Index

Page numbers in italics denote figures and tables.

AAEP. See American Association of Equine Practitioners
ACS. See autologous conditioned serum
‘Adopt a Horse/Burro’ program, 459
adrenocorticotropic hormone (ACTH), 377
‘aged event’ competition, 305
alpha-2 agonist drugs, 149–50
alternative medicine approaches, 205–6
challenging science effectiveness, 219–20
interventions, 218–19
MBCMTE, 219
non-veterinarians claim, 219
therapies, 218
evidence-based medicine, 216
expectation and false promises
acupuncture practitioners, 214–15
benefits, 214
chiropractic, 215
colic curing, 215–16
side-effects, 215
therapeutic interventions, 214
health belief models
factors, 211–12
human, 210
mediating factors, 212–13
psychological, 210
rational scientific assessments, 213
risk, 213–14
health-care decisions, 209
horsemanship, 223
individual approaches, 206
integrative (see integrative veterinary medicine)
limits
effects, 220
purveyors, 221
modalities, 216–17
risks and benefits
clinical benefits, 208
interventions, 206–7
rational assessments, 207–8
riding, 207–8
surgery, intestinal problem, 208
science
clinical trials, 221
debates, 221–2
de-foes, 221
end-points, 221
evidence lack, 222
therapies, 222
unbiased scientific testing, 217–18
American Association of Equine Practitioners (AAEP)
AVMA, 61
euthanasia, 171
medical criteria, euthanasia, 431
pain scales, 139

© 2011 by UFAW. Published 2011 by Blackwell Publishing Ltd.

473
American Association of Equine Practitioners (AAEP) (cont’d)
rescue and retirement facilities estimation, 429–30
soring, 248
TWH, soring elimination
AQHA Executive Committee recommendations, 253–4
HIO, 251–2
thermography, 252–3
and unwanted horse coalition, 436–7
White Paper, 68
American Horse Slaughter Prevention Act, 435
American Jockey Club, 231
American Quarter Horse Association (AQHA)
Executive Committee, task force recommendation, 253–4
‘Greener Pastures’ program, 437–8
reining, 304
rules, inhumane treatment, 309–10
American Society for the Prevention of Cruelty to Animals (ASPCA), 381, 394, 401
American Veterinary Medical Association (AVMA)
AAEP, 61–2
euthanasia, 165–6, 168, 172–3
principles, 61
An Encyclopedia of Agriculture, 388
Animal and Plant Health Inspection Service (APHIS), 434
commercial transport, horses, 434
thermography, 252–3
animal experimentation
AWA regulations, 420–421
‘three Rs’ principles
reduction, 422
refinement, 422
replacement, 422
Animal Welfare Act (AWA), 420–421
AQHA. See American Quarter Horse Association
Arabian conformation horse, 247
The Art of Horsemanship, 40
ASPCA. See American Society for the Prevention of Cruelty to Animals
Atlanta Olympics, 347, 465
The Autobiography of a Horse, 54
autologous conditioned serum (ACS), 416–17
AVMA. See American Veterinary Medical Association
AWA. See Animal Welfare Act
Banamine®. See Flunixin meglumine
barrel racing associations, 288
description, 286
whips, 288
Beijing Olympics, 465
‘Bill of Rights’, 6
Black Beauty, 54, 55
BLM. See Bureau of Land Management
bovine spongiform encephalopathy (BSE), 426
British Horse Society training manuals, 95
BSE. See bovine spongiform encephalopathy
Bureau of Land Management (BLM). See also wild horses, Western USA
adoption program, 457–60
and Forest Service, 443–4, 458
goals, 427
horses
mustang/wild, 168
vaccinations and medical treatments, 448
wild, 443–4
periodic roundups, 450
California Animal Health and Food Safety (CAHFS), 230
California Horse Racing Board, 230, 232, 414
California Necropsy Program, 232–3
Canadian Farm Animal Care Trust (CANFACT), 321, 322, 324, 325
CANFACT. See Canadian Farm Animal Care Trust
carcass disposal methods
biodigestion, 433
burial, 432
composting, 433
euthanasia and, 430
incineration/cremation, 433
rendering, 432
cardiac recovery index (CRI), 350–351
care and handling of horses in PMU operations (COP), 319–22, 327, 328
Carprofen
clinical applications, 145
pharmacokinetics, 145
toxicity, 146
carriage horses
commercial carriage trade, 394–5, 395
health problems
colic, 396–7
lame, 395–6
respiratory, 397
rhabdomyolysis, 397–8
skin and harness sores, 398
trauma, 398–9
weather-related, 398
health regulations
driver education, 403
Index

housing, 401–2
identification, registration/license number, 399–400
records and inspections, 401
reports, 401
rules, 402
time, shift and area restrictions, 400
trimming, shoeing and grooming, 402
veterinary examination, 400
weather-related rules, 401
carts and chariots
China and Greece, 30–31
funeral processions and races, 31
spoked wheel, 30
traction, 29–30
wagons, 30
CAST. See Council for Agricultural Science and Technology
chiropractic methods, 185
chronic obstructive pulmonary disease (COPD), 397
CIP. See continuous improvement process
claiming race, 238–9
‘cold-blooded’ horse
expression, 116
temperament, 116
companion animal, horse
acute medical crisis
colic, 271
emergency surgical care, 271
medical directives, 271–2
athletic pursuits
discomfort/anxiety, 258
horse and rider, 256–7
medical therapies, 257
riding partnership, 256
training and competition, 257–8
backyard horse, 255–6
behavioral challenge
‘buyer beware’, 260–261
dangerous vice, 260
Uniform Commercial Code, sales, 261
breeding ambitions, 258
character development, 255
family, position loss
crippling disability, 263
donation, riding program, 261
leasing/joint ownership, 265
neglect, 262, 263–4
ownership responsibility, 261
‘throw-away’, 264–5
as trainer, 261
‘unwanted’, 263
foal protection, 258–9
horse and owner emotional connection, 256
incompatibility issues
selling, 260
wastage and potential welfare issues, 259–60
joys, 273
killing, kindness
exercise, 265–6
obesity, 265, 266
pasture turnout, mental health, 267
legislative considerations
animal abuse penalties, 272–3
‘livestock’, 272
life demise
athletic pursuits, 269–70
discomfort/stress, 269
euthanasia, 270
middle-aged horse, 268
non-acute medical situation, 268–9
old horse, 266, 267, 268
tarsal/carpal osteoarthritis, 268, 270
complementary and alternative medicine (CAM)
integrative veterinary medicine
federal funding, 185–6
research programs, 185
scientific process, 175–6
NCCAM, definition, 175
scientific method
criticism, 182
practitioners, 181–2
untested therapies, 179–80
continuous improvement process (CIP), 325–6
COP. See Care and Handling of Horses in PMU Operations
Council for Agricultural Science and Technology (CAST), 7–9
Cowboys Turtle Association, 276
CRL. See cardiac recovery index
crosstraining, 178
cutting horse
  athletic injuries, 307
  genetics, 316
  inhumane treatment, 309–10
  medication, 312–15
  origin, 303
  skills, 303
  training
  ‘aged event competition’, 305
  and cow movement, 304–5
  period, 304

