Οργανικές Ψυχικές Διαταραχές

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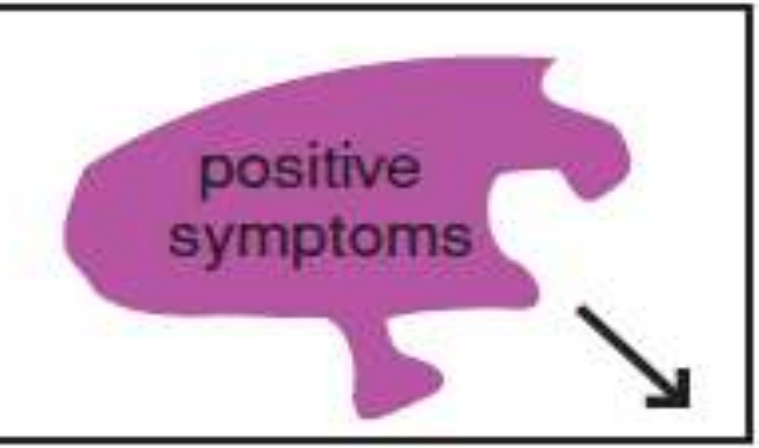
Πανεπιστημιακό Γενικό Νοσοκομείο «ΑΤΤΙΚΟΝ»

Οργανικές Ψυχικές Διαταραχές

- Ντελίριο
- Άνοια
- Αμνησικές και άλλες ψυχικές διαταραχές που οφείλονται σε σωματική νόσο



- Λοιμώξεις!
- Ογκολογικά Νοσήματα
- ΧΑΠ
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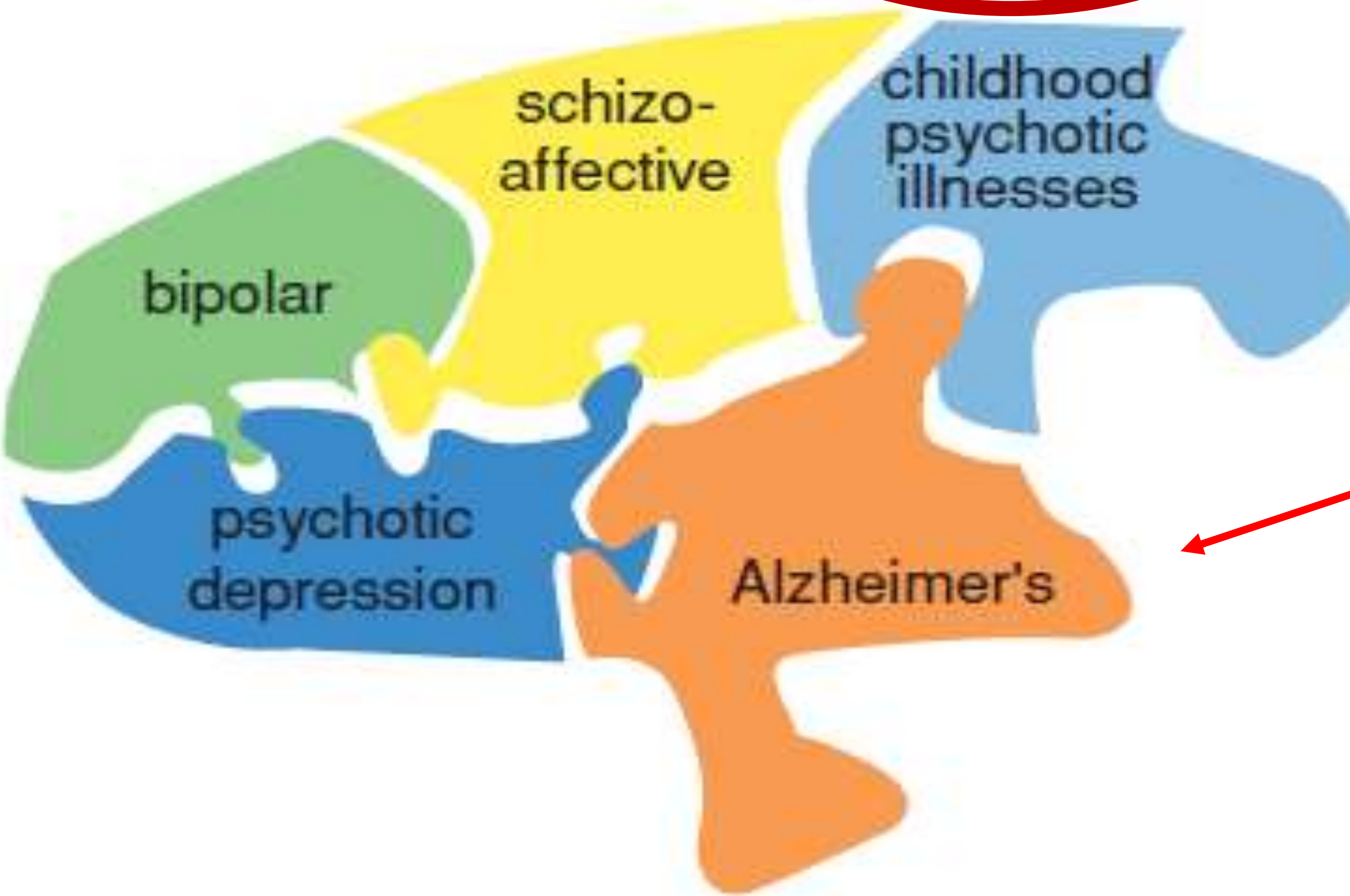
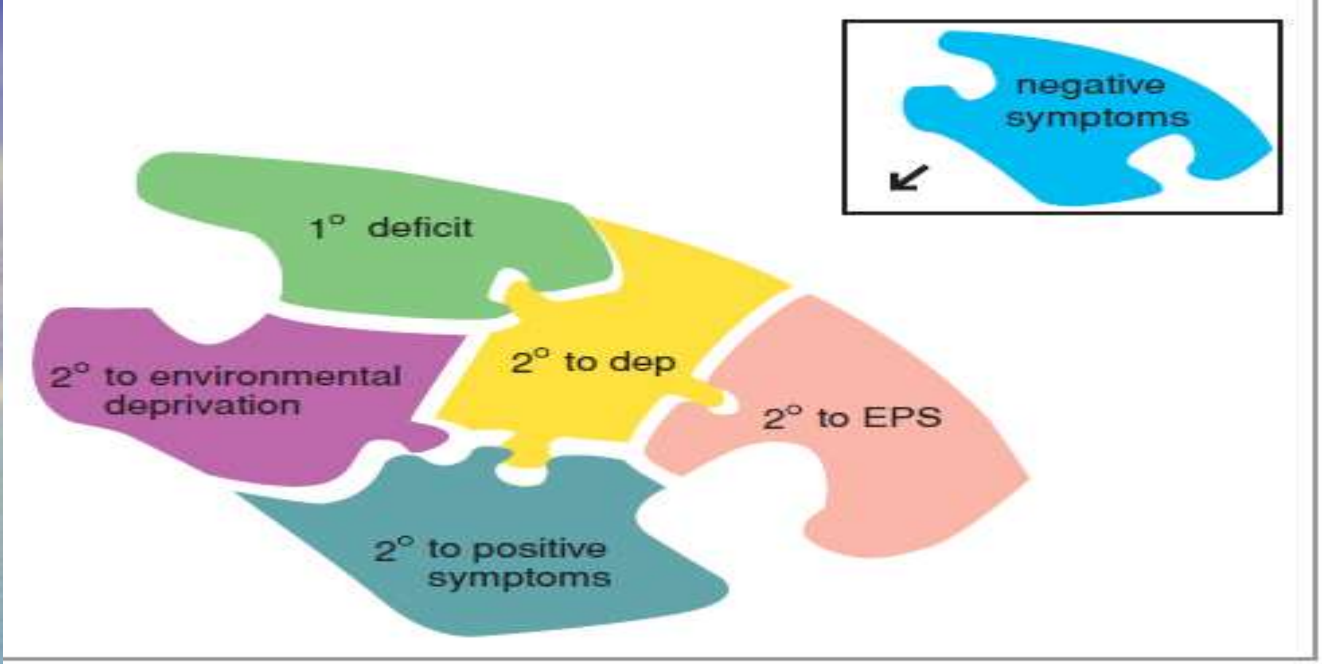
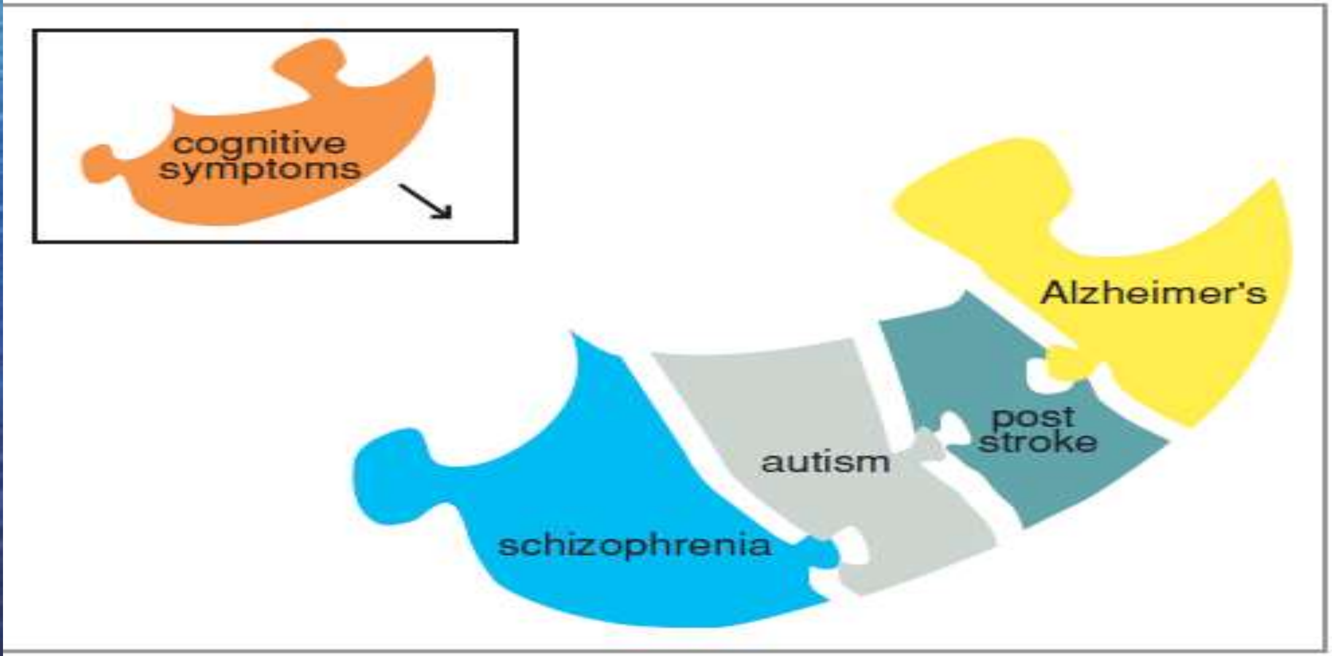
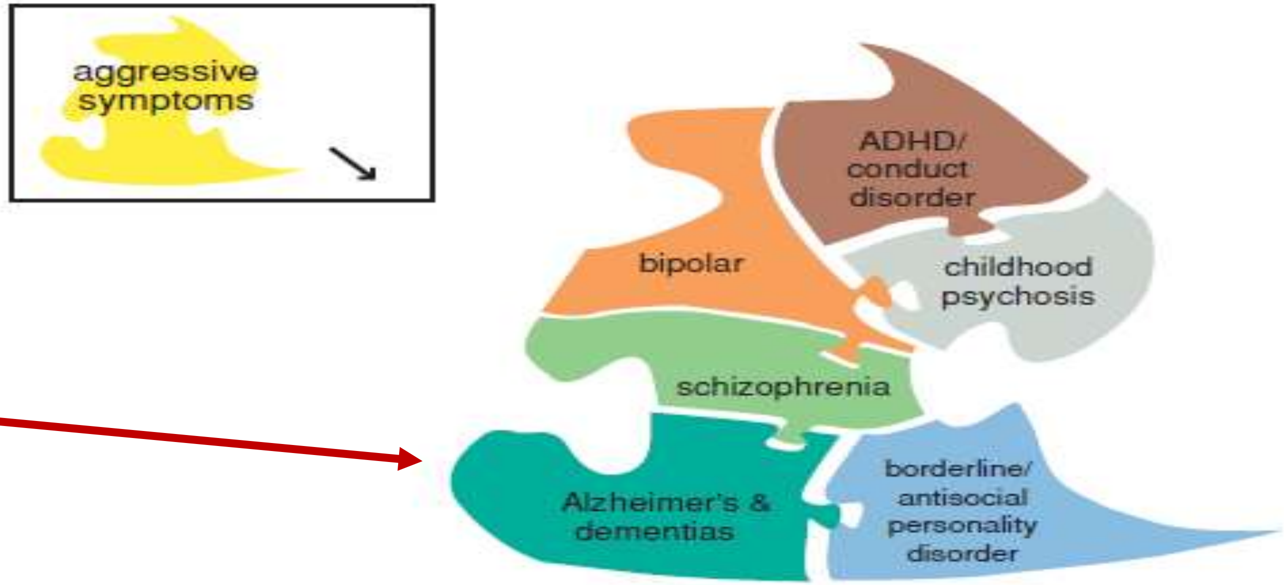
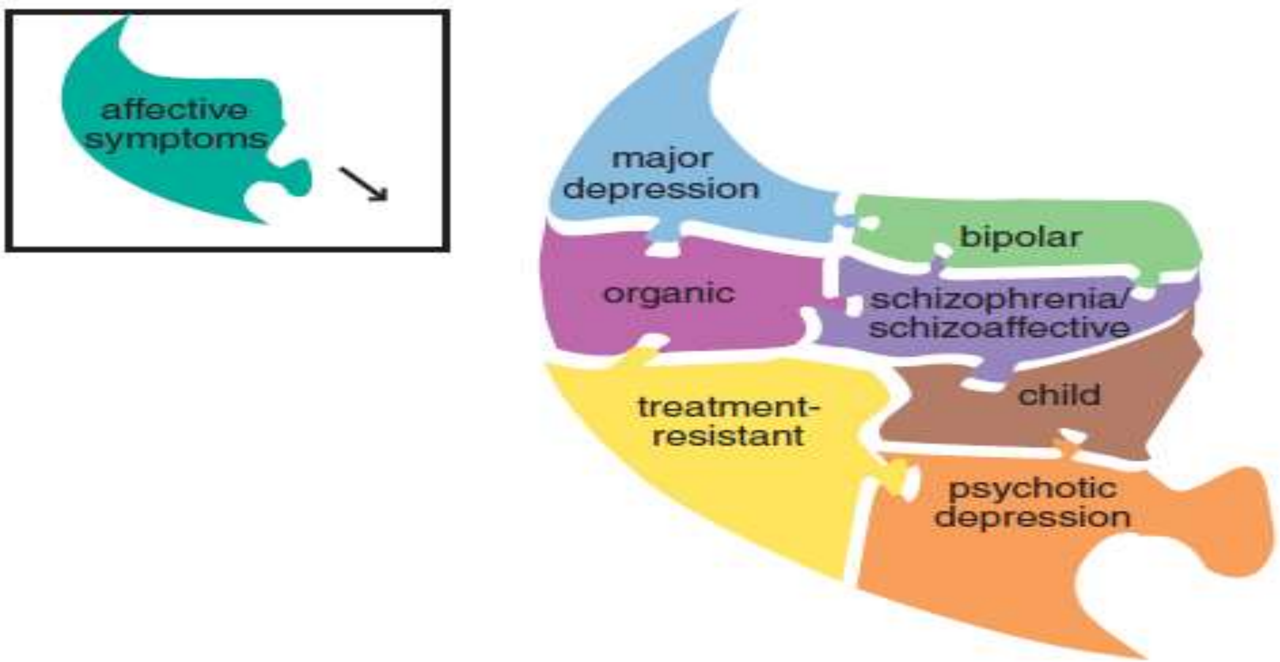
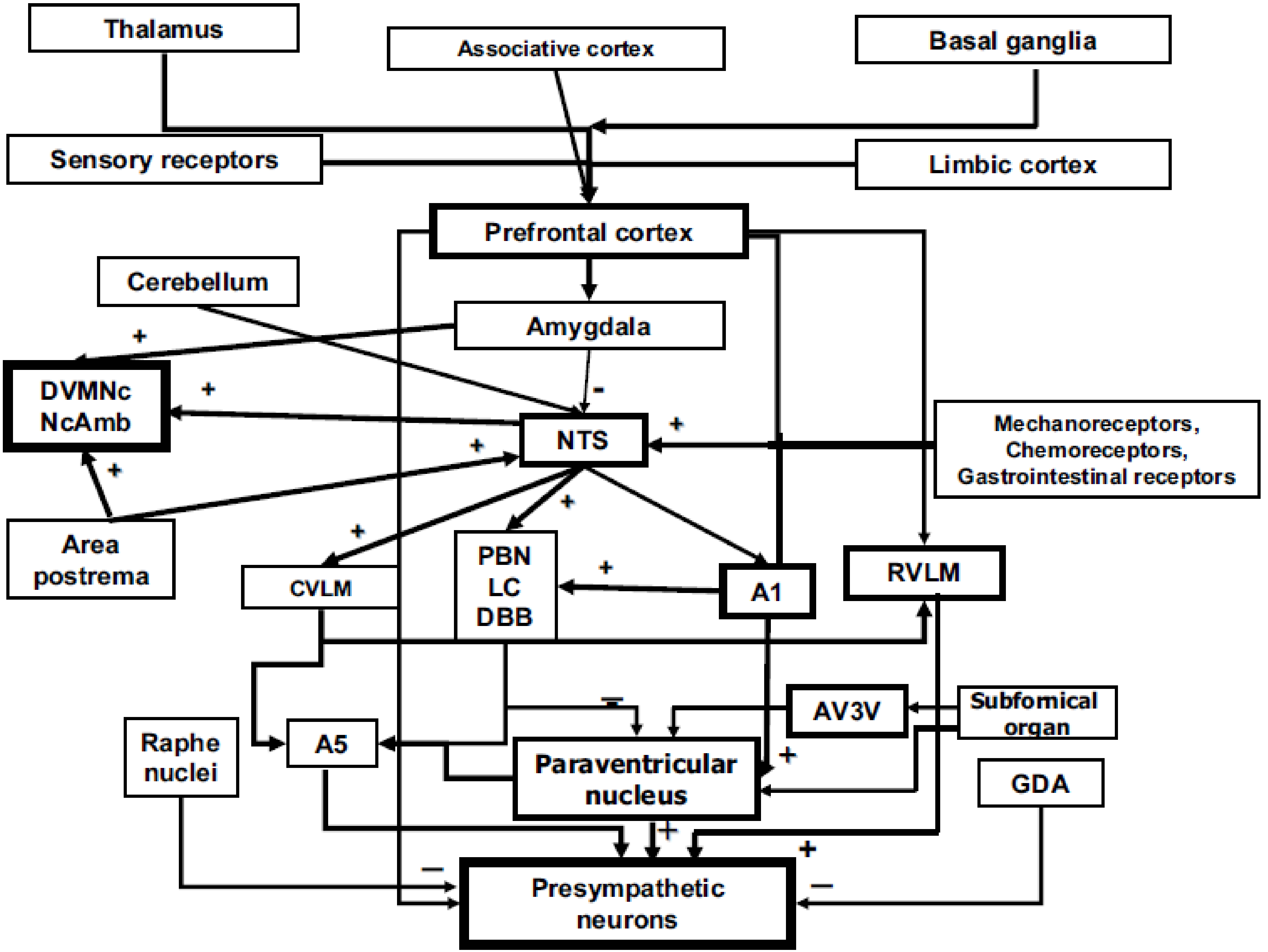



