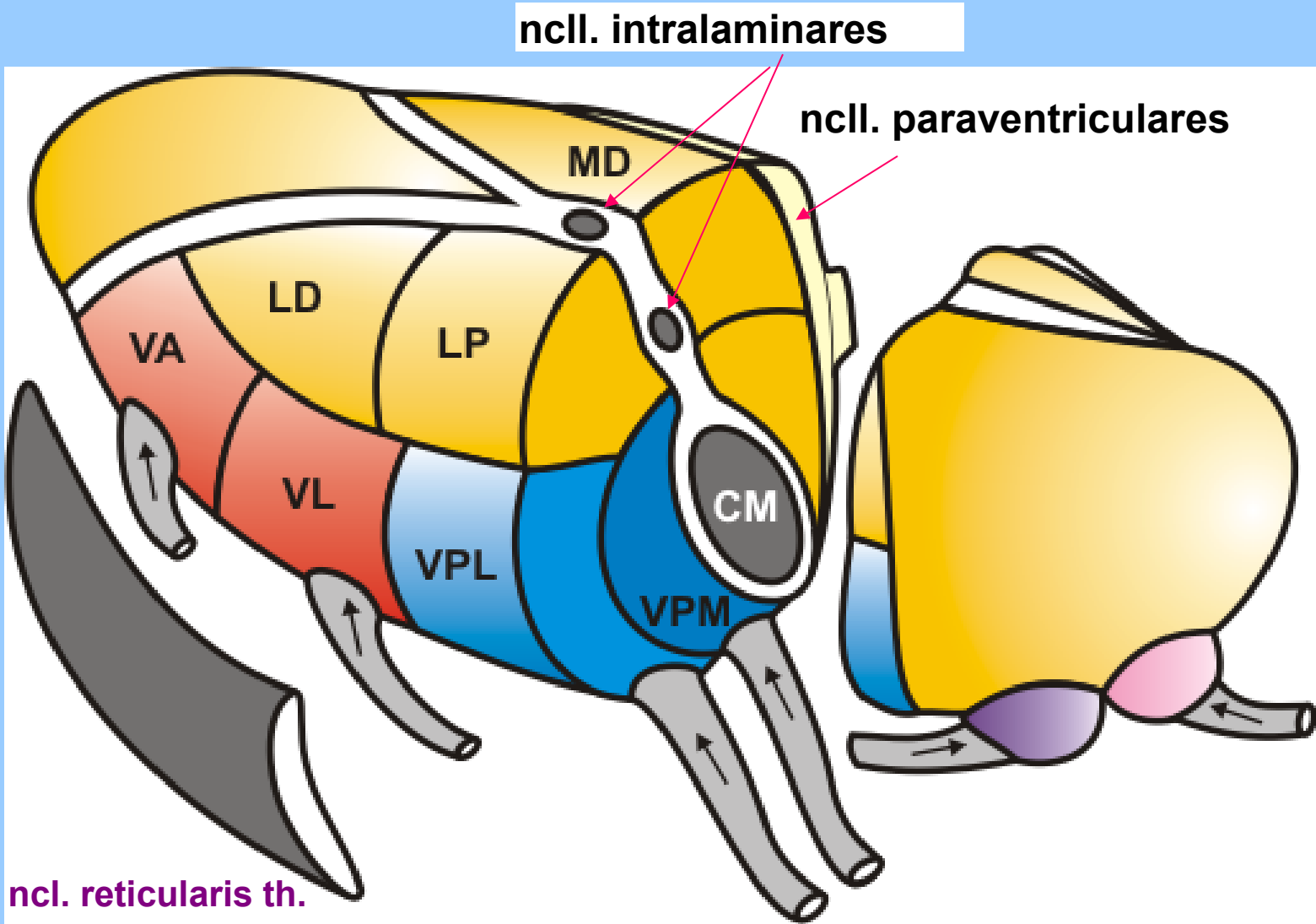
CM= ncl. centromedianus

FUNCTIONAL PATHWAYS OF ASSOCIATION THALAMIC NUCLEI

cortex
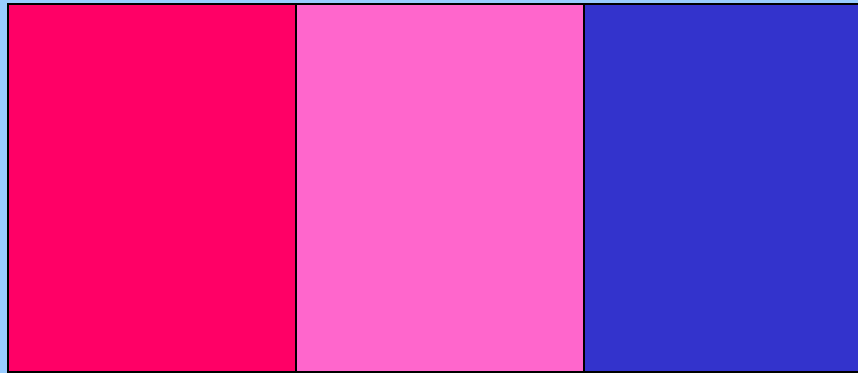
cortex

**anterior
thalamic ncl.**

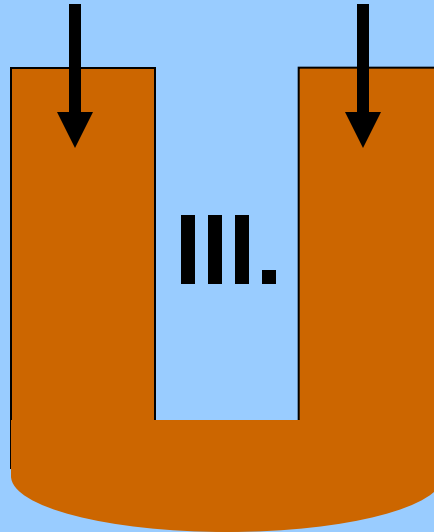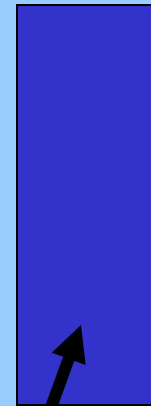# HYPOTHALAMIC NCLL.

anterior   middle   posterior

rostral   dorsal

PERIVENTRICULAR ROW
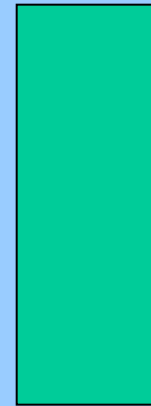
LATERAL ROW

III.

LATERAL ROW
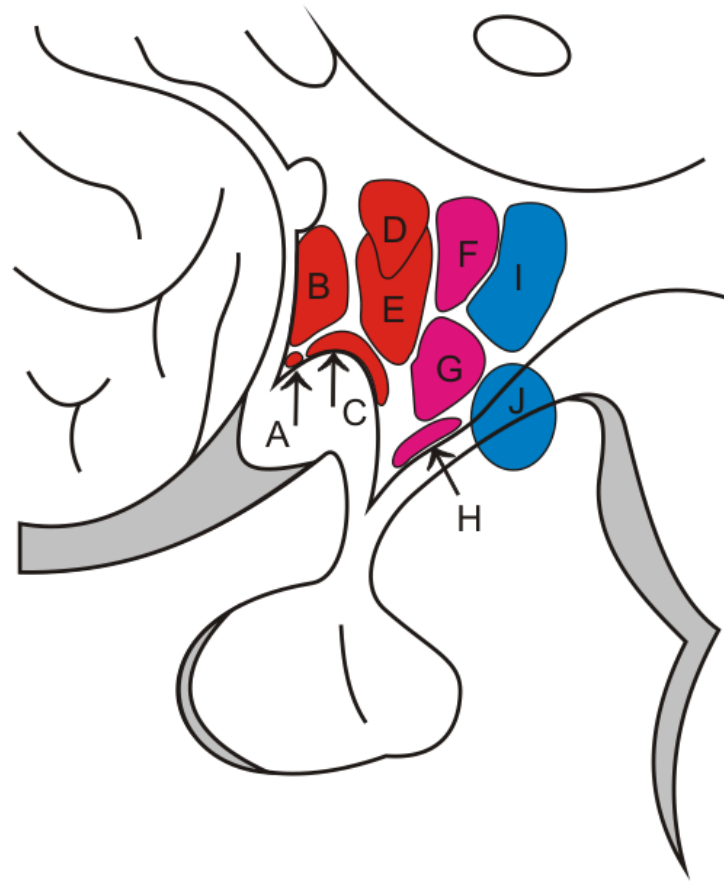
MEDIAL ROWS

Basic arrangement of hypothalamic nuclei

ANTERIOR GROUP
Periventricular row

A - ncl. suprachiasmaticus

Medial row

B - ncl. preopticus

C - ncl. supraopticus

D - ncl. paravetricularis

E - ncll. anteriores

MIDDLE GROUP

F - ncl. dorsomedialis

G - ncl. ventromedialis

H - ncl. arcuatus

POSTERIOR GROUP

I - ncl. posterior

J - ncl. mamillaris

ANTERIOR HYPOTHALAMUS

Ncl. suprachiasmaticus – *afferentation from retina - generator of circadian rhythms*

Ncl. preopticus – *different structure in female and male – control of individual sexual behavior, behavior associated with maternity; regulation of body temperature*

Ncl. supraopticus and paraventricularis (magnocellular component) – *tractus hypothalamo-hypophysialis – transport of hormones into neurohypophysis*

