

Essentials of Exercise Physiology, Fifth Edition

William D. McArdle, Frank I. Katch, Victor L. Katch

1. [Chapter 02: Macronutrients and Micronutrients, Animation: Digestion of Carbohydrate](#)
2. [Chapter 02: Macronutrients and Micronutrients, Animation: Hydrolysis](#)
3. [Chapter 02: Macronutrients and Micronutrients, Animation: Glycogen Synthesis](#)
4. [Chapter 02: Macronutrients and Micronutrients, Animation: Condensation](#)
5. [Chapter 02: Macronutrients and Micronutrients, Animation: Fat Mobilization and Use](#)
6. [Chapter 02: Macronutrients and Micronutrients, Animation: Transamination](#)
7. [Chapter 02: Macronutrients and Micronutrients, Animation: Biologic Function of Vitamins](#)
8. [Chapter 02: Macronutrients and Micronutrients, Animation: Vitamin C as an Antioxidant](#)
9. [Chapter 02: Macronutrients and Micronutrients, Animation: Calcium in Muscle](#)
10. [Chapter 02: Macronutrients and Micronutrients, Animation: Bone Growth](#)
11. [Chapter 02: Macronutrients and Micronutrients, Animation: Water Balance](#)
12. [Chapter 02: Macronutrients and Micronutrients, Animation: Renal Function](#)
13. [Chapter 03: Food Energy and Optimum Nutrition for Physical Activity, Animation: Digestion of Carbohydrate](#)
14. [Chapter 03: Food Energy and Optimum Nutrition for Physical Activity, Animation: Glycogen Synthesis](#)
15. [Chapter 05: Fundamentals of Human Energy Transfer, Animation: Alanine-Glucose Cycle](#)
16. [Chapter 05: Fundamentals of Human Energy Transfer, Animation: Biochemical Reactions of Cori Cycle](#)
17. [Chapter 05: Fundamentals of Human Energy Transfer, Animation: Catabolism](#)
18. [Chapter 05: Fundamentals of Human Energy Transfer, Animation: Chemical Reactions of Mitochondrion](#)
19. [Chapter 05: Fundamentals of Human Energy Transfer, Animation: Citric Acid Cycle](#)
20. [Chapter 05: Fundamentals of Human Energy Transfer, Animation: Electron Transport](#)
21. [Chapter 05: Fundamentals of Human Energy Transfer, Animation: Energy Transfer Chain](#)
22. [Chapter 05: Fundamentals of Human Energy Transfer, Animation: Exercise and Blood Flow](#)
23. [Chapter 05: Fundamentals of Human Energy Transfer, Animation: Glycolysis](#)
24. [Chapter 05: Fundamentals of Human Energy Transfer, Animation: Hydrolysis](#)
25. [Chapter 05: Fundamentals of Human Energy Transfer, Animation: Muscle Contraction](#)
26. [Chapter 05: Fundamentals of Human Energy Transfer, Animation: Oxygen Consumption](#)
27. [Chapter 05: Fundamentals of Human Energy Transfer, Animation: Triacylglycerol Breakdown](#)
28. [Chapter 09: The Pulmonary System and Physical Activity, Animation: Asthma](#)
29. [Chapter 09: The Pulmonary System and Physical Activity, Animation: Gas Exchange in Alveoli](#)
30. [Chapter 09: The Pulmonary System and Physical Activity, Animation: Oxygen Transport](#)
31. [Chapter 09: The Pulmonary System and Physical Activity, Animation: Pulmonary Ventilation](#)
32. [Chapter 09: The Pulmonary System and Physical Activity, Animation: Renal Function](#)
33. [Chapter 09: The Pulmonary System and Physical Activity, Animation: Transport of Carbon Dioxide](#)
34. [Chapter 10: The Cardiovascular System and Physical Activity, Animation: Blood Circulation](#)
35. [Chapter 10: The Cardiovascular System and Physical Activity, Animation: Blood Flow](#)
36. [Chapter 10: The Cardiovascular System and Physical Activity, Animation: Cardiac Cycle](#)
37. [Chapter 10: The Cardiovascular System and Physical Activity, Animation: Fick Principle](#)
38. [Chapter 10: The Cardiovascular System and Physical Activity, Animation: Hypertension](#)