developmental orthopedic disease (DOD)
  feeding scenarios, 85
  risk, 86
  zinc, 78
DOD. See developmental orthopedic disease
domestication, human–equine interactions
  archeological indicator, 25
  body size, changes, 27
  Botai culture, 25–6
  equids, 24
  evidence, 26
  genetic changes, 27–8
  milking, mare, 26, 27
  Neolithic period, 25
  riding/traction, 26–7
dressage discipline
  competition regulations
    bit and spur checks, 335–6
    Bitless Bridle, 336
    competitors, 339
    drug and medication, 338–9
    hyperflexion definition, 337
    in-barn examinations, 335
    nutrition and hydration, 338
    pastern chains, 339
    relaxation, 337–8
    rollkur, 336–7, 337
    training abuses, 336
husbandry
  average age, 332
  mounting energy, 333
  turnout exercise, 333
  warmblood breeds, 332–3
training methods
  ballet dancer, 334
  epaxial musculature, 334–5
  foundation, 334
  warm-up period, 335
travel preparations
  air, 333
  forage, 334
  warmblood breeds, 332–3
early warning system (EWS), 367
ECVS. See European College of Veterinary
Surgeons
EIPH. See exercise-induced pulmonary
hemorrhage
emergency conditions, endurance events
  clinical signs, 361
  treatment and monitoring
    fluid therapy, 361, 364, 365
    hospital and surgical center, 361, 362
    metabolic illness, 365–6
    monitoring eliminated horses, 364–5
    refusal, 366
    wilderness areas, 361, 363
endurance riding standards
AERC, 341
  challenge
    riders, 345–6
    saddles, 345
  cost and value, 367–8
  drug-free policy, 345
  emergency conditions
    clinical signs, 361
    fluid therapy, 361, 364, 365
    hospital and surgical center, 361, 362
    metabolic illness, 365–6
    monitoring eliminated horses, 364–5
    treatment refusal, 366
    wilderness areas, 361, 363
  fifty-miles competition, 344
  governing body objectives
    FEI, 346–7
    ride and horse safety, 347
  horse preparation, 348
  log books, safeguard
    EWS, 367
    horse’s passport, FEI events, 366
  metabolic mishaps, 347
  100-mile competitions
    mountainous/wilderness terrain, 343
    time frame, 342, 344
  post-ride reporting, 367
  ride frequency, 348
  risk
    base camp, eliminated horses, 361
    hold time duration, 359–60
    horse stabling, 336
    IV fluids, 344
    metabolic issues/musculoskeletal injury, 344
    transport stress, 356
    veterinary checks, 357
    vet gate timing, 357–8
  speed, 341–2
  veterinarian’s role
CRI, 350–351
  criteria, 352–5
  ‘fit to continue’, 349–50
  hiring staff, 351–2
  treatment, 355–6

