

The Neuropsychiatric Examination and Ancillary Tests

Sheldon Benjamin, MD
UMass Medical School Neuropsychiatry

October 22, 2026



UMass Chan
MEDICAL SCHOOL

Disclosures

My spouse and I have the following relevant financial relationship with a commercial interest to disclose: My spouse and I are partners in and I am an author for Brain Educators LLC, a neuropsychiatry education publishing company (publisher of The Brain Card®, a neuropsychiatry evaluation pocket card) and owners of braineducators.com.

Royalties: American Psychiatric Publishing

I derive no income from any other industry source.

I serve as a psychiatry director on the American Board of Psychiatry and Neurology and receive an honorarium for this work

DETAILED BACKGROUND FOR TODAY'S TALK: Chapter 5 in Silbersweig et al, *Neuropsychiatry and Behavioral Neurology: Principles and Practice* 2021; Benjamin and Niu, *Psychiatric Neurology: A Clinical Approach*, American Psychiatric Association Publishing, Washington DC, 2025.



Brigham and Women's Hospital
Founding Member, Mass General Brigham



HARVARD MEDICAL SCHOOL
TEACHING HOSPITAL

Outline

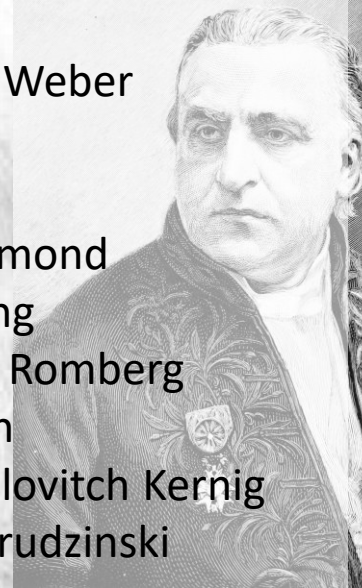
- 1) Review the importance of the bedside examination in neuropsychiatry
- 2) See above

Much of our present exam is based on the work of 19th and early 20th century psychiatrists and neurologists

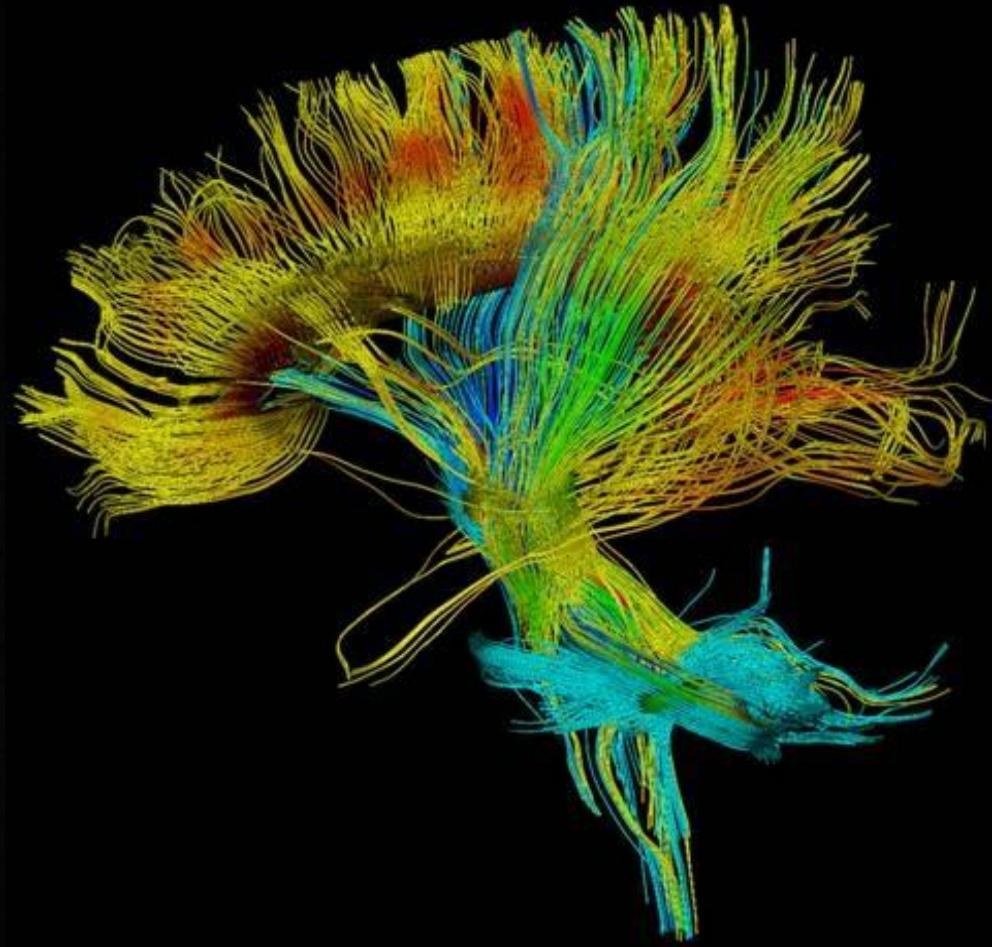
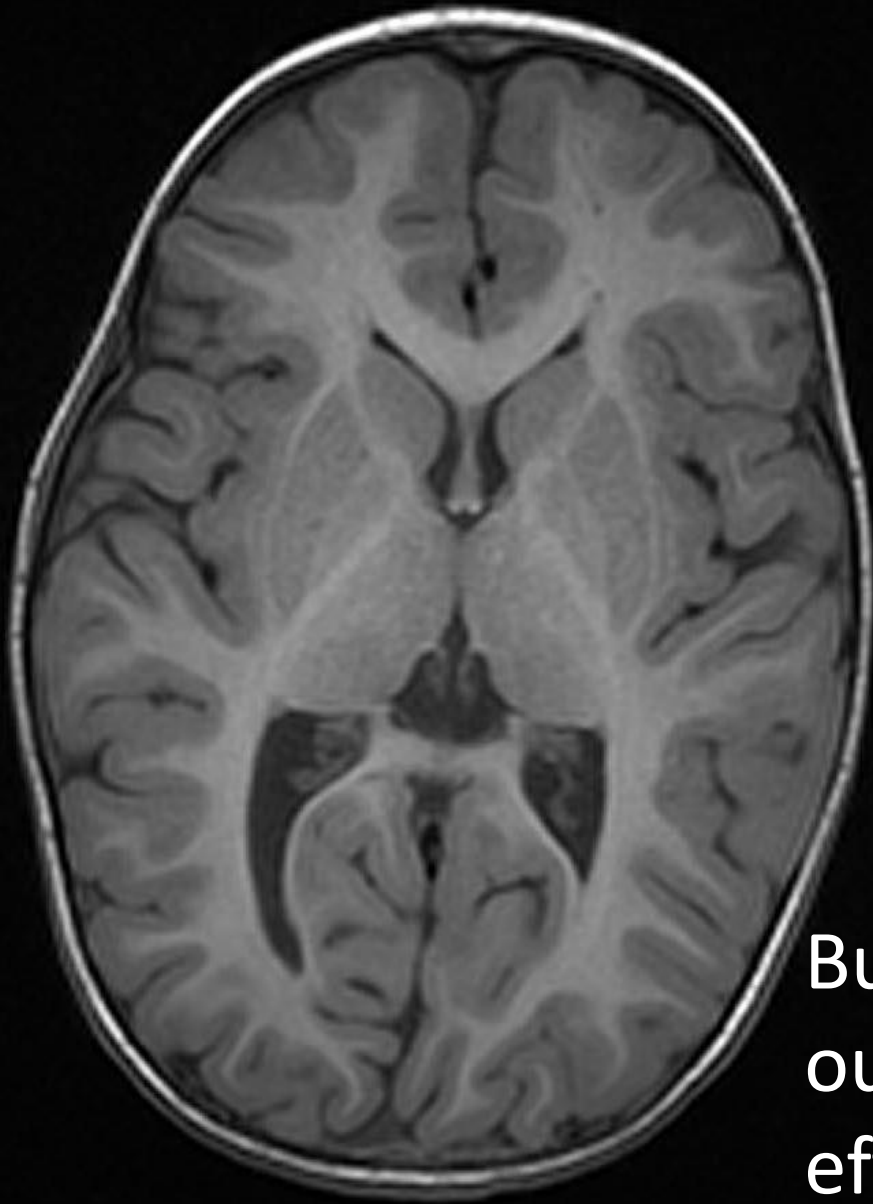
William Richard Gowers
Charles Karsner Mills
Archibald Church
Nikolaus Friedreich
George Huntington
Bernard Sachs
William Worcester
Fredrick Peterson
C Miller Fisher
Smith Ely Jelliffe
William Alanson White
Paul Broca
Carl Wernicke
John William Ogle
Hermann Snellen
Gordon Morgan Holmes
Hermann Von Helmholtz
Marcus Gunn
Samuel Wilks
Douglas Argyll-Robertson
Grainger Stewart
Norman Geschwind

