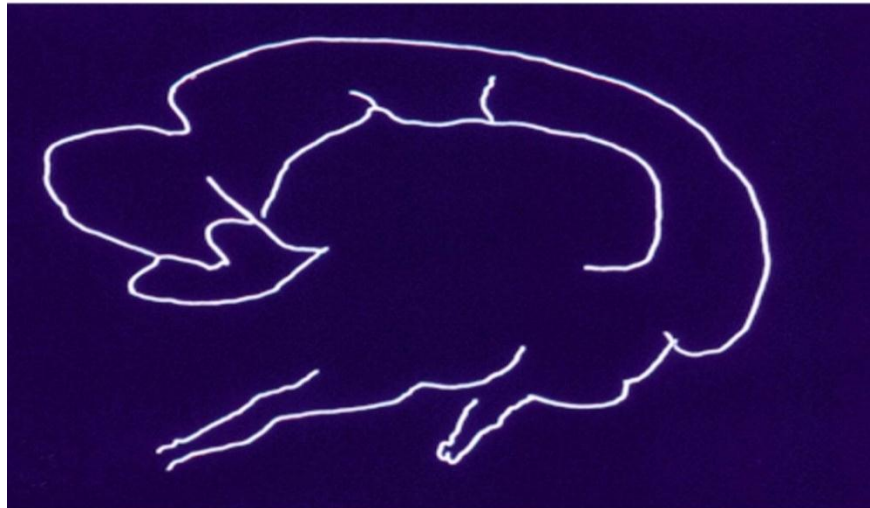


Λειτουργική Ανατομία Υποθαλάμου

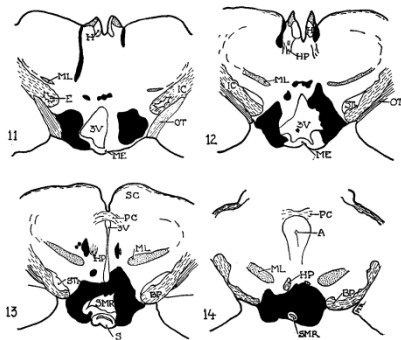


Θεοδόσης Καλαματιανός PhD
ΠΜΣ ΕΦΑΡΜΟΣΜΕΝΗ ΝΕΥΡΟΑΝΑΤΟΜΙΑ

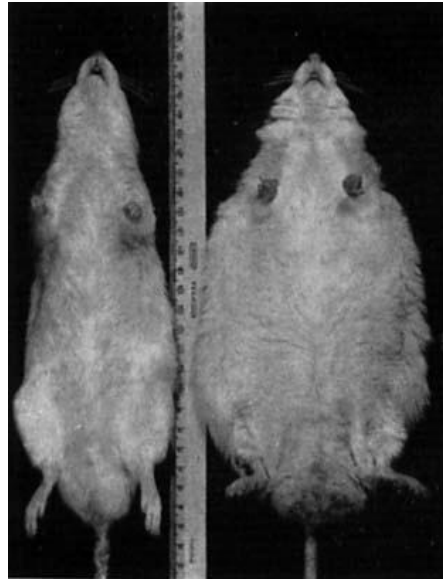
Μια παλιά ιστορία:

**Ο έσω κοιλιακός πυρήνας (ΚΕΝΤΡΟ ΚΟΡΕΣΜΟΥ!) &
η πλάγια υποθαλαμική περιοχή (ΚΕΝΤΡΟ ΤΗΣ ΟΡΕΞΗΣ!)**

**ΗΛΕΚΤΡΟΛΥΤΙΚΕΣ ΒΛΑΒΕΣ ΣΤΗΝ ΕΣΩ
ΚΟΙΛΙΑΚΗ ΠΕΡΙΟΧΗ ΤΟΥ ΥΠΟΘΑΛΑΜΟΥ
ΠΕΡΙΟΧΗ (VMN)**



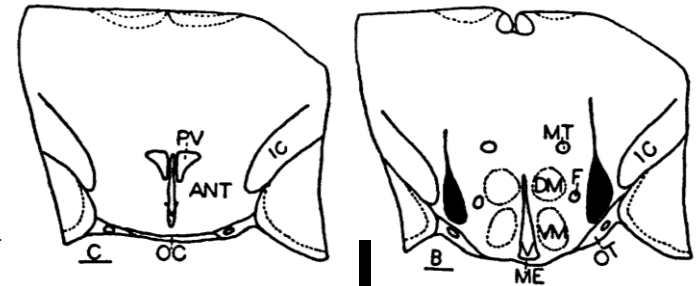
40's



**HYPOTHALAMIC LESIONS AND ADIPOSITY
IN THE RAT ¹**

A. W. HETHERINGTON AND S. W. RANSON

**ΗΛΕΚΤΡΟΛΥΤΙΚΕΣ ΒΛΑΒΕΣ ΣΕ ΠΛΑΓΙΑ
ΥΠΟΘΑΛΑΜΙΚΗ ΠΕΡΙΟΧΗ**



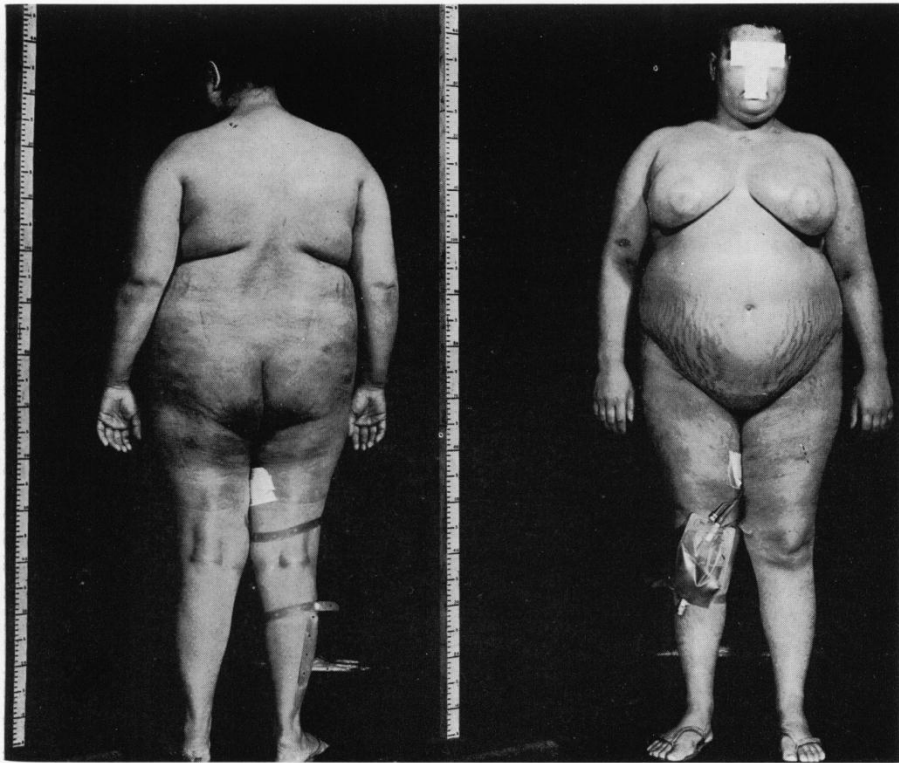
50's

**ΚΑΤΑΣΤΟΛΗ ΒΡΩΣΗΣ & ΠΟΣΗΣ ΣΕ
ΠΟΝΤΙΚΟΥΣ & ΓΑΤΕΣ**

**HYPOTHALAMIC CONTROL OF FOOD INTAKE
IN RATS AND CATS***