Environmental Protection Agency (EPA), 74, 75, 433

Equine Placement Trust Fund (EPTF), 329

equine welfare and ethics
  abortion, 11
  agriculture, 6
  animals’ nature, 18
  annual research and testing, 16
  anti-cruelty ethic, 14
  anti-slaughter movement, 19
  beliefs, ethical, 17
  boycotting, South African business, 3–4
  CAST, 7, 8
  ethical components, 9
  ethic and laws, 13
  event horse, issues
    challenges, 471
    competition and, 464–5
    FEI, 463–4
    injuries, 465–8
    medication rules, FEI, 468–71
  federal bills, 4–5
  ‘five freedoms’, 8
  freedom, 4
  frivolous uses, abolition, 6
  husbandry, 15
  inescapable ethical component, 9
  issues, carriage horses
    ‘five freedoms of animal welfare’, FAWC, 403–4
    housing, 404
    humans and horses partnership, 403
    media manipulation, 406
    medical care, 405
    occupational health problems, 403
    retirement, 406
    trade culture, 406
    zone and work restrictions, 405
  laboratory animals, 5
  Middle Ages, 3
  moral categories, 17
  moral/legal fences, 18
  New York State case, 12–13
  pain and suffering, 11–12
  PMU ranching
    CIP, 324–5
    collection, recommendations, 321–4
    inspection, 321–2
    productivity, 7–8
  prohibition, cruelty, 11
  psychopaths, 12
  racing
    daily form, 235–6
    jockeys, 234
    pre-race examination, 234–5
    racing regulatory veterinarian examination, 235
  research (see Equine welfare research)
  research community, 10
  rodeo horse, issues
    athlete, 291–4
    barrel racing, 286
    bucking animals, 280–281
    care and handling, PRCA members, 295, 296
    description, 275
    drug and medication policies, 288
    livestock transportation, 286–8
    maintenance, 294–5
    modern bull riding, 276
    non-competitive activity, 289–90
    non-sanctioned events, 289
    organizations, 276–7
    PRCA, 275
    Professional Rodeo Cowboys Association, 276
    roping events, 282–6
    roghtock events, riding, 278–81
    rules, 277
    steer wrestling, 283–4
    whips and devices usage, 288
    wild west show, 275–6
  social and conceptual reasons, 14–15
  social consensus ethic, 10
  societal concerns, 7
  state bills, 5
  tame pigeon shoot, Colorado, 12
  totalitarian societies, 17–18
  USA agriculture, horses and mules
    components, 387
    cowboy-horsemanship, 387–8
    draft animal, working cattle, livestock and transportation, 386
    geldings, retired, 390
    laws, 390–391
    NAHMS, 391
    ranch horse, 388, 389
    requirements, developed countries, 391–2
    RHAA, 386
    RSPCA, 391
    work, 388–90
  Western stock horse sports
    cutting, 303
equine welfare and ethics (cont’d)
genetics, 316
inhumane treatments, 309–10
medications, 312–15
reining, 303–4
shows and events, 311
training (see training, Western stock horse sports)
World War II, 15–16
equine welfare research
AAEP, 408
animal as model, human disease, 411
clinical studies
case control, 414
case report, 413
case series, 414
cohort, 415
EBM, 412–13
expert opinion, 413
RCTs, 415
complex issues, 409
ECVS Annual Meeting, 409
hypothesis testing, 416
IACUC, 408
nutraceuticals, 410
positive controls, 416
power calculation
lameness scores, ACS, 416–17, 417
synovial membrane histology, 417, 419
total protein levels, 417–18, 418
regulations
animal experimentation, 421
AWA, 420–421
scientific validation, FDA-licensed products, 410–411
stages, 411–12
‘three Rs’ principles
animal replacement, non-animals, 422
reduction, animal number, 422
refinement, animal use, 422
Equioxx®. See Firocoxib
Equiphen®/Equipolozone®. See Phenylbutazone
Equiproxen®. See Naproxen
estrogen replacement therapy, 319
European College of Veterinary Surgeons (ECVS), 409, 411
euthanasia
AAEP, 171
AVMA, 165–6
chronic disease, 64
clinical cases
lameness, 170–171
racehorse, femoral fracture, 169–70
radial fractured pony, 169
ranch horse, 168–9
rescued horse, 168
retired show horse, 170
show horse, 167
wild horse, 167–8
working horse, 166
decision, 63–4
description, 165–6
methods
captive bolt/free-bullet methods, 172–3
intravenous pentobarbital, 172
resolution
behavioral issues, 171
domestic horses, 171
wild horses, 171–2
unwanted horses
biodigestion, composting, 433
carcass disposal, 432–3
description, 430–431
gunshot and penetrating captive bolt methods, 431–2
medical criteria, 431
sodium pentobarbital use, barbiturate, 431
event horse welfare issues
challenges, 471
competition and
Atlanta Olympics and Beijing Olympics, 465
cross-country course designer, 464–5
FEI, 464
FEI, 463–4
injuries
cardiovascular and respiratory problems, 468
falls, 468
fatigue-related, 467
heat effect, 467–8
jump-related, 467
lacerations, 465–6
speed-related, 466–7
medication rules, FEI
controlled drugs, 469
detection time list, 468–9
FEI veterinary rules, 470
prohibited medications, 469
restrictions, 469–70
testing, 469
USEF and USEA, 470
USHJA, 471
exercise-induced pulmonary hemorrhage (EIPH), 75, 465, 466
exertional rhabdomyolysis (ER), 466–7
Farm Animal Welfare Council (FAWC), 8
FAWC. See Farm Animal Welfare Council
FDA. See Food and Drug Administration
Fédération Equestre Internationale (FEI)
boots weighing, 375
competitions regulation, 335–9
drug-free policy, 345
endurance log sheet, 366
equine welfare statement, 463–4
event horse welfare issues
controlled drugs, 469
detection time list, 468–9
FEI veterinary rules, 470
prohibited medications, 469
restrictions, 469–70
testing, 469
USEF and USEA, 470
USHJA, 471
events, 353, 356
NRHA, 304
‘over-bending/hyperflexion’, 336–7
USEF and USEA, 464
website, 336
World Horse Welfare, 464
feeding
broodmare
early pregnancy, 87
lactation, 88
late pregnancy, 87
post-weaning management, 88
geriatric horses, 89
performance horses
energy, 88
protein, 89
young horse
sucklings, 83
two-year-olds, 86–7
weanling, 83–4
yearlings, 84–6
Firocoxib, 146
Flunixin meglumine
clinical applications, 142–3
pharmacokinetics, 142
toxicity, 143
foals
neonatal
functions, 127
vitality levels, 126
seven days old, 127
Food and Drug Administration (FDA), 410
Gabapentin, 155