Ncl. paraventricularis (parvocellular component) - *capillary network in eminentia medialis – control of adenohypophysis - hypothalamo-hypophysial portal pathway*
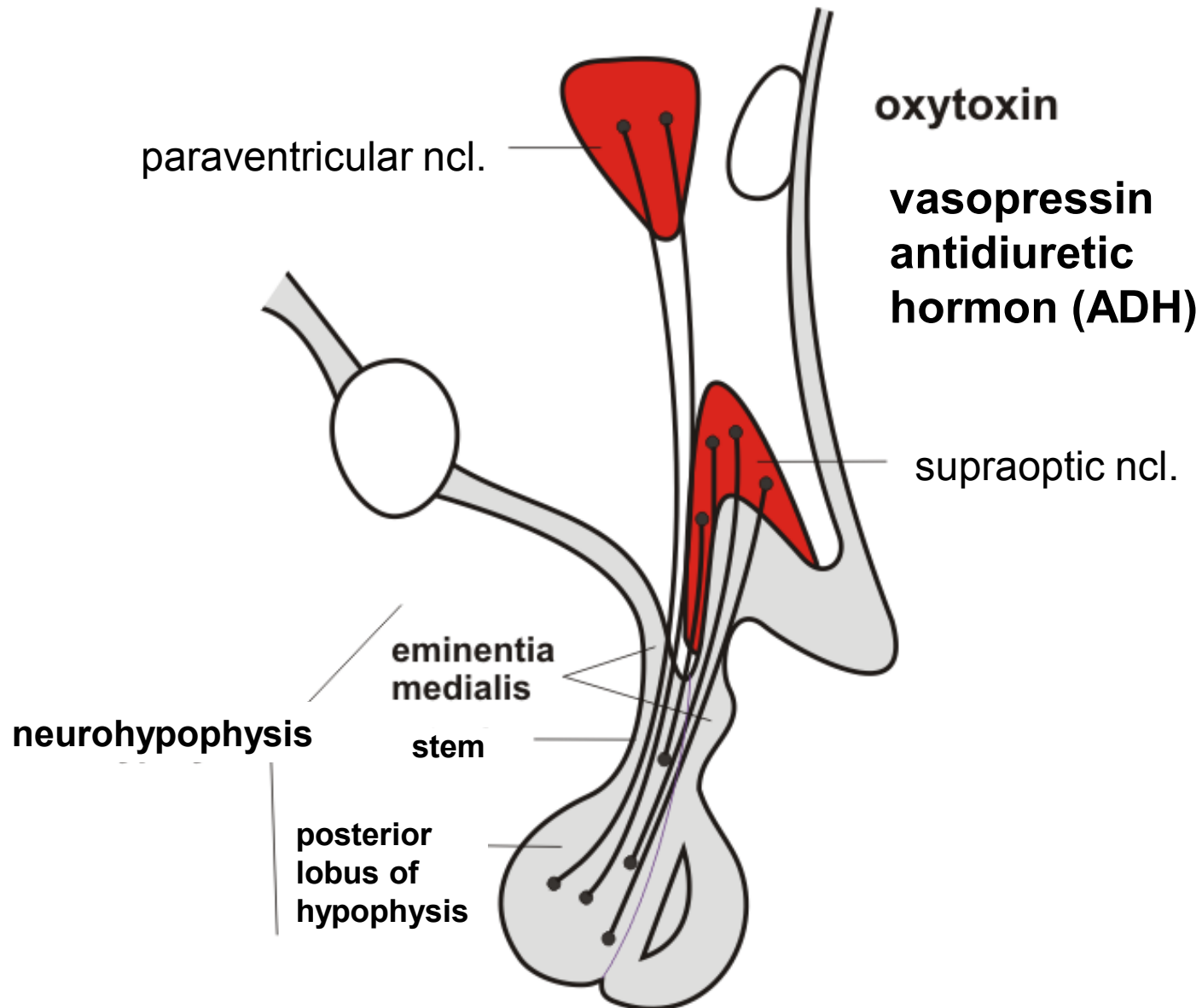
MIDDLE HYPOTHALAMUS

Ncl. arcuatus - *capillary network in eminentia medialis – control of adenohypophysis - hypothalamo-hypophysial portal pathway*

Ncl. ventromedialis – *control of food intake (apestat)*

Ncl. tuberales - *capillary network in eminentia medialis – control of adenohypophysis - hypothalamo-hypophysial portal pathway*

Hypothalamo-hypophysial pathway

paraventricular ncl.

oxytoxin

vasopressin antidiuretic hormon (ADH)

supraoptic ncl.

eminentia medialis

neurohypophysis

stem

posterior lobus of hypophysis

Hypothalamo-hypophysial portal pathway