

A

- Abstracts, 87th Annual Scientific Meeting–163
not presented–753
- Acceleration tolerance, $-G_z$ adaptation observed during high performance jet flight–996, E1 (Dec)
- Accelerometers, wearable, in high performance jets–102
- Accidents, aviation
causes of, in helicopter EMS–26
ethanol and drugs found in civilian pilot fatalities–470
FAA medically certified 3rd class pilots vs. medically uncertified pilots–618
missing aircraft crash sites and last radar fix–114
pilot and passenger injuries using powered parachutes–947
pilot decision making in fatal night helicopter EMS–550
rates in light sport vs. general aviation aircraft–652
- Acidosis, respiratory, during in-flight oxygen assessment–144
- Active materials, morphing compression garments for spaceflight using–84
- Acute mountain sickness
HACE prevention in rats with antiangiogenesis pharmacotherapy–1031
lipid subhyaloid maculopathy at high altitude–898
use of statins for prophylaxis–148 (Letter)
- Adaptation, social, occupational, and cultural during 12 months in Antarctica–781
- Adolescents, hypoxic challenge testing in–1004
- Aeromedical disposition
aortic root aneurysm in flight medic–487
atrial fibrillation in a Naval rotary-wing pilot–508
complication of corneal refractive surgery–426
erectile dysfunction in a military pilot–152
evaluation of F-16 candidate with incomplete paraplegia–968
ground-level decompression sickness case in F-15 pilot–908
herpes zoster with papular rash in a pilot–661
malaria prevention in U.S. Air Force aviators–429
malaria treatment in a U.S. Army aviator–78
Mycobacterium infection after tattooing–510
popliteal artery entrapment in helicopter pilot–75
pulmonary arterial hypertension in aviation trainee–834
recurrent central serous chorioretinopathy in fighter pilot–901
sinus barotrauma due to rapid repressurization–583
subdural hemorrhage in military aviator–575
supraventricular tachycardia in a fighter pilot–1051
venous thoracic outlet syndrome–748
vestibular neuritis in an F-15 pilot–150
West Nile virus with neuroinvasive disease in a pilot–976
- Aeromedical evacuation
Army air ambulance blood product program in combat zone–728
complication rates in altitude-restricted patients after military–352
injury severity and accident causes in helicopter EMS–26
predicting motion sickness in Ebola patients–71
- Aerospace Medical Association (AsMA)
87th Annual Scientific Meeting Program and Abstracts–159
bylaws and proposed changes–157, 339
Expert Working Group recommendations for pilot mental health, revised–505 (Commentary)
past presidents–332
President's page–2, 83, 159, 351, 435, 515, 593, 681, 763, 837, 911, 981
- Aerospace medicine, Geographic Information System for risk-informed decision making in–972
- Aerospace Medicine and Human Performance*, journal metrics–1
- Aerotitis media, multifrequency tympanography in pilots and pilot candidates–676
- Age, effects on gaze behavior in complex control task–646
- Aging, identifying Parkinson's disease in civilian pilots–545
- Air ambulance—*See* Aeromedical evacuation
- Air travel
fitness to fly testing with severe asthma–571
fitness to fly with congenital heart and lung disease–54, 1004
hypercapnic respiratory acidosis during in-flight oxygen assessment–144
- Aircraft maintenance workers
characterization of low back pain in–795
depression and organophosphate ester exposure in–712
- Aircraft transit isolator, predicting motion sickness in Ebola patients transported in–71
- Aircraft—*See also specific aircraft types*
explosive decompression of 4th generation fighter at ground level–963
flying after conducting excessive cabin leakage test–816
light sport, accident rates compared with general aviation aircraft–652
light sport, accidents with medically certified vs. uncertified pilots–618
powered parachutes, pilot and passenger injuries using–947
suicide and murder-suicide involving–388 (Review), E1 (Apr)
- Aircrew—*See* Commercial airline aircrew *and* Military aircrew
- Airline pilots—*See* Commercial airline pilots
- Allergic rhinoconjunctivitis, bilastine use in pilots–622
- Altitude effects
bilastine use in pilots–622
cognition effects of low-grade hypoxia–596
complications in altitude-restricted patients after military aeromedical evacuation–352
decompression sickness risk and physical activity during exposure–516
HACE prevention in rats with antiangiogenesis pharmacotherapy–1031
lipid subhyaloid maculopathy–898
oxygen breathing before and after acute normobaric hypoxia–3
respiratory muscle training and cognitive function during exercise–18
respiratory muscle training and exercise endurance–704
white matter integrity in U-2 pilots–983
- Alveolar gas equation, considerations in simulation of hypobaric hypoxia–61
- Ambulance, air—*See* Aeromedical evacuation
- Animal models
HACE prevention in rats with antiangiogenesis pharmacotherapy–1031
hypergravity effects on mouse eye–13
rabbit model of sinus barotrauma–521
rat muscle adaptations to restricted activity–443
- Antarctica, adaptation during 12-month wintering in–781
- Antibiotics, *Mycobacterium* infection after tattooing–510
- Antihistamines, bilastine use by pilots–622
- Anxiety
laypersons' on commercial spaceflights–882 (Review)
virtual reality system for treatment of fear of flying–411
- Apache AH-64 attack helicopter, assessment of prototype flight eye-wear for–800

Page numbers preceded by an "E" indicate supplemental material for individual articles that can be found online through <http://www.asma.org/journal/read-the-journal>.

