FUNCTIONAL SPEECH AND SWALLOWING DISORDERS

Jonathan Smith, MD
Medical Director, Vanderbilt University Hospital Psychiatry Services

A depiction of dancing mania, on the pilgrimage of epileptics to the church at Molenbeek. Pieter Brueghel the Younger (1564-1638)

THE “ROSE COLD”

Dr. John Noland Mackenzie, 1885

Biol Psychiatry. 2021 Mar 1; 89(5): e21–e23.

The American Journal of the Medical Sciences. Jan 1886, 181: 45-56.

None

Off-label use of medications will be discussed

OUTLINE

Historical Context

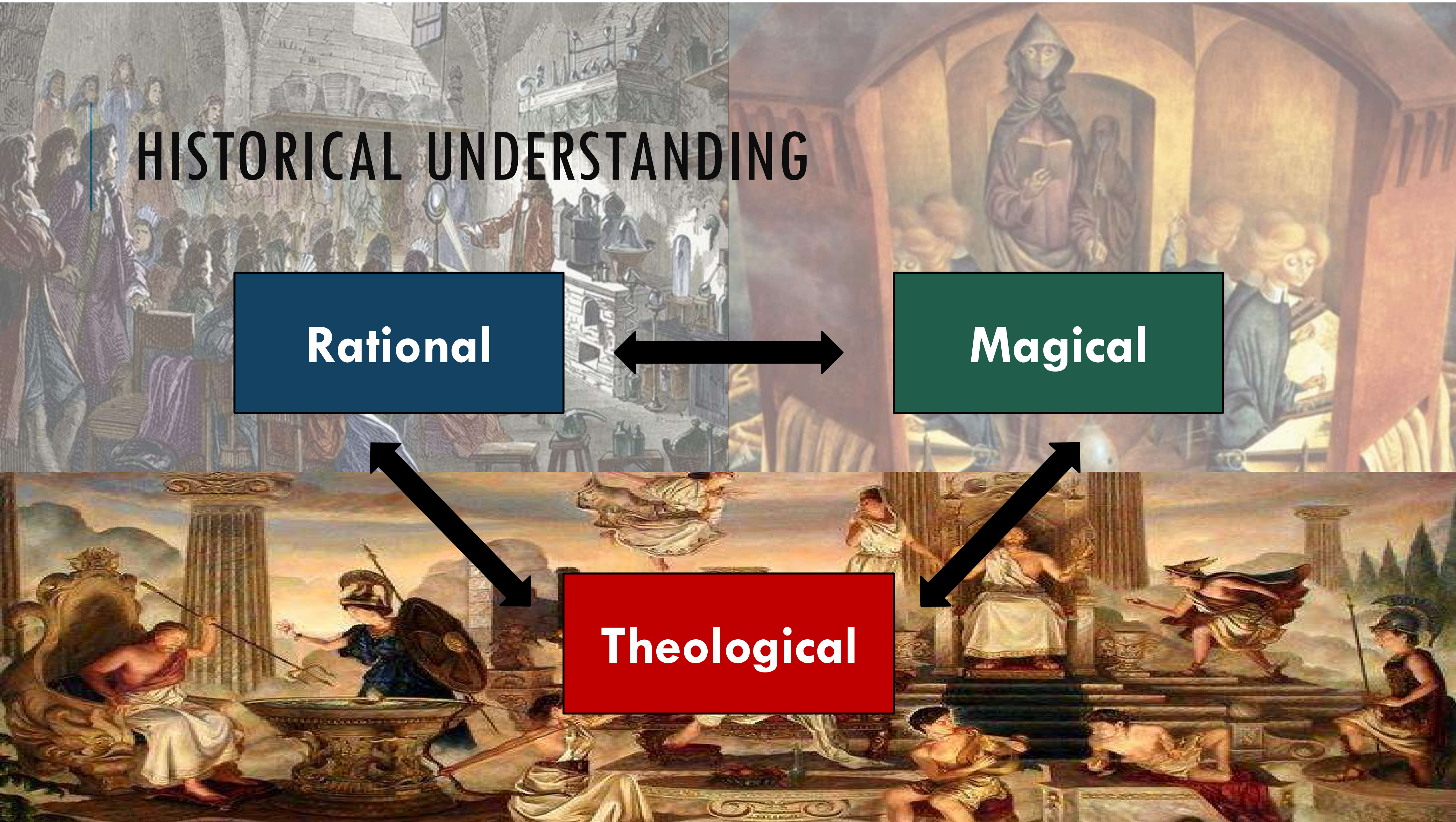
Diagnosis

Epidemiology

Etiology

General Management

Specific Conditions


HISTORICAL UNDERSTANDING
Rational
Magical
Theological

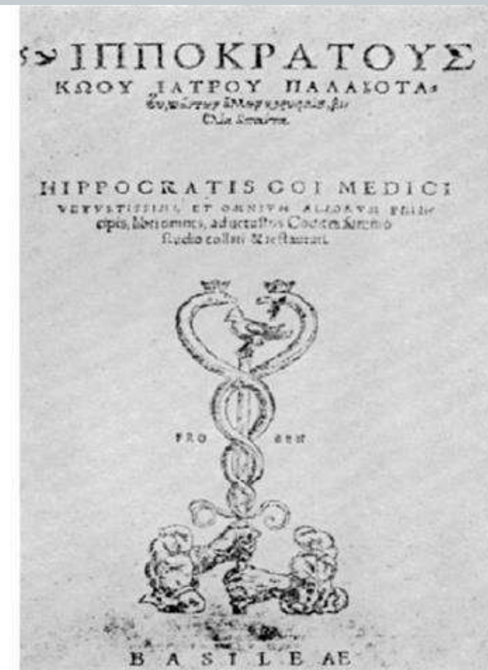
HISTORICAL UNDERSTANDING

Babylonian accounts (1600s BCE) of returning soldiers troubled by “ghosts”

Handbook of Clinical Neurology (139), 2016

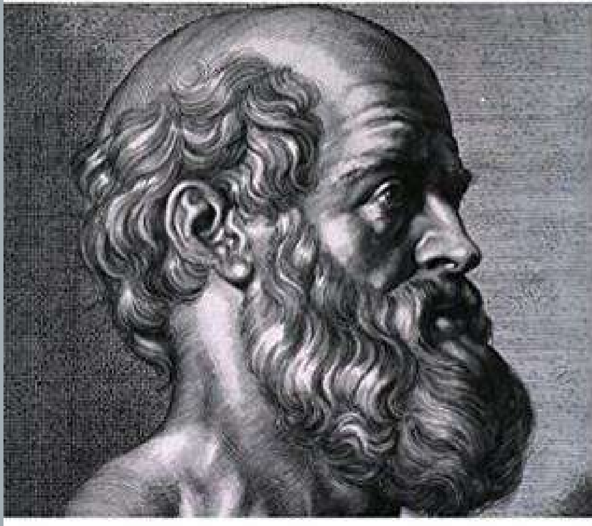
Corpus Hippocratium 400 BCE
“Hysteria” coined, used as an explanation for variety of other illnesses

ΑΠΑΝΤΑ ΤΑ ΤΟΥ
ΙΠΠΟΚΡΑΤΟΥΣ.
OMNIA OPERA
HIPPOCRATIS.



ΙΠΠΟΚΡΑΤΟΥΣ
ΚΩΟΥ ΙΑΤΡΟΥ ΠΑΛΑΙΟΤΑ.
HIPPOCRATIS COI MEDICI
BASILEAE

HISTORICAL UNDERSTANDING



Hippocrates
- Mostly rational, physical explanations
- Understanding was highly influenced by study of epilepsy patients

Galen (130-201CE)
- Distinctions between role of bodily illness and mental illness
- Described the reciprocal connection – "psychosomatic medicine"

From *The Malleus Maleficarum*

"And so in this
twilight and evening
of the world,
when sin is flourishing
on every side and
in every place,
when charity is
growing cold,
the evil of witches
and their iniquities
superabound."