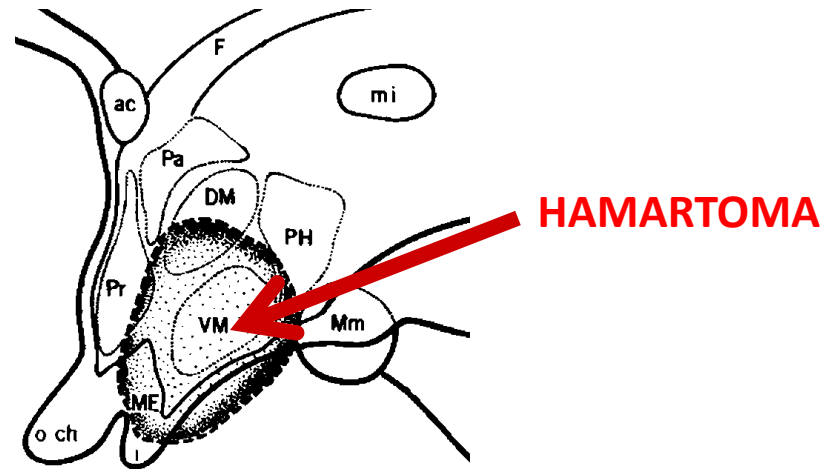
BAL K. ANAND† AND JOHN R. BROBECK

Μια παλιά ιστορία: ΕΠΙΒΕΒΑΙΩΣΗ ΤΟΥ ΜΟΝΤΕΛΟΥ (ΚΟΡΕΣΜΟΣ: VMN ΣΤΟΝ ΑΝΘΡΩΠΟ)



60's

- A 20-year-old Puerto Rican woman was admitted to The New York Hospital in November 1962, complaining of bulimia.



Hyperphagia, Rage, and Dementia
Accompanying a Ventromedial
Hypothalamic Neoplasm

Alexander G. Reeves, MD, and Fred Plum, MD, New York

Most Obesities (K)nown Are Low In Sympathetic Activity



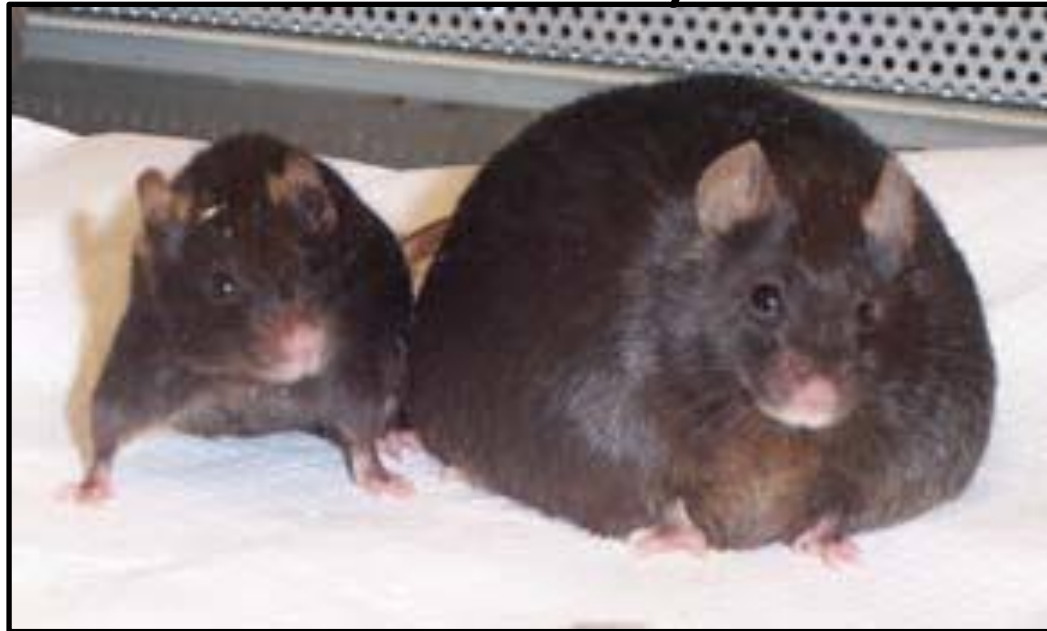
Ένα καινούργιο κεφάλαιο!

