

Chapter 2 - Neuroscience as a Basis for Adult Development and Aging

Student: _____

- The best conclusion to draw from Neuroscience approach is
 - has shown associations between brain structures and social cognitive tasks.
 - cognitive tasks such as person theory have shown the biggest change.
 - person perception has shown associations between brain structures and theory of mind
 - none of these theories completely explain neuroscience approach.
- A Neuroscientific approach to the study of aging has
 - data interpretation.
 - overall patterns.
 - specific disadvantages.
 - specific advantages.
- The neuroscience approach offers a new level of analysis to understanding _____ and _____ functioning.
 - cognitive; social-emotional
 - cellular; occupational
 - systematic; interpretations
 - cross-linking; brain
- Which of the following is **not** associated with neuroscience?
 - brain structures
 - social cognitive tasks
 - cross-linking
 - theory of mind
- Neuroscience research demonstrates that areas of the brain related to visual processing _____ with age.
 - increase
 - stay the same
 - fluctuate
 - decline
- From the perspective of neuroscience and aging, researchers acknowledge that cognitive, social and _____ change in older adulthood is influenced at multiple levels.
 - density
 - emotional
 - brain
 - volume

7. Researchers in neuroscience analyze both structural changes in brain volume and density and _____ changes of brain areas.
- A. size
 - B. variable
 - C. functional
 - D. coenzymes.
8. There is evidence on the degree to which social interventions, biological interventions, and _____ interventions influence positive change and negative change, as we grow older.
- A. sociocultural
 - B. life-cycle
 - C. psychological
 - D. cross-linking.
9. Magnetic resonance imaging scanner is radio waves to produce _____ of the brain.
- A. structural
 - B. blood flow
 - C. functioning
 - D. images
10. MRI focuses on the _____ of the brain.
- A. blood flow
 - B. structural
 - C. images
 - D. wrinkles
11. fMRI focuses on the _____ of the brain.
- A. structural
 - B. images
 - C. functioning
 - D. blood flows
12. _____ approach compares the brain functioning of healthy older adults with adults displaying various pathological disorders in the brain.
- A. Neurobiological
 - B. Correlational
 - C. Psychological
 - D. Neuropsychological
13. Which approach attempts to link measures of cognitive performance to measures of brain structure or functioning?
- A. Correlational
 - B. Psychological.
 - C. Neuropsychological.
 - D. Neurobiological

14. Which approach attempts to directly link functional brain activity with cognitive behavioral data?
- A. Neurobiological.
 - B. Correlational
 - C. Activation imaging
 - D. Psychological.
15. _____ changes allow older adults to adapt to the inevitable decline of specific areas of the brain.
- A. compensatory
 - B. sociological
 - C. compromise
 - D. collaboration
16. Neuroscience approaches can explain how the brain influences performance, and investigating in the maturing brains of _____ and _____.
- A. older adults; children
 - B. adolescents; children
 - C. women ; men
 - D. older adult; adolescents
17. Research methods that focus on the age-related changes of the brain can help explain why certain _____ functioning are preserved.
- A. cognitive
 - B. muscle
 - C. environment
 - D. all of the these
18. Well-practiced tasks, vocabulary, and wisdom can be _____ into old age.
- A. lost
 - B. preserved
 - C. altered
 - D. distorted
19. Processing speed _____ rapidly as people age.
- A. increases
 - B. declines
 - C. distorts
 - D. inclines
20. A major thrust of adult development and aging research has been on cognitive aging based on _____ data.
- A. psychosocial
 - B. behavioral
 - C. social
 - D. environment

21. Recently the availability of Neuroscientific methods stimulated research that allows us to study _____ processes and changes.
- A. cognitive
 - B. genetic
 - C. behavioral
 - D. social
22. Neuroscience has dedicated most of its effort to the _____.
- A. right axon
 - B. frontal lobe
 - C. cerebral cortex
 - D. focal area
23. The higher-order executive functions are involved in the ability to make and carry out plans, switch between tasks, and maintain _____ and _____.
- A. mobility; stability
 - B. attention; focus
 - C. sounds; emotions
 - D. language; faces
24. Overall, there is considerable shrinkage that occurs in the aging brain, however the shrinkage is selective, the prefrontal cortex, the _____ and the _____ show profound shrinkage.
- A. frontal lobe; cortex
 - B. parietal; occipital
 - C. cerebellum; amygdale
 - D. hippocampus; cerebellum
25. The sensory cortices, such as the visual cortex, show relatively little _____.
- A. shrinkage
 - B. decline
 - C. white matter
 - D. intensity
26. The white matter area shows deterioration with increasing age; the Neuroimaging method _____ assess the rate and direction that water diffuses through the white matter.
- A. fMRI
 - B. MRI
 - C. MRI Scanner
 - D. DTI