THE HISTORIAN'S HUT

HISTORICAL UNDERSTANDING

A Briefe Discourse of a Disease Called the Suffocation of the Mother: Written Uppon Occasion which Hath Beene of Late Taken Thereby, to Suspect Possesion of an Euill Spirit, Or Some Such Like Supernaturall Power. Wherin is Declared that Diuers Strange Actions and Passions of the Body of Man, which in the Common Opinion, are Imputed to the Diuell, Haue Their True Naturall Causes, and Do Accompanie this Disease.

By Edward Jorden, Doctor in Physicke (1603)

Edward Jorden (1600s)

Behaviors arise from both higher order thinking and the "animal spirits" of the midbrain, but are only a result of the brain

Hysterical behaviors are non-gendered

Symptoms in the brain can arise from dysfunction in the body

- Various organs acting in "sympathetic" manner

HISTORICAL UNDERSTANDING

Symptoms are a result of “displaced sexual passions“

Introduced repression as an explanatory framework

Also described factitious symptoms in a subpopulation of patients

- Misuse of leeches
- Using wrappings to cut circulation to limbs

Robert Carter (1829-1918)

Jean-Martin Charcot at the Salpetriere Hospital

Symptoms were explained by one of three mechanisms:

1. Neuroanatomical lesions

Stroke, trauma, degenerative diseases

2. Functional neurologic changes:

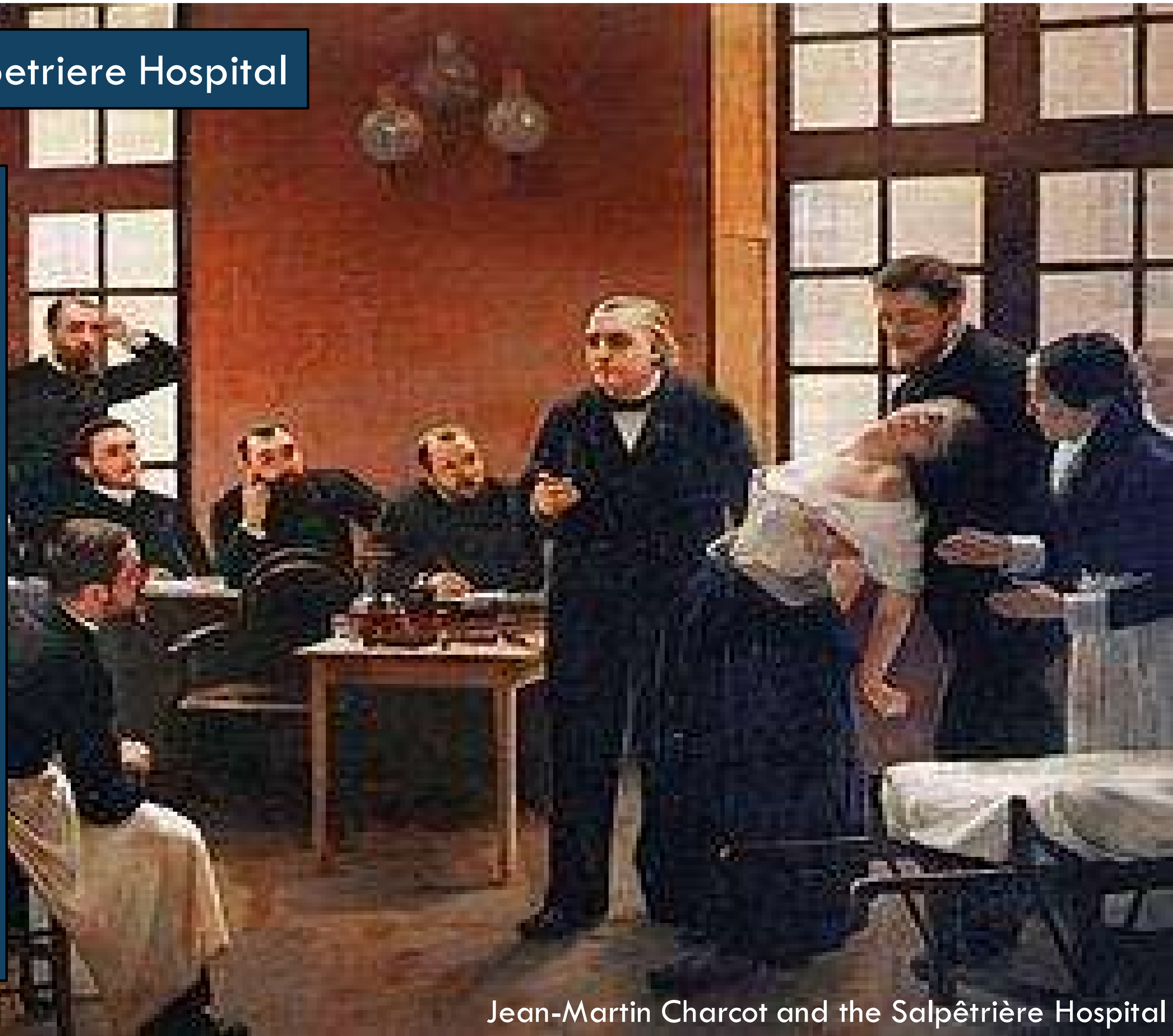
Neuroses – clear and consistent syndromes

Modern examples – multiple sclerosis, Parkinson disease, epilepsy, migraine

Hysterias – Less consistent symptoms, associated with stress or injury, vulnerable to hypnotic suggestion