39. [Chapter 10: The Cardiovascular System and Physical Activity, Animation: Myocardial Blood Flow](#)
40. [Chapter 10: The Cardiovascular System and Physical Activity, Animation: Perform a Basic 12-Lead Electrocardiogram](#)
41. [Chapter 10: The Cardiovascular System and Physical Activity, Animation: Renal Function](#)
42. [Chapter 11: The Neuromuscular System and Physical Activity, Animation: Action Potential](#)
43. [Chapter 11: The Neuromuscular System and Physical Activity, Animation: Fatigue Mechanism](#)
44. [Chapter 11: The Neuromuscular System and Physical Activity, Animation: Lactic Acid Accumulation](#)
45. [Chapter 11: The Neuromuscular System and Physical Activity, Animation: Muscle Contraction](#)
46. [Chapter 11: The Neuromuscular System and Physical Activity, Animation: Nerve Synapse](#)

47. [Chapter 11: The Neuromuscular System and Physical Activity, Animation: Neural Control of CV System](#)
48. [Chapter 11: The Neuromuscular System and Physical Activity, Animation: Patella Tendon Stretch](#)
49. [Chapter 11: The Neuromuscular System and Physical Activity, Animation: Proprioceptors: How Do They Work](#)
50. [Chapter 11: The Neuromuscular System and Physical Activity, Animation: Sliding Filament Theory](#)
51. [Chapter 12: Hormones, Physical Activity, and Exercise Training, Animation: Diabetes](#)
52. [Chapter 12: Hormones, Physical Activity, and Exercise Training, Animation: Endocrine Gland Stimulation](#)
53. [Chapter 12: Hormones, Physical Activity, and Exercise Training, Animation: Hormonal Control](#)
54. [Chapter 12: Hormones, Physical Activity, and Exercise Training, Animation: Insulin Functions](#)
55. [Chapter 15: Factors Affecting Physiologic Function: The Environment and Special Aids to Performance, Animation: Thermal Regulation](#)
56. [Chapter 15: Factors Affecting Physiologic Function: The Environment and Special Aids to Performance, Animation: Water Balance](#)
57. [Chapter 17: Physical Activity, Successful Aging, and Disease Prevention, Animation: Acute Inflammation](#)
58. [Chapter 18: Clinical Aspects of Exercise Physiology, Animation: Asthma](#)
59. [Chapter 18: Clinical Aspects of Exercise Physiology, Animation: Congestive Heart Failure](#)
60. [Chapter 18: Clinical Aspects of Exercise Physiology, Animation: Coronary Angiography: Left Coronary System-Part A](#)
61. [Chapter 18: Clinical Aspects of Exercise Physiology, Animation: Coronary Angiography: Left Coronary System-Part B](#)
62. [Chapter 18: Clinical Aspects of Exercise Physiology, Animation: Edema](#)
63. [Chapter 18: Clinical Aspects of Exercise Physiology, Animation: Stroke](#)

Animations (Closed Caption Enabled)

1. [Chapter 02: Macronutrients and Micronutrients, Animation: Digestion of Carbohydrate \(CC enabled\)opens a dialog](#)
2. [Chapter 02: Macronutrients and Micronutrients, Transcript for Animation: Digestion of Carbohydrateopens a dialog](#)
3. [Chapter 02: Macronutrients and Micronutrients, Animation: Hydrolysis \(CC enabled\)opens a dialog](#)
4. [Chapter 02: Macronutrients and Micronutrients, Transcript for Animation: Hydrolysisopens a dialog](#)
5. [Chapter 02: Macronutrients and Micronutrients, Animation: Glycogen Synthesis \(CC enabled\)opens a dialog](#)
6. [Chapter 02: Macronutrients and Micronutrients, Transcript for Animation: Glycogen Synthesisopens a dialog](#)
7. [Chapter 02: Macronutrients and Micronutrients, Animation: Condensation \(CC enabled\)opens a dialog](#)
8. [Chapter 02: Macronutrients and Micronutrients, Transcript for Animation: Condensationopens a dialog](#)