27. Using the diffusion tensor imaging (DTI), studies examine WMH (white matter hyper intensities) have demonstrated that such disruptions may represent dysfunction of the _____ cortex in older adulthood.
- A. cerebral
 - B. frontal
 - C. prefrontal
 - D. white
28. The WMH are linked to cerebrovascular disease, which is preventable and can be treated with medication and changes in _____.
- A. diet
 - B. lifestyles
 - C. environment
 - D. social situations
29. _____ functioning includes processes such as inhibitory control or the ability to control the contents of the conscious mind using working memory.
- A. Executive
 - B. Cognitive
 - C. Psychological
 - D. Conscious
30. Executive functioning failures in older adults include irrelevant information to process in the _____.
- A. episodic memory
 - B. working memory
 - C. long-term memory
 - D. semantic memory
31. Evidence suggests that _____ shrinkage in the brain is linked to poor cognitive performance.
- A. volume
 - B. density
 - C. size
 - D. memory
32. WMH in healthy older adults have been linked to _____ cognitive test scores and _____ executive functioning.
- A. increased; decreased.
 - B. lower; decreased
 - C. higher; increased
 - D. lower; increased

33. Poor performance on executive functioning tasks has also been linked with _____ volume of the prefrontal cortex.
- A. increased
 - B. decreased
 - C. empty
 - D. improved
34. Some studies have found prefrontal _____ to be linked to working memory performance.
- A. density
 - B. size
 - C. white matter
 - D. volume
35. The majority of evidence suggests that age-related change in _____ regions of the brain correlates with executive dysfunction and memory decline.
- A. frontal
 - B. cortex
 - C. cerebellum
 - D. Hippocampus
36. _____ is the neurotransmitter that sends messages throughout the brain.
- A. Serotonin
 - B. Insulin
 - C. Adenosine
 - D. Dopamine
37. Dopaminergic system is associated with high-level cognitive functioning like inhibiting thoughts, _____ and planning.
- A. attention
 - B. socialization
 - C. concentration
 - D. temperament
38. The effective functioning of the dopaminergic system _____ in normal aging.
- A. increases
 - B. declines
 - C. stays the same
 - D. misfires
39. Research has found that declines in the dopaminergic system are related to declines in _____ memory and _____ tasks.
- A. long-term; speed
 - B. semantic; attention
 - C. episodic; thought
 - D. episodic; speed

40. To explore brain related factors that might explain age differences in cognitive functioning: a researcher may use _____ to examine how changes in brain activity occur in correspondence to changes in task demands and the type of cognitive functioning.
- A. EEG
 - B. MRI
 - C. fMRI
 - D. eMRI
41. The anterior cingulate cortex is affiliated with the prefrontal cortex and is involved in _____ control.
- A. cognitive
 - B. attention
 - C. thought
 - D. executive
42. The overall finding is that reduced working memory performance is related to _____ activation of the anterior cingulate cortex in older adults compared to younger adults.
- A. increased
 - B. decreased
 - C. neurotransmitter
 - D. cognitive
43. Reduced brain activation or _____ of the prefrontal cortex occurs during intentional cognitive processing.
- A. over-recruitment
 - B. decline-recruitment
 - C. low-recruitment
 - D. under-recruitment
44. Reduced frontal recruitment in aging is _____ dependent.
- A. recall
 - B. context
 - C. recognition
 - D. thought
45. Older adults from Western cultures showed significantly _____ object-processing adaptation in the lateral occipital complex.
- A. greater
 - B. decreased
 - C. lower
 - D. leveled

46. Lateral occipital complex is involved in _____ processing.
- A. memory
 - B. thought
 - C. visual
 - D. conscious
47. Older adults from East Asia showed almost _____ adaptation in the lateral occipital complex.
- A. no
 - B. hundred percent
 - C. fifty percent
 - D. some
48. Overall, age-related change seems to have more profound effect on changes in brain _____ than _____.
- A. activation; environment
 - B. functioning; activation
 - C. systems; culture
 - D. functioning; culture
49. Most significant findings in the cognitive aging neuroscience literature is the observed _____ of neural activation patterns when comparing younger and older adults' brain activity during the performance of cognitive tasks.
- A. continuity
 - B. discontinuity
 - C. irregularity
 - D. interrupted
50. Activation of both left and right prefrontal areas of the brain is called _____ activation.
- A. bilateral
 - B. symmetry
 - C. multilateral
 - D. balance
51. Bilateral activation in older adults may serve a functional and supportive role in their _____ functioning.
- A. conscious
 - B. unconscious
 - C. cognitive
 - D. cultural
52. Research findings have shown an association between bilateral activation in older adults and _____ performance in a number of tasks, including _____ memory tasks.
- A. higher; long-term
 - B. lower; working
 - C. higher; working
 - D. lower; short-term