negative
symptoms
1° deficit
2° to environmental
deprivation
2° to dep
2° to EPS
2° to positive
symptoms


cognitive
symptoms
Alzheimer's
post
stroke
autism
schizophrenia


aggressive symptoms
ADHD/ conduct disorder
bipolar
childhood psychosis
schizophrenia
Alzheimer's & dementias
borderline/ antisocial personality disorder


affective symptoms
major depression
bipolar
organic
schizophrenia/ schizoaffective
treatment-resistant
child
psychotic depression



Thalamus
Associative cortex
Basal ganglia
Sensory receptors
Limbic cortex
Prefrontal cortex
Cerebellum
Amygdala
DVMNc
NcAmb
NTS
Mechanoreceptors,
Chemoreceptors,
Gastrointestinal receptors
Area postrema
CVLM
PBN
LC
DBB
A1
RVLM
AV3V
Subfomical organ
Raphe nuclei
A5
Paraventricular nucleus
GDA
Presympathetic neurons

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Delirium

Jo Ellen Wilson[1,2,†], Matthew Mart[1,3], Colm Cunningham[4], Yahya Shehabi[5], Timothy D. Girard[1,6], Alasdair M.J. MacLullich[7], Arjen J.C. Slooter[8], E. Wesley Ely[1,3,9,10]

DSM-5 diagnostic criteria

construct. In the current edition of DSM, DSM-5 (ref.[4]), among five criteria (A–E), the presence of disturbances in attention and awareness (criterion A; for example, reduced orientation to the environment or altered arousal[198]) and at least one other cognitive deficit (criterion C) that has developed over a short period, specified as "usually hours or days" (criterion B), are required for a delirium diagnosis. Coma is excluded as a disturbance of attention or awareness but the guidance notes state that patients above the level of coma who are unable to produce speech or engage in cognitive testing or interview should be classified as having 'severe inattention' and thus fulfill criterion A. Criteria D and E relate to exclusion of alternative explanations for the disturbances in criteria A and C, such as other neurocognitive disorders (criterion D) or medical conditions, drug use or withdrawal or toxin exposure (criterion E). The International Classification of Disease 10th Edition

Box 2.

Delirium prevention in different healthcare settings

Consensus guidelines[243,265] make a number of recommendations for delirium prevention in various healthcare settings.

General settings

Multicomponent interventions:

- Early recognition of high-risk factors (age >65 years, dementia, hip surgery, and high acuity)
- Daily screening for delirium
- Environmental orientation (sensory, auditory, dentures, time, events, family visits and music)
- Maintain normal hydration
- Regulation of bladder and bowel function
- Early establishment of normal diet
- Correction of metabolic disorders
- Cardiorespiratory optimization (with provision of oxygen if appropriate)
- Early identification of infection
- Effective treatment of pain
- Daily mobilization
- Avoidance of antipsychotic drugs
- Avoidance of benzodiazepines
- Reduced nocturnal disturbances to promote sleep
- Early removal of devices (intravascular and airway devices)
- Avoidance of physical restraints
- Sleep promotion (eye mask and earplugs)

Pharmacological interventions:

- None with high-level evidence

Παράγοντες κινδύνου για ανάπτυξη Delirium

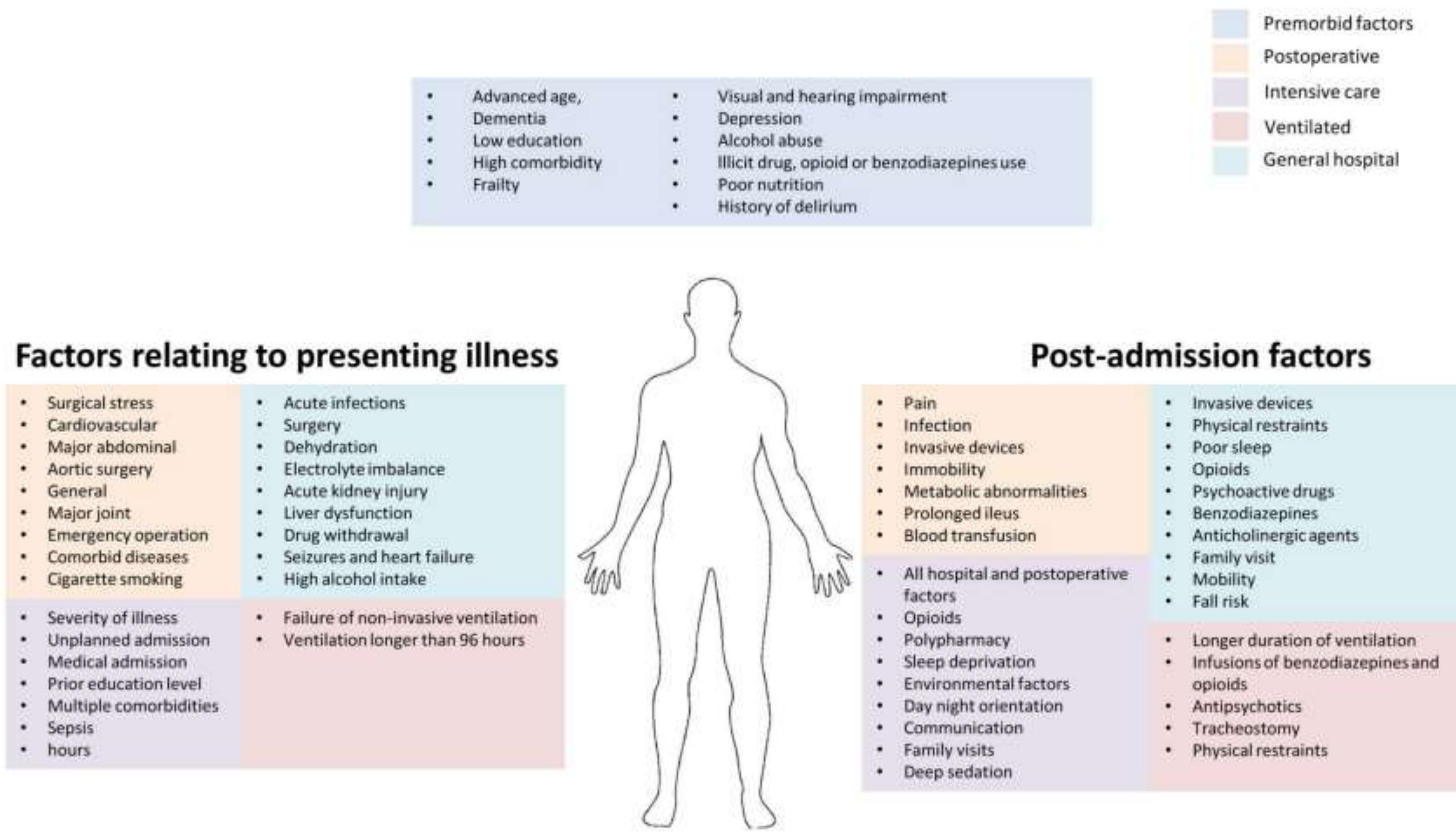


Figure 1. Risk factors for delirium.
Risk factors for delirium relate to premorbid or predisposing factors (that is, a patient's characteristics) and to precipitating factors, which are factors relating to the presenting illness or that occur after hospital admission.

REVIEW Open Access

Phenotypes and subphenotypes of delirium: a review of current categorisations and suggestions for progression

Emily M. L. Bowman[1*], Emma L. Cunningham[1], Valerie J. Page[2] and Daniel F. McAuley[3]