Arctic, laboratory and field data from North Pole Marathon participant—493
 Arterial blood flow, velocity during prolonged body tilting—682
 Arterial gas embolism
 after explosive decompression at ground level—963
 after loss of cabin pressure at altitude—740
 Arteriography, popliteal artery entrapment in helicopter pilot—78
 Asthma, severe, hypoxic challenge testing for fitness to fly—571
 Astronauts—*See also* Cosmonauts and Spaceflight
 adaptations for long-duration missions—406
 elevated end-tidal PCO₂ during long-duration spaceflight—894
 predicting lunar and Martian endurance performance—367
 psychometric personality differences in candidate selection—933
 Atrial fibrillation, in a Naval rotary-wing pilot—508
 Attention distribution
 of pilots between chasing moving and stationary target—989
 of pilots during pursuit of dynamic target—40
 Auscultation, aortic root aneurysm in flight medic—487
 Austere environments—*See also* Extreme environments
 3D printing applications in—423
 Australia, identifying Parkinson's disease in civilian pilots in—545
 Aviation safety
 field-deployable psychomotor vigilance test for helicopter pilots—417
 pilots' attention distribution during pursuit of dynamic target—40
 suicide and murder-suicide involving aircraft—388 (Review)

B

Back pain
 low, in commercial airline pilots and maintenance technicians—795
 transverse process fractures due to centrifuge training—655
 Balance
 angular displacement perception during helicopter flight—852
 perceived roll tilt during turns in flight—454
 Ballooning, high-altitude, emergency medical considerations in space-suited patient—947
 Barodontalgia, in military divers—137
 Barotrauma
 dynamic rabbit model of sinus—521
 flying after conducting aircraft excessive cabin leakage test—816
 multifrequency tympanography in pilots and pilot candidates—676
 sinus, due to rapid repressurization—583
 transient unilateral facial nerve baroparesis in F-16 pilot—141
 Batman syndrome, -G_z adaptation observed during high performance jet flight—996
 Behavioral health
 countermeasure evaluation at HI-SEAS Mars analog—912
 impact of communication delays on International Space Station—940
 Bicuspid aortic valve disease, aortic root aneurysm in flight medic—487
 Bilastine, use by pilots—622
 Biomarkers, to predict suicidality—659 (Commentary)
 Biosensors, wearable, -G_z adaptation observed during high performance jet flight—996, E1 (Dec)
 Blood products, Army air ambulance program in combat zone—728
 Body mass index, metabolic syndrome and periodontal disease in civilian pilots—1016
 Brain perfusion
 during prolonged body tilting—682
 respiratory muscle training and cognitive function at altitude—704
 respiratory muscle training and exercise endurance at altitude—704
 Buccal tissue, near-infrared probe as hypoxia marker—498

C

Cabin altitude restriction, complications after evacuation in military personnel with—352

Cabin pressure
 flying after conducting excessive cabin leakage test—816
 pilot's recurrent neurological deficits after loss of—740
 Cancer, prostate, in pilots—565 (Review)
 Cardiopulmonary resuscitation, in-flight sudden cardiac arrest on commercial flights—862
 Cardiovascular disease
 aortic root aneurysm in flight medic—487
 atrial fibrillation in a Naval rotary-wing pilot—508
 in-flight sudden cardiac arrest on commercial airlines—862
 pulmonary arterial hypertension in aviation trainee—833
 supraventricular tachycardia in a fighter pilot—1051
 Carotid artery, intima-media thickness during 6 months of space-flight—449
 Case reports
 aortic root aneurysm in flight medic—487
 central serous chorioretinopathy in pilots—1041
 data from North Pole Marathon participant—493
 evaluation of F-16 candidate with incomplete paraplegia—968
 explosive decompression of fighter plane at ground level—963
 fractures due to centrifuge training—655
 in-flight hypercapnic respiratory acidosis—144
 laser-induced retinal injury in pilot—69
 lipid subhyaloid maculopathy at high altitude—898
 motion sickness in aeromedical evacuation of Ebola patients—71
 pilot's recurrent neurological deficits after loss of cabin pressure—740
 recurrent central serous chorioretinopathy—901
 severe stroke in commercial airplane over Sahara—825
 subdural hemorrhage in military aviator—575
 syncope during helicopter hoist rescue—821
 transient unilateral facial nerve baroparesis in F-16 pilot—141
 Cataracts, complication from corneal refractive surgery—426
 Central nervous system, oxygen toxicity and seizures in hyperbaric oxygen therapy—477 (Review)
 Central serous chorioretinopathy
 recurrent, in a fighter pilot—901
 treatment and monitoring in pilots—1041
 Centrifuge training
 G protection with pressurized sleeves and gloves—464
 perceived roll tilt during turns in—454
 transverse process fractures secondary to—655
 Cerebral autoregulation, effect of prolonged body tilting on—682
 Certified pilots, aeromedical hazard comparison with medically uncertified pilots—618
 Cervical traction, home, to reduce neck pain in pilots—1010
 Children, hypoxic challenge testing in—1004
 China, energy expenditure, resting, and motion sickness in male adults—360
 Chorioretinopathy
 central serous, treatment and monitoring in pilots—1041
 recurrent central serous, in a fighter pilot—901
 Circadian rhythm
 pilots' subjective measurement of in-flight sleep and variations in—638
 sleep disorders in female flight attendants and teachers—638
 Civilian pilots
 ethanol and drugs found in fatal accidents—470
 identifying Parkinson's disease in—545
 metabolic syndrome and periodontal disease among—1016
 occupational ocular UV exposure in—32
 sunglass filter transmission effects in—436
 Cognitive function
 bilastine effects on pilots—596
 effects of low-grade hypoxia on—596
 respiratory muscle training for exercise at altitude—18
 sustained military operations and performance—718 (Review)
 Cognitive norms, compilation of, for military aviators—764