gingering and whip training, 247
GonaCon™, 456
‘Greener Pastures’ program, 437–8
gunshot euthanasia, 172–3
Hayagriva, 37
health and disease
athletic horse, equine veterinarian
analgesic agent, 68
human sports medicine, 67–8
NSAIDs and intra-articular medication, 68–9
sports medicine, 68
belief models, alternative medicine
factors, 211–12
human, 210
mediating factors, 212–13
psychological, 210
rational scientific assessments, 213
risk, 213–14
carriage, regulations
driver education, 403
housing, 401–2
identification, registration/license number, 399–400
records and inspections, 401
reports, 401
rules, 402
time, shift and area restrictions, 400
trimming, shoeing and grooming, 402
veterinary examination, 400
weather-related rules, 401
code of practice
AAEP and AVMA, 61
Animal Welfare Act 2006, 60
NEWC, 60
euthanasia
chronic disease, 64
decisions, 63–4
infectious and contagious, 65
injury prevention and diagnosis
bone disease, 67
musculoskeletal injury, 66
racehorse, 66–7
lameness
anti-inflammatory and analgesic drugs, 66
laminitis, 65
musculoskeletal disorders, 66
monitoring and detection, 62
preventive health programs
dental examination, 64–5
foot care, 65
parasite control, 64
vaccination, 64
health and disease (cont’d)
  veterinarians, 64
problems, carriage
  colic, 396–7
  lameness, 395–6
respiratory, 397
rhabdomyolysis, 397–8
skin and harness sores, 398
trauma, 398–9
weather-related, 398
standards of care, 59–60
treatment, 62–3
wild horses, 447
work and welfare, 63
health problems, carriage horses
  colic, 396–7
  lameness, 395–6
respiratory, 397
rhabdomyolysis, 397–8
skin and harness sores, 398
trauma, 398–9
weather-related problems, 398
Horse Industry Organization (HIO), 251–2
Horse Protection Act (HPA), 248–50, 252, 253
Horse Slaughter Prohibition Bill, 435–6
horse whisperer, 54, 94
‘hot-blooded’ horse
  expression, 115
  quick and spirited, 117
temperament, 116
Humane Care for Animals Act, 390
human–equine interactions
  breeding
    destriers and coursers, 48
    England, 48–9
    Ferghana horses, 47
    manuals, 51
    power, 49
    Quarter horses, 51–2
    racing, 50
    Thoroughbred breed, 50–51
carts and chariots
  China and Greece, 30–31
  funeral processions and races, 31
  spoked wheel, 30
  traction, 29–30
  wagons, 30
domestication
  archeological indicator, 25
  body size, changes, 27
  Botai culture, 25–6
  equids, 24
  evidence, 26
genetic changes, 27–8
  milking, mare, 26, 27
  Neolithic period, 25
  riding/traction, 26–7
Empires
  cavalry, 40–41
  Christianity, 43
  Eastern cultures, 42
  infantrymen, 45
  light and heavy armored troops, 46
  Mamluks, 41–2
  mounted warrior, 44
  musculature, 45
  renaissance, 44
  Roman knights, 42
  vintage engraving, 43
horse–human interactions
  bones, 23
  prehistoric image, Lascaux caves, 24
  prehistoric man, 23
modern
  art, 53–4
  books, 54
  eventing competitions, 53
  horsemanship, 52
  sports, 52, 53
riding, ancient world
  Aesop fables, 40
  cavalry, Roman, 39
  China, 35
  color, 37–8
  cover, saddle, 33
  culture, 31
  entertainment, 39–40
  expeditions, 32–3
  feed, 36
  Greece, 38
  India, 33–4
  intelligence, 37
  Persian horses, 39
  raiding and mounted warfare, 32
  saddles, 32
  Scythian horseman, 34
  spiritual, 34–5
  stirrups, 34
  Terracotta Army, Emperor Qin Shi Huang, 35, 36
  Uffington White Horse, 35
  unicorn, 37, 38
  wings, 37
symbolic meanings, 22
training and controlling
  bridle and bit, 28–9
‘donkey seat’ riding, 28, 29
foals, 28
geldings, 29
nose rings, 28
work
draft horses, 46
Japan, 47
wagonways, 47
Humane Society of the United States (HSUS), 381, 394
hunting and jumping horse
current medical practices
corticosteroids, 376
‘tail blocking’, 375
therapeutic medication, 375–6
physical and medication abuse, 378
schooling and preparation, competition
boots, 374–5
lungeing, 373–4
‘rapping’/’poling’, 374
whips and spurs, 375
training
confinement, 372
obstacles, 372
‘on the flat’, 371
welfare concerns, 371–2
travel, training and competition
anti-ulcer medications, 373
transport vehicles, 372–3
unconventional medication
ACTH, 377
dexamethasone, 376
feed additives, 376
NSAID, 377–8
thiamine, 377
zero-tolerance rules, 378
IACUC. See Institutional Animal Care and Use Committee
injuries
athletic cutting horses, 307
event horses
cardiovascular and respiratory problems, 468
cardiovascular and respiratory systems, 468
falls, 468
fatigue-related, 467
heat effect, 467–8
jump-related, 467
lacerations, 465–6
speed-related, 465–6
metabolic issues/musculoskeletal, 344
prevention and diagnosis
bone disease, 67
musculoskeletal injury, 66
racehorse, 66–7
Institutional Animal Care and Use Committee (IACUC)
animal replacement, non-animals, 422
origin, 420–421
osteochondral chip fragment model, 417
power calculation, 416–17
RCTs, 415
integrative veterinary medicine
acupuncture
diagnosis, 193
efficacy, 193–4
needle and electro, 192–3
beneficial effects, 174
CAM
federal funding, 185–6
research programs, 185
chiropractic techniques
clinical effects, 191–2
controlled trials, 192
professional training, 191
vague musculoskeletal disorders, 191
chronic back pain, evidence, 190
equitation science and horsemanship, 174–5
evidence-based
definition, 182
process description, 182–3
quality ranking, 183
RCTs (see randomized controlled trials)
scientific and, 184–5
issues, 186
licensed professionals and lay practitioners
benefits, 197–8
CAM, 196–7
research and funds, 197
shoes reset, 195–6
tests, 197
mental and physical stimulation, 178
nutraceuticals, botanical medicine and
homeopathy, 195
outcome measures, 189–90
pain relief, 177–8
physical therapy and rehabilitation
diagnostic and treatment approaches, 194
exercise, 195
hydrotherapy, 194–5
ice-water baths, 194
RCTs, 194
placebo effects
characteristics, 186
clinical setting/physical environment, 189
integrative veterinary medicine (cont’d)
description, 186
human caregivers, 187–8
human medicine, 188–9
mode of action, 187
time, 189
‘total drug effect’, 187
veterinarian–client–patient relationship, 188