Described as equally common in males and females

3. Symptom simulation (malingering)



Jean-Martin Charcot and the Salpêtrière Hospital

HISTORICAL UNDERSTANDING – WWI AND WWII

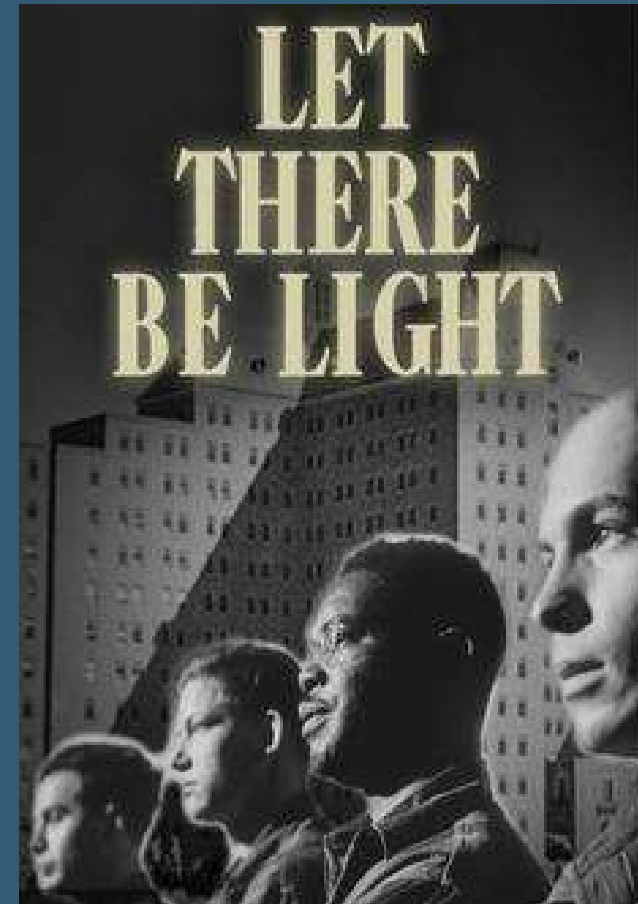
Silas Weir Mitchell

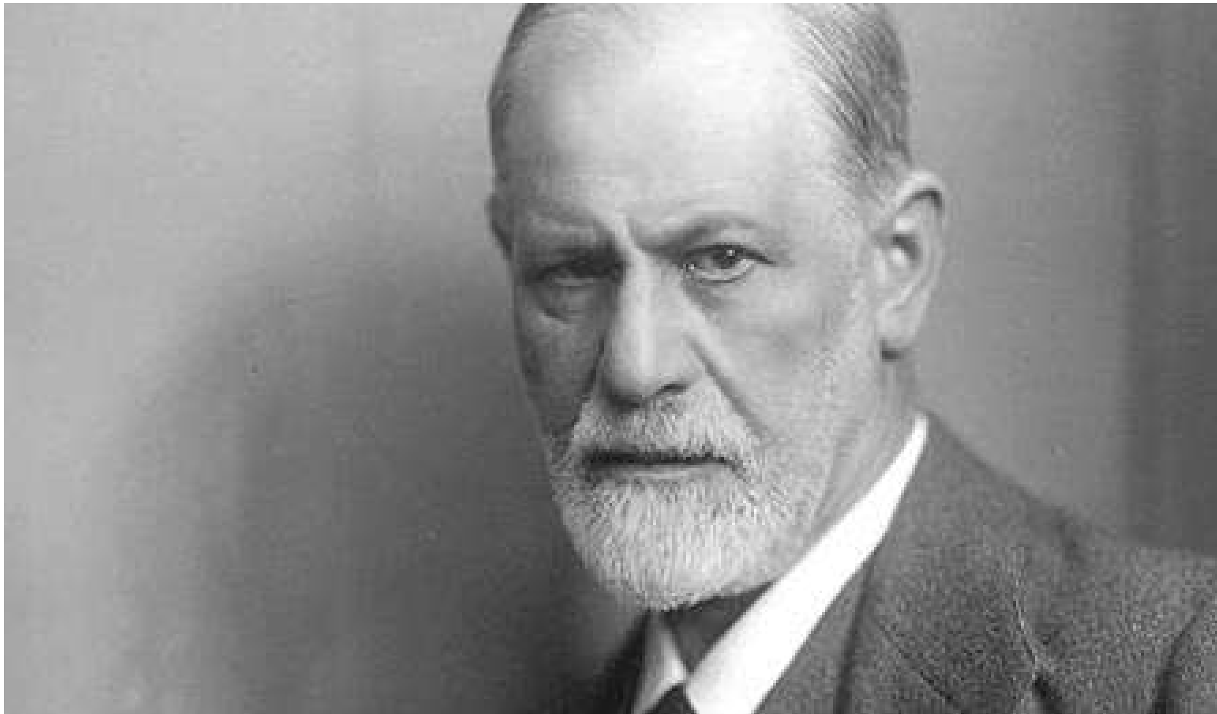
- Aggressive/manipulative behavioral treatments
- The "Rest Cure"

Numerous others throughout US and Europe began to describe "neurasthenics," shell shock, traumatic neuroses, and other consequences of combat on men

Hypnosis, narcotherapy commonly employed

Acceptance of "hysteria" as a condition in women and men significantly higher





HISTORICAL UNDERSTANDING FREUD

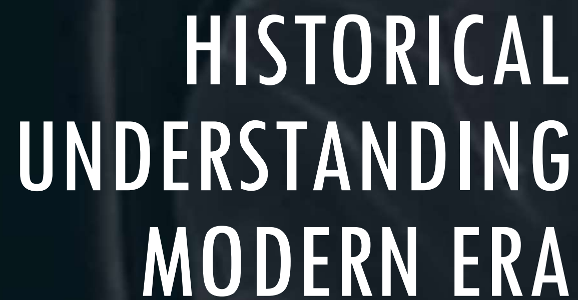
Abandoned neurophysiologic approaches in favor of psychoanalytic explanations

- Hysterical symptoms were always purposeful, willful, produced, but:
- The patient was the victim of their own unconscious

Conversion was the primary mechanism

Unacceptable feeling → repressed → emerges as symbolically-important physical symptom

Heavily influenced American and European thinking



Biologic approach gradually regained favor

No longer diagnosis of exclusion

With DSM 5:

- Importance of neurologic examination and finding positive signs of illness
- Medically-unexplained symptoms alone are not sufficient
- Recognition of the high prevalence of comorbidity between functional and organic illness

FUNCTIONAL NEUROLOGIC DISORDERS

DIAGNOSES – SOMATIC SYMPTOM AND RELATED DISORDERS (DSM5)

Somatic symptom disorder

- One or more somatic symptoms which are distressing or result in significant disruptions in daily life
- Excessive thoughts, feelings, or behaviors related to the symptoms or associated concerns

Illness anxiety disorder

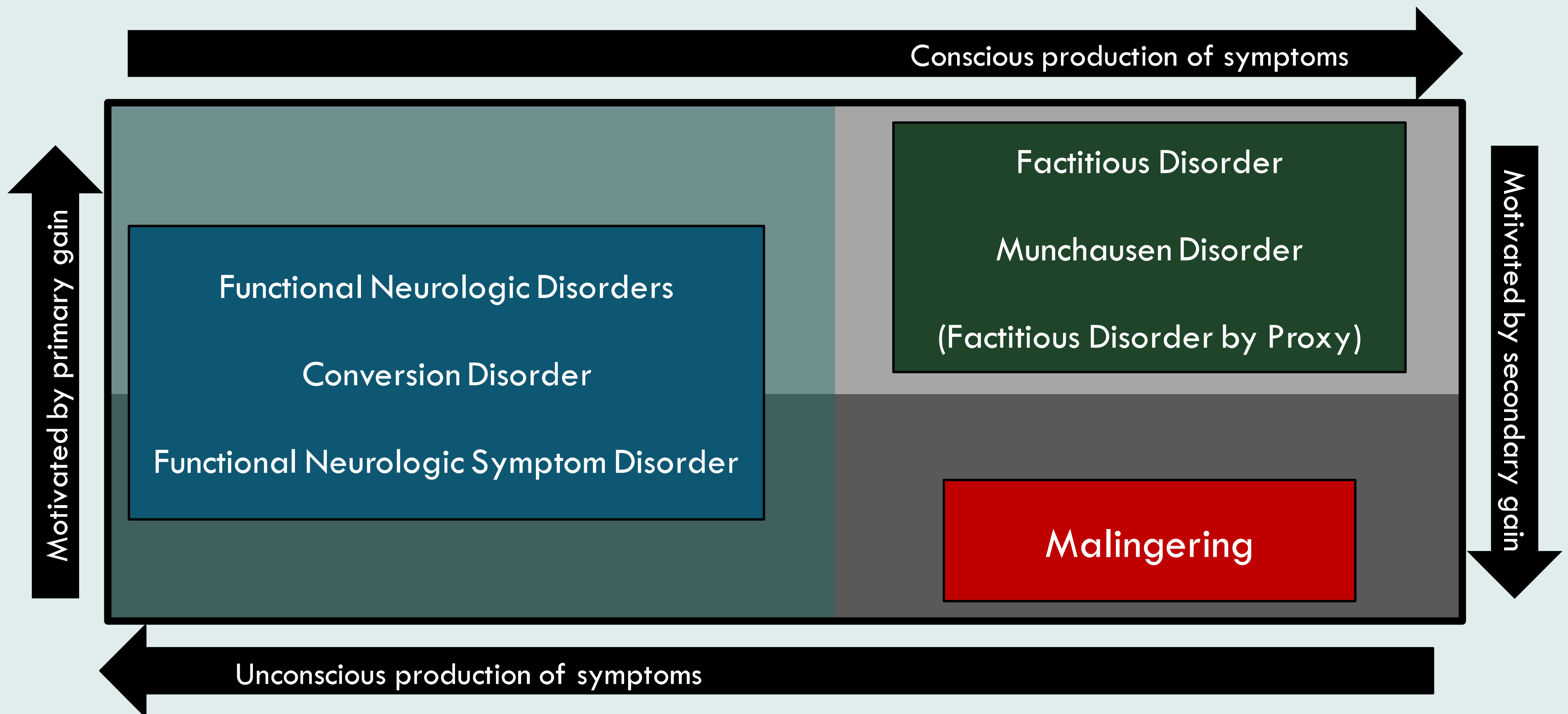
- Preoccupation with having a serious illness without significant somatic symptoms
- Excessive health-related behaviors and high level of anxiety about personal health status

Functional Neurologic Symptom Disorder (Conversion disorder)

- One or more voluntary sensory or motor symptoms which are incompatible with neurologic or medical conditions
- Specify if with: weakness, paralysis, abnormal movements, **swallowing symptoms, speech symptoms**, seizures, sensory loss, special sensory problems

https://dsm.psychiatryonline.org/doi/full/10.1176/appi.books.9780890425596.dsm09

TERMINOLOGY



GAIN

Refers to the source of motivation for a particular behavior

Primary gain – Internal motivator
- Validation of a patient's suffering
- Praise for good clinical work