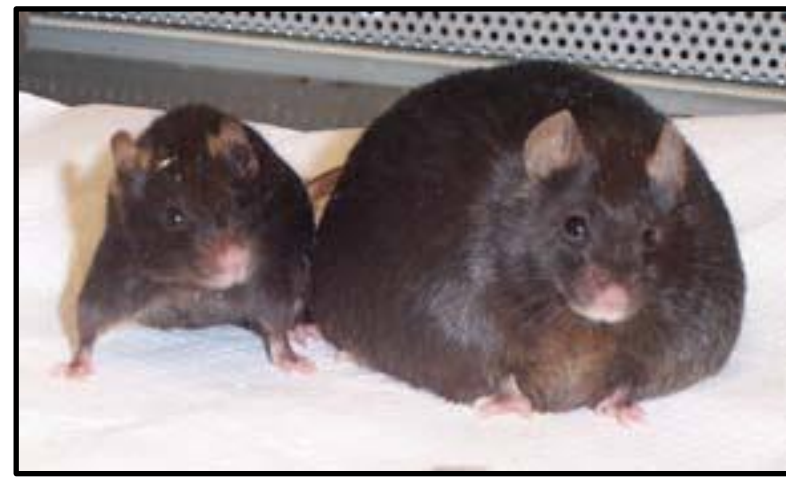
Δίκτυο Ρύθμισης Όρεξης & Ισοζυγίου Ενέργειας

Zhang Y, Proenca R, Maffei M, Barone M, Leopold L, Friedman JM (December 1994). "**Positional cloning of the mouse obese gene and its human homologue**". *Nature*. 372: 425–32. The Rockefeller University,, New York, New York, USA