scientific method
CAM practitioners, 181–2
criticism, CAM research, 182
description, 180
stages, 181
sports, 177
surgical procedures, 178–9
therapeutic options, owners, 179
‘traditional’ and ‘non-traditional’, 176–7
translational, 179
untested CAM therapies, 179–80

Internal Revenue Service (IRS), 428
intravenous (IV) fluids, 344
intravenous pentobarbital euthanasia, 172

Jockey Club Safety Committee, 229
jumping horses. See also hunting and jumping horse
sports, 52–3
trail and hunter, 248

Ketamine, 151–2
Ketofen®, 143–4
Ketoprofen
clinical applications, 144
pharmacokinetics, 143–4
toxicity, 144

lacerations, event horses
carpus abrasions, 466
distal limb, 465
overreach wounds and stud-related punctures, 465–6

lameness
career-limiting/career-ending, 258
ground reaction forces, 136
limb pain, 137
welfare issue, 65–6

Legal Handbook for Inspectors, 391
livestock welfare survey, 293–4

Maryland Board of Chiropractic and Massage Therapy Examiners (MBCMTE), 219

medicines
alternative
acupuncture practitioners, 214–15

approaches, 205–6
benefits, 214
chiropractic, 215
colic curing, 215–16
effectiveness, 219–20
evidence-based medicine, 216
health belief models, 210–214
health-care decisions, 209
horsemanship, 223
individual approaches, 206
integrative (see integrative veterinary medicine)
interventions, 218–19
limits, 220–221
MBCMTE, 219
modalities, 216–17
non-veterinarians claim, 219
risks and benefits, 206–8
science, 221–2
side-effects, 215
therapeutic interventions, 214
therapies, 218, 222
unbiased scientific testing, 217–18

integrative veterinary
acupuncture, 176, 192–4
beneficial effects, 174
CAM, 175–6, 185–6
chiropractic techniques, 191–2
chronic back pain, 190
equitation science and horsemanship, 174–5
evidence-based, 182–5
issues, 186
licensed professionals and lay practitioners, 195–8
mental and physical stimulation, 178
nutraceuticals, botanical medicine and homeopathy, 195
outcome measures, 189–90
pain relief, 177–8
physical therapy and rehabilitation, 194–5
placebo effects, 186–9
scientific method, 180–182
sports, 177
surgical procedures, 178–9
therapeutic options, owners, 179
‘traditional’ and ‘non-traditional’, 176–7
translational, 179
untested CAM therapies, 179–80

minerals
macro
calcium and phosphorus, 77
electrolytes, 77
micro
iron, 77
manganese, 77
selenium, iodine, copper and zinc, 78

NAERIC. See North American Equine Ranching Information Council

Naproxen
clinical applications, 144–5
pharmacokinetics, 144
toxicity, 145

National Animal Health Monitoring System (NAHMS), 382, 385, 391
National Center for Complementary and Alternative Medicine (NCCAM), 175
National Cutting Horse Association (NCHA), 304, 307, 310–314
National Equine Welfare Council (NEWC), 60, 62
National Reined Cow Horse Association (NRCHA), 304, 307, 309, 311–12
National Reining Horse Association (NRHA), 304, 307, 310–314
The National Thoroughbred Racing Association Safety Alliance, 229
NEWC. See National Equine Welfare Council

non-steroidal anti-inflammatory drugs (NSAIDs)
carprofen
clinical applications, 145
pharmacokinetics, 145
toxicity, 146
COX-1, 139
cyclooxygenase-2 (COX-2) inhibitors, 139–40
doses, 140
firocoxib, 146
flunixin meglumine
clinical applications, 142–3
pharmacokinetics, 142
toxicity, 143
ketoprofen
clinical applications, 144
pharmacokinetics, 143–4
toxicity, 144
naproxen
clinical applications, 144–5
pharmacokinetics, 144
toxicity, 145
phenylbutazone (PBZ)
clinical applications, 141–2
pharmacokinetics, 140–141
toxicity, 142
topical, 146–7
toxicity, 140
USEF and USEA, 470
USHJA, 471

North American Equine Ranching Information Council (NAERIC), 328–30

NSAIDs. See non-steroidal anti-inflammatory drugs

NSCs. See non-structural carbohydrates

nutritional management
broodmare feeding
eyearly pregnancy, 87
lactation, 88
late pregnancy, 87
post-weaning management, 88
carbohydrates
NSCs, 73
structural, 74
digestive function
digestive tract, 71
fermentation, 71
hindgut fermenters, 72
large intestine, 71
energy, 79
fats
acid composition, oils, 75
benefits, 74
description, 74
omega-3 fatty acids, 74–5
forages
composition, 79–80
intake, 80–81
geriatric horses, feeding, 89
grains
daily feed consumption, 82
feeds, 82–3
fortified, 81–2
minerals
macro, 76–7
micro, 77–8
performance horses feeding
energy, 88
protein, 89
protein
description, 72
insufficiency, 73
supplemental sources, 73
rules
body condition, 90
diet, 89
feedstuffs, 89
grain meals, 91
supplement classes, 82, 83
vitamins
description, 75
fat-soluble, 76
water-soluble, 76
water, 72

non-structural carbohydrates (NSCs), 73
nutritional management (cont’d)
young horse, feeding
  sucklings, 83
two-year-olds, 86–7
weanling, 83–4
yearlings, 84–6