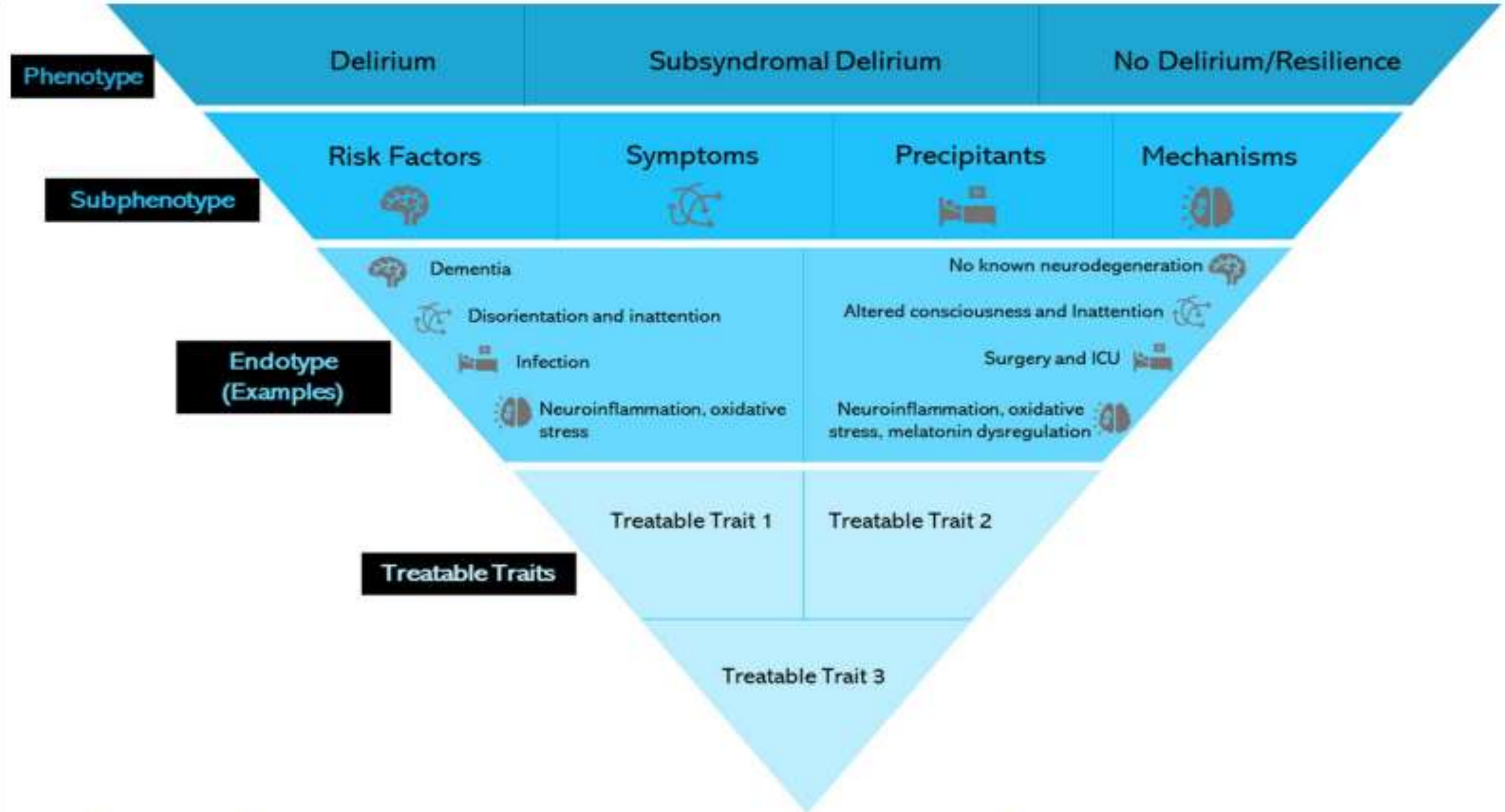
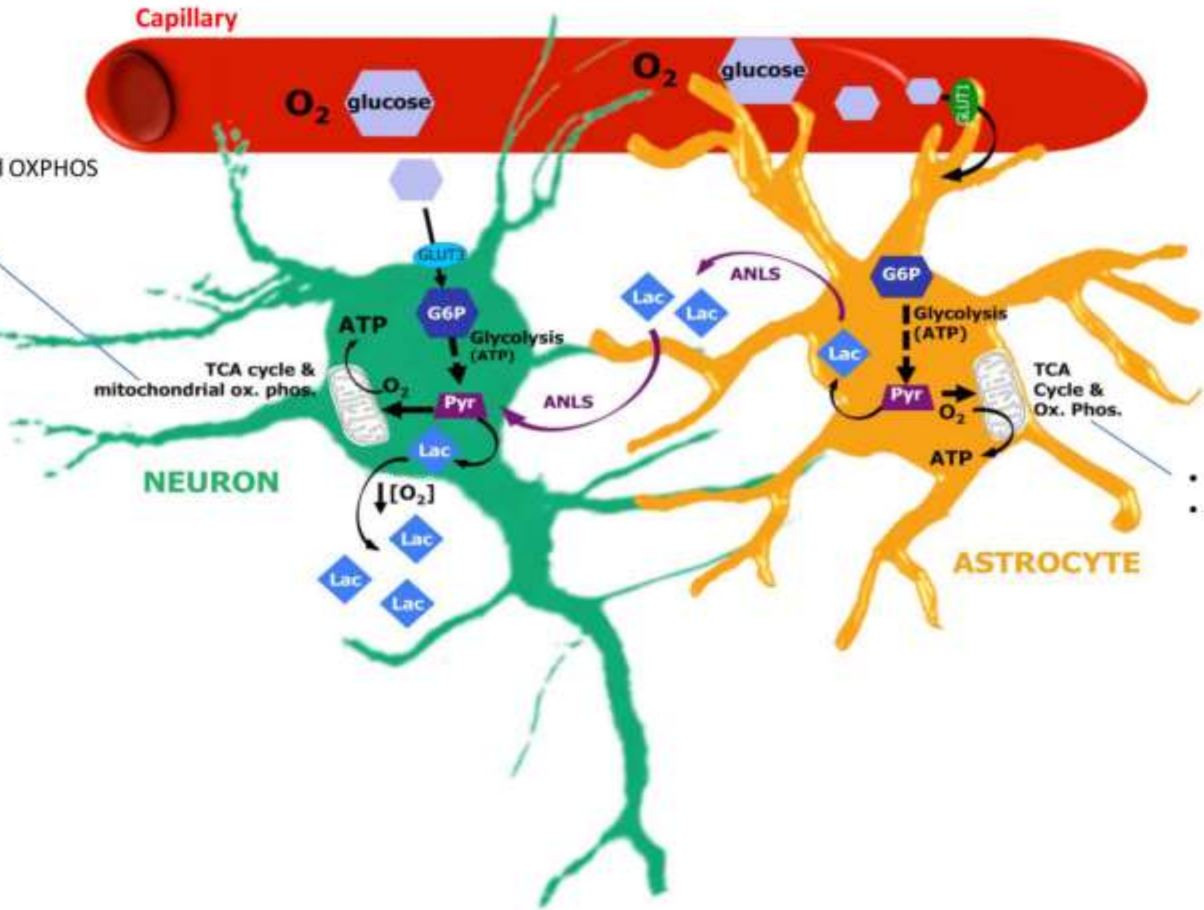
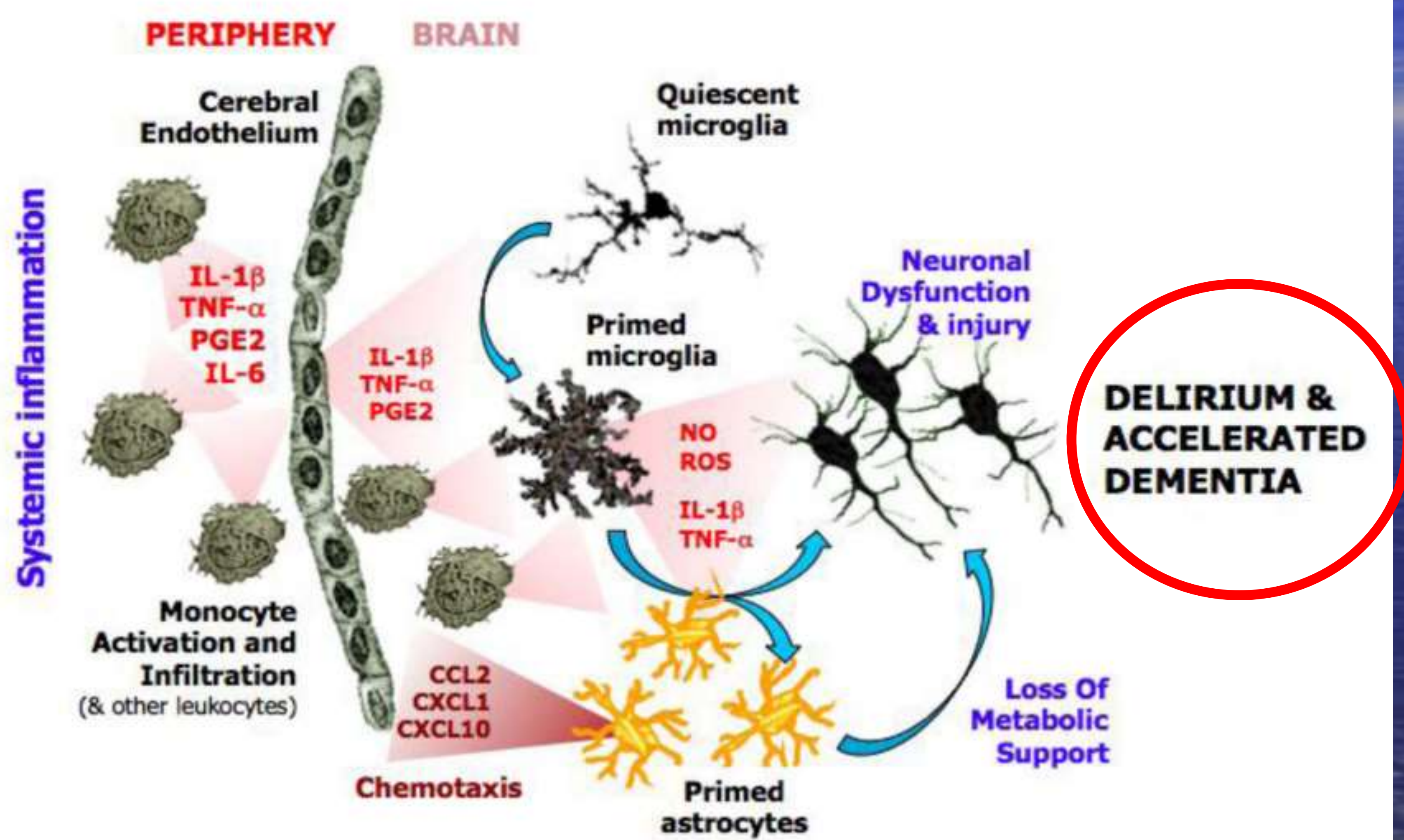


Fig. 1 Phenotypes, subphenotypes, endotypes, and treatable traits. Examples of the potential methods for dividing the delirium phenotype into subphenotypes. This may be translated into endotypes, which depend on the characteristics of the subphenotype. Endotype identification may allow the development of treatments targeting specific traits. One person may possess more than one treatable trait

- TCA cycle
- mitochondrial OXPHOS



- TCA cycle
- mitochondrial OXPHOS


PERIPHERY
BRAIN
Systemic inflammation
Cerebral Endothelium
IL-1β
TNF-α
PGE2
IL-6
IL-1β
TNF-α
PGE2
Monocyte Activation and Infiltration
(& other leukocytes)
CCL2
CXCL1
CXCL10
Chemotaxis
Quiescent microglia
Primed microglia
NO
ROS
IL-1β
TNF-α
Primed astrocytes
Neuronal Dysfunction & injury
Loss Of Metabolic Support
DELIRIUM & ACCELERATED DEMENTIA

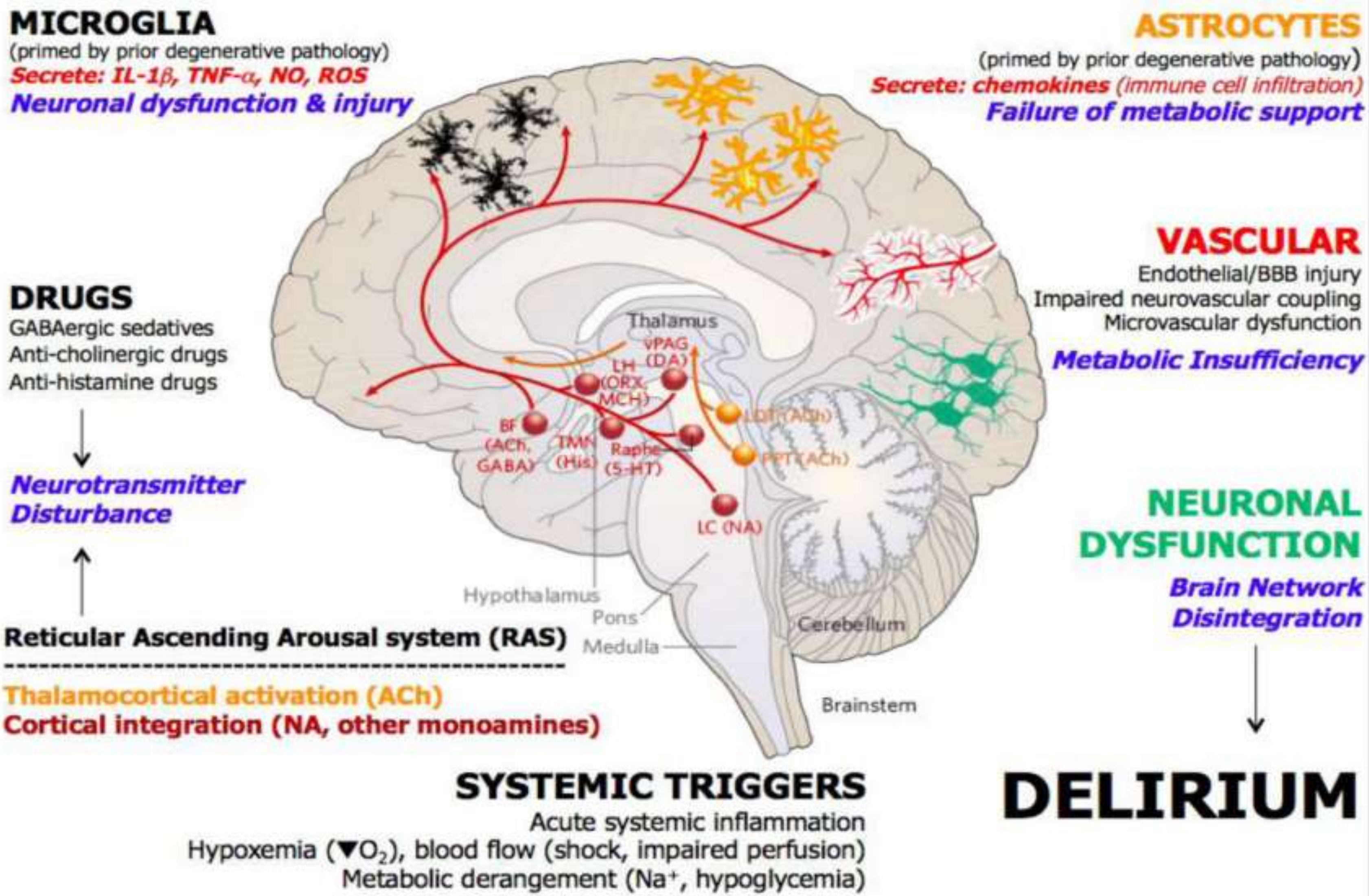


Figure 4. Major mechanisms in delirium pathophysiology.