Sir Charles Bell
Pierre Flourens
Robert Barany
Heinrich Rinne
Carl Olof Siggeßon Nylén
Wilhelm Heinrich Erb
Carl Friedrich Westphal
Robert Wartenberg
Morris Lewis
Erno Jendrassik
Joseph Félix Babinski
Hermann Openheim
Alfred Gordon
Walker Overend
Georges Marinesco
Anghel Radovici
O Rosenbach
Samuel A Kinnier Wilson
Francis Walshe
McDonald Critchley
William J. Adie
Kurt Goldstein

Georg Herman Monrad-Krohn
Charles Edward Brown-Séquard
Max Von Frey
Ernest Heinrich Weber
Otrfid Foerster
Henry Head
William A. Hammond
Russell N. DeJong
Moritz Heinrich Romberg
James Parkinson
Vladimir Mikhailovitch Kernig
Josef Polikarp Brudzinski
Armand Trousseau
Joseph Jules Dejerine
Pierre Marie
François Moutier
Harold Goodglass
Edith Kaplan
Alexander Romanovich Luria
Arthur Benton
Hugo Liepmann
Marshal Folstein



It is tempting to image everyone...



But the bedside exam remains
our most important & cost-
effective tool

HISTORY

PHYSICAL EXAM

**NEUROPSYCHIATRIC
FORMULATION**

MSE/CSE

LAB DATA REVIEW

The Neuropsychiatric Examination is a dynamic process requiring the examiner to adapt to the patient and to the diagnostic goal

Different types of evaluations demand different approaches

Uncooperative

Demented

Unresponsive

Acutely ill

Intellectually disabled

Highly intelligent

Forensic

Child

Rehabilitation planning

Risk assessment

Etc.

Don't ask a math professor the sum of 13+17

The Neuropsychiatry Examination is More Than Data Collection

An entirely standardized, rote, or scale-based exam is insufficient

A good examination also helps in—

Forming
an alliance

Hypothesis
testing

Planning
for ancillary tests

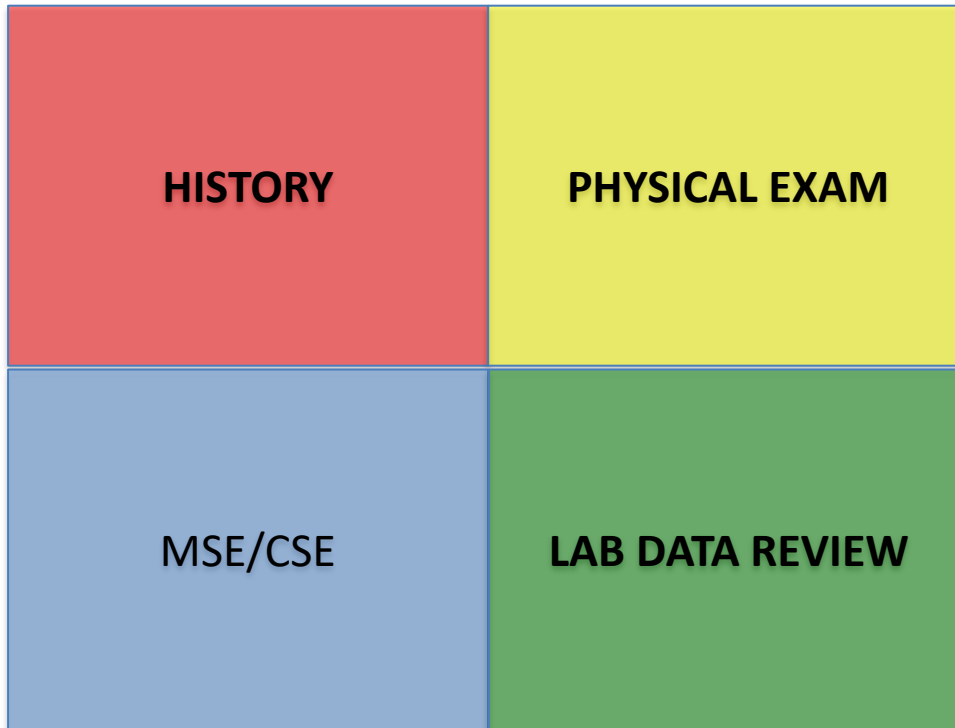
Rehab
planning

How we will review the neuropsychiatric evaluation

Section of Exam

Components of this section

Areas of function assessed



We will focus on neuropsychiatric questions as opposed to general neurology & psychiatry