9. [Chapter 02: Macronutrients and Micronutrients, Animation: Fat Mobilization and Use \(CC enabled\)opens a dialog](#)
10. [Chapter 02: Macronutrients and Micronutrients, Transcript for Animation: Fat Mobilization and Useopens a dialog](#)
11. [Chapter 02: Macronutrients and Micronutrients, Animation: Transamination \(CC enabled\)opens a dialog](#)
12. [Chapter 02: Macronutrients and Micronutrients, Transcript for Animation: Transaminationopens a dialog](#)
13. [Chapter 02: Macronutrients and Micronutrients, Animation: Biologic Function of Vitamins \(CC enabled\)opens a dialog](#)
14. [Chapter 02: Macronutrients and Micronutrients, Transcript for Animation: Biologic Function of Vitaminsopens a dialog](#)

15. [Chapter 02: Macronutrients and Micronutrients, Animation: Vitamin C as an Antioxidant \(CC enabled\)opens a dialog](#)
16. [Chapter 02: Macronutrients and Micronutrients, Transcript for Animation: Vitamin C as an Antioxidantopens a dialog](#)
17. [Chapter 02: Macronutrients and Micronutrients, Animation: Calcium in Muscle \(CC enabled\)opens a dialog](#)
18. [Chapter 02: Macronutrients and Micronutrients, Transcript for Animation: Calcium in Muscleopens a dialog](#)
19. [Chapter 02: Macronutrients and Micronutrients, Animation: Bone Growth \(CC enabled\)opens a dialog](#)
20. [Chapter 02: Macronutrients and Micronutrients, Transcript for Animation: Bone Growthopens a dialog](#)
21. [Chapter 02: Macronutrients and Micronutrients, Animation: Water Balance \(CC enabled\)opens a dialog](#)
22. [Chapter 02: Macronutrients and Micronutrients, Transcript for Animation: Water Balanceopens a dialog](#)
23. [Chapter 02: Macronutrients and Micronutrients, Animation: Renal Function \(CC enabled\)opens a dialog](#)
24. [Chapter 02: Macronutrients and Micronutrients, Transcript for Animation: Renal Functionopens a dialog](#)
25. [Chapter 03: Food Energy and Optimum Nutrition for Physical Activity, Animation: Digestion of Carbohydrate \(CC enabled\)opens a dialog](#)
26. [Chapter 03: Food Energy and Optimum Nutrition for Physical Activity, Transcript for Animation: Digestion of Carbohydrateopens a dialog](#)
27. [Chapter 03: Food Energy and Optimum Nutrition for Physical Activity, Animation: Glycogen Synthesis \(CC enabled\)opens a dialog](#)
28. [Chapter 03: Food Energy and Optimum Nutrition for Physical Activity, Transcript for Animation: Glycogen Synthesisopens a dialog](#)
29. [Chapter 05: Fundamentals of Human Energy Transfer, Animation: Alanine-Glucose Cycle \(CC enabled\)opens a dialog](#)
30. [Chapter 05: Fundamentals of Human Energy Transfer, Transcript for Animation: Alanine-Glucose Cycleopens a dialog](#)
31. [Chapter 05: Fundamentals of Human Energy Transfer, Animation: Biochemical Reactions of Cori Cycle \(CC enabled\)opens a dialog](#)
32. [Chapter 05: Fundamentals of Human Energy Transfer, Transcript for Animation: Biochemical Reactions of Cori Cycleopens a dialog](#)
33. [Chapter 05: Fundamentals of Human Energy Transfer, Animation: Catabolism \(CC enabled\)opens a dialog](#)
34. [Chapter 05: Fundamentals of Human Energy Transfer, Transcript for Animation: Catabolismopens a dialog](#)
35. [Chapter 05: Fundamentals of Human Energy Transfer, Animation: Chemical Reactions of Mitochondrion \(CC enabled\)opens a dialog](#)
36. [Chapter 05: Fundamentals of Human Energy Transfer, Transcript for Animation: Chemical Reactions of Mitochondrionopens a dialog](#)
37. [Chapter 05: Fundamentals of Human Energy Transfer, Animation: Citric Acid Cycle \(CC enabled\)opens a dialog](#)
38. [Chapter 05: Fundamentals of Human Energy Transfer, Transcript for Animation: Citric Acid Cycleopens a dialog](#)