- Cognitive style, associated with teleoperation performance—772
- Cold exposure, laboratory and field data from North Pole Marathon participant—493
- Color vision tests
for military screening—382
performance on color-coded cockpit displays—921
- Combat medical care
Army air ambulance blood products program—728
complications in altitude-restricted patients after aeromedical evacuation—352
- Commercial air travel
fitness to fly testing with severe asthma—571
fitness to fly with congenital heart and lung disease—54, 1004
hypercapnic respiratory acidosis during in-flight oxygen assessment—144
severe stroke occurring over Sahara—571
- Commercial airline aircrew, sleep disturbances in female flight attendants—638
- Commercial airline engineers, flying after conducting aircraft excessive cabin leakage test—816
- Commercial airline pilots
characterization of low back pain in—795
laser-induced retinal injury in—69
occupational ocular UV exposure in—32
sleep and fatigue in short/medium and long haul flights—811
sunglass filter transmission and solar protection in—436
- Commercial spaceflight, screening/mitigating anxiety of laypersons on—882 (Review)
- Communication, delays in, impact on behavior and performance on ISS—940
- Community periodontal index, metabolic syndrome and periodontal disease in civilian pilots—1016
- Compression garments, for spaceflight using controllable technology and active materials—84
- Congenital heart and lung disease
fitness to fly with—54, E2 (Jan)
hypoxic challenge testing in children and adolescents with—1004
- Coriolis illusion
and hypoxia in simulated flight—108
- Corneal refractive surgery
complications from, aeromedical disposition of—426
- Cosmonauts, spacecraft docking performance assessment on board Mir and ISS—534
- Countermeasure exercises
blood flow restricted vs. high-load resistance exercise—688
gravity-independent flywheel aerobic and resistance training—93
resistance, and neuromuscular adaptations in long-term bedrest model—610
respiratory muscle training for exercise at altitude—18
- Countermeasures, for neck strain due to night vision goggles in helicopter pilots—48
- Crashes, aircraft—see Accidents, aviation
- Crashworthiness, of helicopter EMS—26
- Cultural adaptation, during 12 months in Antarctica—781
- D**
- Decision making
in aerospace medicine, Geographic Information System (GIS) for—972
pilot experience in night fatal helicopter EMS accidents—550
- Decompression, explosive, of aircraft at ground level—963
- Decompression sickness
flying after conducting aircraft excessive cabin leakage test—816
ground-level case in F-15 pilot—908
inner ear, initial severity scoring and residual deficit in—735
pilot's recurrent neurological deficits after loss of cabin pressure—740
risk and physical activity during altitude exposure—516
- Defibrillation, in-flight sudden cardiac arrest on commercial airlines—862
- Dental pain, barodontalgia in military divers—137
- Depression
behavioral health countermeasure evaluation at Mars analog—912
and organophosphate ester exposure in aircraft maintenance workers—712
- Dermatology, *Mycobacterium* infection after tattooing—510
- Diabetes mellitus, metabolic syndrome prevalence in Indian military aircrew—790
- Dietary supplements, reasons for use by Air Force personnel—628
- Digital fabrication—See Three-dimensional printing
- Discomfort, local pressure application effects in helicopter seats—697
- Diving
barodontalgia in military divers—137
measuring nitrogen uptake and elimination at different pressures—1045
severity scoring in inner ear decompression sickness—735
- Domain task experience, of pilots in fatal night helicopter EMS accidents—550
- Drug abuse, in civil aviation accident pilot fatalities—470
- E**
- Ear problems, multifrequency tympanography in pilots and pilot candidates—676
- Ebola virus, predicting motion sickness during aeromedical evacuation—71
- Echography, arterial intima-media thickness during 6 months of spaceflight—449
- Electromyography, in pilots wearing night vision goggles—928
- Emergency medical services, helicopter
Army air ambulance blood product program—728
injury severity and accident causes in—26
pilot decision making in night fatal accidents—550
- Emergency medicine
considerations in space-suited patient—958
in-flight—See In-flight emergencies
- Endovascular treatment, of severe stroke in commercial airplane over Sahara—825
- Endurance, respiratory muscle training and exercise at altitude—704
- Energy beverages, consumption among Naval aviation candidates—557
- Energy expenditure, resting, and motion sickness in Chinese male adults—360
- Engine oil, depression in aircraft maintenance workers exposed to—712
- Engineers, flying after conducting aircraft excessive cabin leakage test—816
- Environmental control system, of aircraft, explosive decompression at ground level—963
- Epilepsy, post-traumatic, after subdural hemorrhage in military aviator—575
- Equivalent air altitude, considerations in simulation of hypobaric hypoxia—61
- Erectile dysfunction, in a military pilot—152
- Erratum—81, 1055
- Ethanol abuse, in civil aviation accident pilot fatalities—470
- Ethnicity, metabolic syndrome prevalence in military aircrew in India—790
- Eustachian tube, multifrequency tympanography in pilots and pilot candidates—676
- Excessive cabin leakage test, flying after conducting—816
- Exercise
respiratory muscle training and cognitive function at altitude—18
respiratory muscle training and endurance at altitude—704

Exercise countermeasures
 blood flow restricted vs. high-load resistance exercise–688
 gravity-independent flywheel aerobic and resistance training–93
 resistance, and neuromuscular adaptations in long-term bedrest model–610
 respiratory muscle training for exercise at altitude–18
 Exercise systems, gravity-independent flywheel aerobic and resistance training–93
 Extravehicular activity
 morphing compression garments for–84
 predicting endurance performance on Moon and Mars missions–367
 Extreme environments
 3D printing applications in–423
 adaptation during 12-month wintering in Antarctica–781
 data from North Pole Marathon participant–493
 lessons from NEEMO on adaptation for–406
 Eye movements, pilot attention distribution when chasing moving and stationary target–989

F

F-15 pilots—*see also* Military pilots
 ground-level decompression sickness case in–908
 vestibular neuritis in–150
 F-15C pilots, home cervical traction to reduce neck pain in–1010
 F-16 pilots
 attention distribution between chasing moving and stationary target–989
 medical certification of candidate with incomplete paraplegia–968
 transient facial nerve baroparesis in–141
 F-18 pilots, $-G_z$ adaptation observed with wearable biosensors–996
 Facial nerve palsy, transient, in F-16 pilot–141
 Fatal accidents, aviation
 ethanol and drugs found in civilian pilot–470
 pilot experience in night helicopter EMS–550
 Fatigue
 differences in short/medium and long haul commercial flights–811
 pilots' subjective measurement of in-flight sleep–869
 psychomotor vigilance test to monitor helicopter pilots–417
 resistance exercise effects in long-term bedrest model–610
 Fear of flying, treatment using virtual reality system–411, 830
 Federal Aviation Administration (FAA), comparison of medically certified vs. uncertified pilots–618
 Femoral artery, intima-media thickness during 6 months of space-flight–449
 Fighter pilots—*See* Military pilots
 Fitness to fly testing
 for patients with congenital heart and lung disease–54, 1004, E2 (Jan)
 for patients with severe asthma–571
 Flight attendants, female, sleep disturbance in teachers and–638
 Flight experience, physiological indices of pilots' abilities–375
 Flight physical, auscultation of aortic root aneurysm in flight medic–487
 Flight simulation
 angular displacement perception during–852
 perceived roll tilt during turns in–454
 rotor wing, spatial disorientation training for–890
 Flywheel device, gravity-independent-aerobic and resistance training on–93
 Forensics
 ethanol and drugs found in civilian pilot fatalities–470
 missing aircraft crash sites and last radar fix–114
 Forkhead box-containing protein O1 (FOXO1), in biochemical adaptations of rat muscle to restricted activity–443
 Fractures, transverse process, secondary to centrifuge training–655

