

TABLE OF CONTENTS

- American College of Laboratory Animal Medicine Series

Preface

Acknowledgments

Reviewers

Contributors

Chapter 1. History of the Use of Nonhuman Primates in Biomedical Research

Human and Nonhuman Primates to 1960

Establishment of the National Institutes of Health's National Primate Research Centers Program in the USA: Crossing the Threshold

1960–1980: Period of Growth in a World of Increasing Constraints

1980S and 1990S: Progress Paying off in the Face of Serious Challenges

Primate Research Beyond the Year 2000

Looking Toward the Future

Chapter 2. Laws, Regulations and Policies Relating to the Care and Use of Nonhuman Primates in Biomedical Research

Introduction

National Laws on Use of Nonhuman Primates in Biomedical Research

Nonlegislative Initiatives that Affect the Care and Use of Nonhuman Primates

Good Laboratory and Manufacturing Practice

Human and Animal Disease Control

Species Conservation

Transport

Health and Safety

Appendix 1

Chapter 3. Taxonomy of Nonhuman Primates Used in Biomedical Research

Introduction

Biomedically Relevant Primate Species

The Old World Primates

The New World Primates

From Phylogenetics to Phylogenomics

Acknowledgment

Chapter 4. Functional Morphology

Introduction

Morphological Definition of Primate Order

Sexual Dimorphism

Growth and Development

Body Size and Integument

Head and Neck Morphology

Back and Spine Morphology

Limb Morphology

Thoracic Morphology

Abdominal and Pelvic Morphology

Perineal Morphology

Conclusions

Acknowledgments

Selected Readings

Chapter 5. Study of Nonhuman Primate Social Behavior

Introduction

Levels of Behavioral Analysis

Definition of Nonhuman Primate Societies

General Statement on Nonhuman Primate Social Structures

Methodologies used to Study Behavior

Behavior Research to Colony Management

Conclusions

Chapter 6. Behavioral Management, Enrichment, and Psychological Well-being of Laboratory Nonhuman Primates

Introduction

Definitions of Terms

Why Perform Behavioral Management?

Managing Behavior

Environmental Enrichment Plans

Positive Reinforcement Training

Balancing Psychological Well-Being and Research Needs

Managing Behavioral Management Programs

Conclusions

Acknowledgments

Chapter 7. Behavioral Disorders of Nonhuman Primates

Introduction

Etiology of Psychological Disorders

Therapeutic Strategies for Reversing Psychopathology

A Practical Guide to Managing Abnormal Behavior in the Laboratory

Summary

Acknowledgments

Chapter 8. Reproduction and Breeding of Nonhuman Primates

Basic Reproductive Biology

Housing, Husbandry, and Population Management for Breeding

Pregnancy Management

Nonhuman Primates from Foreign Breeding Programs

Chapter 9. Laboratory Housing of Nonhuman Primates

Introduction

Primary Housing Design for Individuals, Pairs, or Small Groups

Group Enclosures

Security

Conclusion

Acknowledgments

Chapter 10. Nutrient Requirements and Dietary Husbandry Principles for Captive Nonhuman Primates

Introduction

Primate Nutrient Requirements

Considerations for Feeding Protocols

Chapter 11. Animal Identification and Record Keeping for Nonhuman Primates

Introduction

Animal Identification

Record Keeping

Data and Database Format

Reports and Analyses

Summary

Acknowledgments

Chapter 12. Preventative Medicine in Nonhuman Primates

Introduction

Occupational Health and Safety

Quarantine

Husbandry Measures Contributing to Preventive Health

Disease Surveillance

Animal Vaccination Program

Chapter 13. Clinical Techniques used for Nonhuman Primates

Introduction

Handling

Digestive System

Urinary System

Respiratory System

Reproductive System

Circulatory System

Central Nervous System

Musculoskeletal System

Integumentary System

Body Cavities

Chapter 14. Surgery in Nonhuman Primates

Introduction

Nonclinical Concerns

General Principles of Experimental Surgery

Chapter 15. Emergency Medicine and Critical Care for Nonhuman Primates

Introduction

General

Emergencies and Diseases Common to Nonhuman Primates Requiring Critical Care

Chapter 16. Xenotransplantation

Introduction

History

Pathobiology of Pig-To-Primate Organ Transplantation

The Pig-to-Nonhuman Primate Model

Results and Complications

Genetic Modification of Pigs

Summary

Acknowledgments

Chapter 17. Anesthesia and Analgesia in Nonhuman Primates

Introduction

Preanesthetic Considerations

Selecting an Anesthetic Regime

Anesthetic Management and Monitoring

Dealing with Emergencies

Special Considerations

Postanesthetic Care

Analgesia

Chapter 18. Biosafety in Laboratories using Nonhuman Primates

General Biosafety Considerations

Disease Prevention

Facilities Management

Equipment

Personnel Management

Veterinary Care, Animal Health, and Husbandry Practices

Zoonoses, Biohazards, and Other Health Risks

Viral Diseases

Bacterial Diseases

Spirochetal Diseases

Mycoplasmal Diseases

Rickettsial Diseases

Chlamydial Diseases

Mycotic Diseases

Parasitic Diseases

Model Occupational Health Program for Persons Working with Nonhuman Primates

Participants

Components

Records

Health Services/Personnel

Acknowledgments

Chapter 19. Safety and Efficacy Evaluation Using Nonhuman Primates

History and Regulation of Primate Testing

Nonhuman Primate Models of Safety Assessment

Efficacy Studies in the Nonhuman Primate

Index.