WHAT I'M THINKING

WHAT TO DO NEXT

HISTORY

Chief Complaint

Neuropsychiatric ROS

Psychiatric, Medical/Surgical History

Neurological History

TBI

Seizures

Stroke

CNS Infection

Intellectual disability/LD

Pre-existing deficits

Substance History

Family History

Neurodevelopmental History

Birth/handedness/milestones

Social History

ADL's/iADL's

Education/Occupation/Special skills

Living/Support

Legal

WHAT I'M THINKING

What is the patient's subjective experience of the symptoms?

Do symptoms fit a familiar pattern?

Acquired vs Pre-existing-
Recurrent

Progressive vs Static

Undiagnosed medical, neuro,
psych condition?

What doesn't fit the hypothesis?

Risk assessment

Which rating scales should I use

WHAT TO DO NEXT

Gather collateral history

Focus the general, neuro &
cognitive exams

The neuropsychiatric review of systems consists of the psychiatric and neurologic ROS with added emphasis on:

Behavior change

Motor symptoms & involuntary movements

Paroxysmal symptoms

Sleep symptoms

Cognitive symptoms

Neurovegetative functions

Endocrine, Rheumatologic symptoms

ADL's, iADLs

Have a ready differential diagnosis of common neuropsychiatric presentations

Delirium

Catatonia

- Catatonic excitement

- NMS

- Serotonin syndrome

- Limbic encephalitis

Aggressive behavior

- New onset aggression in non-verbal individuals

- Self-injurious behavior

- Aggression related to cognitive deficits

Post-TBI syndromes

Dementia

Dementia with extrapyramidal features

Stereotyped paroxysmal phenomena

Alcohol related conditions

Insomnia, hypersomnia, parasomnia

Frontal/dysexecutive syndromes

Multiple CNS deficits

Pervasive developmental disorders

ID with dysmorphic features

Apathy

GENERAL PHYSICAL EXAM

Vital signs & weight changes

Dysmorphic features

Asymmetry, midline defects

Most common syndromes: Down syndrome, Fetal Alcohol syndrome, Fragile X, Velocardiofacial syndrome

Skin

Alopecia, hirsutism, birthmarks, rashes

Most common neurocutaneous syndromes: Tuberous sclerosis, neurofibromatosis I, Sturge-Weber, Ataxia-telangiectasia

Head, Face, Neck

Head size; Neck: obstructive apnea

Tongue: atrophic glossitis (B₁₂)

Cardiovascular

Murmurs

Extremities

Joint inflammation

WHAT I'M THINKING

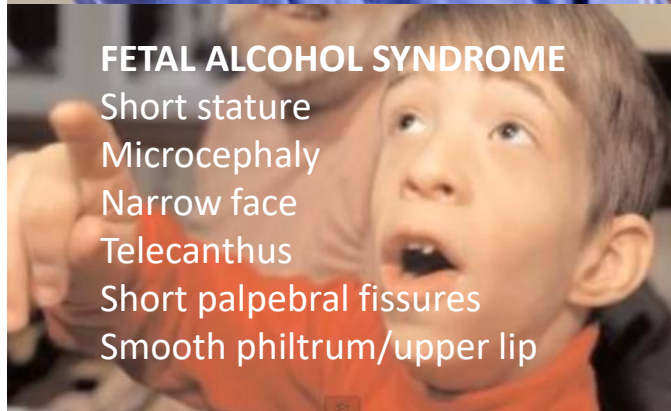
Signs of congenital disorders?
Inherited metabolic disorders?
Medical syndromes causing symptoms or due to same cause as symptoms?

Associated physical problems?
Relationship to neurobehavioral Chief Complaint?

WHAT TO DO NEXT

Neuro exam

Common Dysmorphic Syndromes with Intellectual Disability*



For unknown
dysmorphic syndromes,
AI assisted apps are
available



Face2Gene is a suite of phenotyping applications that facilitate
comprehensive and precise genetic evaluations.

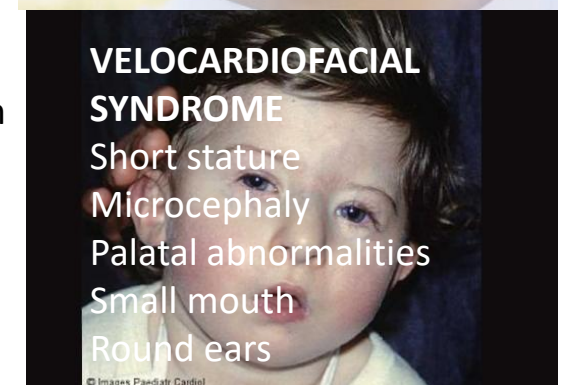
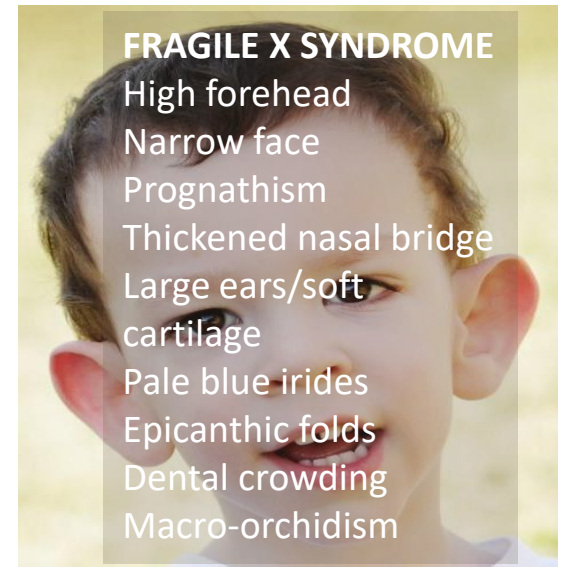


Face2Gene increases confidence of clinicians
and bioinformaticians by prioritizing genetic
disorders and variants in clinic and in lab.

LEARN MORE

FACE2GENE
Smart Phenotyping. Better Genetics.