G

G forces, wearable accelerometers in high performance jets–102
 G-suit, G protection with pressurized sleeves and gloves–464

Gastrointestinal disease, in active Air Force pilots–122
 Gaze behavior, age- and gravity-related changes in–646
 Gender differences
 discrimination against the Mercury thirteen–1054
 in tests of navigational working memory in military pilots–528
 Gene expression biomarkers, to predict suicidality–659 (Commentary)
 Geographic Information System (GIS), for risk-informed decision making in aerospace medicine–972
 Ghrelin levels, resting energy expenditure and motion sickness–360
 Gianaros Motion Sickness Questionnaire, psychometric properties of Greek version–954
 Gondola centrifuge
 angular displacement perception during–852
 perceived roll tilt during turns in–454
 Gravitational cues, flipping a switch down without–84

H

Head injury, subdural hemorrhage in military aviator–575
 Head-down tilt, effect on brain perfusion during prolonged–682
 Head-mounted displays, frequency of latency and simulator sickness–604
 Head-up displays, pilots' attention distribution during pursuit of dynamic target–40
 Head-up tilt, effect on brain perfusion during prolonged–682
 Heart disease
 fitness to fly with congenital–54, E2 (Jan)
 hypoxic challenge testing in children and adolescents with congenital–1004
 in-flight sudden cardiac arrest on commercial flight–862
 Heart rate variability, resting energy expenditure and motion sickness–360
 Helicopter emergency medical services
 fatal fall due to syncope during single sling hoist rescue–821
 injury severity and accident cause in–26
 pilot decision making in fatal night accidents–550
 Helicopter pilots
 assessment of prototype Apache flight eyewear–800
 decision making in fatal night EMS accidents–550
 field-deployable psychomotor vigilance test for–417
 night vision goggle effects on neck muscle activation–48, E1 (Jan)
 popliteal artery entrapment in–75
 venous thoracic outlet syndrome in–748
 Helicopters
 angular displacement perception during flight–852
 local pressure application effects on seat discomfort in–697
 Helmet display unit, assessment of prototype Apache flight eyewear–800
 Herpes zoster, with papular rash in a pilot–661
 HI-SEAS Mars analog, behavioral health countermeasure evaluation at–912
 High altitude cerebral edema (HACE), prevention in rats with antiangiogenesis pharmacotherapy–1031
 History
 the Mercury thirteen–1054
 This Month in Aerospace Medicine History–82, 156, 433, 434, 513, 586, 664, 752, 836, 910, 980, 1056
 Hoist, helicopter, fatal fall due to syncope during single sling rescue–821
 Human factors, pilot decision making in fatal night helicopter EMS accidents–550
 Human performance
 adaptations for long-duration space missions–406
 characteristics associated with teleoperation use–772
 cognition effects of low-grade hypoxia–596
 cognitive, in sustained military operations–718
 field-deployable psychomotor vigilance test for helicopter pilots–417

gaze behavior, effects of age and gravity on—646
 on ISS, impact of communication delays—940
 pilot attention distribution between chasing moving and stationary target—989
 in spacecraft docking—assessment on Mir and ISS—534, E1 (June)
 Hydraulic fluid, depression in aircraft maintenance workers exposed to—712
 Hyperbaric oxygen therapy
 chamber design and human factors in—397 (Review)
 CNS oxygen toxicity and seizures in—477 (Review)
 inner ear decompression sickness in scuba divers—735
 Hypercapnia
 respiratory acidosis during in-flight oxygen assessment—144
 Hypergravity, effects on mouse eye—13
 Hypobaric chamber simulation, dynamic rabbit model of sinus barotrauma—521
 Hypobaric exposure, white-matter integrity in high-altitude pilots—983
 Hypobaric hypoxia, alveolar gas equation and simulation of—61
 Hypoxemia, in-flight risk in patients with congenital heart and lung disease—54
 Hypoxia
 cognition effects of low-grade—596
 considerations in simulation of hypobaric—61
 Coriolis illusion in simulated flight and—108
 hypergravity effects on mouse eye—13
 near-infrared buccal tissue probe as marker for—498
 normobaric, effects on working memory—3
 Hypoxic challenge testing
 in children/adolescents with congenital heart and lung disease—1004
 for fitness to fly in patients with severe asthma—571

I

Imaging, lumbar puncture technique using portable radiography—745
 In-flight biosensors, wearable, $-G_z$ adaptation during high performance jet flight—996, E1 (Dec)
 In-flight emergencies
 prognostic factors for outcomes of in-flight sudden cardiac arrest—862
 severe stroke on commercial flight over Sahara—825
 In-flight physiology, wearable accelerometers for high performance jets—102
 India, metabolic syndrome prevalence in military aircrew in—790
 Infectious disease
 motion sickness in Ebola patients during aeromedical evacuation—71
 Mycobacterium infection after tattooing—510
 West Nile virus with neuroinvasive disease in a pilot—976
 Injuries
 blue laser-induced retinal—in commercial pilot—69
 pilot and passenger—using powered parachutes—947
 severity of, in helicopter EMS accidents—26
 subdural hemorrhage in military aviator—575
 Interference tests, of navigational working memory in military pilots—528
 International Space Station (ISS)
 artery intima-media thickness during 6 months on—449
 communication delays impact behavior and performance on—940
 elevated end-tidal PCO_2 during long-duration spaceflight—894
 remote robotic arm, characteristics associated with performance using—772
 spacecraft docking performance assessment in PILOT experiment on—534, E1 (June)
 technique for performing lumbar puncture on—745
 Intima-media thickness, arterial, during 6 months of spaceflight—449
 Intracranial pressure, syndrome with visual impairment
 distortion product otoacoustic emissions in monitoring for—844
 elevated end-tidal PCO_2 during long-duration spaceflight—894
 lumbar puncture technique in microgravity—745