Delirium και κακή ποιότητα ζωής

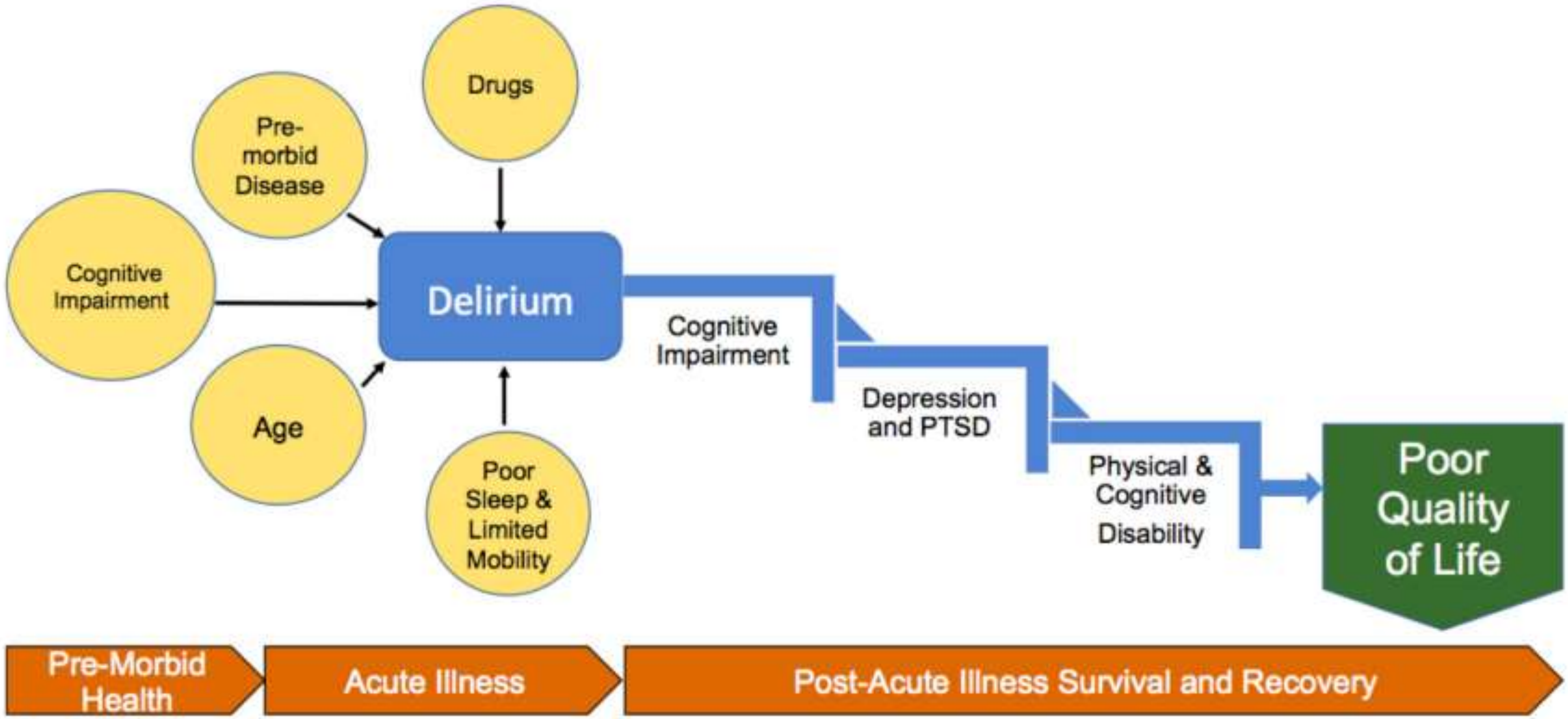
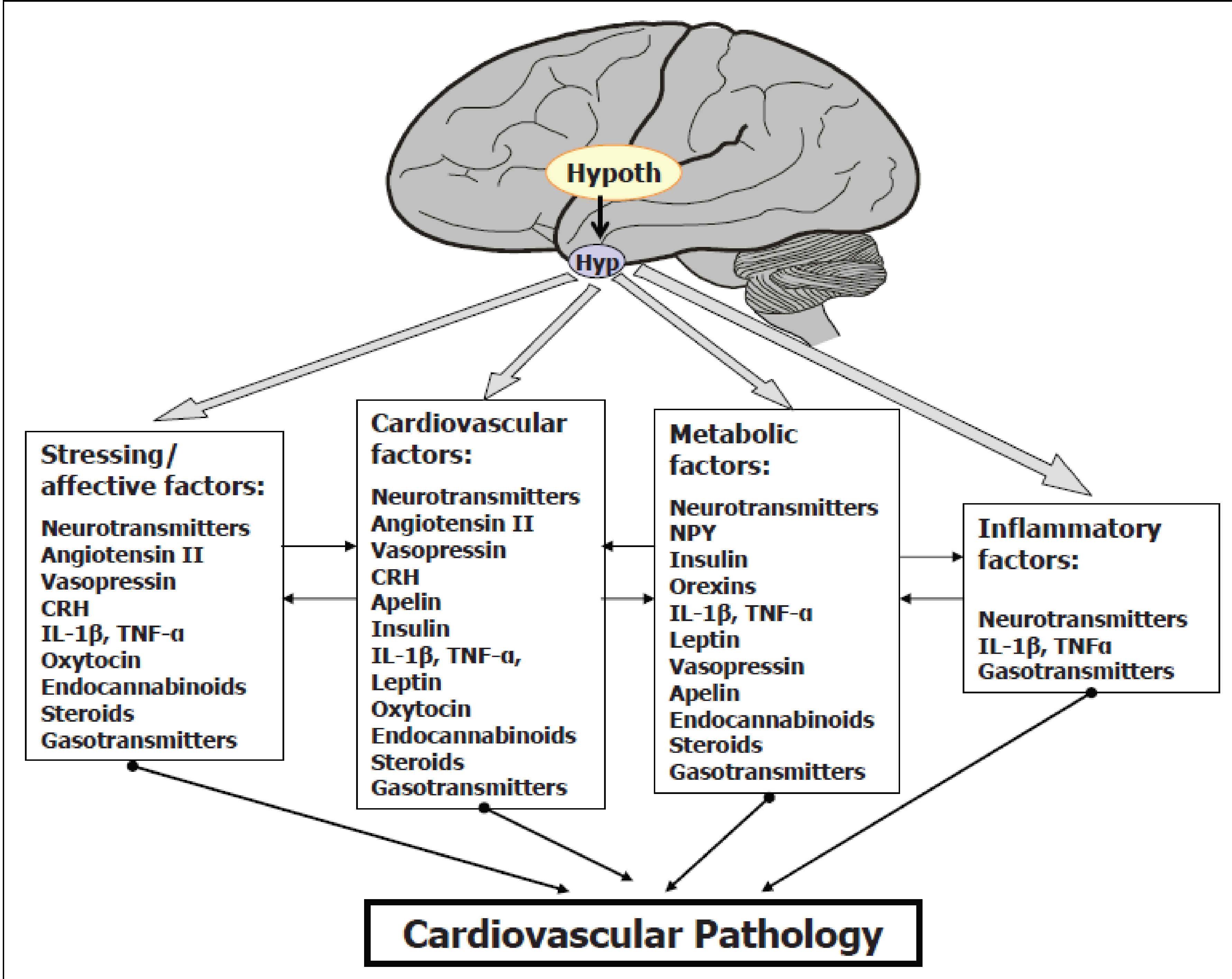
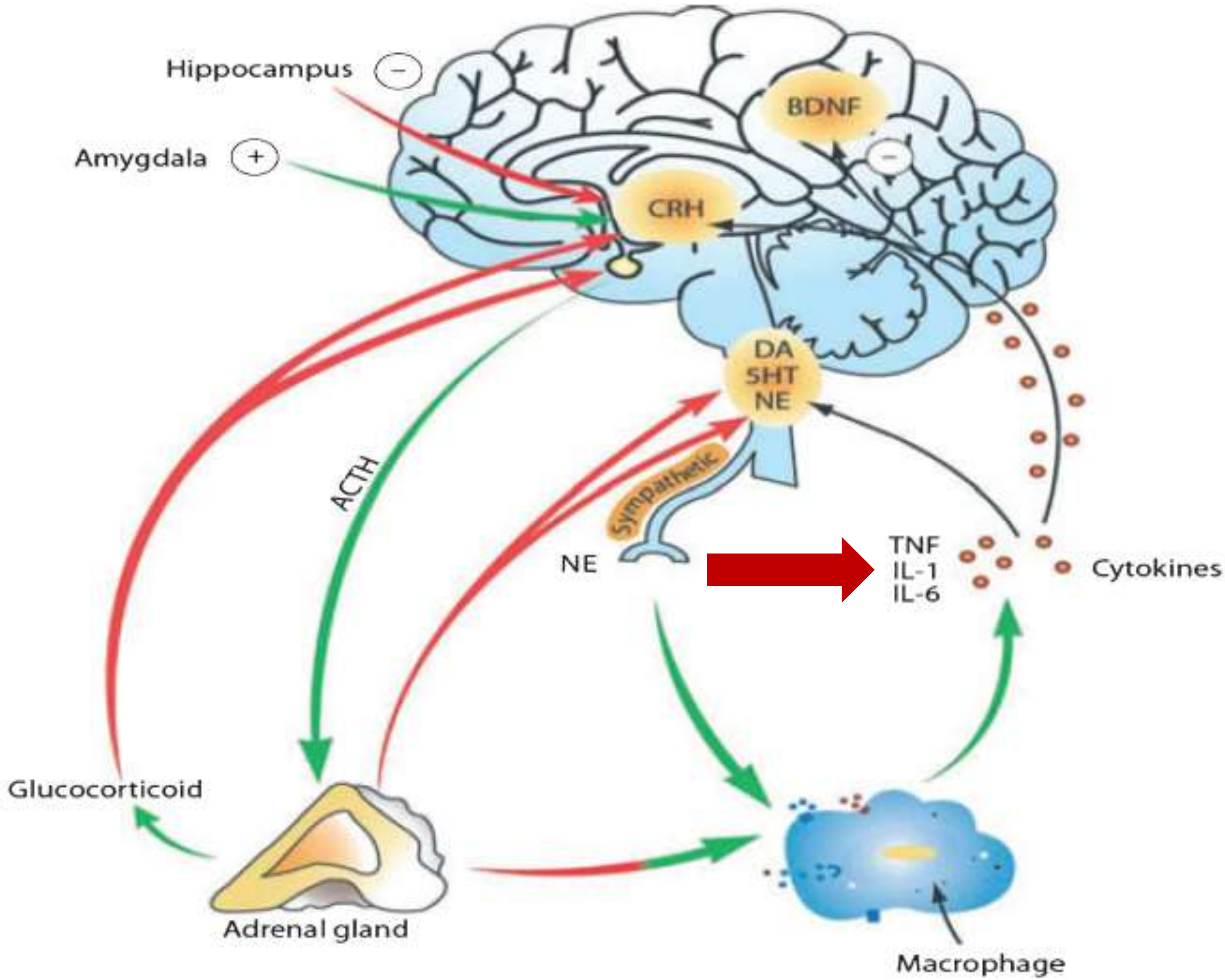


Figure 9. Relationship between delirium and post-ICU quality of life.


Hypoth
Hyp
Stressing/ affective factors:
Neurotransmitters
Angiotensin II
Vasopressin
CRH
IL-1β, TNF-α
Oxytocin
Endocannabinoids
Steroids
Gasotransmitters
Cardiovascular factors:
Neurotransmitters
Angiotensin II
Vasopressin
CRH
Apelin
Insulin
IL-1β, TNF-α,
Leptin
Oxytocin
Endocannabinoids
Steroids
Gasotransmitters
Metabolic factors:
Neurotransmitters
NPY
Insulin
Orexins
IL-1β, TNF-α
Leptin
Vasopressin
Apelin
Endocannabinoids
Steroids
Gasotransmitters
Inflammatory factors:
Neurotransmitters
IL-1β, TNFα
Gasotransmitters
Cardiovascular Pathology


Hippocampus
−
Amygdala
+
BDNF
−
CRH
DA
5HT
NE
ACTH
Sympathetic
NE
TNF
IL-1
IL-6
Cytokines
Glucocorticoid
Adrenal gland
Macrophage

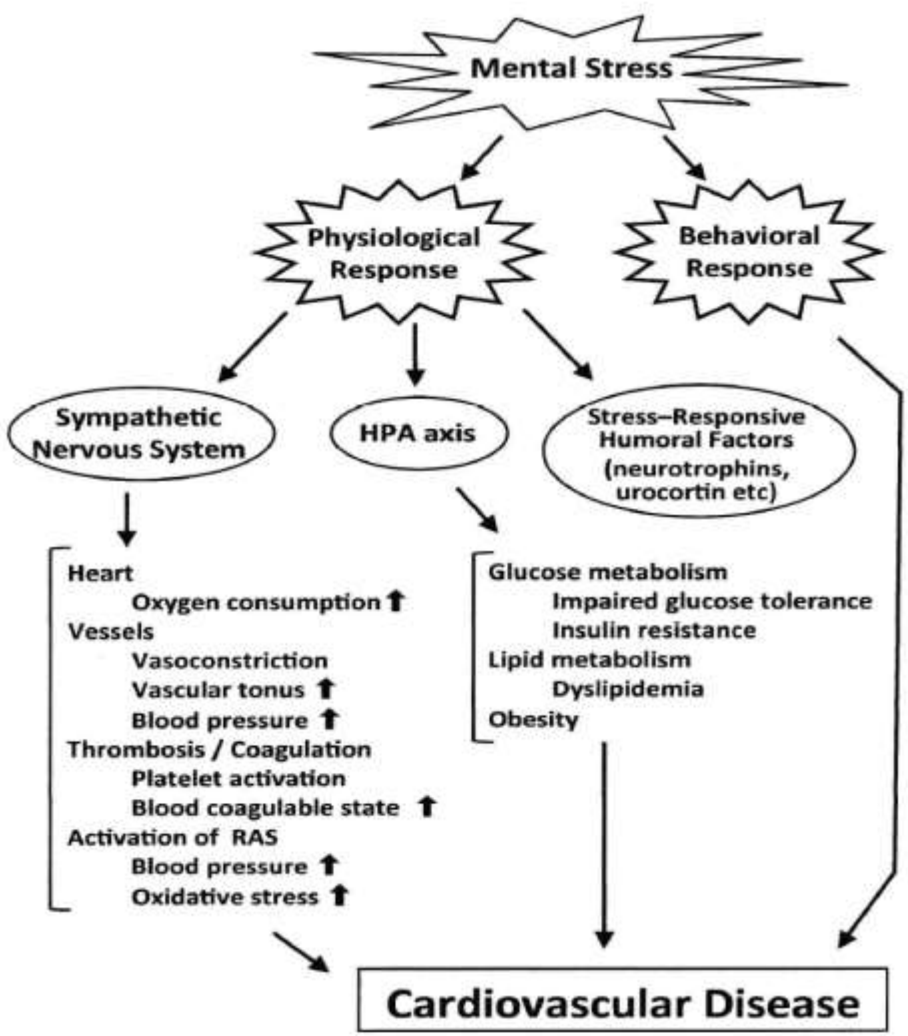


Fig. 3. Mechanism(s) underlying the exacerbation of cardiovascular disease due to mental stress. Mental stress induces two kinds of responses: physiological and behavioral responses. In terms of physiological responses, the sympathetic nervous system and HPA axis are activated. Under the activation of these two major systems, a wide variety of cellular events are involved in the pathogenesis of cardiovascular disease.

In addition, various stress-responsive humoral factors are regulated, including neurotrophins and urocortin.