[Face2gene.com](https://face2gene.com)



“Doorway diagnoses” have distinctive phenotypes*

Alpha-Mannosidosis
Coffin-Lowry Syndrome
Down Syndrome
Fragile X Syndrome
Klinefelter syndrome XXY
Laurence-Moon/Biedl-Bardet
Lujan-Fryns Syndrome
Marfan syndrome
Norrie Disease

Oculocutaneous albinism
Phenylketonuria
Prader Willi Syndrome
Sturge-Weber syndrome
Tuberous Sclerosis
Turner syndrome
Usher syndrome
Werner syndrome
Wolfram Syndrome

**Benjamin S et al, Child Psych Clin N Amer 22 (2013) 581*

Become familiar with the more common syndromes in children/young adults that have been associated with psychosis*

Acute Intermittent Porphyria
Autism spectrum disorders
Down Syndrome
Fragile X Syndrome
Gilbert Syndrome
Glucose-6-Phosphate
Dehydrogenase Deficiency
XXX Karyotype

Huntington Disease
Klinefelter Syndrome XXY
Marfan Syndrome
Neurofibromatosis, Type 1
Oculocutaneous Albinism
Phenylketonuria
Turner Syndrome
Velocardiofacial Syndrome

**Benjamin S et al, Child Psych Clin N Amer 22 (2013) 581*

PSYCHIATRISTS NEED TO BEGIN LEARNING ABOUT RARE DISEASES

RARE: <5/10,000 IN AGGREGATE: 1 in 15 or 400 Million people!

First presentation of a major psychiatric disorder outside usual age of onset

Major personality change

Sudden symptom onset in previously asymptomatic individual

New psychiatric symptoms in context of a steep decline in cognitive or functional level, especially in adolescence or young adulthood

Stereotyped behavioral episodes

Onset in proximity to or context of medical or neurological condition

Presence of dysmorphic features, birthmarks or focal signs on neurological exam

Family history of a rare disease

Today's common psychiatric disorders may be comprised of tomorrow's rare diseases

Lauterbach et al, The Importance of Rare Diseases for Psychiatry, Lancet Psych 3:1098 (2016)

Costei et al, Adult Hereditary White Matter Diseases with Psychiatric Presentation, J

Neuropsych Clin Nsci 33(3):180 (2021)

NEED TO LOOK UP A RARE DISORDER?

OMIM.ORG: Online Mendelian Inheritance in Man
Search by symptom/sign, disease or gene

ORPHA.NET: Online database of information on rare diseases, genes, orphan drugs

NEUROLOGICAL EXAM

Cranial Nerves

(including dysarthria exam)

Motor Examination

Bulk

Tone

Strength

Coordination

Reflexes/Pathologic reflexes

Involuntary movements

Sensory examination

Primary (LT, PP, Vib, JPS)

Cortical (DSS, graphesthesia,
stereognosis)

Gait & Station

Neurodevelopmental (Soft) Signs

Specific exam for FND if appropriate

WHAT I'M THINKING

Upper Motor Neuron

Lower Motor Neuron

Neuromuscular

Myopathy/Neuropathy

Basal ganglia disease

Cerebellar disease

Associated cognitive deficits?

Relationship to neurobehavioral

Chief Complaint?

WHAT TO DO NEXT

Mental Status/Cognitive Status
exam

Paralysis of emotional expression in the lower face is of particular interest in neuropsychiatry

Emotional movement of the lower face may be spared in facial hemiparesis for movement to command



A Command



B Spontaneous

*Hopf et al, Neurology 42 (1992) 1918 (including photo)

The lower face may be paretic for emotional expression (spontaneous movement) in lesions of the SMA, basal ganglia, internal capsule, or medial temporal lobe (? Due to interruption of thalamo-medial frontal/temporal connections)*

Recognition of abnormal speech patterns is a core neuropsychiatric skill

Assess motor components of speech: labial (“Pa”), lingual (“Ta”), guttural (“Ka”)

Assess related motor function: swallow, cough, tongue & palate movement; praxis (“blow out a match”)

Other non-aphasic aspects of spontaneous speech:

Volume: aphonia, hypophonia, hyperphonia

Quantity: mutism, poverty, latency

Rate: hyperkinetic, hypokinetic, pressured

Articulation/reiteration: dysarthria, stutter, stammer, echolalia, palilalia, verbigeration

Idiosyncrasies

Recognition of involuntary movements is a core neuropsychiatric skill

Hypokinetic disorders

Parkinsonism (akinesia, rigidity, resting tremor)
Parkinson Plus syndromes: akinetic rigidity

Catatonic Phenomena

Catalepsy
Prolonged posturing
Waxy flexibility
Stereotypy
Automatic obedience
Echophenomena
Ambitendency
Autonomic instability

Hyperkinetic disorders

Choreiform movements (chorea, ballism)
Myoclonus
Athetosis
Tremor
Tic
Stereotypy
Mannerism
Compulsions & rituals

Consult a text with videos, like:
Jankovic et al, Principles & Practice of Movement Disorders: Expert Consult Elsevier 2021

The Bush-Francis Catatonia Rating Scale assesses 23 behaviors seen in catatonia

Bush et al, Acta Psychiatr Scand 93(1996) 129-136

Excitement*

Immobility/stupor*

Mutism*

Staring

Posturing/catalepsy*

Grimacing*

Echopraxia/echolalia*

Stereotypy*

Mannerisms*

Verbigeration

Rigidity

Negativism*

Waxy flexibility

Withdrawal

Impulsivity

Automatic obedience

Mitgehen

Gegenhalten

Ambitendency

Grasp reflex

Perseveration

Combateness

Autonomic Abnormality

*denotes DSM-5-TR catatonia components

Neurodevelopmental (“soft”) Signs

Seen in absence of known neurological damage

LESS LATERALIZING

Dysarthria
Inability to move eyes
without moving head
Clumsiness
Drooling
Ataxia
Dysphagia
Nystagmus
Slow or irregular RAM's
Bradykinesia
Overflow (& mirror)
movements

MORE LATERALIZING

Dystonic posture
Hemiparesis
Clonus
Asymmetric DTR's & Hyper-
reflexes
Asymmetry of face or
extremities
Slow or irregular FFM's
Astereognosis
Agraphesthesia
Extinction to double
simultaneous stimulation
Motor impersistence

MENTAL STATUS

Attitude, demeanor, appearance

Relatedness, empathy

Awareness, self-monitoring,
planning

Affect

Mood

Thought process

Thought content

Abnormal perceptions

Insight

Judgment

Risk of harm to self, others

A REHAB-ORIENTED MSE describes what you did to help the patient accomplish each task—that becomes part of the rehab prescription

WHAT I'M THINKING

Are the mental status changes typical for a general psychiatric condition?