osteochondrosis dissecans (OCD), 84

pain
alpha-2 agonist drugs
  cardiac output, intravenous bolus, 150
  receptors, 149
  sedation, 149–50
analgesic response, 137
assessment
  beta-endorphin, 135
  catecholamines and corticosteroids, 135–6
  heart rate, 135
behavioral changes
  abdominal, 137–8
  back, acute and chronic, 138
  environmental factors, 137
  head, 137
  limb, 137
behavioral signs, 137
chronic input result, 133
consequences
  and inflammatory responses, 131
  uncontrolled, 131, 133
  ‘wind-up’ phenomenon, 131
description, 130–131
dissociatives, 151–2
electroencephalography (EEG), 136
epidural analgesia
  benefits, 152
  catheters, 152–3
  drug combinations, 152
  morphine and detomidine/xylazine, 153–4
  sedative effects, detomidine, 154
fentanyl patches, 154
gabapentin and sarapin, 155
gait analysis, 136
ground reaction forces, 136
intra-articular analgesics
  joint-related pain, 148–9
  mepivacaine, bupivacaine and lidocaine, 149
  morphine, 149
intravenous infusions, continuous, 154
local anesthetic drugs
  bupivacaine, 148
  cardiovascular safety, 147–8
  lidocaine, 148
mepivacaine, 148
postoperative period and chronic pain, 147
management misconceptions
  analgesics, 133–4
  benefits, pain control, 134
  bowel function, 134
NSAIDS (see non-steroidal anti-inflammatory drugs)
opioids
  butorphanol, 150–151
  mu, 151
  side-effects, 151
peripheral nerve block, continuous, 154
physiological vs. clinical, 132
pressure response, 136
scoring and inconsistencies
  AAEP, 139
  numerical rating scale (NRS), 139
  simple descriptive scale (SDS), 139
  visual analog scale (VAS), 138
thermographic imaging, 136

PBZ. See Phenylbutazone
people for the ethical treatment of animals
  (PETA), 10, 381, 394
Pew Commission, 6–7
Phenylbutazone (PBZ)
  clinical applications, 141–2
  pharmacokinetics, 140–141
toxicity, 142
PHS. See Public Health Service
placebo effects
  characteristics, 186
  clinical setting/physical environment, 189
  description, 186
  human caregivers, 187–8
  human medicine, 188–9
  mode of action, 187
  time, 189
  ‘total drug effect’, 187
  veterinarian–client–patient relationship, 188
poling, 248
Pony Express, 39
pregnant mares’ urine (PMU) ranching
  breeds, 321
  CIP, 325–6
  collection apparatus, 320–321
  COP, 319–320
downsizing effort, Prempro™, 329
EPTF, 329–330
estrogen replacement therapy, 319
ranchers care and welfare, 330
research initiatives
  ad libitum water intake, 326–7
behavioral and health consequences, 327
confinement effect, 328
foal mortality rates, 328
NAERIC, 328–9
offspring disposition, 328
time budgets, 327
water, 326
tie stalls, 323
urine collection harness, 318–19
welfare issues, CANFACT
CIP, 324–5
collection, recommendations, 321–4
inspection, 321–2
Prevention of Equine Cruelty Act, 436
Professional Rodeo Cowboys Association (PRCA)
animal welfare program, 293
‘as little as possible’ prod, 291
flank straps, 290–291
livestock welfare survey, 293–4
rules, prohibitions
‘abuse/mistreatment’, 288
sharpened spur/locked rowels, 292
‘stimulants/hypnotics’, 288
veterinarians, rules, 293–4
psychological needs and life quality
body and mind relationship
activities, time budgets, 96
behavioral abnormalities, 97
distress indicators, 97–9
eating time, 96–7
ill-health, 95–6
modern husbandry systems, 97
cognitive needs
behavioral restrictions, 109, 110
brain study, 105
‘dominance orders’, 107
ecological knowledge, 106
learning, 106
places and situations, 107–8
problems, 104
social rules, 106–7
suburban/urban-type environments, 107
welfare, 108
emotions and private lives, 103–4
horse whisperer, 94
physical needs, 99
social needs
breeding, 101–2
environmental stimulation, 99
feral and domestic free-living populations, 103
learning, older survivors, 101
stallions and mares, 102
‘sticking’ and ‘splitting’, 100, 101
Public Health Service (PHS), 420
Quarter horse, 51–2, 232
racing
California Necropsy Program
‘fractured shoulder’, 232–3
nuclear scintigraphy facility, Santa Anita Park, 233
claiming
description, 238–9
Hot Potato/Old Maid, 239
jockey role, 239–240
regulation and effects, welfare
daily racing form, 235–6
jockeys, 234
pre-race examination, 234–5
racing regulatory veterinarian examination, 235
risks
American Jockey Club, 231
California Horse Racing Board, 230
injury and safety improvement, 231
national fatality rate, 230–231
slaughter issue, 242
track surfaces
California, 232
Turfway Park, 231–2
terrestrial medical care
drug testing, 238
exercise-induced pulmonary hemorrhage (EIPH), 236–7
firing and blistering, 237–8
NSAIDs, 237
trainer, owner and veterinarian, 236
wastage, non-fatal and training injuries
attrition rates, 233–4
financial cost, 234
whips
British whipping rules, 240–241
jockeys, 240
prohibition, 241
USA, 241–2
Ranching Horse Association of America (RHAA), 386
randomized clinical trials (RCTs), 415
randomized controlled trials
evidence-based medicine
CAM, 184
vs. human, 183–4
treatment efficacy and bias control, 184
randomized controlled trials (cont’d)
musculoskeletal disorders, chiropractic
methods, 183
RCTs. See randomized clinical trials
reining horse
genetics, 316
inhumane treatment, 309–10
medication, 312–15
origin, 303–4
in sports, 304
training
canter, 305
movement pattern, 305–6
repetitive, 305
rhabdomyolysis syndrome, 397–8
Rimadyl®. See Carprofen
risks, equine
and benefits, alternative medicine
clinical benefits, 208
health belief models, 213–14
interventions, 206–7
rational assessments, 207–8
riding, 207–8
surgery, intestinal problem, 208
endurance riding standards
base camp, eliminated horses, 361
hold time duration, 359–60
horse stabling, 356
IV fluids, 344
metabolic issues/musculoskeletal injury, 344
transport stress, 356
veterinary checks, 357
vet gate timing, 357–8
racing
American Jockey Club, 231
California Horse Racing Board, 230
injury and safety improvement, 231
national fatality rate, 230–231
rodeo horse welfare issues
athlete
flank strap, 290–291
livestock prod, 291–2
minimal care guidelines, PRCA, 293
spurs, 292
surveys, 293
veterinarian on-site/on-call, 293–4
barrel racing, 286
bucking animals, 280–281
care and handling, PRCA members, 295, 296
description, 275
drug and medication policies, 288
livestock transportation
feed, water and stabling requirements, 286
headroom, 287–8
trailers, 287
maintenance
Pendleton round-up’s animal ambulance, 294, 295
place rules and enforcement procedures, 294
written plan, 294–5
modern bull riding, 276
non-competitive activity, 289–90
non-sanctioned events, 289
organizations, 276–7
PRCA, 275
professional cowboys association, 276
roping events
steer, 285–6
team, 283
tie-down, 282–3
roughstock events, riding
bareback, 278
bucking animals, 280–281
bull, 279–80
saddle bronc, 279
rules, 277
steer wrestling
description, 283–4
wrestler, 284
whips and devices usage, 288
wild west show, 275–6
roughstock events
bucking animals, 280–281
riding
bareback, 278
bull, 278
saddle bronc, 278
Royal Society for the Prevention of Cruelty to
Animals (RSPCA), 380, 391
rules, PRCA, 277
Sarapin, 155
SDFT. See superficial digital flexor tendonitis
show horse, USA
gingering and whip training, Arabian
conformation horse, 247
habituation, 246
inhumane practice, stock horse breed events
cow horse, 247–8
trail, jumping and hunter horses, 248
Western pleasure, 247
issues, breed associations and show
organizations
abuse culture, 249
evaluation methods, 249–50
soring, veterinary recommendation, 248–9
soring, TWH
description, 246
mustard oil, 246  
non-sored, 246–7  
TWH (see Tennessee Walking Horse)  
Society for the Prevention of Cruelty to Animals (SPCA), 380  
SpayVac™, 456  
speed-related injuries, event horses  
EIPH, 466  
SDFT, 466  
tying-up (see exertional rhabdomyolysis)  
spirit  
‘cold-blooded’, 115–16  
horse color, 117  
‘hot-blooded’ type, 115  
mutation, 117  
niche adaptation, 117–18  
temperament, 117  
temperament and disposition, 116  
and wellness  
‘breaking-in’ method, 128  
fatigue, 128  
non-aggressive, 127–8  
steer roping event  
piggin string, 285  
‘tripping’, 285–6  
steer tripping. See steer roping event  
steer wrestling  
description, 283  
wrestler, 284  
superficial digital flexor tendonitis (SDFT), 466  
Surpass®, 146–7  
TCA. See Thoroughbred Charities of America  
team roping, 283  
Tennessee Walking Horse (TWH)  
AAEP, soring elimination  
AQHA Executive Committee recommendations, 253–4  
HIO, 251–2  
thermography, 252–3  
soring, show horse  
description, 246  
mustard oil, 246  
non-sored, 246–7  
White Paper  
abuse culture, 249  
evaluation methods, 249–50  
soring, veterinary recommendation, 248  
Thoroughbred Charities of America (TCA), 437  
Thoroughbred Retirement Foundation (TRF), 437  
‘three Rs’ principles  
reduction, 422  
refinement, 422  
replacement, 422  
timed events  
barrel racing, 286  
roping  
steer, 285–6  
team, 283  
tie-down, 282–3  
steer wrestling  
description, 283  
wrestler, 284  
training  
abuses, 336  
cross-training, 178  
cutting horse  
‘aged event’ competition, 305  
and cow movement, 304–5  
period, 304  
gingering and whip, Arabian conformation horse, 247  
and human–equine interactions  
bridle and bit, 28–9  
‘donkey seat’ riding, 28, 29  
foals, 28  
geldings, 29  
nose rings, 28  
hunting and jumping horse  
confinement, 372  
obstacles, 372  
‘on the flat’, 371  
welfare concerns, 371–2  
methods  
ballet dancer, 334  
epaxial musculature, 334–5  
foundation, 334  
warm-up period, 335  
reining horse  
canter, 305  
movement pattern, 305–6  
repetitive, 305  
Western stock horse sports  
athletic injury, young, 307–8  
canter, 305  
and cow movement, 304–5  
cutting, 305  
exercise, young, 307  
mouthpiece and chin strap, 308–9  
NCHA, NRHA and NRCHA, 307  
pasture/grass paddock, 308  
reining pattern, 305–6  
repetitive, 306–7  
snaffle bit, 308–9  
spurs, 309  
tracking cow, 304–5  
trauma, 308
TRF. See Thoroughbred Retirement Foundation
TWH. See Tennessee Walking Horse