Intraocular pressure, hypergravity effects in mice—13
 Isolated environments
 adaptation during 12 months in Antarctica—781
 behavioral health countermeasure evaluation at Mars analog—912
 Isolation—*See* Aircraft transit isolator
 Israel, ecology of medical care among aviators in—1036

J

Jet aircraft, wearable accelerometers for—102
 Jet lag, sleep disturbances in female flight attendants and teachers—638

L

Lasers, retinal injury in commercial pilot due to handheld—69
 Latency, frequency of, and simulator sickness with head-mounted display—604
 Light sport aircraft
 accident rate compared with general aviation aircraft—652
 aeromedical hazard comparison of medically certified vs. uncertified pilots—618
 Limb oxygenation, local pressure application effects in helicopter seats—697
 Long-duration space missions—*See also* Planetary exploration missions
 adaptation during 12 months in isolated confined environment—781
 elevated end-tidal PCO_2 during—894
 impact of communication delays on behavior and performance—940
 Long-haul flights, sleep and fatigue differences vs. short/medium flights—811
 Long-term bedrest model, effect of resistance exercise on neuromuscular adaptations—610
 Loss of consciousness, during single sling helicopter hoist rescue—821
 Low back pain—*See also* Back pain
 in commercial airline pilots and maintenance technicians—795
 Lumbar puncture, technique for performing in microgravity—745
 Lunar missions, predicting intra- and site-to-site task performance on—367
 Lung disease, congenital
 fitness to fly with—54, E2 (Jan)
 hypoxic challenge testing in children and adolescents with—1004

M

Maculopathy, lipid subhyaloid, at high altitude—898
 Maintenance workers, aircraft
 characterization of low back pain in—795
 depression and organophosphate ester exposure in—712
 Major depressive disorder, in aircraft maintenance workers exposed to organophosphate esters—712
 Malaria
 aeromedical disposition in U.S. Army aviator—78
 prevention in U.S. Air Force aviators—429
 Mars missions—*See also* Planetary space exploration
 behavioral health countermeasure evaluation—912
 evaluation of 3D printed surgical instruments for—806
 predicting endurance performance on—367
 Medevac—*See* Aeromedical evacuation
 Medical certification, of F-16 candidate with incomplete paraplegia—968
 Medical resources, 3D printing applications in austere environments—423
 Medically certified third-class pilots, aeromedical hazard comparison with medically uncertified pilots—618
 Memory, working—*See* Working memory
 Mental health
 causing erectile dysfunction in a military pilot—152
 occupational exposures and depression in aircraft maintenance workers—712

of pilots, revised AsMA recommendations for—505 (Commentary)
 suicide and murder-suicide involving aircraft—388 (Review)

Mental workload, attention distribution between chasing moving and stationary target—989

Mercury space missions, the Mercury thirteen—1054

Metabolic syndrome
 in military aircrew using candidate definition—790
 and periodontal disease in civilian pilots—1016

Metamorphosis, for central serous chorioretinopathy in pilots—1041

Mice—*See* Animal models

Microgravity—*See also* Simulated spaceflight
 effects on carotid and femoral artery during extended spaceflight—449
 effects on gaze behavior in complex control task—646
 flipping a switch down without gravitational cues—84
 technique for performing lumbar puncture in—745

Military aircrew—*See also* Military pilots
 comparison of color vision test for screening—382
 prevalence of metabolic syndrome in Indian—790
 sinus barotrauma due to rapid repressurization—583

Military combat personnel, with altitude restriction, complications after aeromedical evacuation—352

Military divers, barodontalgia in—137

Military operations, sustained, cognitive performance in—718 (Review)

Military pilots
 attention distribution between chasing moving and stationary target—989
 cognitive and personality norms for—764
 F-15 pilots—150, 908
 F-15C pilots—1010
 F-16 pilots—141, 968, 989
 F-18 pilots—996
 -G_z adaptation observed with wearable biosensors in fighter pilots—996, E1 (Dec)
 gastrointestinal disease in—122
 ground-level decompression sickness case in F-15 pilot—908
 home cervical traction to reduce neck pain in fighter pilots—1010
 local pressure application effect on seat discomfort—697
 medical certification of F-16 candidate with incomplete paraplegia—968
 recurrent central serous chorioretinopathy in fighter pilots—901
 supraventricular tachycardia in a fighter pilot—1051
 tests of navigational working memory in—528
 transient facial nerve baroparesis in fighter pilots—140
 U-2 pilots—983
 vestibular neuritis in fighter pilots—150
 white-matter integrity in high-altitude—983

Mir space station, spacecraft docking performance assessment—534, E1 (June)

Missing aircraft, crash sites and last radar fix—114

Motion sickness
 biodynamic hypothesis for—65
 Greek version of Gianaros Motion Sickness Questionnaire—954
 prediction of, in aeromedical evacuation of Ebola patients—71
 and resting energy expenditure in Chinese male adults—360
 in space, subjective vertical conflict theory and—128

Multivitamins, use by Air Force personnel—628

Murder-suicide, involving aircraft—388 (Review), E1 (Apr)

Muscle function
 adaptations after long-term bedrest with or without resistance exercise—610
 biochemical adaptations of rat muscle to restricted activity—443
 neck muscle strain in pilots wearing night vision goggles—928

Musculoskeletal disorders
 low back pain in commercial airline pilots and maintenance technicians—795
 transverse process fractures due to centrifuge training—655

