

Cognition

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Cognition: the process of thought by which an individual learns, stores, retrieves, and uses information.

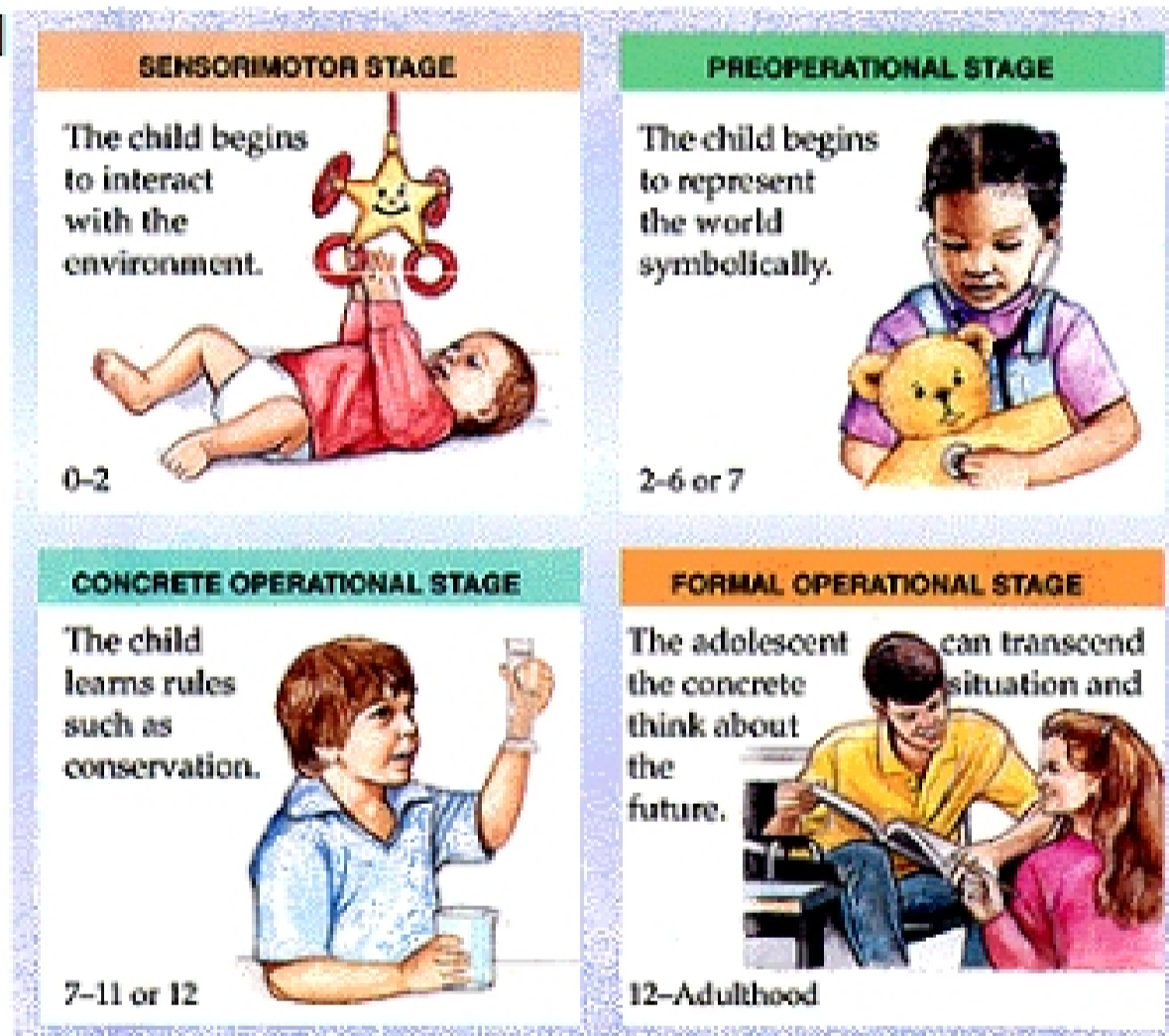
Piaget's Stages of Cognitive Development:

Step 1: sensorimotor period: coordination of sensory input and motor responses; development of object permanence. [birth-2 years]

Step 2: preoperational period: development of symbolic thought marked by irreversibility, centration, and egocentrism. [2-7 years]

Step 3: concrete operational period: mental operations applied to concrete events; mastery of conservation, hierarchal, classification. [7-11 years]

Step 4: formal operational period: mental operation applied to abstract ideas; logical, systemic thinking. [11-adulthood]



KEY POINTS:

-cognition occurs along a spectrum from impaired levels to optimal levels, based on the patient's age, educational level, and developmental level.

-Elderly patients are at greatest risks for developing impaired cognition.

-Cognitive impairment is not a part of normal aging.

-Consequences of cognitive impairment can be devastating.

In order for someone's cognition to be intact they need to have had an

-appropriate growth and development, adequate oxygenation, tissue perfusion and nutrition, an intact neurological function, and opportunities for growth through education.

Someone with an intact cognition has the ability to

-interpret the environment accurately, send and receive information/communicate, and the ability to remember/learn.

RISK FACTORS FOR IMPAIRED COGNITION:

- altered sleep patterns
- life style/hazardous jobs or hobbies
- impaired health/disease
- age
- medications
 - anticholinergics
 - CNS Stimulants/Depressants
 - Antipsychotics

(+) Consequences include minimal injuries, close relationships, financial management, treatment compliance, critical thinking, optimal health, and optimal decision making.

(-) Consequences include frequent injuries, institutionalized/dependence, inability to form and maintain relationships, unexpected consequences for actions/victimization, poor health outcomes, and poor decision making.

Cognition Assessment

Get a history of their speech, gait, LOC, the quality of their speech, memory, affect, logic/perception, insight/judgment, substance abuse, exposure and comorbidities. Do a mental examination [MINI MENTAL EXAM & Confusion Assessment Method or CAM-ICU if patient is unable to speak.] as well as a physical exam.

Diagnostic Exams: blood analysis, drug screen, MRI, PET, CT.

{Mini Mental Status Exam}

Category	Possible Points (Total-30)
Orientation to time	5
Orientation to place	5
Registration	3
Attention and calculation	5
Recall	3
Language	2
Repetition	1
Complex commands	6

Medications that affect cognition

CHOLINERGIC DRUGS (ALZHEIMER'S AND DEMENTIA)

Stimulate cholinergic receptors and increase levels of Acetylcholine in the brain.

Donepezil (Aircept), Rivastigmine (Exelon), Galantamine (Reminyl).

CENTRAL NERVOUS SYSTEM STIMULANTS

Stimulate the excitatory neurons in the brain.

Amphetamines, sympathomimetics, xanthines.

CENTRAL NERVOUS SYSTEM DEPRESSANTS

A sedative or hypnotic that slows the transmission of nerve impulses.

Benzodiazepines (Diazepam, Lorazepam) or miscellaneous hypnotic drugs (Eszopiclone/Lunesta)

Antipsychotics (to be discussed w/ psychosis.)

Primary Prevention

Patient education is to include:

promote a healthy lifestyle: optimal nutrition, exercise, social activities.

- Avoidance of drugs/substances altering cognitive level.
- Safety precautions (driving, climbing, diving, swimming, etc.)
- Education of s&s of a stroke
- Genetic counseling

Secondary Prevention

- MMSE, CAM
- Provide a safe environment
- Consistently reassess cognitive levels (frequency depends on patient status)
- Reorient patient as needed
- Administer oxygen as ordered
- Administer medications as ordered.

Tertiary Prevention

Is aimed at returning patient to the highest level of function possible; rehabilitation.

- Physical therapy
- Occupation therapy
- Speech therapy
- Psychology groups (learning life skills)