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Stress triggers coronary mast cells leading to cardiac events

Michail Alevizos[1,#], **Anna Karagkouni**[1,§], **Smaro Panagiotidou**[1], **Magdalini Vasiadi**[1], and **Theoharis C. Theoharides**[1,2,3,4]

[1]Molecular Immunopharmacology and Drug Discovery Laboratory, Department of Integrative Physiology and Pathobiology, Boston, MA 02111, USA

[2]Department of Internal Medicine, Tufts University School of Medicine, Tufts Medical Center, Boston, MA 02111, USA

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Keywords

allergy; corticotropin-releasing hormone; heart; inflammation; interleukin 6; mast cell; stress; urocortin

Introduction

NIH-PA Author Manusc

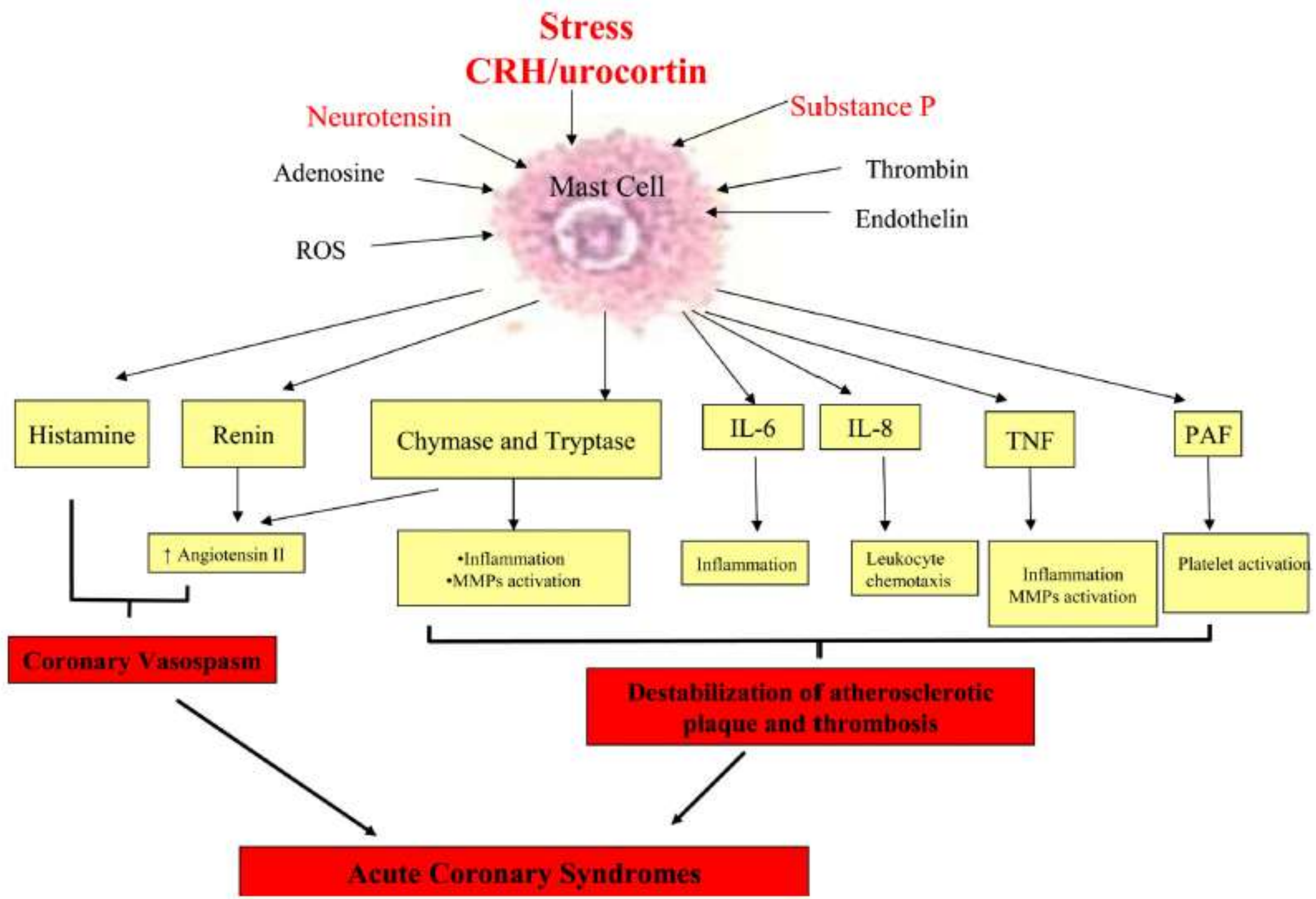

Figure 2.

Diagrammatic representation of the possible triggers of cardiovascular MC and their key mediators with CAD-relevant actions and major pathological sequellae.

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Nat Rev Cardiol. 2018 September ; 15(9): 505–522. doi:10.1038/s41569-018-0064-2.

Inflammageing: chronic inflammation in ageing, cardiovascular disease, and frailty

Luigi Ferrucci[1,*] and Elisa Fabbri[2]
[1]Translational Gerontology Branch, National Institute on Aging, NIH, Baltimore, MD, USA.
[2]Department of Medical and Surgical Sciences, University of Bologna, Bologna, Italy.

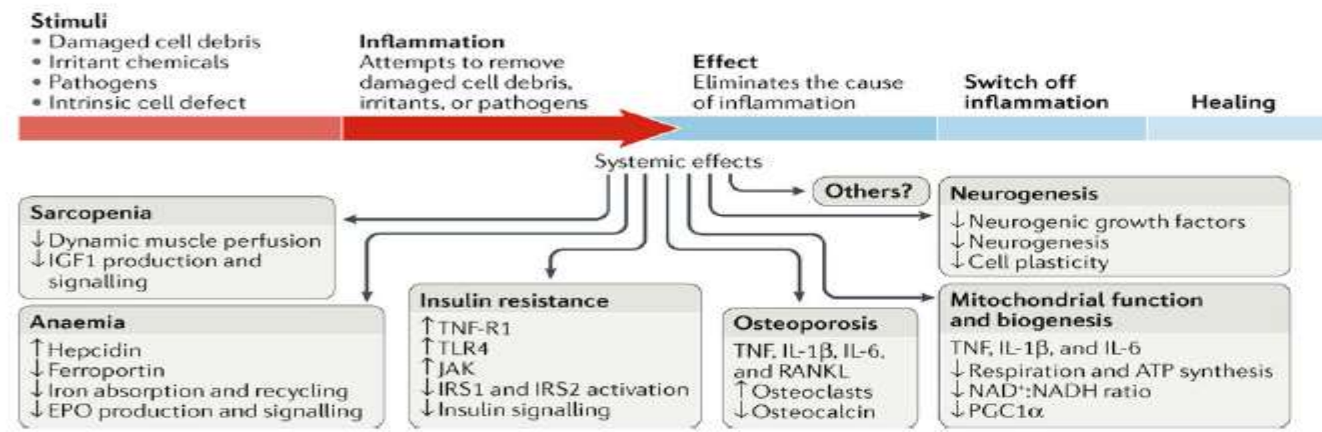

Fig. 3 |. Inflammageing induces a catabolic state.

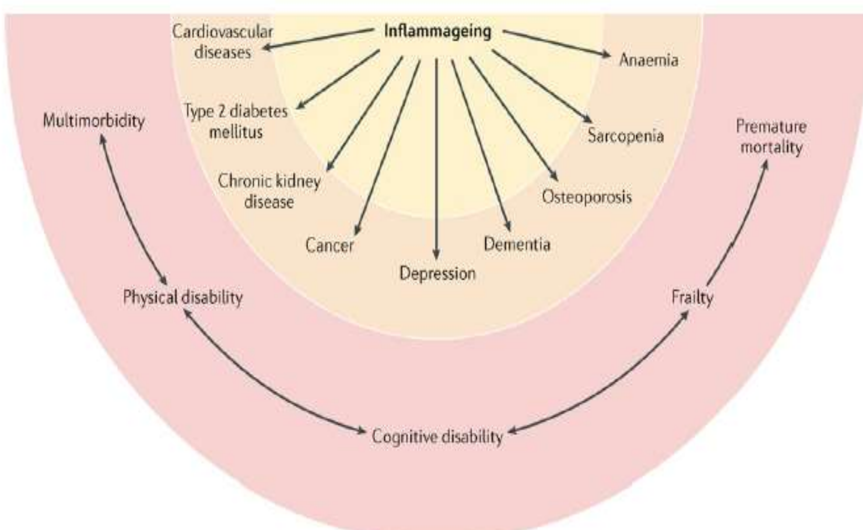

Fig. 2 |. Inflammageing is a risk factor for multiple chronic diseases.

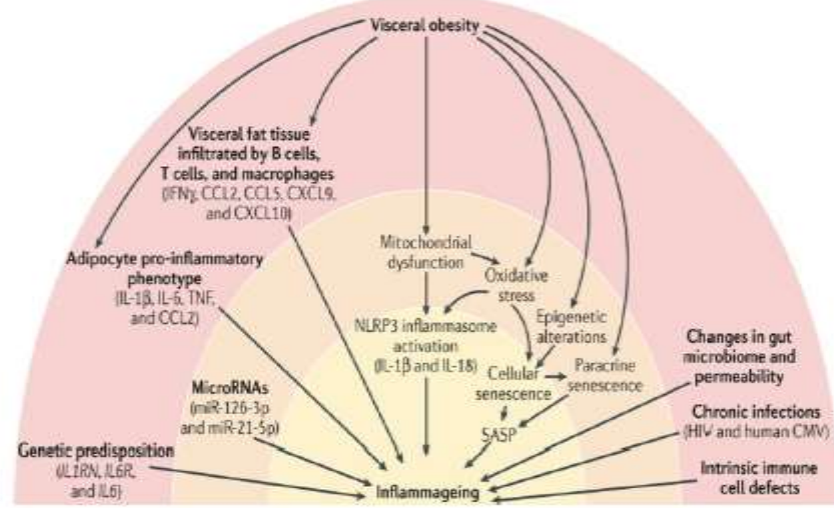

Fig. 1 |. Potential causes of inflammageing.

MICROBIAL ECOLOGY IN HEALTH AND DISEASE
2018, VOL. 29, 1548250
https://doi.org/10.1080/16512235.2018.1548250

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Gut thinking: the gut microbiome and mental health beyond the head

Grace Lucas

School of Health Sciences, City, University of London, London, UK

Neurobiology of Stress 7 (2017) 124–136

Contents lists available at ScienceDirect

Neurobiology of Stress

journal homepage: http://www.journals.elsevier.com/neurobiology-of-stress/

Stress & the gut-brain axis: Regulation by the microbiome

Jane A. Foster [a], Linda Rinaman [b,*], John F. Cryan [c,d]

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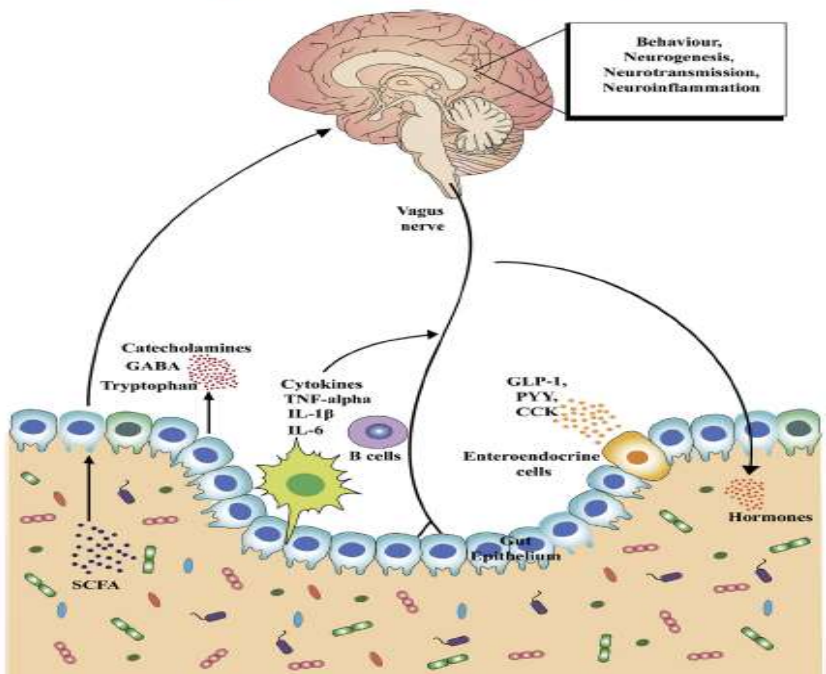
[b] Department of Neuroscience, University of Pittsburgh, Pittsburgh, PA, United States
[c] APC Microbiome Institute, University College Cork, Cork, Ireland
[d] Department of Anatomy and Neuroscience, University College Cork, Cork, Ireland



International Journal of *Molecular Sciences*

MDPI

Review

Alterations of Expression of the Serotonin 5-HT4 Receptor in Brain Disorders

Heike Rebholz [1,*], Eitan Friedman [1,2] and Julia Castello [1,2]

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2 Ph.D. Programs in Biochemistry and Biology, The Graduate Center, City University of New York, New York, NY 10031, USA
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Abstract: The serotonin 4 receptor, 5-HT_4R, represents one of seven different serotonin receptor families and is implicated in a variety of physiological functions and their pathophysiological variants, such as mood and depression or anxiety, food intake and obesity or anorexia, or memory and memory loss in Alzheimer's disease. Its central nervous system expression pattern in the forebrain, in particular in caudate putamen, the hippocampus and to lesser extent in the cortex, predispose it for a role in executive function and reward-related actions. In rodents, regional overexpression or knockdown in the prefrontal cortex or the nucleus accumbens of 5-HT_4R was shown to impact mood and depression-like phenotypes, food intake and hypophagia; however, whether expression changes are causally involved in the etiology of such disorders is not clear. In this context, more data are emerging, especially based on PET technology and the use of ligand tracers that demonstrate altered 5-HT_4R expression in brain disorders in humans, confirming data stemming from post-mortem tissue and preclinical animal models. In this review, we would like to present the current knowledge of 5-HT_4R expression in brain regions relevant to mood/depression, reward and executive function with a focus on 5-HT_4R expression changes in brain disorders or caused by drug treatment, at both the transcript and protein levels.