United States Equestrian Federation (USEF)
anti-ulcer medication, 373
competitions
and FEI, 375
jumper, 374
drug and medication program, 471
medication, 312
NSAIDs, 377
rules, medication, 470
steward, 464

United States Eventing Association (USEA), 464, 467, 468, 470

United States Hunter Jumper Association (USHJA), 471

unwanted horses
AAEP
coalition’s mission, 437
funding unavailability, 437
rescue and retirement facilities, 436
anti-slaughter legislation
American Horse Slaughter Prevention Act, 435
APHIS, 434
Horse Slaughter Prohibition Bill, 435–6
Prevention of Equine Cruelty Act, 436
slaughter, described, 433–4
transportation, USDA report, 434–5
BLM, 427
breed registration trends, 429
euthanasia
biodigestion, composting, 433
carcass disposal, 432–3
description, 430–431
gunshot and penetrating captive bolt methods, 431–2
medical criteria, 431
sodium pentobarbital use, barbiturate, 431
mortality, 429
organizations efforts
‘Greener Pastures’ logo, 437–8
recurring themes, 438
solutions, 438
TCA, 437
TRF, 437
process for meat, 427–8
retraining, rescue, adoption and retirement options, 429–30
slaughter connection
BSE, foot-and-mouth disease, 426
human consumption, 426
processing plants, 425