53. Evidence has shown that the _____ in frontal activity in older adults may be a response to the _____ efficiency of neural processing related to the perceptual areas of the brain.
- A. increase; increased
 - B. decrease; increased
 - C. function; increased
 - D. increase; decreased
54. Default network of the brain refers to regions of the brain that are most _____ at rest.
- A. direct
 - B. inactive
 - C. active
 - D. observed
55. The scaffolding theory of cognitive aging model (STAC) suggest that the reason older adults continue to perform at _____ levels despite neuronal deterioration is because of compensatory scaffolding.
- A. low
 - B. high
 - C. same
 - D. decrease
56. Compensation is the brain's response to _____.
- A. challenge
 - B. deterioration.
 - C. inactivity
 - D. processing
57. Park and Reuter-Lorenz argue, that the integrative approach embraces a lifelong potential for plasticity and the ability to _____ to age-related changes.
- A. change
 - B. adapt
 - C. approve
 - D. modify
58. Which one of the following part of the brain is preserved from aging?
- A. amygdala
 - B. occipital
 - C. parietal
 - D. prefrontal
59. Emotional processing areas of the brain are _____ whereas higher-order executive cognitive process seems to _____.
- A. preserved; decline
 - B. conserved; increases
 - C. preserved; increase
 - D. conserved; decline

60. _____ is a multifaceted concept that applies across the life span, and involves the interaction between the brain and the environment and is mostly used to describe the effects of experience on the structure and functions of the neural system.
- A. Plasticity
 - B. Neural
 - C. Neuroscience
 - D. neurofibrillary
61. A form of compensation from neuroscience perspective that refers to the ability to compensate for declining performance from a behavioral perspective or to the reorganization of neural circuitry is commonly referred to as _____.
- A. Neurofibrillary
 - B. neuropsychology
 - C. neuraladaptation
 - D. Plasticity
62. Behavioral perspective research has suggested that basic cognitive processes affected by aging can be improved through _____ and _____ to multiple levels of functioning as long as the basic functioning are shared across tasks.
- A. practice; repetition
 - B. writing; reading
 - C. plasticity; training
 - D. training; transfer
63. _____ in older adults persist in the adult brain and can generate new ones throughout the life span.
- A. Synapses
 - B. Neurons
 - C. Matter
 - D. Memories
64. Research shows that mice that were exposed to enriched environments performed much better on _____ memory tasks.
- A. long-term
 - B. spatial
 - C. working
 - D. short-term
65. Research on physical exercise in elderly mice _____ the number of newly generate neurons and improved performance.
- A. enhanced
 - B. decreased
 - C. impacted
 - D. changed

66. _____ are strategies which involve using personally relevant cues to help one remember information.
- A. Neuropsychology
 - B. Rehearsal.
 - C. Repetition
 - D. Mnemonics
67. What does social cognitive neuroscience focus on?
- A. how people make causal judgments
 - B. how people see their environment
 - C. how people react to social situation
 - D. how social situations cause stress
68. Making social judgments are usually.
- A. deliberate
 - B. automatic
 - C. quick
 - D. easy
69. Which of the following brain area is associated with automatic social cognition?
- A. basal ganglia
 - B. frontal lobe
 - C. cortex
 - D. occipital
70. Which of the following brain area are associated with emotional processing?
- A. occipital, basal ganglia
 - B. basal ganglia, amygdale
 - C. frontal lobe, cortex
 - D. cerebellum, amygdale
71. Which part of the brain appears to be relatively spared in the aging adult?
- A. occipital
 - B. parietal
 - C. amygdalae
 - D. cortex
72. Research has shown that if information has _____ significance, we will more likely remember it than information that is more _____ in nature.
- A. neutral; emotional
 - B. important ; emotional
 - C. emotional; importance
 - D. emotional ; neutral

73. Which of the following are older adults more motivated to maintain?
- A. social memories
 - B. positive affect
 - C. unconscious memories
 - D. white matter
74. Which region implicated in emotional processing?
- A. cerebellum
 - B. sensorimotor area
 - C. hippocampus
 - D. ventromedial prefrontal cortex
75. Core emotional memory network regions are well _____ in emotional memory, as one grows older.
- A. preserved
 - B. balanced
 - C. deteriorated
 - D. challenged.
76. Research has shown brain activations when viewing faces with _____ emotional expressions.
- A. negative
 - B. positive
 - C. neutral
 - D. None of the above
77. Which of the following is preserved with aging.
- A. core emotional memory
 - B. social memory
 - C. recognition of faces
 - D. negative information
78. Explain Neuroscience and the associations between brain structures and social cognitive tasks.