Keywords: serotonin; 5-HT 4 receptor; 5-HT4R; depression; mood disorder; expression; Alzheimer's disease; cognition; Parkinson's disease

Clinical research

Metabolic syndrome in psychiatric patients: overview, mechanisms, and implications

Brenda W. J. H. Penninx, PhD; Sjors M. M. Lange, MD

ARTICLE IN PRESS

Molecular Aspects of Medicine xxx (xxxx) xxx–xxx

Contents lists available at ScienceDirect

Molecular Aspects of Medicine

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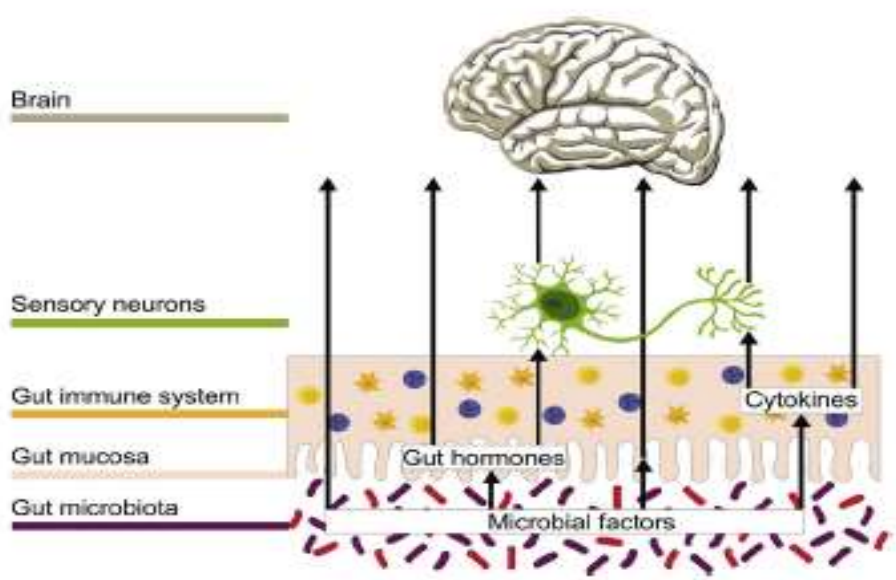
Diabesity and mood disorders: Multiple links through the microbiota-gut-brain axis

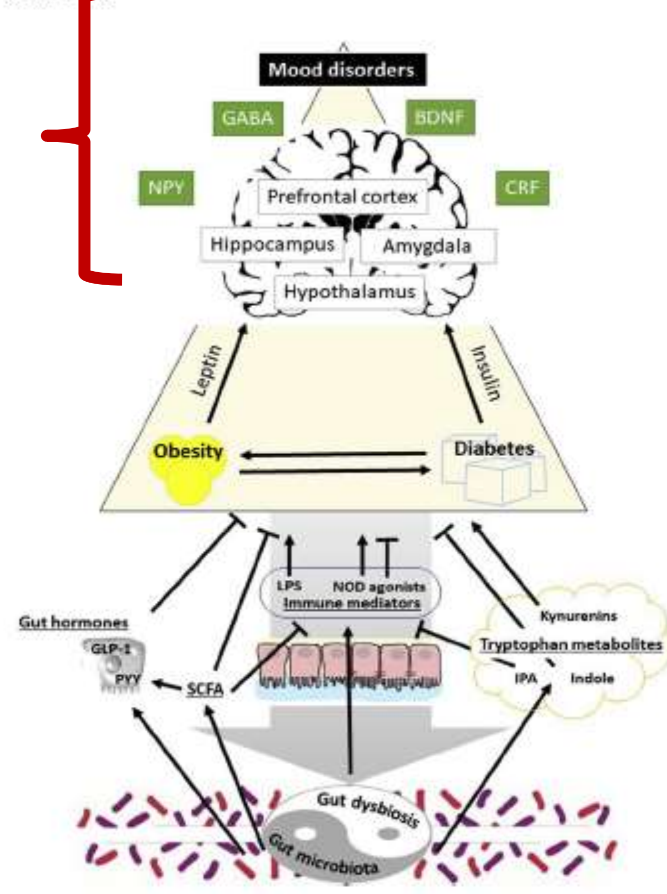
Aitak Farzi[a], Ahmed M. Hassan[a], Geraldine Zenz[a], Peter Holzer[a,b,*]

[a] Research Unit of Translational Neurogastroenterology, Division of Pharmacology, Otto Loewi Research Centre, Medical University of Graz, Universitätsplatz 4, A-8010 Graz, Austria
[b] BioTechMed-Graz, Mozartgasse 12, A-8010 Graz, Austria

A. Farzi et al.



A. Farzi et al.



Goldstein et al. BMC Obesity (2018) 5:27
https://doi.org/10.1186/s40608-018-0204-6

BMC Obesity

STUDY PROTOCOL Open Access

Multi-sensor ecological momentary assessment of behavioral and psychosocial predictors of weight loss following bariatric surgery: study protocol for a multicenter prospective longitudinal evaluation

Stephanie P. Goldstein[1], J. Graham Thomas[1*], Sivamainthan Vithiananthan[2], George A. Blackburn[3], Daniel B. Jones[3], Jennifer Webster[1], Richard Jones[4], E Whitney Evans[1], Jody Dushay[5], Jon Moon[6] and Dale S. Bond[1*]

Rigobon et al. BMC Obesity (2018) 5:32
https://doi.org/10.1186/s40608-018-0208-2

BMC Obesity

RESEARCH ARTICLE Open Access

Obesity moderates the complex relationships between inflammation, oxidative stress, sleep quality and depressive symptoms

Alanna V. Rigobon[1], Thirumagal Kanagasabai[2] and Valerie H. Taylor[3,4*]

frontiers in Endocrinology

MINI REVIEW
published: 31 July 2018
doi: 10.3389/fendo.2018.00431

Depression and Obesity: Integrating the Role of Stress, Neuroendocrine Dysfunction and Inflammatory Pathways

Silvia R. S. Ouakinin[1*], David P. Barreira[1,2] and Carlos J. Gois[1]

[1] Faculdade de Medicina, Clínica Universitária de Psiquiatria e Psicologia Médica, Universidade de Lisboa, Lisbon, Portugal, [2] Serviço de Gastrenterologia e Hepatologia, Centro Hospitalar Lisboa Norte-Hospital de Santa Maria, Lisbon, Portugal

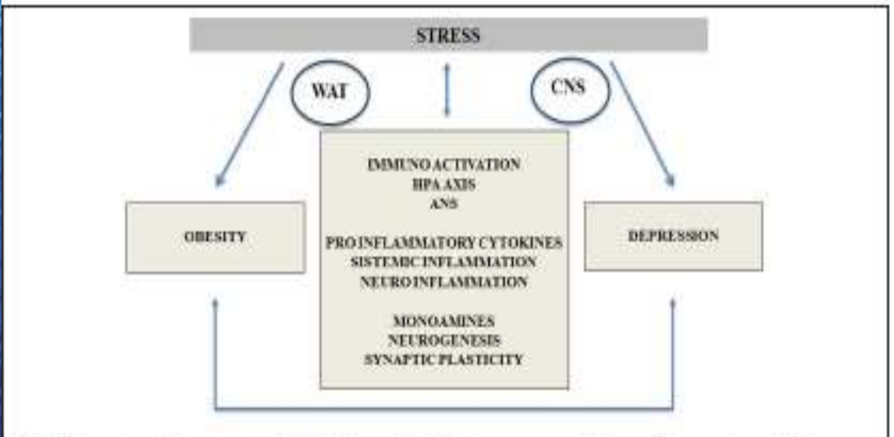


FIGURE 1 | Depression and obesity common neurobiological pathways, highlighting the stress response mechanisms and its impact on the comorbidity between both entities. CNS, central nervous system; WAT, white adipose tissue; HPA Axis, hypothalamic pituitary adrenal Axis; ANS, autonomous nervous system.

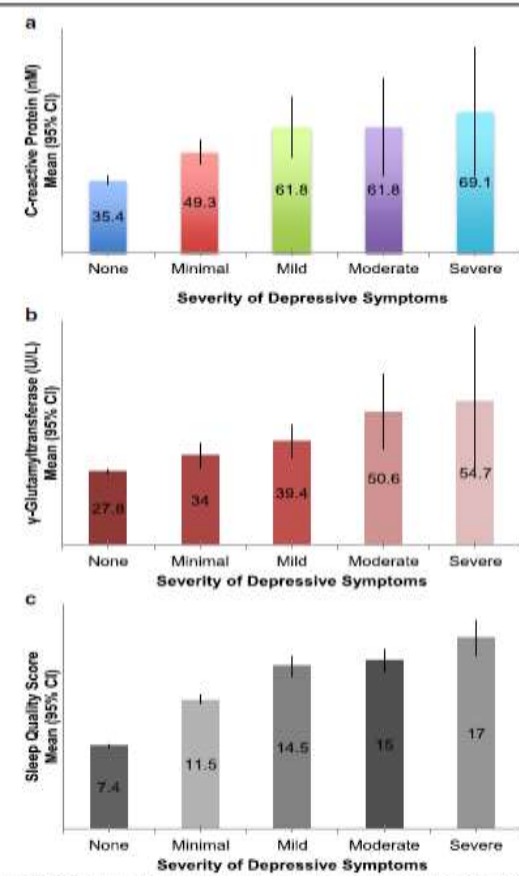


Fig. 1 Higher severity of depressive symptom is associated with higher inflammation (a), oxidative stress (b), and lower sleep quality (c)

Goldstein et al. BMC Obesity (2018) 5:27
https://doi.org/10.1186/s40608-018-0204-6

BMC Obesity

STUDY PROTOCOL Open Access

Multi-sensor ecological momentary assessment of behavioral and psychosocial predictors of weight loss following bariatric surgery: study protocol for a multicenter prospective longitudinal evaluation

Stephanie P. Goldstein[1], J. Graham Thomas[1*], Sivamainthan Vithiananthan[2], George A. Blackburn[3], Daniel B. Jones[3], Jennifer Webster[1], Richard Jones[4], E Whitney Evans[1], Jody Dushay[5], Jon Moon[6] and Dale S. Bond[1*]

frontiers in Neuroscience

REVIEW
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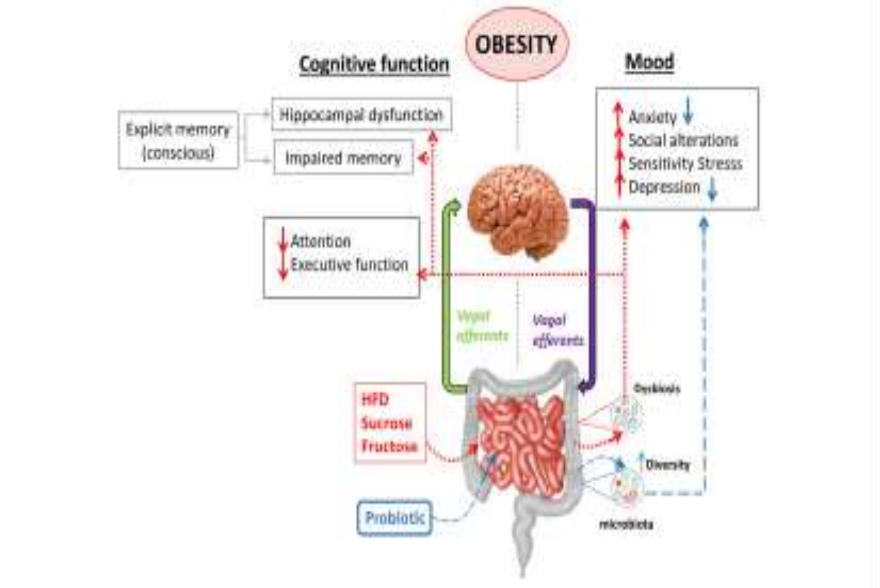
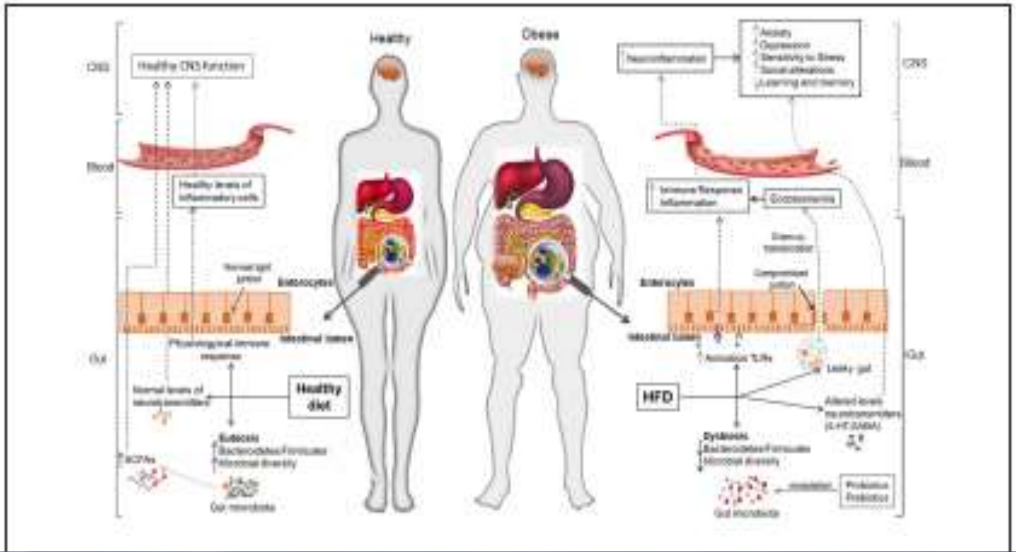
doi: 10.3389/fnins.2018.00155

Interplay Between the Gut-Brain Axis, Obesity and Cognitive Function

Ana Agusti[1*], Maria P. Garcia-Pardo[1], Inmaculada López-Almela[1], Isabel Campillo[1], Michael Maes[2], Marina Romaní-Pérez[1] and Yolanda Sanz[1]

[1] Microbial Ecology and Nutrition Research Unit, Institute of Agrochemistry and Food Technology, National Research Council (IATA-CSIC), Valencia, Spain, [2] IMPACT Strategic Research Centre, School of Medicine, Deakin University, Geelong, VIC, Australia





nutrients

MDPI

Review

The Gut–Brain Axis in the Neuropsychological Disease Model of Obesity: A Classical Movie Revised by the Emerging Director "Microbiome"

Elena Niccolai [1,*], Federico Boem [1], Edda Russo [1] and Amedeo Amedei [1,2,*]

