Index of Exercise Physiology

EFFECTS ON CARDIOVASCULAR SYSTEM, 421–24

Atrial pumping (atrial fibrillation), 384

Cardiac output (increases), 385, 421–24, 421*f*–22*f*, 423*t*, 424*f*

Distribution during exercise, 421, 421f

Control mechanisms, 422f, 423

Coronary blood flow (increases), 421, 421f

Gastrointestinal blood flow (decreases), 421, 421f

Heart attacks (protective against), 429

Heart rate (increases), 422–23, 422*f*, 423*t*, 424*f*

Lymph flow (increases), 408

Maximal oxygen consumption (increases), 424, 424f

Mean arterial pressure (increases), 412, 421–23, 422f, 423t

Renal blood flow (decreases), 366, 421, 421f

Skeletal muscle blood flow (increases), 277, 396, 412, 421,

421f, 422-23

Skin blood flow (increases), 421f

Stroke volume (increases), 422–23, 422*f*, 423*t*, 424*f*

Summary, 430

Venous return (increases), 422–23

Role of respiratory pump, 406-7, 422f, 424

Role of skeletal muscle pump, 406-7, 422f, 424

EFFECTS ON ORGANIC METABOLISM, 583–84

Cortisol secretion (increases), 583–84

Diabetes mellitus (protects against), 600

Epinephrine secretion (increases), 583

Fuel homeostasis, 580–582

Fuel source, 80, 83, 276, 581

Glucagon secretion (increases), 582–83, 582f

Glucose mobilization from liver (increases), 581–82

Glucose uptake by muscle (increases), 276, 580–82, 582f

Growth hormone secretion (increases), 584

Insulin secretion (decreases), 580–82, 582f

Metabolic rate (increases), 585

Plasma glucose changes, 276, 580–82, 582*f*

Plasma lactic acid (increases), 276, 476

Sympathetic nervous system activity (increases), 582

EFFECTS ON RESPIRATION, 477, 478

Airflow (increases), 446

Alveolar gas pressures (no change in moderate exercise),

463, 477, 478f

Capillary diffusion, 464

Control of respiration in exercise, 471–77, 478f

Oxygen debt, 276

Ventilation (increases), 477, 478f

Breathing depth (increases), 276, 460

Expiration, 453, 472*f*

Respiratory rate (increases), 460, 473

Role of Hering-Breuer reflex, 473

EFFECTS ON SKELETAL MUSCLE

Adaptation to exercise, 280-282

Arterioles (dilate), 412, 421–23, 422f

Changes with aging, 281

Cramps, 283

Fatigue, 276, 276*f*

Glucose uptake and utilization (increase), 276, 582–83, 582f

Hypertrophy, 259, 280

Local blood flow (increases), 277, 396, 412, 421–22, 421f

Local metabolic rate (increases), 585

Local temperature (increases), 296–97, 421

Nutrient utilization, 276, 580–82

Oxygen extraction from blood (increases), 467

Recruitment of motor units, 280

Soreness, 281

Summary, 285*t*–286*t*

OTHER EFFECTS

Aging, 281

Body temperature (increases), 74, 593, 593f

Central command fatigue, 276

Gastrointestinal blood flow (decreases), 421, 421f

Immune function, 679

Menstrual function, 633

Metabolic acidosis, 524t

Metabolic rate (increases), 585

Muscle fatigue, 276, 276f

Osteoporosis (protects against), 355

Stress, 344

Sweating, 515

Weight loss, 585, 600

TYPES OF EXERCISE

Aerobic, 280

Endurance exercise, 280–81, 424, 600

Long-distance running, 276, 281, 423, 423*t*, 477

Moderate exercise, 423, 478

Swimming, 423, 478

Weightlifting, 276, 280, 422