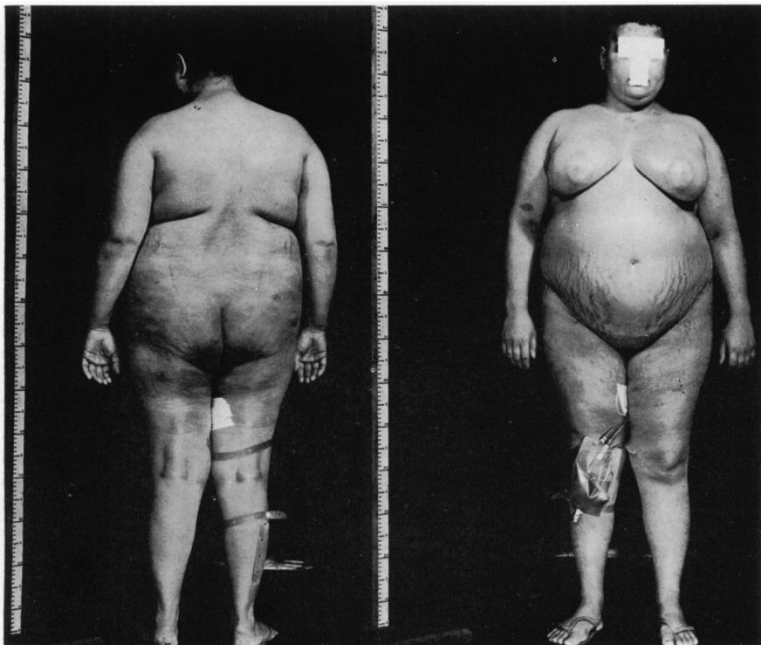
ob/ob

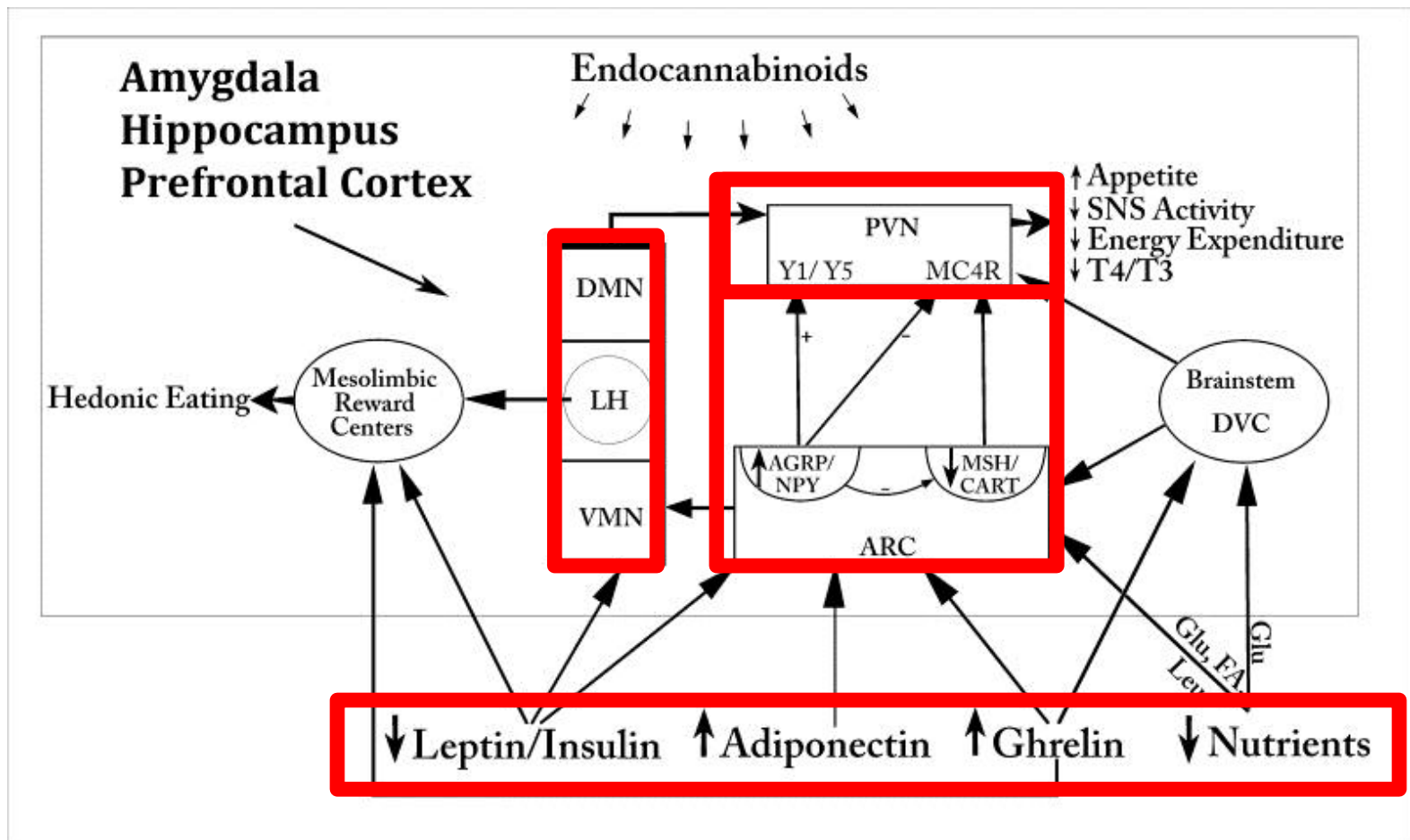
90's





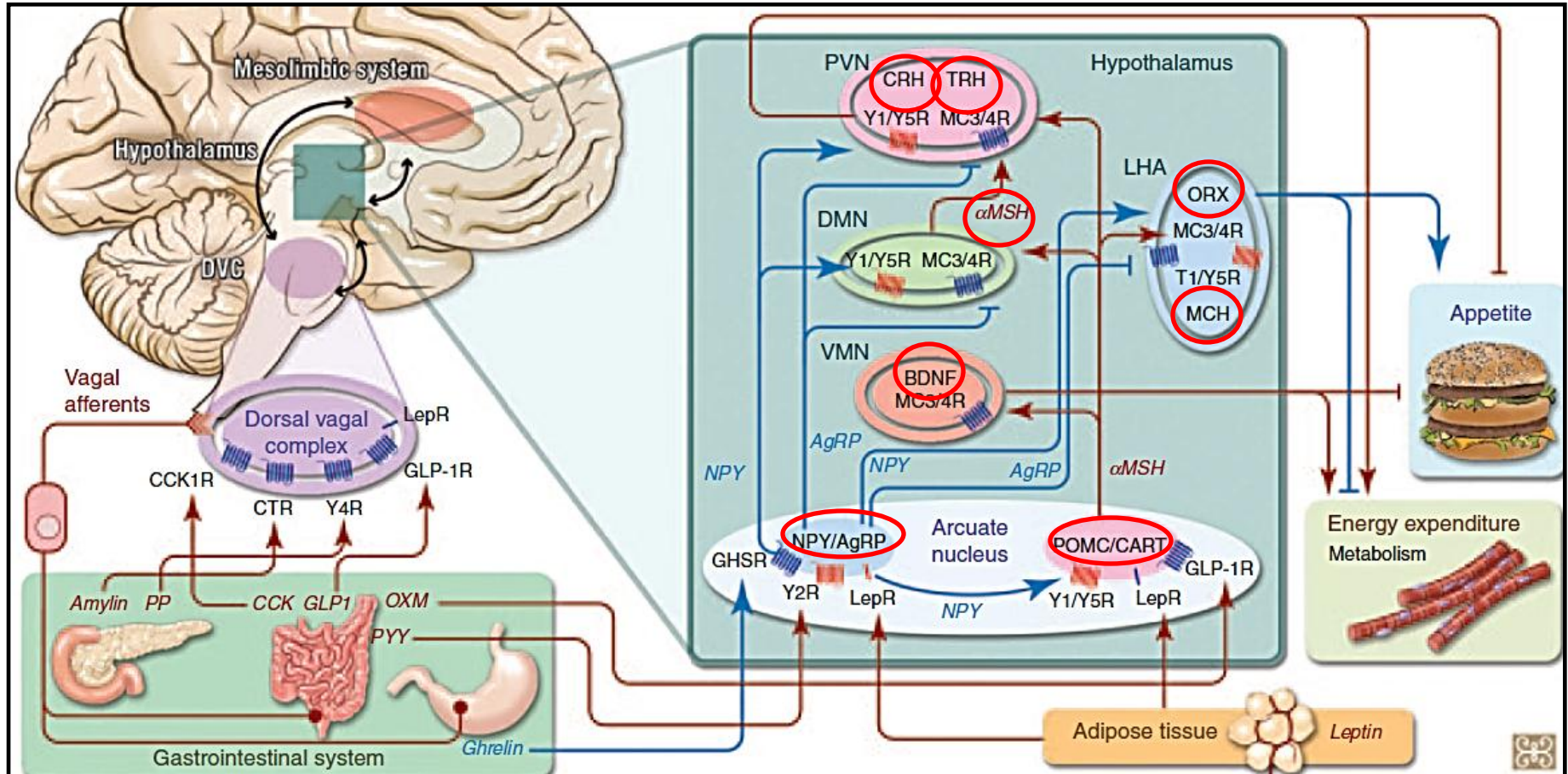
“Σύνθεση: Το σύγχρονο πρότυπο”





- Neuropeptide Y(NPY)/Agouti Related peptide(AgRP) = ΝΕΥΡΩΝΕΣ ΜΕ ΟΡΕΞΙΟΓΟΝΟ & ΑΝΑΒΟΛΙΚΗ ΔΡΑΣΗ
- Melanocyte stimulating hormone (MSH)/Cocaine and amphetamine regulated transcript (CART) = ΝΕΥΡΩΝΕΣ ΜΕ ΑΝΟΡΕΞΙΟΓΟΝΟ & ΚΑΤΑΒΟΛΙΚΗ ΔΡΑΣΗ
- ΓΑΣΤΡΕΝΤΕΡΙΚΟΣ ΣΩΛΗΝΑΣ= ΒΡΑΧΥΠΡΟΘΕΣΜΗ ΡΥΘΜΙΣΗ (ΓΚΡΕΛΙΝΗ)
- ΛΙΠΟΣ = ΜΑΚΡΟΠΡΟΘΕΣΜΗ ΡΥΘΜΙΣΗ (ΛΕΠΤΙΝΗ)