Could the MSE changes be caused by a medical or neurological condition?

What is the rehab potential?

What are the risks?

Which rating scales might I use?

WHAT TO DO NEXT

Cognitive assessment (screening batteries AND bedside assessment as indicated)

COGNITIVE STATUS

Arousal/Attention/Orientation

Span

Vigilance

Working memory

Persistence

Memory

Fund of knowledge

Verbal/non-verbal recall

Spontaneous, cued, list

Recent, remote

Language

Aphasia, paralinguistic functions

Praxis

Buccofacial, axial, limb

Construction, R-L, Spatial, &

Geographic orientation

Calculation, finger gnosis

Executive functions

See next slide

WHAT I'M THINKING

How good is the effort?

Are deficits consistent?

What are the sources of the errors?

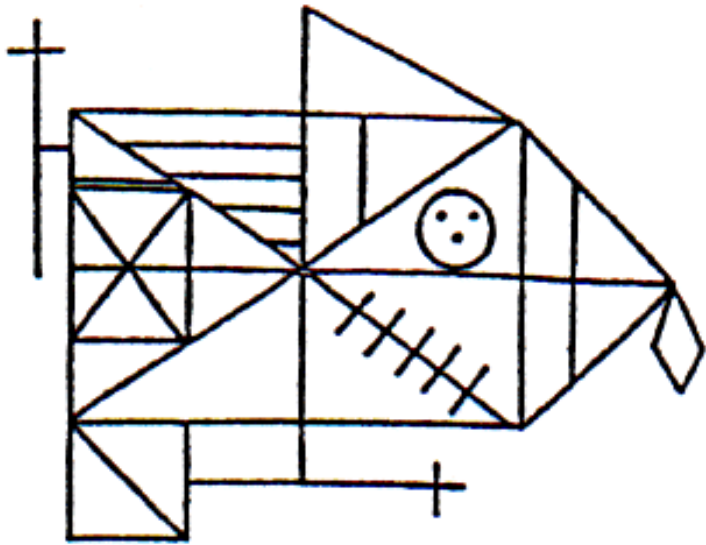
Is the psychiatric disorder or medication causing the errors?

What is the rehab potential?

What are the risks?

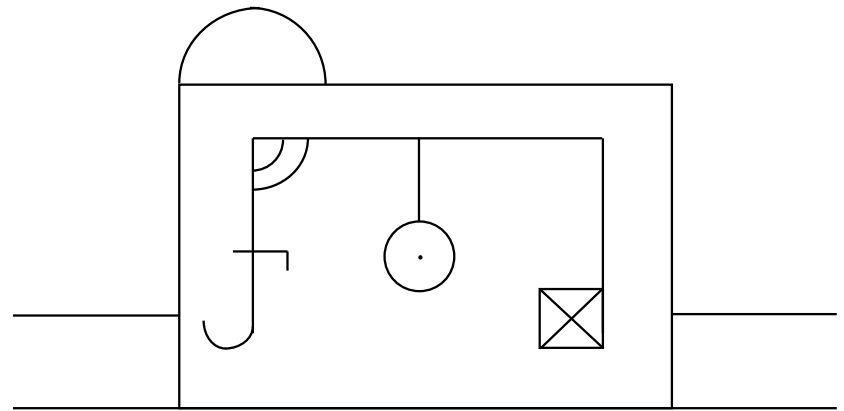
WHAT TO DO NEXT

Prefrontal executive assessment (as much as needed to determine level of function)



Rey-Osterrieth Complex Figure

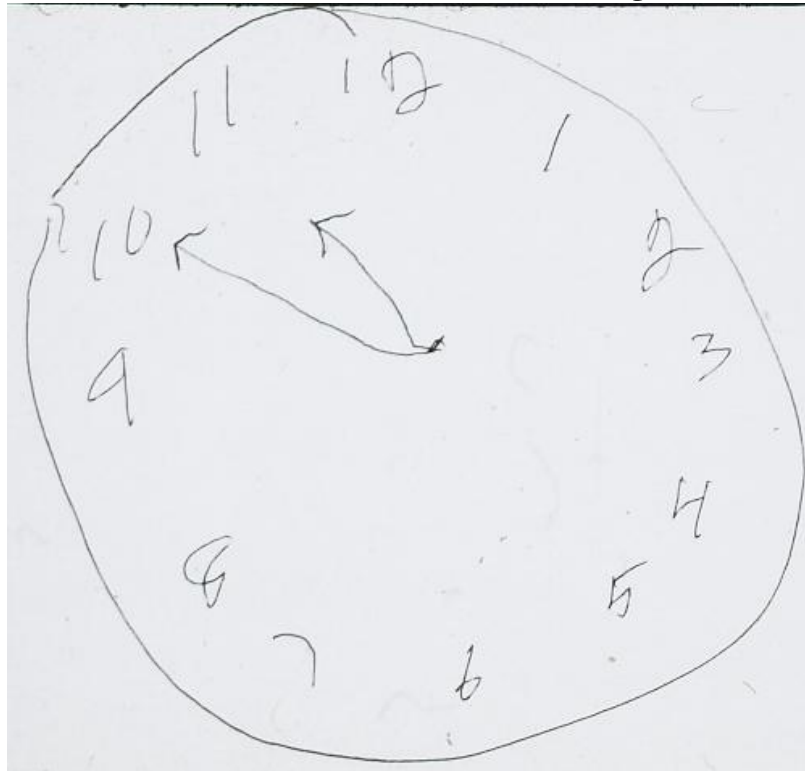
Tasks based on common neuropsychological tests can be used as bedside cognitive screening tools



A quick complex figure for bedside use

Draw-A-Clock Task

“Draw a big circle, put in the numbers, and set the hands to 10 after 11”



Stimulus bound: “pulled” to the 10

The MoCA is freely available in many languages; validated; normative data*

* MoCA training (1 hour) now free for students, faculty, academic researchers, public healthcare institutions

MoCA DUO tablet app free for up to 20 tests/month

MoCAcognition.com

Best used as screen for dementia and MCI
However: the best overall neuropsychiatry diagnostic evaluation screen remains the neuropsychiatric examination