Secondary gain – External motivator
- Time away from work
- Paycheck for doing one's job

Tertiary gain – Motivator of some third party
- The abuser in factitious disorder by proxy
- Pharmaceutical companies/influencers

HIGHLY COMORBID PSYCHIATRIC CONDITIONS

Anxiety disorders esp panic attacks

Obsessive-compulsive and tic disorders

Eating disorders esp anorexia nervosa

Specific phobias

Neurodevelopmental disorders esp autism spectrum

Neurodegenerative disorders

EPIDEMIOLOGY

Problem of definitions

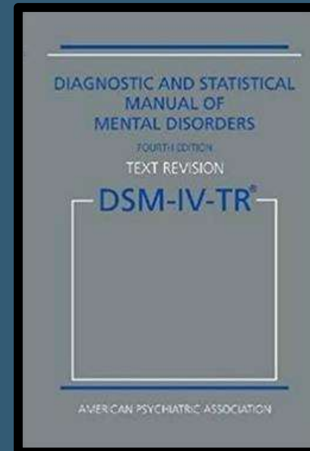
DSM-IV continued to require inciting, exacerbating psychological factors, challenging to capture in systematic fashion

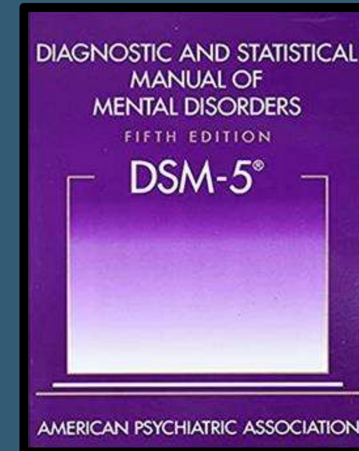
DSM-5 updated:

- Presence of neurologic symptoms that are internally incongruent or inconsistent with known patterns of physiologic disease

Prevalence increases as the general medical acuity of the population increases:

Community < Clinic < Hospital < Specialty Neurology Units





EPIDEMIOLOGY – ROUGH RULES OF THUMB

¾ patients will be female

Most patients will manifest symptoms between 35-50yo

Community prevalence is at least ~5/100,000

- Mostly consistent across populations, cultural backgrounds

~25%+ neurology patients will have "medically-unexplained symptoms"

Patients may present at any age, in any setting, and are (likely) often missed

FUNCTIONAL OUTCOMES

High-quality data lacking for most conditions

Functional movement disorders
~20% remission
~40% partial remission
~60% no improvement or worse

Functional seizures
~50% remission
~30% partial remission
~20% no improvement or worse

Functional speech disorders
Generally more favorable outcomes, high recurrence

Other functional conditions
Minimal data, highly variable courses

EVALUATION

GENERAL PRESENTATION

Onset of symptoms is acute but not sudden

- Minutes to hours

Injury, physical event, stressor may precede symptom onset and be directly related to the presenting symptom

- Choking, minor injury, witnessed injury, etc

Multiple presentations for care are common

- Within same institution or between multiple institutions (peregrination)

Rates of ongoing litigation are high (15-30%)

- May be unknown to healthcare team at the time of evaluation
- Bidirectional relationship (physical disability ←→ monetary support)

EVALUATION

Maintain diagnostic humility

- Many historical examples of misdiagnosis

Order appropriate testing but set limits

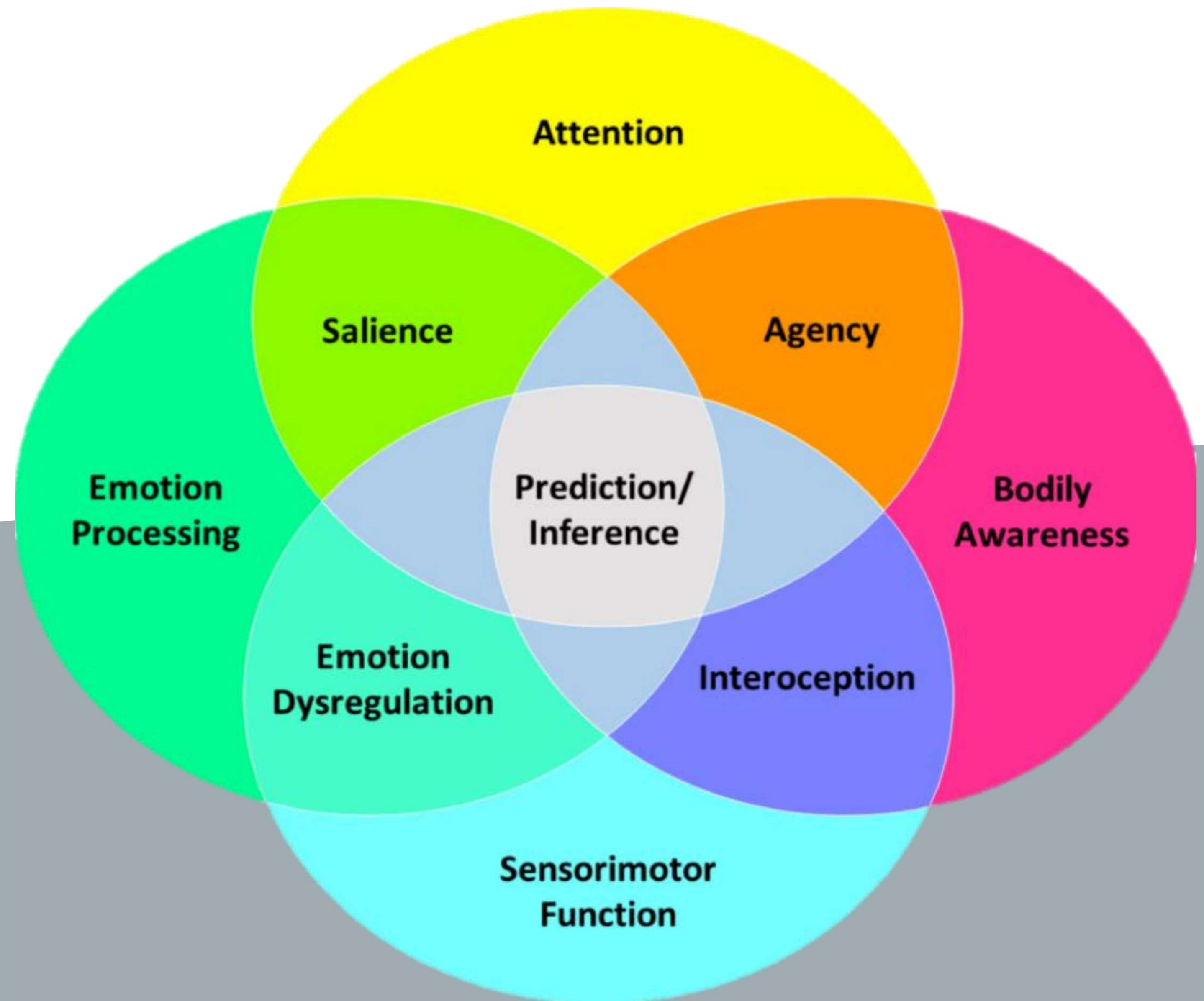
Referrals to other specialties with care

- Fracturing of care allows for collection of diagnoses, repetition of tests, "medicalization" of the patient complaints

Involvement of behavioral health thoughtfully

- Low patient insight = low utility in psychiatric care
- Define the goal of psychiatric evaluation clearly – manage comorbidities, help confirm diagnosis, NOT convince patient the etiology is psychiatric