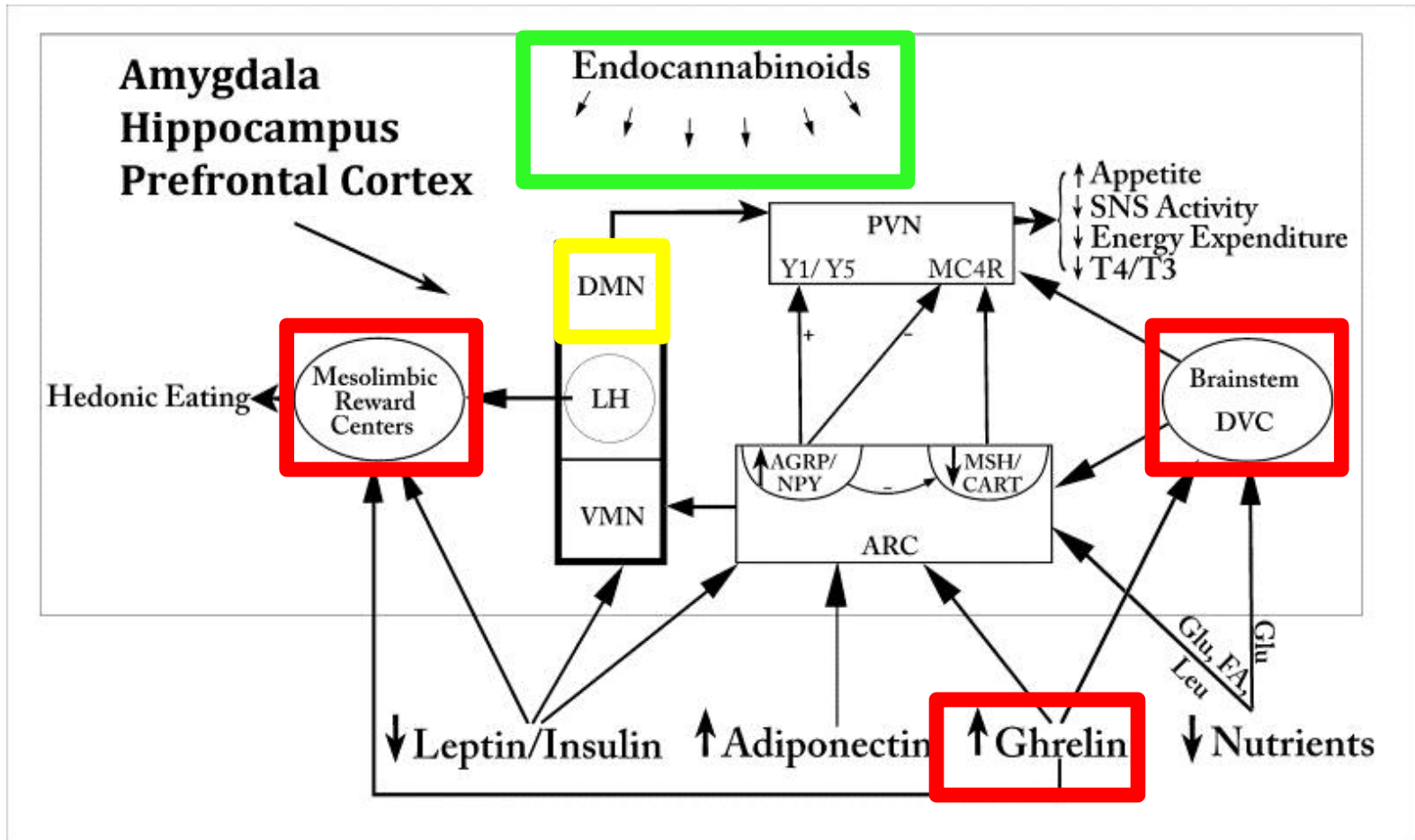
Η “σφαιρική” εικόνα



- Μπλέ Υποδοχέας: Ενεργοποιεί
- Κόκκινος Υποδοχέας: Απενεργοποιεί
- Μπλέ Βέλος: Διεγείρει την όρεξη
- Κόκκινο Βέλος: Καταστέλει την όρεξη