Mycobacterium infection, after tattooing—510

N

National Aeronautics and Space Administration (NASA), lessons from Extreme Environment Missions Operation (NEEMO)—406

Nausea, biodynamic hypothesis for motion sickness—65

Navigation, tests of working memory in military pilots—528

Near-infrared spectroscopy, in buccal tissue as marker for hypoxia—498

Neck pain, in fighter pilots, home cervical traction to reduce—1010

Neck strain
 in Air Force pilots wearing night vision goggles—928
 effects of night vision goggles in helicopter pilots—48, E1 (Jan)

NEEMO, lessons on adaptation of long-duration missions from—406

Neuroinvasive disease, West Nile virus in a pilot—976

Neurological assessment, white-matter integrity in high-altitude pilots—983

Neurological impairment
 identifying Parkinson's disease in pilots—545
 recurrent, after loss of cabin pressure at altitude—740
 transient facial nerve baroparesis in F-16 pilot—14

Neuromuscular adaptations, effect of resistance exercise in long-term bedrest model—610

Night vision goggles
 effects on neck muscle activation—48, E1 (Jan)
 neck muscle strain in Air Force pilots wearing—928

Nitrogen turnover, measuring in humans at different ambient pressures—1045

Normobaric hypoxia
 differences in, for simulation of hypobaric hypoxia—61
 effects of oxygen breathing before and after—3
 effects on working memory—3

Norms, cognitive and personality, for military aviators—764

North Pole Marathon, laboratory and field data from participant in—493

O

Occupational adaptation, during 12 months in Antarctica—781

Occupational exposures
 and depression in aircraft maintenance workers—712
 to ocular UV in civilian aircrew—32

Occupational health
 dietary supplement use by Air Force personnel—628
 low back pain in commercial airline pilots and maintenance technicians—795
 sleep disturbance in female flight attendants vs. teachers—638
 transverse process fractures during centrifuge training—655

Occupational norms
 cognitive and personality, for military aviators—764

Oculomotor activity, hypoxia and Coriolis illusion in pilots—108

Oncology, prostate cancer in pilots—565 (Review)

Ophthalmology
 blue laser-induced retinal injury—69
 central serous chorioretinopathy—1041
 color vision and performance on color-coded cockpit displays—921
 complication of corneal refractive surgery—426
 hypergravity effects on mouse eye—13
 lipid subhyaloid maculopathy at high altitude—898
 recurrent central serous chorioretinopathy—901

Organophosphate esters, depression in aircraft maintenance workers exposed to—712

Otolaryngology
 multifrequency tympanography in pilots and pilot candidates—676
 vestibular neuritis in an F-15 pilot—150

Oxidative capacity, biochemical adaptations of rat muscle to restricted activity—443

Oxygen assessment, in-flight, hypercapnic respiratory acidosis—144

Oxygen breathing, effects before and after normobaric hypoxia—3

Oxygen consumption, altitude decompression sickness risk and physical activity during exposure—516

Oxygen toxicity, CNS, and seizures in hyperbaric oxygen therapy-477 (Review)
 Oxygen uptake (VO_2 max), predicting lunar and Martian endurance performance-367

P

Paced Auditory Serial Addition Test-3
 Parachutes
 high-altitude, emergency medical considerations in space-suited patient-947
 powered, pilot and passenger injuries using-947
 Paraplegia, aeromedical evaluation of F-16 candidate with incomplete-968
 Parkinson's disease, identifying pilots with-545
 Passengers, aircraft
 endovascular treatment for stroke on commercial flight over Sahara-825
 fitness to fly with congenital heart and lung disease-54
 hypercapnic respiratory acidosis during in-flight oxygen assessment-144
 in-flight sudden cardiac arrest on commercial flight-862
 Perception, flipping a switch down without gravitational cues-838
 Performance—*See* Human performance
 Performance-enhancing supplements, use by Air Force personnel-628
 Periodontal disease, and metabolic syndrome in civilian pilots-1016
 Peroxisome proliferator-activated receptor γ coactivator 1 γ (PGC-1 γ), adaptations of rat muscle to restricted activity-443
 Personality norms, compilation of, for military aviators-764
 Personality traits
 associated with teleoperation performance-772
 psychometric differences in candidates for astronaut selection-933
 Phobias, virtual reality system for treatment of fear of flying-411, 830
 Photodynamic therapy, for central serous chorioretinopathy in pilots-1041
 Physiological reactions, as indices of pilots' abilities-375
 PILOT experiment, docking performance assessment on Mir and ISS-534, E1 (June)
 Pilots—*See also* Aircrew, Civilian pilots, Commercial airline pilots, Helicopter pilots, and Military pilots
 aeromedical hazard comparison of medically certified vs. uncertified-618
 attention distribution during pursuit of dynamic target-40
 bilastine use by-622
 ecology of medical care among Israeli aviators-1036
 ethanol and drugs found in civilian pilot fatalities-470
 gastrointestinal disease in-122
 hypoxia and Coriolis illusion in pilots during-108
 identifying Parkinson's disease in-545
 mental health of, revised AsMA recommendations-505 (Commentary)
 metabolic syndrome and periodontal disease among civilian-1016
 multifrequency tympanography in-676
 occupational ocular UV exposure in civilian-32
 physiological indices of abilities-375
 prostate cancer in-565 (Review)
 sport, accident rates in light sport aircraft-652
 subjective measurements of in-flight sleep and circadian variation-869
 use of gene expression biomarkers to predict suicidality-659 (Commentary)
 Planetary exploration missions—*See also* Mars missions
 lessons from space analog on adaptation for-406
 predicting endurance performance on-367
 Popliteal artery entrapment, in helicopter pilot-75
 Portable radiography, for performing in-flight lumbar puncture-745
 Posture
 brain perfusion during prolonged body tilting-682
 and helmet load influences on neck muscle activation-48, E1 (Jan)