MONTREAL COGNITIVE ASSESSMENT (MOCA) Versão Experimental Brasileira

Nome: _____ Data de nascimento: ____/____/____
 Escolaridade: _____ Data de avaliação: ____/____/____
 Sexo: _____ Idade: _____

VISUOESPACIAL / EXECUTIVA		Desenhar um RELÓGIO (onze horas e dez minutos) (3 pontos)		Pontos
		☐ Contorno ☐ Números ☐ Ponteiros		☐ 5
NOMEAÇÃO 				
MEMÓRIA Leia a lista de palavras. O sujeito deve repeti-la, faça duas tentativas. Evocar após 5 minutos. 1ª tentativa: ☐ Rosto ☐ Veludo ☐ Igreja ☐ Margarida ☐ Vermelho 2ª tentativa: ☐ ☐ ☐ ☐ ☐ ☐				
ATENÇÃO Leia a sequência de números (1 número por segundo). O sujeito deve repetir a sequência em ordem direta ☐ 2 1 8 5 4 O sujeito deve repetir a sequência em ordem indireta ☐ 7 4 2 Leia a série de letras. O sujeito deve bater com a mão (na mesa) cada vez que ouvir a letra "A". Não se atribuem pontos se ≥ 2 erros. ☐ F B A C M N A A J K L B A F A K D E A A A J A M O F A A B				
Subtração de 7 começando pelo 100 ☐ 93 ☐ 86 ☐ 79 ☐ 72 ☐ 65 4 ou 5 subtrações corretas: 3 pontos; 2 ou 3 corretas 2 pontos; 1 correta 1 ponto; 0 correta 0 ponto				
LINGUAGEM Repetir: Eu somente sei que é João quem será ajudado hoje. ☐ O gato sempre se esconde embaixo do sofá quando o cachorro está na sala. ☐				
Fluência verbal: dizer o maior número possível de palavras que comecem pela letra F (1 minuto). ☐ (N ≥ 11 palavras)				
ABSTRAÇÃO Semelhança p. ex. entre banana e laranja = fruta ☐ trem - bicicleta ☐ relógio - régua				
EVOCAÇÃO TARDIA Deve recordar as palavras SEM PISTAS ☐ Rosto ☐ Veludo ☐ Igreja ☐ Margarida ☐ Vermelho Pista de categoria ☐ ☐ ☐ ☐ ☐ Pontuação apenas para evocação SEM PISTAS				
OPCIONAL Pista de múltipla escolha ☐ ☐ ☐ ☐ ☐				
ORIENTAÇÃO ☐ Dia do mês ☐ Mês ☐ Ano ☐ Dia da semana ☐ Lugar ☐ Cidade				
© Z. Nasreddine MD www.mocatest.org Versão experimental Brasileira: Ana Luísa Rosas Sarmento Paulo Henrique Ferreira Bertolucci - José Roberto Wajman (UNIFESP-SP 2007)				
TOTAL Adicionar 1 pt se ≤ 12 anos de escolaridade:				☐ 30

COGNITIVE STATUS

Prefrontal/Executive Function

Sequencing: motor (Luria 3 step), verbal

Inhibition, motor regulation:
reciprocal motor programs, go/
no-go, anti-saccades

Abstract reasoning: proverb,
connotative reasoning, similarities

Cognitive flexibility

Cognitive estimation

Complex problem solving

Conceptual series completion

Independence



WHAT I'M THINKING

How good is the effort?

Are deficits consistent?

What are the sources of the errors?

Is the psychiatric disorder or medication causing the errors?

What is the rehab potential?

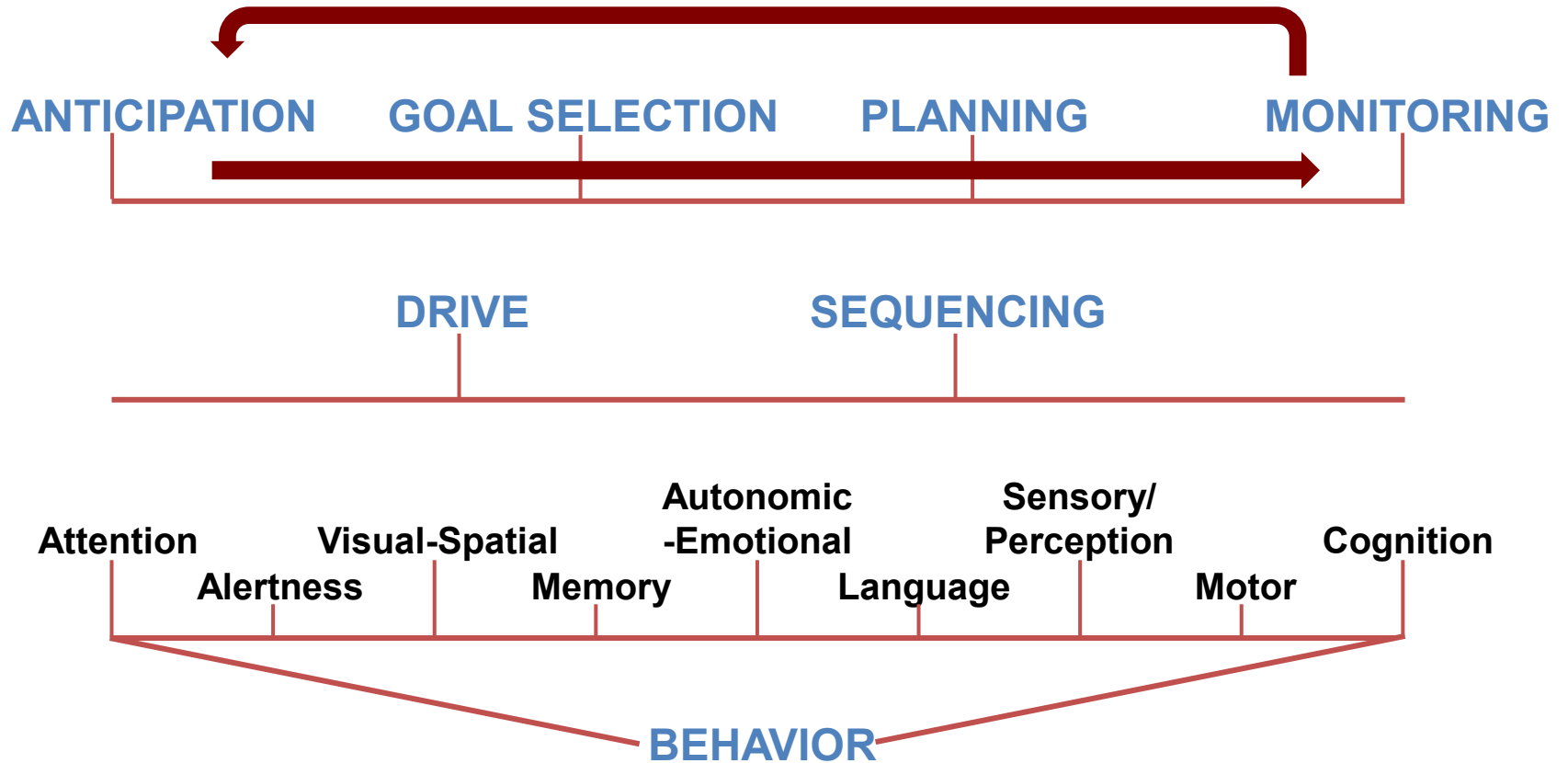
What was the executive function
BEFORE the current episode