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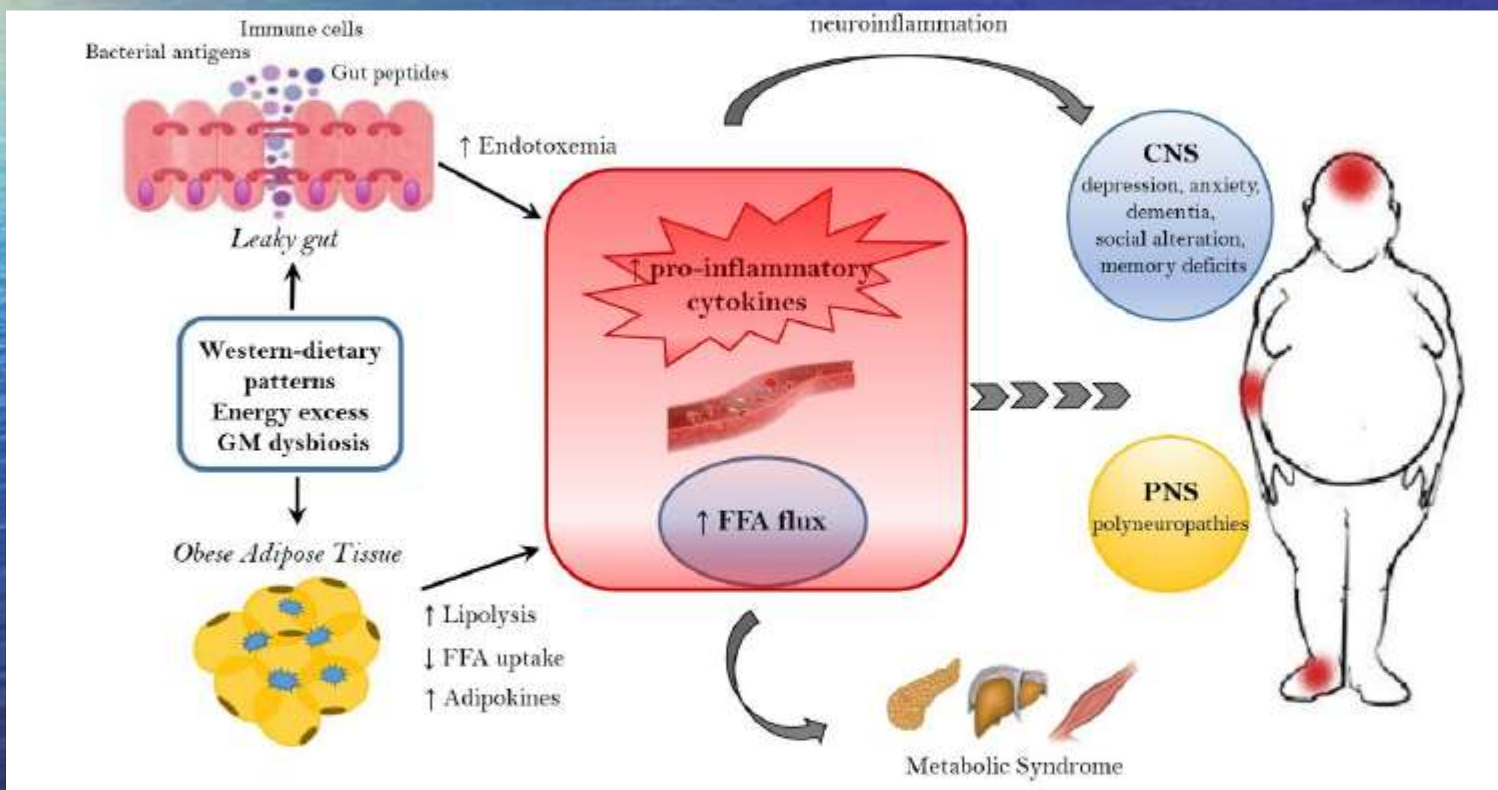
2 Department of Biomedicine, Azienda Ospedaliera Universitaria Careggi (AOUC), Largo Brambilla 3, 50134 Florence, Italy
* Correspondence: elena.niccolai@unifi.it (E.N.); amedeo.amedei@unifi.it (A.A.)



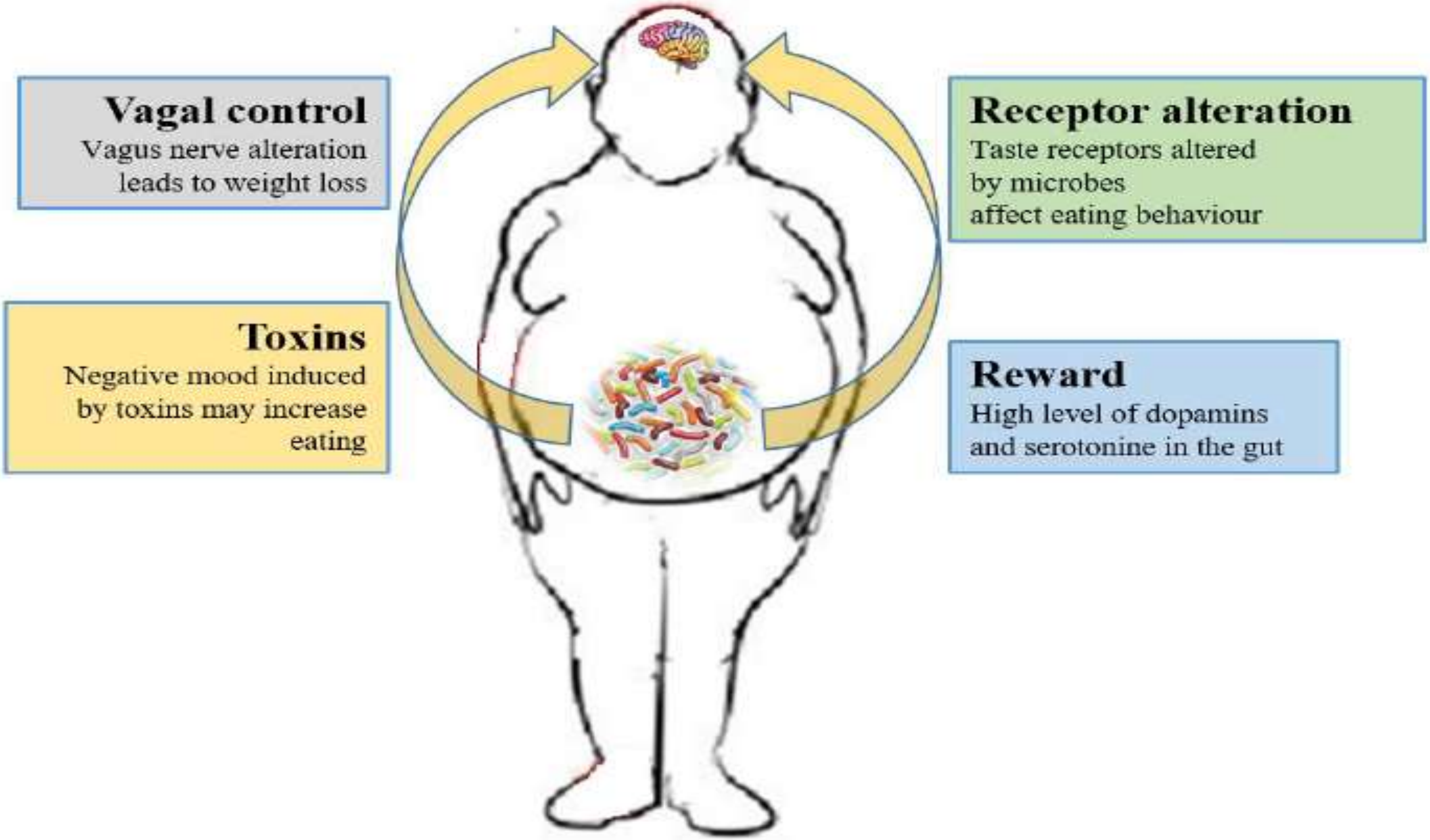


Figure 2. Relations between gut microbiota and eating behavior. The gut microbiota controls the eating behavior by several mechanisms, including changes to receptors such as taste receptors, regulation of reward pathways, production of toxins that alter mood, and deviating neurotransmission via the vagus nerve.

3ο
ΙΑΤΡΙΚΟ
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ΨΥΧΟΣΩΜΑΤΙΚΗΣ
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29-30.11.2019 & 1.12.2019
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Πλάκα, Αθήνα
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ΨΥΧΙΚΩΝ & ΣΩΜΑΤΙΚΩΝ
ΝΟΣΗΜΑΤΩΝ
Από τα γονίδια στις
ψυχοπαθολογικές
εκδηλώσεις
ΔΙΕΘΝΗΣ ΕΤΑΙΡΕΙΑ ΕΡΕΥΝΑΣ
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Οργανικές Ψυχικές Διαταραχές

- Βασικό σύμπτωμα:

Κάποιου είδους γνωστική δυσλειτουργία, δηλαδή δυσλειτουργία της μνήμης, προσοχής, συγκέντρωσης, γλώσσας κλπ.

Ντελίριο

- Ντελίριο οφειλόμενο σε γενική σωματική κατάσταση
- Ντελίριο επαγόμενο από ουσίες
- Ντελίριο οφειλόμενο σε πολλαπλές αιτίες
- Ντελίριο μη προσδιοριζόμενο αλλιώς

Ντελίριο – Συμπτώματα και σημεία

- Διαταραχή της συνείδησης (θόλωση)
- Διαταραχή της προσοχής
- Διαταραχές και άλλων γνωστικών λειτουργιών (π.χ. μνήμης, αντίληψης)
- Χαρακτηριστική εισβολή συνήθως μέσα σε ώρες – τάση για διακύμανση στη διάρκεια της ημέρας

Ντελίριο - Αιτιολογία

- Σοβαρή σωματική ή εγκεφαλική διαταραχή
- ✓Υπερπυρεξία
- ✓Δηλητηρίαση (τοξικώσεις)
- ✓Εγκεφαλική βλάβη
- ✓Αφυδάτωση – διαταραχές ηλεκτρολυτών
- ✓Μετεγχειρητικά
- ✓Απόσυρση από εξαρτησιογόνες ουσίες (αλκοόλ, ναρκωτικές ουσίες, φάρμακα)

Ντελίριο – Παθολογική Φυσιολογία

- Το χολινεργικό είναι το κύριο νευρομεταβιβαστικό σύστημα που εμπλέκεται στην εκδήλωση του συνδρόμου

Ντελίριο – Παθολογική Φυσιολογία

- Η κύρια νευροανατομική περιοχή που εμπλέκεται στην ανάπτυξη του συνδρόμου είναι ο **δικτυωτός σχηματισμός του εγκεφαλικού στελέχους και ο μεσεγκεφαλικός δικτυωτός σχηματισμός – ραχιαία καλυπτρική οδός**

Ντελίριο – Κλινικά χαρακτηριστικά

- Διαταραχή επιπέδου συνειδήσεως (θόλωση της συνειδήσεως - σύγχυση)
- Ημερήσια διακύμανση

Ντελίριο - Διάγνωση

- Πολύ καλό ιατρικό ιστορικό
- Ενδελεχής κλινική εξέταση
- Εργαστηριακός έλεγχος

Ντελίριο - Διάγνωση

- **Η εύρεση του αιτιολογικού παράγοντα είναι απαραίτητη για την διάγνωση και θεραπεία του ντελίριου**

Ντελίριο – Διαφορική Διάγνωση

- Ψύχωση
- Άνοιες
- Κατατονία – εμβροντησία
- Υστερία (Διαταραχές Μετατροπής, Αποσυνδετικές Διαταραχές)

Ντελίριο – Διαφορική Διάγνωση

- Ντελίριο
- Άνοιες (επηρεάζονται και άλλες γνωστικές λειτουργίες)
- Αποσυνδετικές Διαταραχές
- Διαταραχή Προσποίησης

Ντελίριο - Θεραπεία

- Θεραπεία της υποκείμενης αιτίας ή των αιτιών που προκάλεσαν το σύνδρομο
- Συμπτωματική αντιμετώπιση:
  - Υποστήριξη καρδιοαναπνευστικής λειτουργίας
  - Ρύθμιση ύδατος – ηλεκτρολυτών
  - Διέγερση (χρήση αντιψυχωσικών)

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Delirium in Older Persons:

Advances in Diagnosis and Treatment

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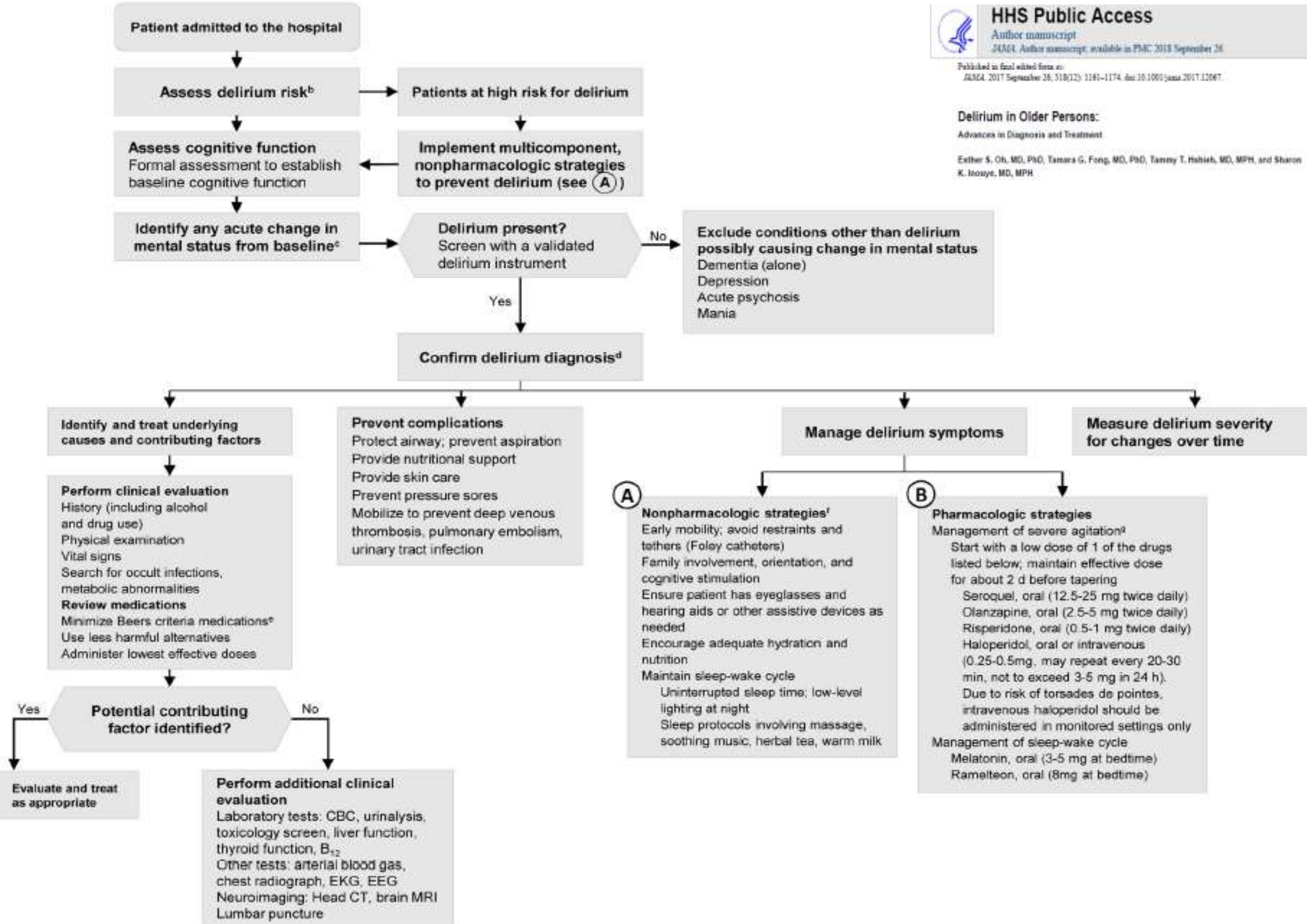