ETIOLOGY



CNS Spectr. 2020 Sep 4;1-7

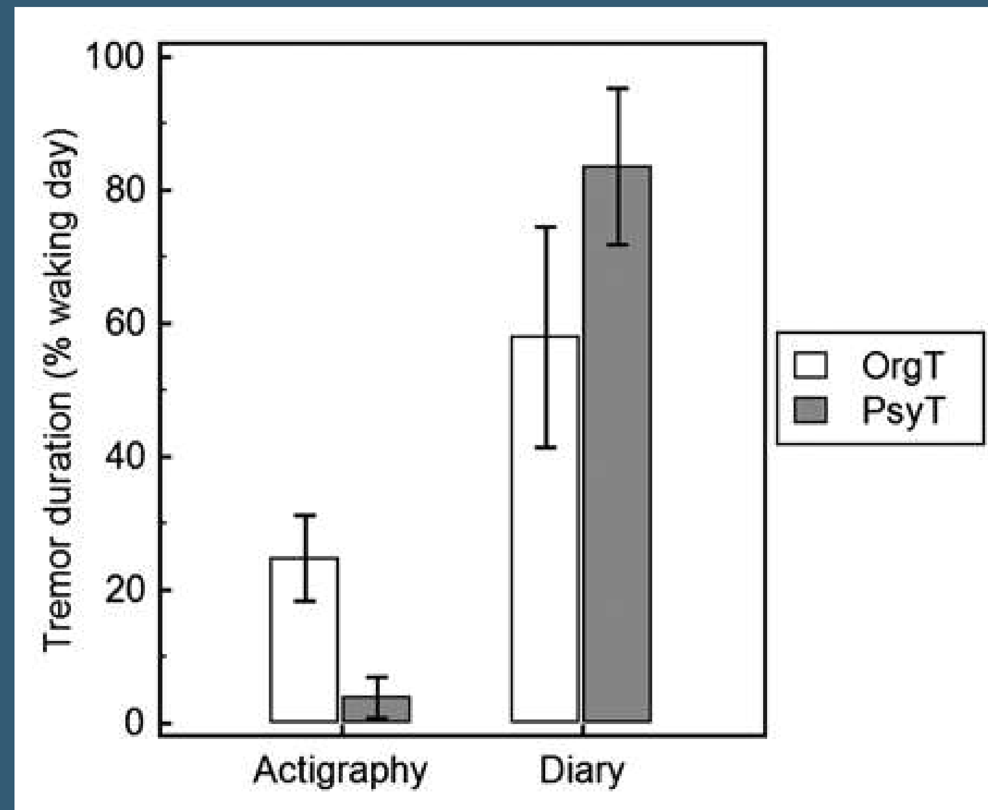
ETIOLOGY

Deficits in emotional processing	Impaired sense of agency	Deficits in attention regulation
• Excess threat detection and deficient habituation (amygdala) • Increased functional connectivity between threat detection systems and emotional/motor effector systems	• Problems with integration of feedforward systems and proprioceptive feedback systems • Movements are subjectively experienced as involuntary	• Evidence for poor attentional shifting, (e.g. from affected to normal bodily systems) • Drives excess focus on perceived pathologic states

ETIOLOGY

Abnormalities in illness beliefs

Self-reported symptom intensity and frequency significantly higher than objectively-measured symptom intensity

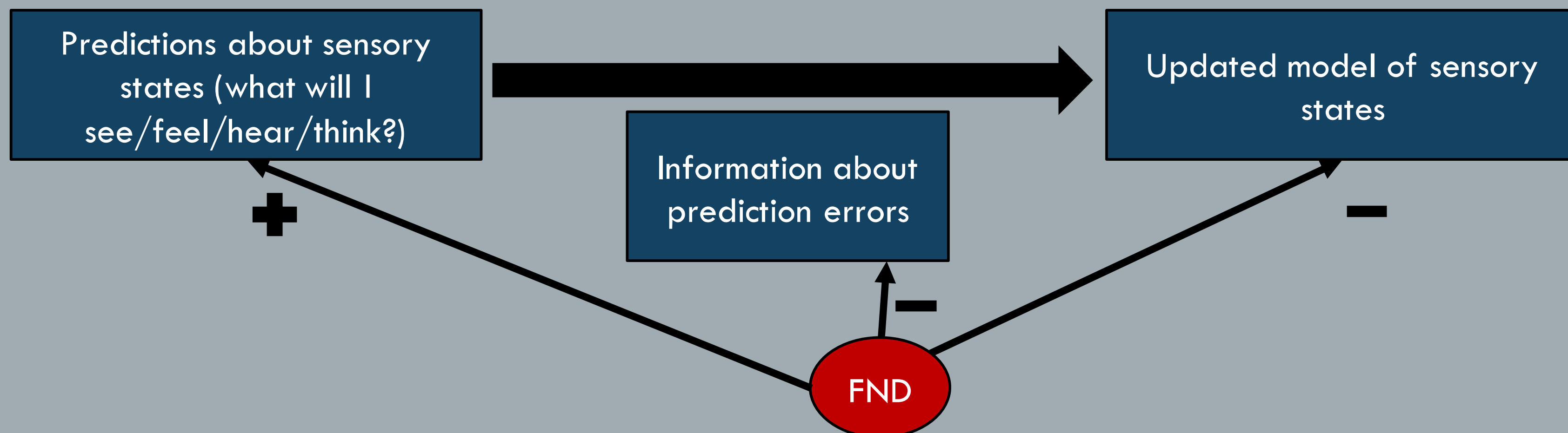


Brain. 2012 Jan;135(Pt 1):117-23

ETIOLOGY – DEFECTIVE INTERNAL MODELS

FND patients have deficits in generating accurate cognitive representations of their body

Leads to generation of inaccurate inferences about sensory states



ETIOLOGY - STRESS

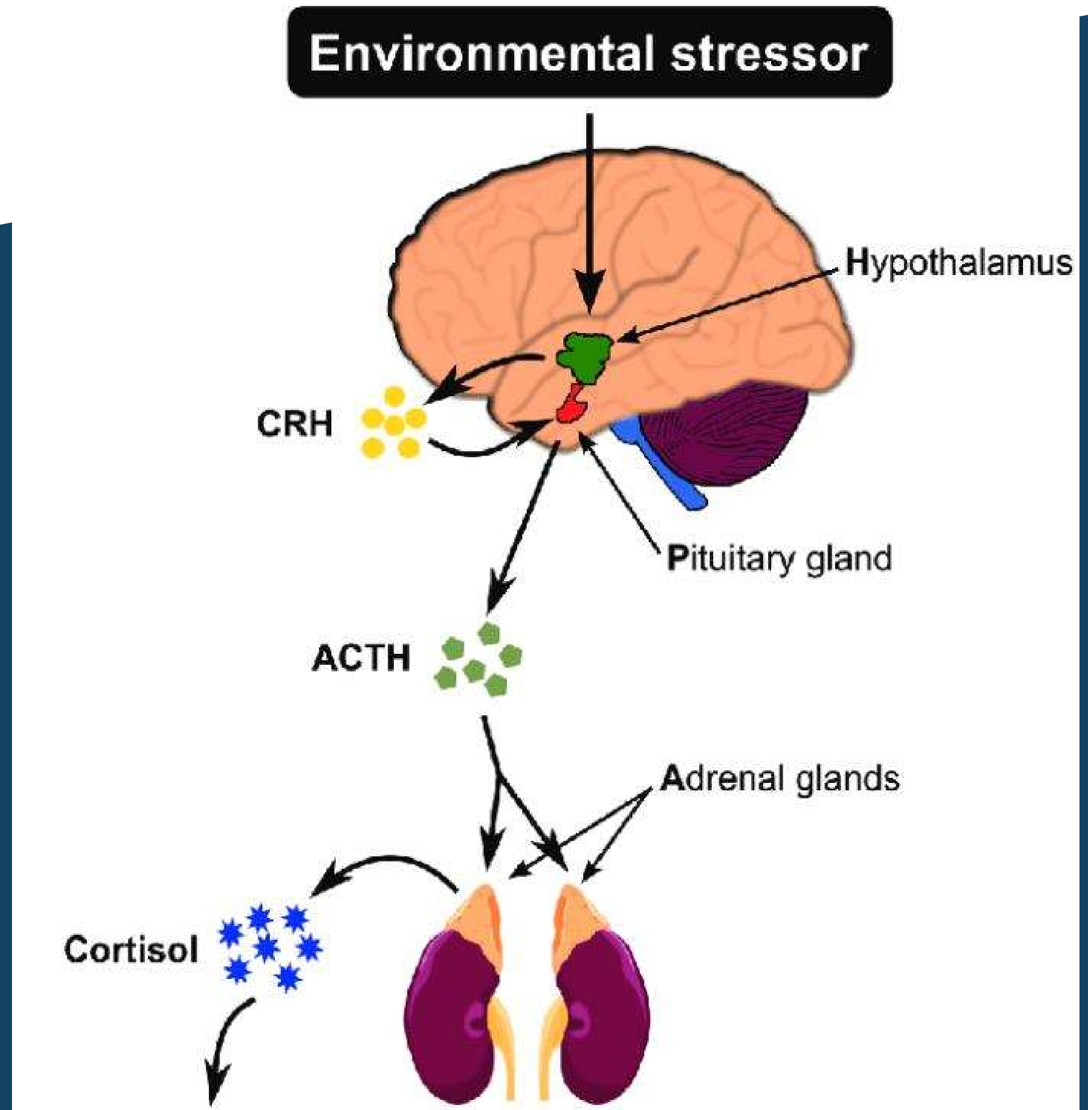
Acute effects:

- Elevated BP and HR
- Sweating, dizziness
- Abdominal cramping, N/V/D
- Hyperventilation

Chronic effects:

- Loss of differentiation between high and low stress stated
- Ineffective stress-response deactivation

Individual stressors provoke intense and longer lasting stress response



MANAGEMENT

Define the problem carefully

- Who should manage what symptom?

Psychoeducation and family involvement

- Pathological caregiver responses should be modified
- Link to educational resources

Behavioral and cognitive behavioral therapies

- Exposure and response prevention
- Graduated advancement with intra-session homework

Hypnotherapy

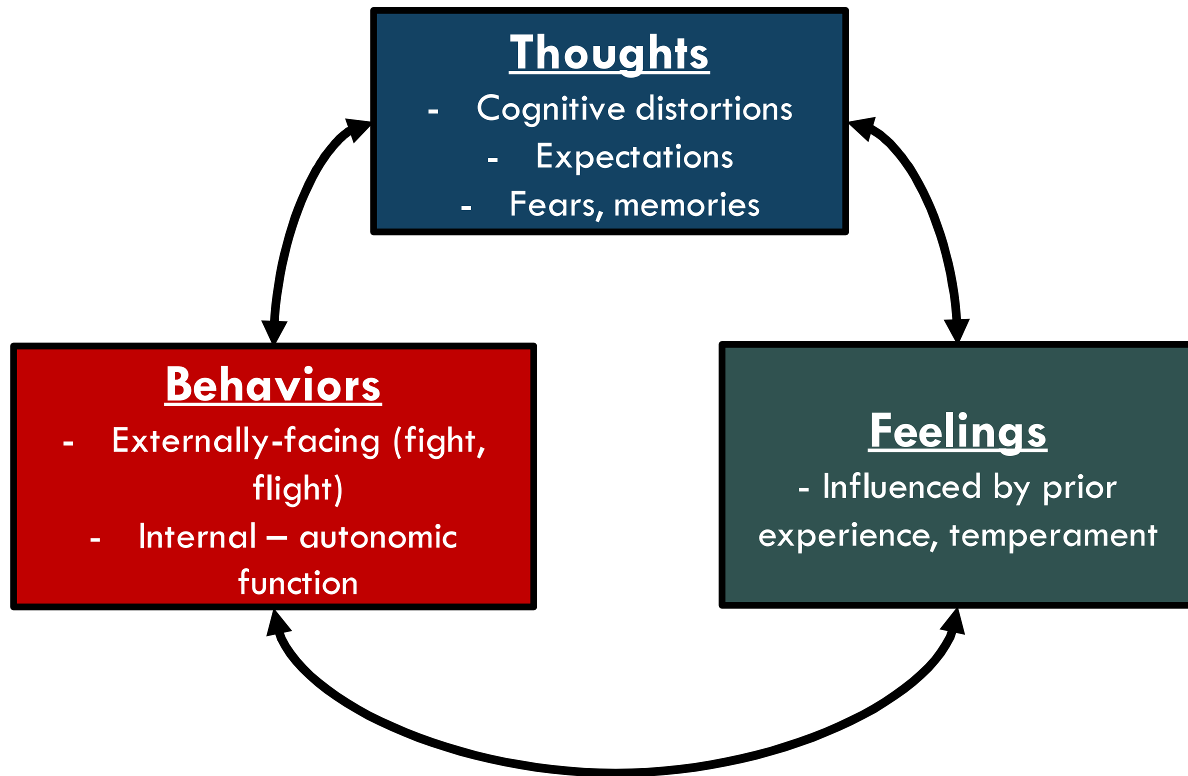
Psychotropics

- Minimal evidence for direct benefit, should be reserved for comorbid psychiatric conditions

Neuromodulation

- Case reports, ECT may be necessary in very severe conditions

COGNITIVE BEHAVIORAL THERAPY



Primary targets are somatic misinterpretations, illness beliefs, functional self-assessments

Identification of contextual contributors, triggers

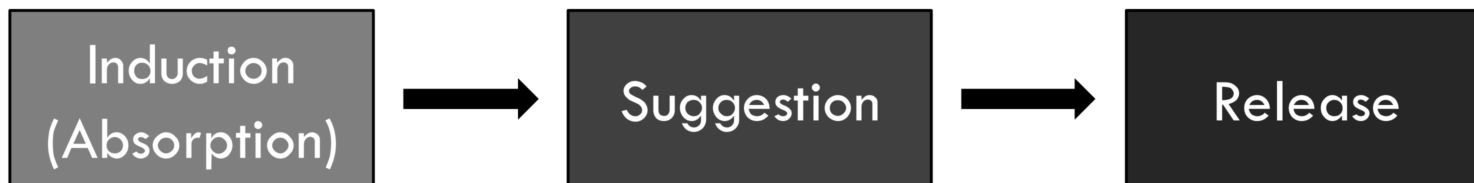
Specific behavioral techniques:

- Relaxation strategies
- Progressive activity modification
- Exposure and response prevention for phobic symptoms

J Neuropsychiatry Clin Neurosci. Winter 2020;32(1):58-66

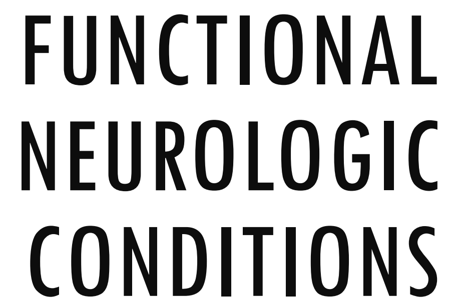
HYPNOSIS

High degree of dissociability/suggestibility common in functional conditions



Split screen technique – imagining symptoms "on" then "off," build sense of control
Focus on single affected body part, suggestions of increased strength/movement/sensation
Practice with self-induction of dissociative state when episodes are anticipated

Variant technique – use of hypnotic medications (acute management in emergency settings, e.g.)


FUNCTIONAL
NEUROLOGIC
CONDITIONS

29YOF, PRESENTING WITH SEVERAL MONTHS OF INTERMITTENT CHOKING SENSATION

Pt presented to PCP then referred to ENT with complaints of food getting "stuck" in the back of her throat

Started 3 months ago after she choked on medication she was taking for otitis externa

Symptoms are not always present, no clear pattern in terms of types of foods, though generally not eating as much

ENT exam is reassuring, no structural problems identified, given course of PPIs empirically

Pt has a prior history of anxiety in college, otherwise healthy, works as paralegal, denied substance use problems

29YO WITH DYSPHAGIA

No improvement after 6 weeks, presents for further evaluation to ENT

Esophageal manometry study is within normal limits, patient informed there was no issue and reassured, no follow up advised

Does the patient have a functional condition?

What additional interventions are available to the ENT physician?

What treatment is most indicated?