WHAT TO DO NEXT

Review Lab Studies

Order labs with clear reasons

EXECUTIVE FUNCTION



After Frank Benson

Complex Problem Solving

AN EXCELLENT PREFRONTAL SCREEN TASK

If I were to give you \$5 and ask you to buy 4 packs of raisins at 89¢/pack, how much change would you receive?

$$\$5 - (4 \times 0.89) =$$

Requires

- Working memory
- Arithmetic
- Cognitive estimation
- Error checking
- Sequencing

Once the diagnostic hypothesis is established, rating scales are useful in monitoring the patient's course—these are some “go-to” scales:

Depression: HAM-D, PHQ-9

Anxiety: HAM-A

OCD: Y-BOCS

Psychosis: BPRS

ADHD: Adult ADHD Self-Report Scale, Connors

Aggression: Overt Aggression Scale

Dementia/MCI Screen: MOCA

TBI: Rancho Los Amigos

EDS: Epworth Sleepiness Scale

Catatonia: BFCRS

Dementia: Blessed

Dementia Scale, Dementia Severity Rating Scale

Psych Symptoms in

Dementia: NPI

Drug-induced Movement Disorders: AIMS

Frontal Dysfunction: FAB

Parkinson Disease: UPDRS

MS: EDSS

APPS CAN BE USEFUL IN NEUROPSYCHIATRIC ASSESSMENT



Seismometer
\$1.99



Tremor
Analysis
Free

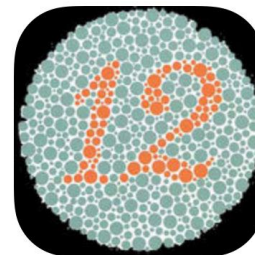


Finger
Tapping Test
Free

MoCA app for tablets available free for up to 20 tests/month



OKN Strips
\$3.99



Pseudochromatic
Color Test
Free

LAB DATA REVIEW

Structural imaging

CT, MRI-read yourself

Electrophysiological studies

Basic blood labs

Special blood labs

DNA tests

CSF

Neurovascular imaging

Autonomic testing

Neuropsychological Testing

WHAT I'M THINKING

Subtle pattern?

Are abnormalities caused by
treatment?

Screen for metabolic syndrome &
other side effects

Do the lab data support the
hypothesis?

WHAT TO DO NEXT

**Neuropsychiatric formulation,
treatment planning**

HISTORY

NEURO EXAM

**NEUROPSYCHIATRIC
FORMULATION**

MSE/CSE

LAB DATA REVIEW

NEUROPSYCHIATRIC FORMULATION

Symptoms & Signs

Localization / network

Differential Diagnosis

Cognitive/Psychological/Neurophysiologic
hypotheses for symptoms

Potentially reversible symptoms (treatment)

Prognosis & rehab plan

NEUROPSYCHIATRY FORMULATION

Symptoms & Signs: A 51 yo previously healthy man without prior family or personal neuropsychiatric history who became manic and paranoid 1 week after right frontal SAH & aneurysm clipping (could not be coiled). Normal elemental neuro exam. Normal cognitive status except difficulty comprehending pun, sarcasm, double-entendre, context, idiom.

Localization / network: Right hemisphere paralinguistic functions, missing the motor strip; may also have orbitofrontal involvement.

Differential Diagnosis: Right frontal dysfunction due to hemorrhagic damage, surgical damage (e.g. post-op SDH/contusion), vs pre-existing deficits. R/o new onset mania despite absent family history. Focal lesions causing mania mostly in right hemisphere or orbitofrontal cortex.

Cognitive hypothesis for symptoms: Paralinguistic deficits and mania both due to right hemisphere dysfunction $\pm$ orbitofrontal dysfunction. Paranoia may be due to impaired inferential reasoning or decoding paralinguistic communication.

Potentially reversible symptoms (treatment): If SDH $\rightarrow$ may evacuate or await resorption. Most likely single manic episode. Paralinguistic deficits may improve with time.

Prognosis & rehab plan: Good; prevention measures, neuropsychological testing for baseline, carbamazepine x 1yr, speech therapy, neuropsychiatry follow-up

Summary

There is no substitute for
examining the patient



UMass Chan
MEDICAL SCHOOL

RESOURCES

Benjamin S, Lauterbach MD, The Neurological Examination Adapted for Neuropsychiatry, CNS Spectrums 2018, 23:219-227

Benjamin S, Neuropsychiatric Assessment, Ch.5 in Silbersweig D et al, [Neuropsychiatry and Behavioral Neurology: Principles and Practice](#), McGraw Hill, 2021

Benjamin S, Lauterbach M, The Brain Card®, Brain Educators LLC (braineducators.com), 3rd ed. 2016

Benjamin S, Lauterbach MD, Stanislavski AL, Congenital and acquired disorders presenting as psychosis in children and young adults, Child Adol Psych Clin N Amer 2013, 22: 581-608

Benjamin S, Niu K, [Psychiatric Neurology: A Clinical Approach](#), American Psychiatric Publishing 2025.

Bush et al, Catatonia I: Rating Scale and Standardized Examination, Acta Psychiatr Scand 93(1996) 129-136

Hopf HC et al, Localization of emotional and volitional facial paresis, Neurology 1992, 42:1918-1923

Epworth Sleepiness Scale

Name: _____

Date: _____

Your age: (Yr) _____ Your sex: ☐ Male ☐ Female

How likely are you to doze off or fall asleep in the situations described below, in contrast to feeling just tired?

This refers to your usual way of life in recent times.

Even if you haven't done some of these things recently try to work out how they would have affected you.