US equine data, 427–8, 428
USA agriculture, horses and mules
equine demographics
farm, inventory changes, 382, 383–4, 385
NAHMS, 385
USDA report, 382
uses and equine welfare components, 387
cowboy-horsemanship, 387–8
draft animal, working cattle, livestock and transportation, 386
geldings, retired, 390
laws, 390–391
NAHMS, 391
ranch horse, 388, 389
requirements, developed countries, 391–2
RHAA, 386
RSPCA, 391
work, 388–90

US Department of Agriculture (USDA)
designated qualified persons (DQPs), 252
‘farm’ definition, 382
HPA regulations, 249
slaughter horse transportation, 287

veterinarian’s role
CRI, 350–351
criteria
best condition award, 355
metabolic distress signs, 352, 354, 355
pulse rate, physical exam, 352
‘fit to continue’
metabolic and soundness status exam, 349, 350
ride card, 349
vet and rider communication, 349–50

hiring staff
AERC, 351
FEI events, 352, 353
qualifications, 351–2
treatment, 355–6

veterinary medicine, integrative
acupuncture, 176
diagnosis, 193
efficacy, 193–4
needle and electro, 192–3
beneficial effects, 174
CAM, 175–6
federal funding, 185–6
research programs, 185

chiropractic techniques
clinical effects, 191–2
controlled trials, 192
professional training, 191
vague musculoskeletal disorders, 191
chronic back pain, 190
equitation science and horsemanship, 174–5
evidence-based
  definition, 182
  process description, 182–3
  quality ranking, 183
  RCTs (see randomized controlled trials)
  scientific and, 184–5
issues, 186
licensed professionals and lay practitioners
  benefits, 197–8
  CAM, 196–7
  practitioners, 197
  research and funds, 197
  shoes reset, 195–6
  tests, 197
mental and physical stimulation, 178
nutraceuticals, botanical medicine and
  homeopathy, 195
outcome measures, 189–90
pain relief, 177–8
physical therapy and rehabilitation
  diagnostic and treatment approaches, 194
  exercise, 195
  hydrotherapy, 194–5
  ice-water baths, 194
  RCTs, 194
placebo effects
  characteristics, 186
  clinical setting/physical environment, 189
  description, 186
  human caregivers, 187–8
  human medicine, 188–9
  mode of action, 187
  time, 189
  ‘total drug effect’, 187
  veterinarian–client–patient relationship, 188
scientific method
  CAM practitioners, 181–2
  criticism, CAM research, 182
  description, 180
  stages, 181
sports, 177
surgical procedures, 178–9
therapeutic options, owners, 179
‘traditional’ and ‘non-traditional’, 176–7
translational, 179
untested CAM therapies, 179–80
vitamins
  fat-soluble
    vitamin A, 76
    vitamin D, 76
    vitamin E and K, 76
  water-soluble, 76
‘warm-blooded’ horse, 117
wellness
  age group, concerns, 126
  birth and growth
    foal (see foals)
    neonatal behavior, 127
  clinical examination protocol, 123
  conditioning, 122–3
  defined, 113–14
  disease control, 122
  dynamics, 125
  and emotional balance
    ‘body language’, 124
    ‘individual space’, 124–5
    weight, 125
  handling
    grazing horses, 120–121
    stabled horses, 120
  individuality
    behavioral characteristics, 123–4
    ‘feelings’, 124
    intelligence, 124
    ‘personality’, 123
  natural behavior, 114–15
  outdoor environmental factors, 121
  physical features
    body condition spectrum, 119
    fleshiness, 118
    grooming, 118
    musculature, 118–19
    non-physical nature, 120
    ‘poverty line’, 119
    signs, 120
    young horse less than two years, 119–20
  preventive husbandry, 115
  preventive management
    hygiene maintenance, 121
    overstocking, 121
    veterinary service, 122
  spirit
    ‘breaking-in’ method, 128
    fatigue, 128
    non-aggressive, 127–8
    suffering and stress, 128–9
Wellness and Preventative Care for Dogs, 114
Western pleasure horse, 247
Western stock horse sports welfare issues
  cutting, 303
  genetics, 316
  inhumane treatments
    AQHA, 309–10
    tail blocking, 310
Western stock horse sports welfare issues (cont’d)

medications
flunixin meglumine, 314
injection, 315
NCHA rulebook, 312–13
NRHA rulebook, 313–14
NSAIDs, 312
policy lack, benefits, 314
psychotropic, 313, 314
USEF policy, 312
reining, 303–4
shows and events
abuse, 311
offenses, 311
training (see training, Western stock horse sports)

Wild and Free Roaming Horse and Burro Protection Act, 167
wild horses, Western USA
adoption, holding and shipping
BLM shipping policies, 457
EIA virus, 457
family groups, 456–7
health management, 458
separation, 456
BLM and Forest Service, 443–4
description, 442–3
fertility control
agents, 456
darting horses impracticality, 456
porcine zona pellucida (PZP) antigen, 454–5
stallion, 454
humane treatment and management, 444
National Park Service, 444
population control
bait/water trapping, 452–3
breeding model, 449
challenges, 453–4
chemical immobilization agents and aerial net-gunning, 453
ground pursuit, 452
helicopter-assisted roping, 451
lion predation, 450
periodic roundups, BLM, 450
pre-existing injuries/physical problems, 453
standing vegetation, death, 449–50
on range
artificial water sources, 446–7
conception rates, 445
euthanasia, 449
forage availability, 445–6
genetic diversity, 448
health problems, 447
management and crisis prevention, 445
old age and physical defects, 448
physical problems, 448–9
problems, 445
starvation problems, 446
vaccinations and medical treatments, 448
ventral abdominal hernias and cryptorchidism, 449
water, 446
winter/drought feeding grounds, 447
stress levels, 444–5
unadopted animal adoption, compliance and care
BLM, 458–9
euthanasia, 460
management programs, 458
pastures spanning tens, 459–60

Work Horse Handbook, 386

young horse feeding
sucklings, 83
two-year-olds, 86–7
weanling
orthopedic disease, 83
post-weaning slump, 83–4
yearling
alfalfa hay, 85–6
DOD, 85
fortification, 86
OCD, 84
zinc, 78