

Part I: Molecular Exercise Physiology

Chapter 1. The Cell

- Cellular Architecture
- Exercise and the Cell
- Conclusion

Chapter 2. Cellular Life Span

- Cell Cycle and Tissue Turnover
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- Conclusion

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- Genes and Genome
- Gene Expression
- Regulation of Gene Expression
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- Conclusion

Chapter 4. Proteins and Exercise

- Protein Synthesis
- Protein Degradation
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- Conclusion

Chapter 5. Extracellular Matrix and Exercise

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Chapter 8. Energy Turnover and Substrate Utilization

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Part II: Exercise and the Cell

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Chapter 13. Activity-Dependent Adaptive Responses of Skeletal Muscle Fibers

- The Multiplicity of Sarcomeric Protein Isoforms

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- Exercise Up-Regulates Brain-Derived Neurotrophic Factor
- Gene Microarray Analysis Reveals Other Genes That Are Regulated by Exercise
- Exercise Enhancement of Learning and BDNF
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- Definitive Role for BDNF in Human Cognition
- CNS and Peripheral Regulatory Mechanisms of Exercise Effect on BDNF
- Conclusion