Use the following scale to choose the most appropriate number for each situation:-

- 0 = would never doze
- 1 = Slight chance of dozing
- 2 = Moderate chance of dozing
- 3 = High chance of dozing

Situation	Chance of dozing
Sitting and reading	
Watching TV	
Sitting, inactive in a public place (e.g. a theatre or a meeting)	
As a passenger in a car for an hour without a break	
Lying down to rest in the afternoon when circumstances permit	
Sitting and talking to someone	
Sitting quietly after a lunch without alcohol	
In a car, while stopped for a few minutes in the traffic	
Total	



BUSH-FRANCIS CATATONIA RATING SCALE

Use presence or absence of items 1-14 for screening

Use the 0-3 scale for items 1-23 to rate severity

1. Excitement: Extreme hyperactivity, constant motor unrest which is apparently non-purposeful. Not to be attributed to akathisia or goal directed agitation 0 = Absent 1 = Excessive motion 2 = Constant motion, hyperkinetic without rest periods 3 = Full-blown catatonic excitement, endless frenzied motor activity	2. Immobility/stupor: Extreme hypoactivity, immobile, minimally responsive to stimuli 0 = Absent 1 = Sits abnormally still, may interact briefly 2 = Virtually no interaction with external world 3 = Stuporous, non-reactive to painful stimuli
3. Mutism: Verbally unresponsive or minimally responsive 0 = Absent 1 = Verbally unresponsive to majority of questions; incomprehensible whisper 2 = Speaks less than 20 words/ 5 min 3 = No speech	4. Staring: Fixed gaze, little or no visual scanning of environment, decreased blinking. 0 = Absent 1 = Poor eye contact, repeatedly gazes less than 20 seconds between shifting of attention; decreased blinking 2 = Gaze held longer than 20 seconds, occasionally shifts attention 3 = Fixed gaze, non-reactive
5. Posturing/cataplexy: Spontaneous maintenance of posture(s), including mundane (e.g. setting or standing for long periods without reacting). 0 = Absent 1 = Less than 1 minute 2 = Greater than one minute, less than 15 minutes 3 = Bizarre posture, or mundane maintained more than 15 minutes	6. Grimacing: Maintenance of odd facial expressions. 0 = Absent 1 = Less than 10 seconds 2 = Less than 1 minute 3 = Bizarre expression(s) or maintained more than 1 minute
7. Echopraxia/echolalia: Mimicking of examiner's movements/speech. 0 = Mimicking of examiner's movements/speech 1 = Occasional 2 = Frequent 3 = Constant	8. Stereotypy: Repetitive, non-goal-directed motor activity (e.g. finger-play; repeatedly touching, patting or rubbing self); abnormality not inherent in act but in frequency. 0 = Absent 1 = Occasional 2 = Frequent 3 = Constant
9. Mannerisms: Odd, purposeful movements (hopping or walking tiptoe, saluting passers-by or exaggerated caricatures of mundane movements); abnormality inherent in act itself. 0 = Absent 1 = Occasional 2 = Frequent 3 = Constant	10. Verbigeration: Repetition of phrases or sentences (like a scratched record). 0 = Absent 1 = Occasional 2 = Frequent 3 = Constant
11. Rigidity: Maintenance of a rigid position despite efforts to be moved, exclude if cog-wheeling or tremor present. 0 = Absent 1 = Mild resistance 2 = Moderate 3 = Severe, cannot be repositioned	12. Negativism: Apparently motiveless resistance to instructions or attempts to move/examine patient. Contrary behavior, does exact opposite of instruction 0 = Absent 1 = Mild resistance and/or occasionally contrary 2 = Moderate resistance and/or frequently contrary 3 = Severe resistance and/or continually contrary
13. Waxy Flexibility: During repositioning of patient, patient offers initial resistance before allowing himself to be repositioned, similar to that of a bending candle. 0 = Absent 3 = Present	14. Withdrawal: Refusal to eat, drink and/or make eye contact. 0 = Absent 1 = Minimal PO intake/interaction for less than 1 day 2 = Minimal PO intake/interaction for more than 1 day 3 = No PO intake/interaction for 1 day or more.

BUSH-FRANCIS CATATONIA RATING SCALE (CONT.)

15. Impulsivity: Patient suddenly engages in inappropriate behavior (e.g. runs down hallway, starts screaming or takes off clothes) without provocation. Afterwards can give no, or only a facile explanation. 0 = Absent 1 = Occasional 2 = Frequent 3 = Constant or not redirectable	16. Automatic obedience: Exaggerated cooperation with examiner's request or spontaneous continuation of movement requested. 0 = Absent 1 = Occasional 2 = Frequent 3 = Constant
17. Mitgehen: "Anglepoise lamp" arm raising in response to light pressure of finger, despite instruction to the contrary. 0 = Absent 3 = Present	18. Gegenhalten: Resistance to passive movement which is proportional to strength of the stimulus, appears automatic rather than wilful. 0 = Absent 3 = Present
19. Ambitendency: Patient appears motorically "stuck" in indecisive, hesitant movement. 0 = Absent 3 = Present	20. Grasp reflex: Per neurological exam 0 = Absent 3 = Present
21. Perseveration: Repeatedly returns to same topic or persists with movement. 0 = Absent 3 = Present	22. Combativeness: Usually in an undirected manner, with no, or only a facile explanation afterwards. 0 = Absent 1 = Occasionally strikes out, low potential for injury 2 = Frequently strikes out, moderate potential for injury 3 = Serious danger to others
23. Autonomic abnormality: Circle: temperature, BP, pulse, respiratory rate, diaphoresis. 0 = Absent 1 = Abnormality of one parameter (excluding pre-existing hypertension) 2 = Abnormality of two parameters 3 = Abnormality of three or more parameters	TOTAL: _____

EXAM PROCEDURE	WHAT TO OBSERVE
Observe patient while trying to engage in a conversation.	Activity level Abnormal movements Abnormal speech
Examiner scratches head in exaggerated manner	Echopraxia
Examine arm for cogwheeling. Attempt to reposition, instructing patient to 'keep your arm loose'- move arm with alternating lighter and heavier force.	Negativism Waxy flexibility Gegenhalten
Ask patient to extend arm. Place one finger beneath hand and try to raise slowly after stating, 'Do NOT let me raise your arm'.	Mitgehen
Extend hand stating 'Do NOT shake my hand'.	Ambitendency
Reach into pocket and state, 'Stick out your tongue, I want to stick a pin in it.'	Automatic obedience
Check for grasp reflex	Grasp reflex