39. [Chapter 05: Fundamentals of Human Energy Transfer, Animation: Electron Transport \(CC enabled\)opens a dialog](#)
40. [Chapter 05: Fundamentals of Human Energy Transfer, Transcript for Animation: Electron Transportopens a dialog](#)
41. [Chapter 05: Fundamentals of Human Energy Transfer, Animation: Energy Transfer Chain \(CC enabled\)opens a dialog](#)
42. [Chapter 05: Fundamentals of Human Energy Transfer, Transcript for Animation: Energy Transfer Chainopens a dialog](#)
43. [Chapter 05: Fundamentals of Human Energy Transfer, Animation: Exercise and Blood Flow \(CC enabled\)opens a dialog](#)
44. [Chapter 05: Fundamentals of Human Energy Transfer, Transcript for Animation: Exercise and Blood Flowopens a dialog](#)

45. [Chapter 05: Fundamentals of Human Energy Transfer, Animation: Glycolysis \(CC enabled\)opens a dialog](#)
46. [Chapter 05: Fundamentals of Human Energy Transfer, Transcript for Animation: Glycolysisopens a dialog](#)
47. [Chapter 05: Fundamentals of Human Energy Transfer, Animation: Hydrolysis \(CC enabled\)opens a dialog](#)
48. [Chapter 05: Fundamentals of Human Energy Transfer, Transcript for Animation: Hydrolysisopens a dialog](#)
49. [Chapter 05: Fundamentals of Human Energy Transfer, Animation: Muscle Contraction \(CC enabled\)opens a dialog](#)
50. [Chapter 05: Fundamentals of Human Energy Transfer, Transcript for Animation: Muscle Contractionopens a dialog](#)
51. [Chapter 05: Fundamentals of Human Energy Transfer, Animation: Oxygen Consumption \(CC enabled\)opens a dialog](#)
52. [Chapter 05: Fundamentals of Human Energy Transfer, Transcript for Animation: Oxygen Consumptionopens a dialog](#)
53. [Chapter 05: Fundamentals of Human Energy Transfer, Animation: Triacylglycerol Breakdown \(CC enabled\)opens a dialog](#)
54. [Chapter 05: Fundamentals of Human Energy Transfer, Transcript for Animation: Triacylglycerol Breakdownopens a dialog](#)
55. [Chapter 09: The Pulmonary System and Physical Activity, Animation: Asthma \(CC enabled\)opens a dialog](#)
56. [Chapter 09: The Pulmonary System and Physical Activity, Transcript for Animation: Asthmaopens a dialog](#)
57. [Chapter 09: The Pulmonary System and Physical Activity, Animation: Gas Exchange in Alveoli \(CC enabled\)opens a dialog](#)
58. [Chapter 09: The Pulmonary System and Physical Activity, Transcript for Animation: Gas Exchange in Alveoliopens a dialog](#)
59. [Chapter 09: The Pulmonary System and Physical Activity, Animation: Oxygen Transport \(CC enabled\)opens a dialog](#)
60. [Chapter 09: The Pulmonary System and Physical Activity, Transcript for Animation: Oxygen Transportopens a dialog](#)
61. [Chapter 09: The Pulmonary System and Physical Activity, Animation: Pulmonary Ventilation \(CC enabled\)opens a dialog](#)
62. [Chapter 09: The Pulmonary System and Physical Activity, Transcript for Animation: Pulmonary Ventilationopens a dialog](#)
63. [Chapter 09: The Pulmonary System and Physical Activity, Animation: Renal Function \(CC enabled\)opens a dialog](#)
64. [Chapter 09: The Pulmonary System and Physical Activity, Transcript for Animation: Renal Functionopens a dialog](#)
65. [Chapter 09: The Pulmonary System and Physical Activity, Animation: Transport of Carbon Dioxide \(CC enabled\)opens a dialog](#)
66. [Chapter 09: The Pulmonary System and Physical Activity, Transcript for Animation: Transport of Carbon Dioxideopens a dialog](#)
67. [Chapter 10: The Cardiovascular System and Physical Activity, Animation: Blood Circulation \(CC enabled\)opens a dialog](#)