ROME CRITERIA

For Functional Dysphagia:

- Sensation of food sticking or passing with difficulty
- Absence of GERD
- Absence of evidence of motility disorder
- Above must be present for at least 3 months

Similar diagnostic schemes for most functional disorders involving the GI tract

First line treatment is always communication of the findings of studies, inform patients what they have (not just what they do not have)

FUNCTIONAL DYSPHAGIA

Also called - psychogenic dysphagia, choking phobia, swallowing phobia, phagophobia

Inability to swallow despite intact neurologic and musculoskeletal systems

Evaluation:

- Onset associated with specific event? Conditioned taste aversion, traumatic event, vicarious experiences?
- Generalized or limited to specific categories? Particular textures/flavors/sizes, pills?
- Persistent vs intermittent/context-dependent? Social component?
- Degree of impairment or medical consequence? Weight change and nutritional status
- Association with comorbid psychiatric conditions
  - OCD, panic disorder, social anxiety disorder, PTSD, eating disorders

Int Psychogeriatr. 2018 Jul;30(7):1081-1083

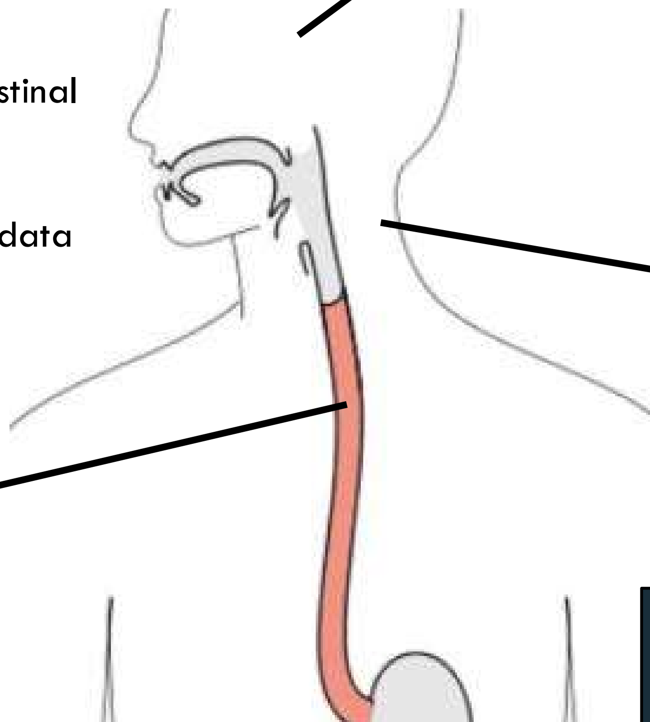
https://www.sciencedirect.com/science/article/pii/B9780128017722000394?via%3Dihub

FUNCTIONAL DYSPHAGIA

Sensitization of brain stem processing and integration of pain signals (Influenced by top-down modulation)

Antidepressants (TCAs, esp) have modest evidence for desensitization of gastrointestinal tract pain

Empiric dilation occasionally used, mixed data



Abnormalities in spinothalamic tract processing of pain signals

Excessive sensitivity to esophageal sensations

- Mechanical stretch
- Chemical irritation
- Emotional triggers

Decreased threshold for HPA axis activation and autonomic activity

Dig Dis Sci. 1999;44:2373–2379

15YOM WITH PAROXYSMAL GASPING

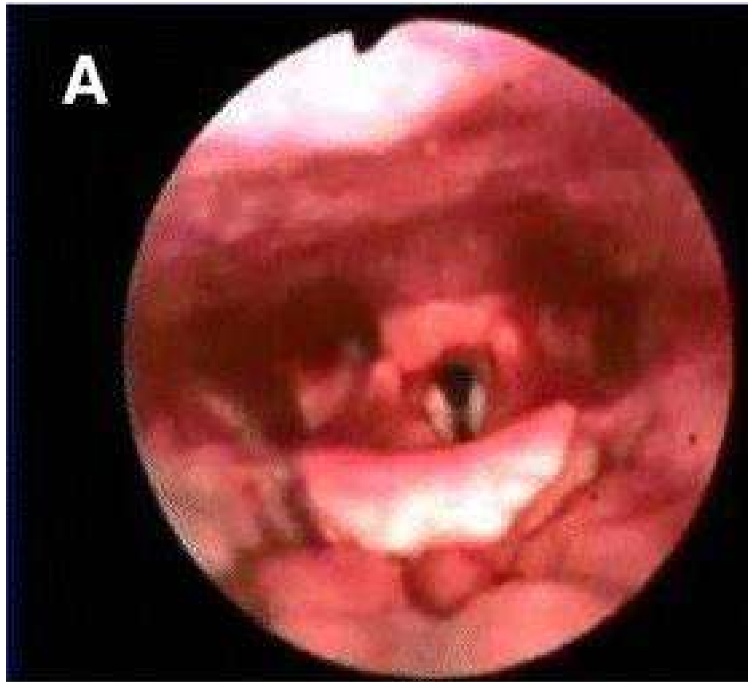
Presenting to PCP with complaints of intermittent shortness of breath

Occurring since starting middle school, tends to occur during the day only. Patient described feeling like "my neck is closing up"

Inhalers and daily steroids treatment tried, minimal to no benefit

Mother reports no significant prior medical history, no evidence for substance use, family history of anxiety in older brother and mother

15YO WITH GASPING



During the exam, he experiences a typical spell

Breath is stridorous, able to talk but is very hoarse, seen grabbing at his neck

Endoscopic exam demonstrates the following during inspiration:

VOCAL CORD DYSFUNCTION

Paradoxical closure or narrowing of VC during inspiratory phase

Evidence for laryngeal hyperresponsiveness to cough reflexes

Unlike many functional syndromes, able to see on direct visual assessment

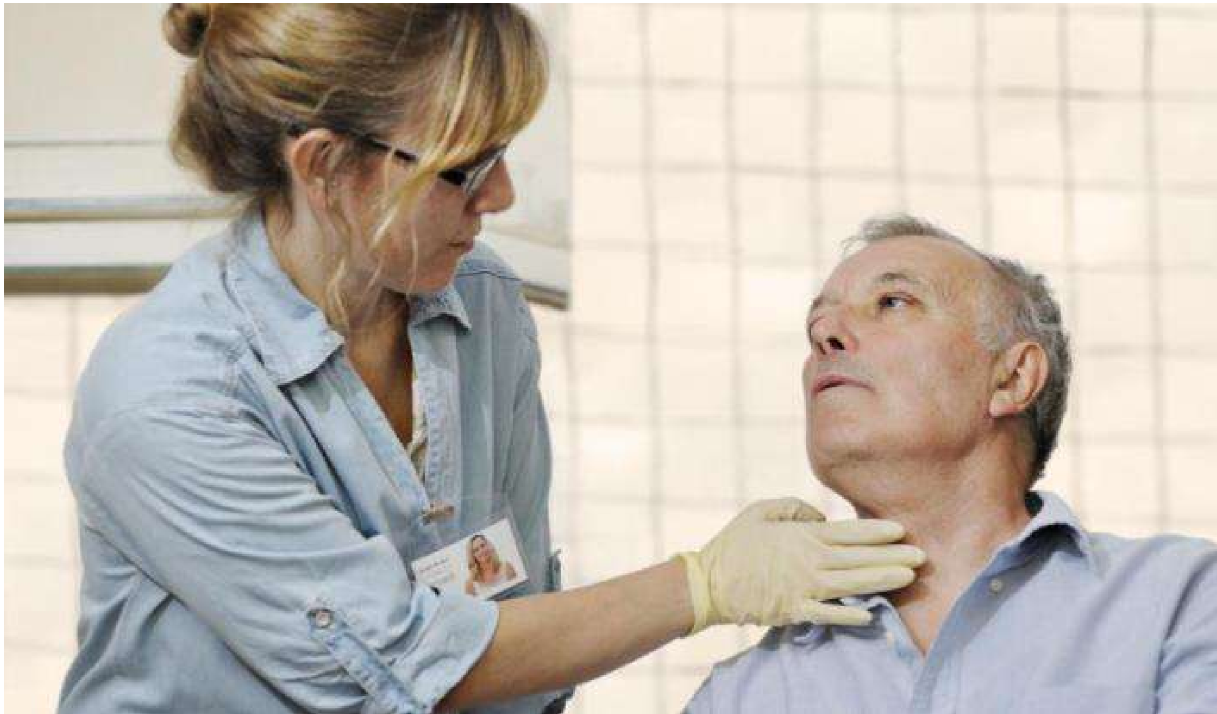
Biggest risk is misdiagnosis and management for asthma

- Inhalers and steroids typically ineffective, may worsen

Management:

- Education
- Medical interventions – BZD, antidepressants, Heliox, Botox (last resort)
- Biofeedback and hypnosis
- Speech therapy – best supported intervention

Asthma Res Pract. 2015; 1: 9



67YOM, HERE FOR EVALUATION OF THROAT PAIN

Presents with 5 years of throat discomfort, best in the mornings and intermittently present throughout the day. Wife urged him to come in since he typically avoid physicians

No problems breathing or swallowing, feels like discomfort is lessened when he eats and drinks, no associated chest pain

"Like I got a frog caught up there, you know?"