Powered parachutes, pilot and passenger injuries-947
 Pressurization, flying after aircraft excessive cabin leakage test-816
 Pressurized sleeves and gloves, G protection when added to G-suit-464
 Prostate cancer, in pilots-565 (Review)
 Protein supplements, use by Air Force personnel-628
 Psychiatry, pilot mental health, revised AsMA recommendations-505
 Psychological assessment
 behavioral health countermeasure evaluation at Mars analog-912
 cognitive and personality norms for military aviators-764
 of layperson anxiety on commercial spaceflights-882 (Review)
 Psychomotor vigilance test, to monitor helicopter pilot performance-417
 Psychosocial issues, adaptation during 12 months in isolated confined environment-781
 Pulmonary arterial hypertension, with shortness of breath in aviation trainee-833
 Pulmonary function test, for shortness of breath in aviation trainee-833

Q

Questionnaires, Greek version of Gianaros Motion Sickness Questionnaire-954

R

Rabbits—*See* Animal models
 Radar forensics, missing aircraft crash sites and last radar fix-114
 Radiography, portable, technique for performing lumbar puncture on-745
 Rapidly growing nontuberculous mycobacteria (RGM), infection after tattooing-510
 Rats—*See* Animal models
 Reaction time, in sustained military operations-718 (Review)
 Remote robotic arms, characteristics associated with performance using-772
 Repressurization, sinus barotrauma due to rapid-583
 Resistance exercise
 effect on neuromuscular adaptations in long-term bedrest model-610
 high load, vs. blood flow restricted exercise during unloading-610
 Respiratory disease
 bilastine use in pilots-622
 elevated end-tidal PCO_2 during long-duration spaceflight-894
 fitness to fly testing with severe asthma-571
 hypercapnic acidosis during in-flight oxygen assessment-144
 Respiratory muscle training, at altitude
 and cognitive function with exercise-18
 and exercise endurance with exercise-704
 Restricted activity, biochemical adaptations of rat muscle to-443
 Resuscitation, Army air ambulance blood product program-728
 Retina
 blue laser-induced injury in commercial pilot-69
 central serous chorioretinopathy-901, 1041
 hypergravity effects in mice-13
 lipid subhyaloid maculopathy at high altitude-898
 Robotic arms, remote operation of, characteristics associated with performance using-772
 Roll tilt, turns in aircraft and gondola centrifuge-454
 Rotary wing aircraft—*See* Helicopters
 Rotor wing flight simulator, spatial disorientation training in-890
 Running, laboratory and field data from North Pole Marathon participant-493

S

Saccadic activity
 hypoxia and Coriolis illusion in pilots-108
 during pursuit of dynamic target-40
 Safety, aviation
 accident rates of light sport vs. general aviation aircraft-652

- aeromedical hazard comparison of medically certified vs. uncertified pilots–618
- field-deployable psychomotor vigilance test for helicopter pilots–417
- identifying Parkinson's disease in civilian pilots–545
- pilots' attention distribution during pursuit of dynamic target–40
- suicide and murder-suicide involving aircraft–388 (Review)
- Science & Technology Watch
- 3D printing applications for space missions–580
- applications of 3D printing in austere environments–423
- development of GIS for risk-informed decision making–972
- virtual reality system to treat fear of flying–830
- Scuba diving, severity scoring in inner ear decompression sickness–735
- Search and rescue, missing aircraft crash sites and last radar fix–114
- Seasickness, resting energy expenditure and motion sickness–360
- Seat-related symptoms, local pressure application effects in helicopter pilots–697
- Seizures, CNS oxygen toxicity in hyperbaric oxygen therapy–477 (Review)
- Shape memory alloys, morphing compression garments for spaceflight using–84
- Sildenafil (Viagra), military medical standards on–152
- Simulated flight
- hypoxia and Coriolis illusion in pilots during–108
- saccade duration during pursuit of dynamic target–40
- vestibular stimulus and perceived roll tilt during turns–454
- Simulated spaceflight—*See also* Spaceflight
- adaptation during 12 months in isolated confined environment–781
- adaptations for long-duration exploration missions–406
- behavioral health countermeasure evaluation–912
- blood flow restricted exercise vs. resistance exercise in–688
- effects of long-term bed rest with or without resistance exercise–610
- evaluation of 3D printed surgical instruments for Mars missions–806
- gravity-independent flywheel aerobic and resistance training–93
- Simulator sickness, frequency of latency and head-mounted display–604
- Sinus barotrauma
- due to rapid repressurization–583
- dynamic rabbit model of–521
- flying after conducting aircraft excessive cabin leakage test–816
- Situational awareness
- during pursuit of dynamic target–40
- pilot attention distribution between chasing moving and stationary target–989
- Sky diving, emergency medical considerations in space-suited patient–947
- Sleep
- differences in short/medium and long haul commercial flights–811
- disturbances of, in female flight attendants and teachers–638
- in-flight, subjective measurements of circadian variation and–869
- Social adaptation, during 12 months in Antarctica–781
- Solar protection, sunglass filter transmission in civilian pilots–436
- Soyuz spacecraft, docking performance assessment on board Mir and ISS–534, E1 (June)
- Space motion sickness, subjective vertical conflict theory and–128
- Space suits
- emergency medical considerations in patient wearing–947
- morphing compression garments using active materials–84
- Spaceflight—*See also* Simulated spaceflight
- active morphing compression garments for–84
- applications of 3D printing for space missions–580
- elevated end-tidal PCO₂ during long-duration–894
- flipping a switch down without gravitational cues–838
- gravity-independent flywheel aerobic and resistance training–93
- noninvasive intracranial pressure monitoring during–844
- predicting ambulation performance on Moon and Mars–367
- screening/mitigation of layperson anxiety on commercial–882 (Review)
- spacecraft docking performance assessment on Mir and ISS–534, E1 (June)
- subjective vertical conflict theory and motion sickness–128
- technique for performing lumbar puncture during–745
- Spatial cognitive ability, associated with teleoperation performance–772
- Spatial disorientation
- angular displacement perception during helicopter flight–852
- perceived roll tilt during turns in flight–454
- subjective vertical conflict theory and space motion sickness–128
- training in rotary-wing flight simulator–890
- Spectacles, assessment of prototype Apache flight eyewear–800
- Sport pilots
- accident rates in light sport aircraft–652
- pilot and passenger injuries using powered parachutes–947
- Statins, for prophylaxis against acute mountain sickness–148 (Letter)
- Stress
- behavioral health countermeasure evaluation at Mars analog–912
- pilot mental health, revised AsMA recommendations for–505 (Commentary)
- Stress management training, with virtual reality in the military–1021 (Review)
- Stroke, endovascular treatment in commercial flight over Sahara–825
- Subjective vertical
- conflict theory, space motion sickness and–128
- flipping a switch down without gravitational cues–84
- Substance abuse
- in civil aviation accident pilot fatalities–470
- suicide and murder-suicide involving aircraft–388 (Review)
- Suicide
- and murder-suicide involving aircraft–388 (Review), E1 (Apr)
- by pilots, use of gene expression biomarkers to predict–659 (Commentary)
- Sunglasses
- filter transmission and solar protection in civilian pilots–436
- occupational ocular UV exposure in civilian pilots–32
- Supraventricular tachycardia, in a fighter pilot–1051
- Surgical instruments, 3D printing of, for simulated Mars mission–806
- Survival
- in-flight sudden cardiac arrest on commercial flights–862
- severe stroke on commercial flight over Sahara–825
- Sustained military operations, and cognitive performance–718 (Review)
- Syncope, during single sling helicopter hoist rescue–821
- Syringomyelitis, evaluation of F-16 candidate with incomplete paraplegia–968