68. [Chapter 10: The Cardiovascular System and Physical Activity, Transcript for Animation: Blood Circulationopens a dialog](#)
69. [Chapter 10: The Cardiovascular System and Physical Activity, Animation: Blood Flow \(CC enabled\)opens a dialog](#)
70. [Chapter 10: The Cardiovascular System and Physical Activity, Transcript for Animation: Blood Flowopens a dialog](#)
71. [Chapter 10: The Cardiovascular System and Physical Activity, Animation: Cardiac Cycle \(CC enabled\)opens a dialog](#)
72. [Chapter 10: The Cardiovascular System and Physical Activity, Transcript for Animation: Cardiac Cycleopens a dialog](#)
73. [Chapter 10: The Cardiovascular System and Physical Activity, Animation: Fick Principle \(CC enabled\)opens a dialog](#)
74. [Chapter 10: The Cardiovascular System and Physical Activity, Transcript for Animation: Fick Principleopens a dialog](#)

75. [Chapter 10: The Cardiovascular System and Physical Activity, Animation: Hypertension \(CC enabled\)opens a dialog](#)
76. [Chapter 10: The Cardiovascular System and Physical Activity, Transcript for Animation: Hypertensionopens a dialog](#)
77. [Chapter 10: The Cardiovascular System and Physical Activity, Animation: Myocardial Blood Flow \(CC enabled\)opens a dialog](#)
78. [Chapter 10: The Cardiovascular System and Physical Activity, Transcript for Animation: Myocardial Blood Flowopens a dialog](#)
79. [Chapter 10: The Cardiovascular System and Physical Activity, Animation: Perform a Basic 12-Lead Electrocardiogram \(CC enabled\)opens a dialog](#)
80. [Chapter 10: The Cardiovascular System and Physical Activity, Transcript for Animation: Perform a Basic 12-Lead Electrocardiogramopens a dialog](#)
81. [Chapter 10: The Cardiovascular System and Physical Activity, Animation: Renal Function \(CC enabled\)opens a dialog](#)
82. [Chapter 10: The Cardiovascular System and Physical Activity, Transcript for Animation: Renal Functionopens a dialog](#)
83. [Chapter 11: The Neuromuscular System and Physical Activity, Animation: Action Potential \(CC enabled\)opens a dialog](#)
84. [Chapter 11: The Neuromuscular System and Physical Activity, Transcript for Animation: Action Potentialopens a dialog](#)
85. [Chapter 11: The Neuromuscular System and Physical Activity, Animation: Fatigue Mechanism \(CC enabled\)opens a dialog](#)
86. [Chapter 11: The Neuromuscular System and Physical Activity, Transcript for Animation: Fatigue Mechanismopens a dialog](#)
87. [Chapter 11: The Neuromuscular System and Physical Activity, Animation: Lactic Acid Accumulation \(CC enabled\)opens a dialog](#)
88. [Chapter 11: The Neuromuscular System and Physical Activity, Transcript for Animation: Lactic Acid Accumulationopens a dialog](#)
89. [Chapter 11: The Neuromuscular System and Physical Activity, Animation: Muscle Contraction \(CC enabled\)opens a dialog](#)
90. [Chapter 11: The Neuromuscular System and Physical Activity, Transcript for Animation: Muscle Contractionopens a dialog](#)
91. [Chapter 11: The Neuromuscular System and Physical Activity, Animation: Nerve Synapse \(CC enabled\)opens a dialog](#)
92. [Chapter 11: The Neuromuscular System and Physical Activity, Transcript for Animation: Nerve Synapseopens a dialog](#)
93. [Chapter 11: The Neuromuscular System and Physical Activity, Animation: Neural Control of CV System \(CC enabled\)opens a dialog](#)
94. [Chapter 11: The Neuromuscular System and Physical Activity, Transcript for Animation: Neural Control of CV Systemopens a dialog](#)
95. [Chapter 11: The Neuromuscular System and Physical Activity, Animation: Patella Tendon Stretch \(CC enabled\)opens a dialog](#)