Table 9.1 Drugs used to treat delirium

Drug	Dose	Adverse effects	Notes
First-generation antipsychotics			
Haloperidol[1,5,7,11,18–21]	Oral 0.5–1 mg bd with additional doses every 4 hourly as needed. (peak effect: 4–6 h) IM 0.5–1 mg, observe for 30–60 minutes and repeat if necessary (peak effect: 20–40 minutes)	EPS can occur especially at doses above 3 mg Prolonged QT interval Increased risk of stroke in patients with dementia	Considered first-line agent. No trial data has demonstrated superiority of other antipsychoti over haloperidol, however care must be taken to monitor for extrapyramidal and cardiac adverse effects Baseline ECG is recommended fo all patients, and especially for the elderly or those with a family or personal history of cardiac diseas Regular monitoring of the ECG and potassium levels should be carried out if there are other conditions present that may prolong the QT interval Avoid in Lewy body dementia an Parkinson's disease Avoid intravenous use where possible. However in the medica ICU setting, IV is often used with close continuous ECG monitorin
Second-generation antipsychotics			
Amisulpride[11,12,22,23]	Oral 50–300 mg od, up to a maximum of 800 mg od Doses higher than 300 mg should be given in two divided doses	Prolonged QT interval Increased risk of stroke in patients with dementia	Very limited evidence in delirium As amisulpride is almost entirely excreted via the kidneys it is imperative to monitor renal function when used in medically ill or elderly patients
Aripiprazole[11,12,22–24]	Oral 5–15 mg/day, up to a maximum of 30 mg/day	EPS less likely than with haloperidol Akathisia or worsening sleep cycle may be problematic Increased risk of stroke in patients with dementia	Very limited evidence The rapid-acting intramuscular preparation has not been assessed in the treatment of delirium
Olanzapine[25–29]	Oral 2.5–5 mg od, up to a maximum of 20 mg/day	EPS less likely than with haloperidol Sedation is the most commonly reported adverse effect Increased risk of stroke in patients with dementia	A trial comparing olanzapine, risperidone, haloperidol and quetiapine showed that all were equally efficacious and safe in the treatment of delirium, but the response rate to olanzapine was poorer in the older age group (>75 years)[30] The rapid-acting IM preparation has not been assessed in the treatment of delirium

Table 9.1 *(Continued)*

Drug	Dose	Adverse effects	Notes
Risperidone[27,28,31–36]	Oral 0.5 mg bd with additional doses every 4 hourly as needed Usual maximum 4 mg/day	The most commonly reported adverse effects are hypotension and EPS Increased risk of stroke in patients with dementia	A trial comparing risperidone with olanzapine showed that both were equally effective in reducing delirium symptoms but the response to risperidone was poorer in the older age group (>70 years)[28]
Quetiapine[37–42]	Oral 12.5–50 mg bd This may be increased every 12 hours to 200 mg daily if it is well tolerated	Sedation and postural hypotension are the most common reported adverse effects Increased risk of stroke in patients with dementia	There are an increasing number of trials demonstrating safety and efficacy of low-dose quetiapine compared with haloperidol both in and outside the medical ICU. Now first choice agent in many units
Ziprasidone[43]	IM 10 mg every 2 hourly Usual maximum 40 mg/day	QT prolongation Increased risk of stroke in patients with dementia	Very limited evidence. Not available in the UK
Benzodiazepines			
Lorazepam[1,5,7]	Oral/IM 0.25–1 mg every 2 to 4 hourly as needed Usual maximum 3 mg in 24 hours IV use is usually reserved for emergencies	More likely than antipsychotics to cause respiratory depression, over-sedation and paradoxical excitement Associated with prolongation and worsening of delirium symptoms	Used in alcohol or sedative/ hypnotic withdrawal, Parkinson's disease and NMS Otherwise – avoid
Diazepam[44]	Starting oral dose of 5–10 mg In the elderly a starting dose of 2 mg is recommended	Much longer half-life than lorazepam Associated with prolongation and worsening of delirium symptoms	Used in alcohol or sedative/ hypnotic withdrawal, Parkinson's disease and NMS Otherwise – avoid
Cholinesterase inhibitors			
Donepezil[45,46]	Oral 5 mg od	Reasonably well tolerated compared with placebo. Nausea, vomiting and diarrhoea are the most common adverse effects reported	Very limited evidence. In the small studies where it has been used, clinical benefits have not been convincing. Not recommended
Rivastigmine[47,48]	Oral 1.5–6 mg bd	A study which added rivastigmine to usual care (haloperidol) showed that rivastigmine did not decrease the duration of delirium but in fact was associated with a more severe type of delirium, a longer stay in intensive care and higher mortality compared with placebo	Use of rivastigmine to treat delirium in critically ill patients is not recommended. May have a place in delirium prevention[49]

Incidence of Delirium and Its Outcomes*

Population	Prevalence (range) †, Incidence (range)	Outcomes (Adjusted Relative Risks‡, RR)
Surgical		
Cardiac	- - - 11%-46%	Cognitive Dysfunction (RR=1.7) Functional Decline (RR = 1.9)
Non-Cardiac	- - - 13% - 50%	Functional Decline (RR = 2.1) Cognitive Dysfunction (RR = 1.6)
Orthopedic	17% 12% – 51%	Dementia/ Cognitive Dysfunction (RR = 6.4 – 41.2) Institutionalization (RR = 5.6)
Medical		
General Medical	18% – 35% 11% – 14%	Mortality (RR= 1.5 –1.6) Functional decline (RR = 1.5)
Geriatric Units	25% 20% – 29%	Falls (RR = 1.3) Mortality (RR = 1.9) Institutionalization (RR = 2.5)
Intensive Care	7%–50% 19% – 82%	Mortality (RR = 1.4 – 13.0) Longer LOS (RR = 1.4 – 2.1) Extended Mechanical Ventilation (RR = 8.6)
Stroke	- - - 10% - 27%	Mortality (RR = 2.0) Any of 3 outcomes: increased LOS, functional impairment, or death (RR= 2.1)
Dementia	18% 56%	Cognitive Decline (RR = 1.6–3.1) Institutionalization (RR = 9.3) Mortality (RR = 5.4)
Palliative Care/Cancer	- - - 47%	- - -
Nursing Home/Postacute Care	14% 20% - 22%	Mortality (RR = 4.9)
Emergency Department	8% - 17% - - -	Mortality (RR = 1.7)

Risk Factors	General Medicine	Surgery		Intensive Care Unit
		Non-cardiac	Cardiac	
	Relative Risks			
Predisposing factors				
Dementia	2.3–4.7	2.8		
Cognitive impairment	2.1–2.8	3.5–4.2	1.3	
History of delirium		3.0		
Functional impairment	4.0	2.5–3.5		
Vision impairment	2.1–3.5	1.1–3.0		
Hearing impairment		1.3		
Comorbidity/severity of illness	1.3–5.6	4.3		1.1
Depression	3.2		1.2	
History of transient ischemia/stroke			1.6	
Alcohol abuse	5.7	1.4–3.3		
Older age	4.0	3.3–6.6		1.1
Precipitating Factors				
Medications				
Multiple medications added	2.9			
Psychoactive medication use	4.5			
Sedative-hypnotics				4.5
Use of physical restraints	3.2–4.4			
Use of bladder catheter	2.4			
Physiologic				
Elevated serum urea	5.1			1.1
Elevated BUN/creatinine ratio	2.0	2.9		
Abnormal serum albumin			1.4	
Abnormal sodium, glucose, or potassium		3.4		
Metabolic acidosis				1.4
Infection				3.1
Any iatrogenic event	1.9			
Surgery				
Aortic aneurysm		8.3		
Non-cardiac thoracic		3.5		
Neurosurgery				4.5
Trauma admission				3.4
Urgent admission				1.5
Coma				1.8–21.3

Overview of Potential Pathophysiologic Contributors to Delirium

Biological factor	Experiment/ Observation*	Hypothesis†	Review‡
Neurotransmitters			
Acetylcholine	E / O		X
Dopamine	E / O		X
Gamma-Aminobutyric-acid (GABA)	E / O		
Melatonin	E / O		X
Tryptophan, serotonin	O		X
Glutamate, N-Methyl-D-aspartate (NMDA)	O		
Epinephrine/Norepinephrine	--	X	
Pro-inflammatory markers			
Interferon (IFN) α/β	E		X
Interleukin 6 (IL-6)	O		X
Interleukin 8 (IL-8)	O		X
Interleukin 10 (IL-10)	O		
Tumor Necrosis Factor (TNF-α)	--	X	X
Interleukin 1-β (IL 1-β)	--	X	X
Prostaglandin E (E2, EP1–4)	--	X	X
Physiologic stressors			
Cortisol	O		
S100B	O		
Neopterin	O		
Hypoxia	O		
Metabolic disorders			
Lactate	E / O		
Glucose	O		
Insulin-like growth factor 1 (IGF-1)	O		X
Hypercapnia	--	X	X
Electrolyte disorders			
Sodium, calcium, magnesium	E / O		
Genetic factors			
Apolipoprotein E (ApoE)	O		X
Glucocorticoid receptor	O		
Dopamine transporter, receptor	O		X
Toll like receptor 4	--	X	

Evaluation and Management of Suspected Delirium*

Evaluation of Delirium	
History	• Baseline cognitive function and recent changes in mental status (eg, family, staff) • Recent changes in condition, new diagnoses, review of systems • Review all current medications, including over-the-counter medications and herbal remedies • Review any new medications and drug interactions • Review alcohol and benzodiazepine use • Assess for pain and discomfort (eg, urinary retention, constipation, thirst)
Vital signs	• Include temperature, oxygen saturation, fingerstick glucose • Postural vital signs as needed
Physical and neurological examination	• Search for signs of occult infection, dehydration, acute abdomen, deep vein thrombosis, other acute illness. Assess for sensory impairments. • Search for focal neurological changes and meningeal signs
Targeted laboratory evaluation (*selected* tests based on clues from history and physical)	Based on history and physical examination, *consider*: • Laboratory tests: CBC, electrolytes, calcium, glucose, renal function, liver function, thyroid function, urinalysis, cultures of urine, blood, sputum, drug levels, toxicology screen, ammonia level, vitamin B12 level, cortisol level • Arterial blood gas • Electrocardiography • Chest X-ray • Lumbar puncture reserved for evaluation of fever with headache, and meningeal signs, or suspicion of encephalitis
Targeted neuroimaging (*selected* patients)	• Assess focal neurological changes, since stroke can present as delirium • Suspicion of encephalitis for temporal lobe changes • History or signs of head trauma
Electroencephalography (*selected* patients)	• Evaluate for occult seizures • Differentiate psychiatric condition from delirium

Management of Delirium	
Medication adjustments	• Reduce or remove psychoactive medications (e.g., anticholinergics, sedative-hypnotics, opioids); lower dosages; avoid PRNs • Substitute less toxic alternatives • Use nonpharmacologic approaches for sleep and anxiety, including music, massage, relaxation techniques
Address acute medical issues	• Treat problems identified in work-up (e.g., infection, metabolic disorders) • Maintain hydration and nutrition • Treat hypoxia
Reorientation strategies	• Encourage family involvement; use sitters as needed • Address sensory impairment; provide eyeglasses, hearing aids, interpreters
Maintain safe mobility	• Avoid use of physical restraints, tethers, and bed alarms, which can increase delirium and agitation • Ambulate patient at least 3 times per day; active range-of-motion • Encourage self-care and regular communication
Normalize sleep-wake cycle	• Daytime: Discourage napping, encourage exposure to bright light • Facilitate uninterrupted period for sleep at night • Quiet room at night with low level lighting; nonpharmacologic sleep protocol
Pharmacologic management (severe agitation or psychosis only)	• Reserve for patients with severe agitation, which will result in interruption of essential medical therapies (e.g., intubation) or severe psychotic symptoms • Start low doses and titrate until effect achieved; haloperidol 0.25–0.5 mgs. po/IM • BID preferred; atypical antipsychotics close in effectiveness.

*BID=twice daily; CBC=complete blood count; IM=intramuscular; mgs=milligrams; po=by mouth; PRN=as needed medication.

Αμνησιακή Διαταραχή

- Έκπτωση μνήμης (πρόσφατης, βραχυπρόθεσμης και μακροπρόθεσμης), που οφείλεται σε συγκεκριμένο παθολογικό αίτιο
- είναι μόνιμη ή αναστρέψιμη
- οι λοιπές γνωστικές λειτουργίες παραμένουν φυσιολογικές

Αμνησιακή Διαταραχή - Αιτιολογία

- Αλκοολισμός (ένδεια θειαμίνης)
- Κακώσεις κεφαλής
- Νευροχειρουργικές επεμβάσεις
- Εγκεφαλική υποξία
- Εγκεφαλικά έμφρακτα
- Επιληψία

Αμνησιακή διαταραχή – Παθολογική Φυσιολογία

- Διεγκέφαλος
- Ιππόκαμπος

Αμνησιακή Διαταραχή – Κλινική εικόνα

- Τι είναι μνήμη;

Ικανότητα μάθησης νέων πληροφοριών (προδρομική) και ανάκλησης των ήδη μαθημένων πληροφοριών (οπισθοδρομική)

Αμνησιακή Διαταραχή – Κλινική εικόνα

- Συνήθως βλάπτεται η πρόσφατη και η βραχείας διάρκειας μνήμη
- Αιφνίδια συνήθως έναρξη
  - Τραύμα κεφαλής
  - ΑΕΕ
- Βαθμιαία έναρξη
  - Εγκεφαλικός όγκος
  - Διαταραχές Διατροφής

Αμνησιακή Διαταραχή - Θεραπεία

- **Εντόπιση και αντιμετώπιση του υποκείμενου αιτίου**

Άνοια

- Σύνδρομο που χαρακτηρίζεται από έκπτωση πολλαπλών γνωστικών λειτουργιών (μνήμη, μάθηση, προσοχή, προσανατολισμός, κρίση)
- Χωρίς διαταραχή επιπέδου συνειδήσεως

Άνοια - Επιδημιολογία

- 5% άνω των 65 ετών
- Αύξηση κατά 5% ανά 5ετία

Σας ευχαριστώ για την προσοχή σας