T

- Task demands, physiological indices of pilots' abilities–375
- Tattooing, *Mycobacterium* infection after–510
- Technical Notes
- lumbar puncture technique in microgravity–745
- measuring uptake and elimination of nitrogen at different pressures–1045
- near-infrared buccal tissue probe as marker for hypoxia–498
- psychomotor vigilance test for helicopter pilot performance–417
- Teleoperation, characteristics with performance of–772
- Temperament Structure Scales, psychometric personality differences in astronaut selection–933
- Three-dimensional (3D) printing
- applications for space missions–580
- applications in austere environments–423
- of surgical instruments for simulated Mars mission–806
- Tilting, effect on brain perfusion during prolonged body–682
- Tissue inhibitor of metalloproteinase-1 (TIMP-1), metabolic syndrome and periodontal disease in civilian pilots–1016

Toxicology
 depression and organophosphate ester exposure in aircraft maintenance workers—712
 ethanol and drugs found in civil aviation accident pilot fatalities—470
 Transfusions, Army air ambulance blood product program—728
 Transport—*See* Aeromedical evacuation
 Transverse process fractures, in healthy aviator during centrifuge training—655
 Traumatic brain injury, subdural hemorrhage in military aviator—575
 Tympanography, multifrequency, in pilots and pilot candidates—676

U

U-2 pilots, white matter integrity in—983
 U.S. Air Force—*See also* Military pilots
 gastrointestinal disease in—122
 malaria prevention in aviators—429
 neck muscle strain in pilots wearing night vision goggles—928
 reasons for use of dietary supplements by—628
 white matter integrity in U-2 pilots—983
 U.S. Army—*See also* Military pilots
 air ambulance blood product program in combat zone—728
 comparison of color vision tests for screening—382
 malaria treatment in an aviator—78
 U.S. Navy—*See also* Military pilots
 energy beverage consumption among aviation candidates—557
 Ultralight aircraft, pilot and passenger injuries using powered parachutes—947
 Ultraviolet (UV) exposure
 in civilian aircrew—32
 sunglasses in solar protection for civilian pilots—436
 Uncertified pilots, aeromedical hazard comparison of medically certified vs.—618
 Underwater equipment, flipping a switch down without gravitational cues—84
 Unilateral lower limb suspension, blood flow restricted exercise vs. resistance exercise in—688
 Unloading, blood flow restricted exercise vs. resistance exercise during—688
 Urticaria, bilastine effects on pilots—596

V

Vardenafil (Levitra), military medical standards on—152
 Varicella zoster, with papular rash in a pilot—661
 Vascular disorders, popliteal artery entrapment in helicopter pilot—75
 Venous thoracic outlet syndrome, in helicopter pilot with shoulder pain—748

Vertical, perception of, flipping a switch down without gravitational cues—84
 Vertigo, vestibular neuritis in an F-15 pilot—150
 Vestibular neuritis, in an F-15 pilot—150
 Vestibular psychophysics
 angular displacement perception during helicopter flight—852
 perceived roll tilt during turns in flight—454
 Vigilance, in sustained military operations—718 (Review)
 Viral infections
 herpes zoster with papular rash in a pilot—661
 West Nile virus with neuroinvasive disease in a pilot—976
 Virtual reality
 in stress management training in the military—1021 (Review)
 in treatment of fear of flying—411, 830
 Vision changes, central serous chorioretinopathy in pilots—901, 1041
 Vision correction
 assessment of prototype Apache flight eyewear—800
 complication of corneal refractive surgery—426
 Visual impairment and intracranial pressure syndrome
 distortion product otoacoustic emissions in monitoring for—844
 elevated end-tidal PCO₂ during long-duration spaceflight—894
 lumbar puncture technique in microgravity—745
 Visual scan patterns, during pursuit of dynamic target—40
 Voluntary hyperventilatory training, for exercise at altitude—18

W

Waivers—*See* Aeromedical disposition
 Wearable biosensors, -G_z adaptation observed during high performance jet flight—996, E1 (Dec)
 Wearable technology
 accelerometers in high performance jets—102
 morphing compression garments with active materials—84
 West Nile virus, neuroinvasive disease in a pilot—976
 White matter integrity, in high-altitude pilots—983
 Women, discrimination against the Mercury thirteen—1054
 Work schedules, sleep disturbances in female flight attendants and teachers—638
 Working memory
 effects of normobaric hypoxia on—3
 navigational, test of in military pilots—528
 respiratory muscle training for exercise at altitude—18
 in sustained military operations—718

Y

You're the Fight Surgeon—75, 78, 150, 153, 426, 429, 508, 510, 583, 661, 748, 833, 906, 976, 1051