Married, retired at age 62 as an accountant, smokes ½ PPD, "social" EtOH, treated for HTN and OSA

67YOM WITH THROAT DISCOMFORT

ENT exam including endoscopy is unrevealing

Patient presents as anxious, withdrawn during much of the examination

Wife pulls MD aside and mentions that the patient had seemed less like himself since he retired, slept more, less adherent to CPAP, drinking more than he let on

What should be on the differential for this patient's complaint?

What types of treatment are indicated?

Eur Arch Otorhinolaryngol. 2018 Aug;275(8):1945-1953.

GLOBUS PHARYNGEUS

Rome Criteria:

- Nonpainful sensation of a lump or irritation in the throat
- Occurs between meals, may be improved with eating
- No associated evidence for GERD, motility, or other structural issues

Commonly associated with anxious states, depression

In some patients, antidepressants may help

One RCT – reassurance vs speech therapy, 3 months of treatment with significant reduction in symptoms and distress relative to pre-treatment and placebo

Rev Laryngol Otol Rhinol (Bord). 2003;124(3):187-90

20YOF PRESENTING WITH STROKE SYMPTOMS

EMS arrival with sudden onset facial droop, nonsensical language, confusion, and agitation

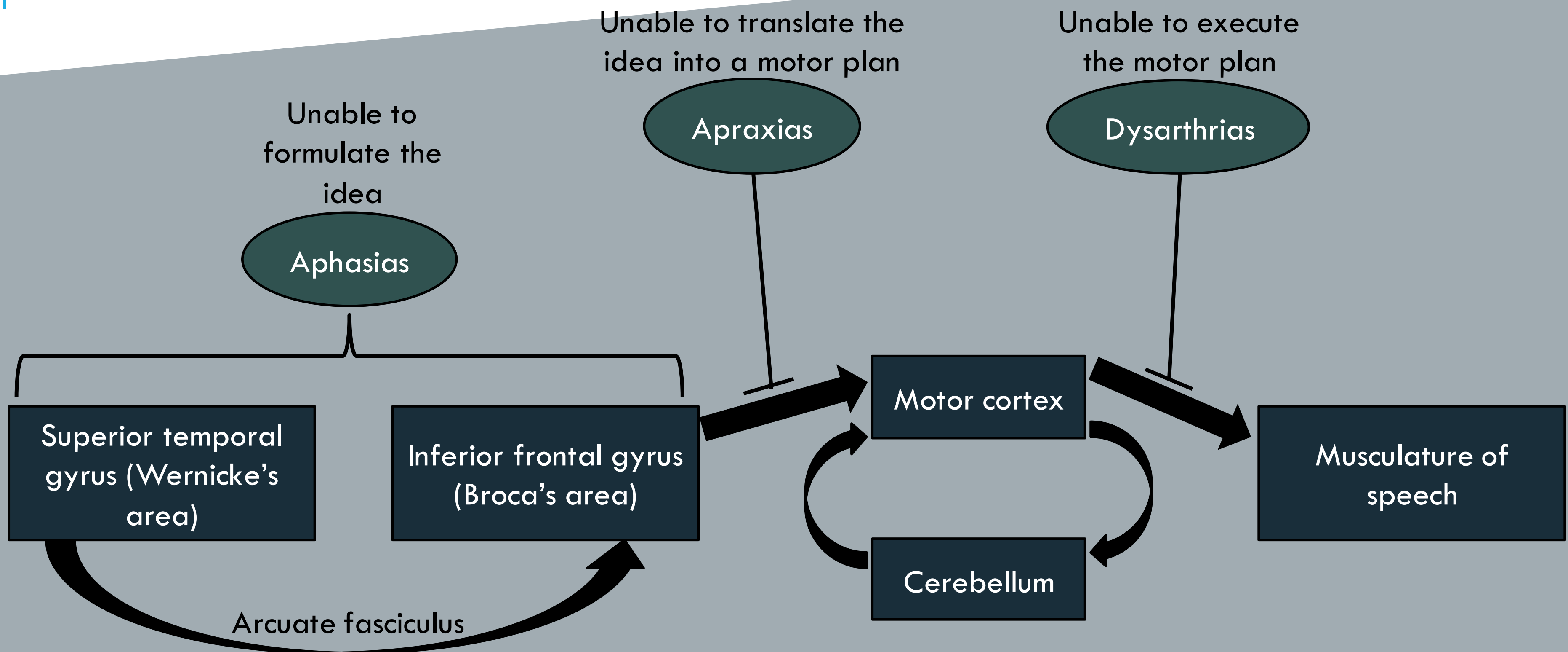
CTH without acute findings, MRI not possible due to orthopedic hardware

Over the first 24h of admission, facial strength recovered, but then experienced BL leg weakness

Speech notable for missing articles and odd syntax but normal articulation and volume – "Having no leg strong"

Family reports event occurred while a child at the daycare the patient worked at was having a tantrum

DISORDERS OF LANGUAGE



LANGUAGE AND SPEECH

<u>Language</u> – (What) – system of verbal representation of ideas, feelings, intentions

- Functional disorders may cause impairment in any of these categories
- Dysphonia/Aphonia – partial or complete loss of speech
- Clanging, malapropisms, paraphasias, neologisms – wrong, illogical, or nonsensical words
- Xenolalia – seeming to speak in a different language
- Glossolalia – seeming to speak in an unknown/imaginary language (speaking in tongues, eg)
- Coprolalia – Inappropriate addition of curse words

<u>Speech</u> – (How) – physical production of the elements of language

- Psychogenic stutter
- Oxylalia, agitolalia – Rapid speech, loss of articulation or dropping words altogether
- Echolalia and verbigeration – repeating words or phrases
- Foreign accent syndrome
- Puberphonia – Mimicking a child's voice
- Functional monotony

FUNCTIONAL SPEECH DISORDERS

Highly comorbid among FND in general

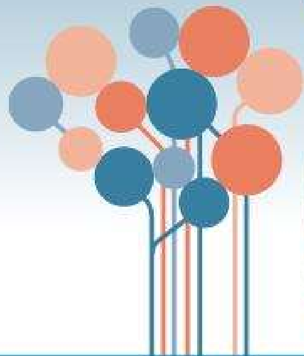
Exam findings suggestive of functional speech condition:

Give-way/collapsing weakness of the jaw or tongue	Variable severity or irregularity in presentation	Paradoxical fatigability	Very rapid improvement with therapy	Wrong way tongue deviation
Isolated lower face retraction	Amplification or suggestibility during exam	Lack of insight or recognition of deficits	Infantile or childlike prosody	Inconsistent nasality, only present with some consonants
Dyskinesias at rest but absent with speech or swallowing	Distractible symptoms (absent with small talk, eg)	Broken English speech pattern	Excessive straining or premonitory movements with stutter	Ability to modulate accents on demand (in FAS)

FUNCTIONAL NEUROLOGICAL DISORDER SOCIETY

ABOUT MEMBERSHIP FND EDUCATION CONFERENCE MEMBERS RESOURCES RESEARCH SUPPORT FNDS COMMUNITY ACCESS

8-11 June 2024
Verona, Italy



FUNCTIONAL NEUROLOGICAL DISORDER SOCIETY
fndsociety.org

5th International Conference on Functional Neurological Disorder