Biopsychology Exam 3 Study Guide

# Memory and Learning, Chapter 11

Retrograde vs. anterograde amnesia

STM vs. LTM

Declarative, procedural, explicit, implicit, semantic, episodic

H.M. (problem, surgery and cites of damage, results, types of tasks he did well on and those that he did not do well on)

Medial temporal lobe amnesia

Repetition priming tasks

In R.B., damage to what specific area of the hippocampus led to anterograde amnesia? But later studies have shown …?

Korsakoff’s (what is it, what are suspected areas of damage, types of tasks these patients have problems with)

Alzheimers and areas of damage

Amnesia after concussion and ECS

Animal models of medial temporal lobe amnesia and delayed nonmatching to sample test in monkeys and rats

Problems with monkey model (regarding sites of damage)

Damage to what structures results in object-recognition deficits?

Tests linking hippocampus to spatial memory

Place cells

Summary of memory structures of the brain (do worksheet to test yourself)

Inputs and outputs of hippocampus

definition of LTP

experimental induction of LTP

what is LTP thought to be the main mechanism for?

LTP only develops under what circumstances?

What kind of effects do drugs that influence learning and memory have on LTP?

What receptor is LTP thought to be dependent on?

What happens at this receptor?

In order to respond maximally, what 2 things must the NMDA receptor have happen at the same time?

Calcium influx

Maintenance and expression of LTP; Variability of LTP

Infantile amnesia

Nootropic drugs

Ch. 16 - Lateralization

definition of lateralization

Cerebral commissures – what are they and location of them

what is the most lateralized of all cognitive abilities?

in most people, language ability is controlled by what hemisphere?

aphasia

apraxia

lateralization video of split brain patient, what she was asked to do, what she had trouble with

Dichotic listening test

speech laterality and handedness

split-brain studies, both animal and human

cross-cuing

Cerebral lateralization of various functions

The basics of the 3 theories of evolution of cerebral lateralization

Broca’s area and Broca’s aphasia

Wernicke’s area and Wernicke’s aphasia

Wernicke-Geshwind model and its’ influence

According to current research, is this model correct?

If there is only damage to “Broca’s area” or to “Wernicke’s area” does this result in Broca’s and Wernicke’s aphasia, respectively?

What are some conclusions regarding how and where language is processed (use class notes for this)?

3 categories of cognitive processes involved in language

Dyslexia (developmental, acquired, cultural diversity)

Ch. 10

You are responsible for pp. 244-258 but focus on the neuropsychological diseases that we discussed

Worksheet to help you with the causes of brain damage

Epilepsy, Parkinson's, Multiple Sclerosis, Huntington’s, Alzheimer’s

video clips that accompanied these sections

Hormones and Sex – ch. 13

Developmental versus activational effects of hormones

Mamawawa

Endocrine glands

Steroid hormones

Gonads

In males and in females

Primary and secondary functions

Relative ratio and levels of sex hormones produced by males and females

Organization (and feedback) of HPG axis

“Nature’s default is to produce a female”

under what conditions do the gonads develop into testes?

Conditions for development of Mullerian vs. Wolffian system

Precursors for gonads, internal sex organs, and external genitalia – do humans have precursors for male or female or both?

Basic types of hormones secreted by testes and what they do

Conditions for development of female vs. male external genitalia

secondary sex characteristics

Sequence of HPG events at puberty

3 cases of unusual human sexual development and why gonads, internal sex organs, and external genitalia would be the way they are

Sex differences in the brain

Perinatal hormones and behavioral development

Critical periods and sexual behavior

Scenarios for different treatment at birth and resulting sexual behavior as an adult

Hormone effects in adulthood

Section on Sexual orientation, hormones, and the brain (and outside studies mentioned in class)

Transexuals