79. Differentiate social cognitive tasks person perception, stereotypes, and theory of mind.

80. Summarize the developmental forces that are associated with age-related change.

81. Explain how the developmental forces interact in biological aging.

82. Identify Neuroscience tools used to produce images of the brain and functions of the brain.

83. Differentiate the differences between MRI and fMRI scanners.

84. Explain how the scans have become increasingly more relevant to cognitive research.
85. Describe neuropsychological approach.
86. What is the difference between correlational approach and the activation imaging approach?
87. Explain compensatory changes in the older adults brain.

88. Neuroscientific approaches to studying cognitive aging promote theoretical development in the field of adulthood and aging in several ways. Explain?
89. Discuss the structures of the brain that exhibit age-related changes in both structure and function.
90. Describe the higher-order executive functions.
91. There has been a lot of discussion on volume shrinkage in prefrontal cortex and poor performance linked to working memory. Summarize your knowledge of volume shrinkage and performance.

92. Explain plasticity and the changes that can take place.

93. Differentiate among behavioral perspectives and neural plasticity perspective.

94. Illustrate what exposure to enriched environment can do to the structure of the brain.

95. Compare and contrast the results using the method of loci mnemonic strategies with younger and older adults.

96. Identify the social judgment process that involves an automatic system.

97. Discuss the overall findings revealed about the core emotional memory network and age –related differences.

98. The Cognitive neuroscience has shown associations between brain structures and a variety of _____ cognitive tasks.

99. Interventions that are important in enhancing the quality of life of older adults are at the _____ level.

100. Researchers now acknowledge that cognitive, social, and emotional change in older adulthood is influenced at multiple levels including both _____ changes in brain volume and _____ and functional changes of brain areas.

101. _____ is tool used to produce images of the brain.

102. _____ is the tool used to focus on the function of the brain.

103. The _____ approach compares brain functioning of healthy older adults with adults displaying various pathological disorders in the brain.

104. Correlational approach attempts to link measures of _____ performance to measures of brain _____ or functioning.

105. The activation imaging approach attempts to directly link functional brain activity with _____ and _____ data.

106. Evidence that older adults undergo _____ that allow them to adapt to the inevitable decline of specific areas of the brain.

107. Evidence suggests that volume shrinkage in the brain is linked to poor _____ performance on certain tasks.

108. Some studies have found prefrontal volume to be linked to _____ memory performance.

109. Many age-related declines in cognitive functioning are a function of insults to the _____ lobes, both _____ and neurochemically.

110. Overall, age-related change seems to have a more profound effect on changes in _____ functioning than _____.

111. _____ involves the interaction between the brain and the _____ and is mostly used to describe the effects of experience on the structure and function of the neural system.

112. _____ is present across the adult life span; there are age-related reductions in this and the potential for _____ improvement.

Chapter 2 - Neuroscience as a Basis for Adult Development and Aging **Key**

1. A
2. D
3. A
4. C
5. D
6. B
7. C
8. C
9. D
10. B
11. C
12. D
13. A
14. C
15. A
16. B
17. A
18. B
19. B
20. B
21. A
22. C
23. B
24. D
25. A
26. D
27. C
28. B
29. A

- 30. B
- 31. A
- 32. B
- 33. B
- 34. D
- 35. A
- 36. D
- 37. A
- 38. B
- 39. D
- 40. C
- 41. D
- 42. B
- 43. D
- 44. B
- 45. A
- 46. C
- 47. A
- 48. D
- 49. B
- 50. A
- 51. C
- 52. C
- 53. D
- 54. C
- 55. B
- 56. A
- 57. B
- 58. A
- 59. A
- 60. A
- 61. D
- 62. D
- 63. B

- 64. B
- 65. A
- 66. D
- 67. A
- 68. B
- 69. D
- 70. B
- 71. C
- 72. D
- 73. B
- 74. D
- 75. A
- 76. A
- 77. A
- 78. Answer not provided
- 79. Answer not provided
- 80. Answer not provided
- 81. Answer not provided
- 82. Answer not provided
- 83. Answer not provided
- 84. Answer not provided
- 85. Answer not provided
- 86. Answer not provided
- 87. Answer not provided
- 88. Answer not provided
- 89. Answer not provided
- 90. Answer not provided
- 91. Answer not provided
- 92. Answer not provided
- 93. Answer not provided
- 94. Answer not provided
- 95. Answer not provided
- 96. Answer not provided
- 97. Answer not provided

- 98. Social
- 99. Neurological
- 100. Structural; density
- 101. MRI
- 102. fMRI
- 103. Neuropsychological
- 104. Cognitive; structure
- 105. Cognitive; behavioral *or* behavioral, Cognitive
- 106. compensatory changes
- 107. cognitive
- 108. working
- 109. frontal; structurally
- 110. brain; culture
- 111. Plasticity; environment
- 112. Plasticity; functional