DOI10.1038/clpt.2013.204

<https://www.researchgate.net/publication/257534183>



- ΚΙΡΚΑΔΙΑ ΣΗΜΑΤΑ (DMN & PVN)
- ΟΡΕΞΙΟΓΟΝΟΣ ΔΡΑΣΗ ΕΝΔΟΚΑΝΝΑΒΙΝΟΕΙΔΩΝ
- ΔΡΑΣΗ Π.Χ ΓΚΡΕΛΙΝΗΣ & ΛΕΠΤΙΝΗΣ ΣΕ
- 1. ΠΕΡΙΟΧΕΣ ΑΝΤΑΜΟΙΒΗΣ (ΜΕΣΟΛΙΜΒΙΚΟΥ)
- 2. ΣΤΕΛΕΧΟΣ (4^η κοιλία γκρελίνη)

Διαφορές Τρωκτικά & Άνθρωπος!

0013-7227/07/\$15.00/0
Printed in U.S.A.

Endocrinology 148(9):4276–4281
Copyright © 2007 by The Endocrine Society
doi: 10.1210/en.2007-0390

Cocaine- and Amphetamine-Regulated Transcript (CART) Is Colocalized with the Orexigenic Neuropeptide Y and Agouti-Related Protein and Absent from the Anorexigenic α -Melanocyte-Stimulating Hormone Neurons in the Infundibular Nucleus of the Human Hypothalamus

Judit Menyhért, Gábor Wittmann, Ronald M. Lechan, Éva Keller, Zsolt Liposits, and Csaba Fekete

Department of Endocrine Neurobiology (J.M., G.W., Z.L., C.F.), Institute of Experimental Medicine, Hungarian Academy of Sciences, 1083 Budapest, Hungary; Tupper Research Institute and Department of Medicine (R.M.L., C.F.), Division of Endocrinology, Diabetes, Metabolism, and Molecular Medicine, New England Medical Center, Boston, Massachusetts 02111; Department of Neuroscience (R.M.L.), Tufts University School of Medicine, Boston, Massachusetts 02111; Department of Forensic Medicine (É.K.), Semmelweis University, 1085 Budapest, Hungary; and Department of Neuroscience (Z.L.), Faculty of Information Technology, Pázmány Péter Catholic University, 1083 Budapest, Hungary

Cocaine- and amphetamine-regulated transcript (CART) is a recently discovered anorexigenic peptide. In rodents, CART inhibits food intake and is expressed in the anorexigenic α -MSH- but not in the orexigenic neuropeptide Y (NPY)- and agouti-related protein (AGRP)-synthesizing neurons of the arcuate nucleus. To understand whether CART is similarly expressed in feeding-related neuronal groups of the human hypothalamus as observed in rodents, colocalization of CART with α -MSH, NPY, AGRP, and melanin-concentrating hormone was studied using double-labeling immunofluorescence and confocal microscopy on human hypothalamic tissues obtained at autopsy. Unlike in rodents, we observed that CART

is absent from the perikarya and axons of α -MSH-synthesizing neurons, but expressed in approximately one third of NPY/AGRP neurons in the human infundibular nucleus. In the lateral hypothalamus of the humans, colocalization of CART and melanin-concentrating hormone was observed, similar to that described in rodents. The anatomy of CART-containing neurons in the human infundibular nucleus differs markedly from that observed in the rodent brain, raising the question whether the colocalization of CART with orexigenic NPY and AGRP neurons is associated with an orexigenic role of CART in the human brain. (*Endocrinology* 148: 4276–4281, 2007)