96. [Chapter 11: The Neuromuscular System and Physical Activity, Transcript for Animation: Patella Tendon Stretchopens a dialog](#)
97. [Chapter 11: The Neuromuscular System and Physical Activity, Animation: Proprioceptors: How Do They Work \(CC enabled\)opens a dialog](#)
98. [Chapter 11: The Neuromuscular System and Physical Activity, Transcript for Animation: Proprioceptors: How Do They Workopens a dialog](#)
99. [Chapter 11: The Neuromuscular System and Physical Activity, Animation: Sliding Filament Theory \(CC enabled\)opens a dialog](#)
100. [Chapter 11: The Neuromuscular System and Physical Activity, Transcript for Animation: Sliding Filament Theoryopens a dialog](#)
101. [Chapter 12: Hormones, Physical Activity, and Exercise Training, Animation: Diabetes \(CC enabled\)opens a dialog](#)
102. [Chapter 12: Hormones, Physical Activity, and Exercise Training, Transcript for Animation: Diabetesopens a dialog](#)
103. [Chapter 12: Hormones, Physical Activity, and Exercise Training, Animation: Endocrine Gland Stimulation \(CC enabled\)opens a dialog](#)
104. [Chapter 12: Hormones, Physical Activity, and Exercise Training, Transcript for Animation: Endocrine Gland Stimulationopens a dialog](#)

105. [Chapter 12: Hormones, Physical Activity, and Exercise Training, Animation: Hormonal Control \(CC enabled\)opens a dialog](#)
106. [Chapter 12: Hormones, Physical Activity, and Exercise Training, Transcript for Animation: Hormonal Controloopens a dialog](#)
107. [Chapter 12: Hormones, Physical Activity, and Exercise Training, Animation: Insulin Functions \(CC enabled\)opens a dialog](#)
108. [Chapter 12: Hormones, Physical Activity, and Exercise Training, Transcript for Animation: Insulin Functionsopens a dialog](#)
109. [Chapter 15: Factors Affecting Physiologic Function: The Environment and Special Aids to Performance, Animation: Thermal Regulation \(CC enabled\)opens a dialog](#)
110. [Chapter 15: Factors Affecting Physiologic Function: The Environment and Special Aids to Performance, Transcript for Animation: Thermal Regulationopens a dialog](#)
111. [Chapter 15: Factors Affecting Physiologic Function: The Environment and Special Aids to Performance, Animation: Water Balance \(CC enabled\)opens a dialog](#)
112. [Chapter 15: Factors Affecting Physiologic Function: The Environment and Special Aids to Performance, Transcript for Animation: Water Balanceopens a dialog](#)
113. [Chapter 17: Physical Activity, Successful Aging, and Disease Prevention, Animation: Acute Inflammation \(CC enabled\)opens a dialog](#)
114. [Chapter 17: Physical Activity, Successful Aging, and Disease Prevention, Transcript for Animation: Acute Inflammationopens a dialog](#)
115. [Chapter 18: Clinical Aspects of Exercise Physiology, Animation: Asthma \(CC enabled\)opens a dialog](#)
116. [Chapter 18: Clinical Aspects of Exercise Physiology, Transcript for Animation: Asthmaopens a dialog](#)
117. [Chapter 18: Clinical Aspects of Exercise Physiology, Animation: Congestive Heart Failure \(CC enabled\)opens a dialog](#)
118. [Chapter 18: Clinical Aspects of Exercise Physiology, Transcript for Animation: Congestive Heart Failureopens a dialog](#)
119. [Chapter 18: Clinical Aspects of Exercise Physiology, Animation: Edema \(CC enabled\)opens a dialog](#)
120. [Chapter 18: Clinical Aspects of Exercise Physiology, Transcript for Animation: Edemaopens a dialog](#)
121. [Chapter 18: Clinical Aspects of Exercise Physiology, Animation: Stroke \(CC enabled\)opens a dialog](#)
122. [Chapter 18: Clinical Aspects of Exercise Physiology, Transcript for Animation: Stroke](#)