ASTM Volume 13.02, June 2024

F2942-19 Standard Guide for in vitro Axial, Bending, and Torsional Durability Testing of Vascular Stents

F2820-12(2021)e1 Standard Specification for Polyetherketoneketone (PEKK) Polymers for Surgical Implant Applications

F2582-20 Standard Test Method for Dynamic Impingement Between Femoral and Acetabular Hip Components

F3208-20 Standard Guide for Selecting Test Soils for Validation of Cleaning Methods for Reusable Medical Devices

F3333-20 Standard Specification for Chopped Carbon Fiber Reinforced (CFR) Polyetheretherketone (PEEK) Polymers for Surgical Implant Applications

F2978-20 Standards Guide to Optimize Scan Sequences for Clinical Diagnostic Evaluation of Metal-on-Metal Hip Arthroplasty Devices using Magnetic Resonance Imaging

F2996-20 Standard Practice for Finite Element Analysis (FEA) of Non-Modular Metallic Orthopaedic Hip Femoral Stems

F3143-20 Standard Test Method for Determination of Frictional Torque and Friction Factor for Hip Replacement Bearings under Standard Conditions Using a Reciprocal Friction Simulator

F3446-20 Standard Test Method for Determination of Frictional Torque and Friction Factor for Hip Implants Using an Anatomical Motion Hip Simulator

F3487-20 Standard Guide for Assessing the Service Life of a Brush Part Intended to Clean a Medical Device

F2209-20 Standard Guide for Training of Land Search Team Member

F3090-20 Standard Test Method for Fatigue Testing of Acetabular Devices for Total Hip

Replacement

F3357-19 Standard Guide for Designing Reusable Medical Devices for Cleanability

F3354-19 Standard Guide for Evaluating Extracellular Matrix Decellularization Processes

F3334-19 Standard Practice for Finite Element Analysis (FEA) of Metallic Orthopaedic Total Knee Tibial Components

F3321-19 Standard Guide for Methods of Extraction of Test Soils for the Validation of Cleaning Methods for Reusable Medical Devices

F2739-19 Standard Guide for Quantifying Cell Viability and Related Attributes within Biomaterial Scaffolds

F3209-16 Standard Guide for Autologous Platelet-Rich Plasma for Use in Tissue Engineering and Cell Therapy

F3044-20 Standard Test Method for Evaluating the Potential for Galvanic Corrosion for Medical Implants

F2979-20 Standard Guide for Characterization of Wear from the Articulating Surfaces in Retrieved Metal-on-Metal and other Hard-on-Hard Hip Prostheses

F3274-21 Standard Guide for Testing and Characterization of Alginate Foam Scaffolds Used in Tissue-Engineered Medical Products (TEMPs)

F2565-21 Standard Guide for Extensively Irradiation-Crosslinked Ultra-High Molecular Weight Polyethylene Fabricated Forms for Surgical Implant Applications

F2848-21 Standard Specification for Medical-Grade Ultra-High-Molecular-Weight Polyethylene Yarns

F2997-21 Standard Practice for Quantification of Calcium Deposits in Osteogenic Culture of Progenitor Cells Using Fluorescent Image Analysis

F3087-15 Standard Specification for Acrylic Molding Resins for Medical Implant Applications

F2791-15 Standard Guide for Assessment of Surface Texture of Non-Porous Biomaterials in Two Dimensions

F3161-16 Standard Test Method for Finite Element Analysis (FEA) of Metallic Orthopaedic Total Knee Femoral Components under Closing Conditions

F3438-21 Standard Guide for Detection and Quantification of Cleaning Markers (Analytes) for the Validation of Cleaning Methods for Reusable Medical Devices

F2751-16 Standard Guide for Training of a Land Search and Rescue Team Member

F2665-21 Standard Specification for Total Ankle Replacement Prosthesis

F2724-21 Standard Test Method for Evaluating Mobile Bearing Knee Dislocation

F3160-21 Standard Guide for Metallurgical Characterization of Absorbable Metallic Materials for Medical Implants

F2625-10(2016) Standard Test Method for Measurement of Enthalpy of Fusion, Percent Crystallinity, and Melting Point of Ultra-High-Molecular Weight Polyethylene by Means of Differential Scanning Calorimetry

F2722-21 Standard Practice for Evaluating Mobile Bearing Knee Tibial Baseplate Rotational Stops

F2723-21 Standard Test Method for Evaluating Mobile Bearing Knee Tibial Baseplate/Bearing Resistance to Dynamic Disassociation

F3098-16 Standard Guide for Training of Non-Wilderness Land Search Team Member

F3510-21 Standard Guide for Characterizing Fiber-Based Constructs for Tissue-Engineered Medical Products

F2605-16 Standard Test Method for Determining the Molar Mass of Sodium Alginate by Size

Exclusion Chromatography with Multi-angle Light Scattering Detection (SEC-MALS)

F1229-01(2016) Standard Guide for Qualification and Training of EMS Air Medical Patient Care Providers

F1086-94(2016) Standard Guide for Structures and Responsibilities of Emergency Medical Services Systems Organizations

F1616-95(2016) Standard Guide for Scope of Performance of First Responders Who Practice in the Wilderness or Delayed or Prolonged Transport Settings

F1552-94(2016) Standard Practice for Training Instructor Qualification and Certification Eligibility of Emergency Medical Dispatchers

F1339-92(2016) Standard Guide for Organization and Operation of Emergency Medical Services Systems

F3129-16 Standard Guide for Characterization of Material Loss from Conical Taper Junctions in Total Joint Prostheses

F3175-16 Standard Guide for Training and Equipping Search and Rescue Personnel Operating on Mountain Bikes (Mountain Bike SAR Endorsement)

F3194-16 Standard Guide for Training for Personnel Operating Small Land Off Road Vehicles (ATV-ROHV Ops Endorsement)

F3193-16 Standard Guide for Training of a Land Search and Rescue Team Leader

F3067-14(2021) Standard Guide for Radial Loading of Balloon-Expandable and Self-Expanding Vascular Stents

F2822-10(2016) Standard Specification for Fixed Anchorages Installed on Structures used for Rope Rescue Training

F2664-19e1 Standard Guide for Assessing the Attachment of Cells to Biomaterial Surfaces by Physical Methods

F3221-16 Standard Guide for Training for Snowmobile Operator's Endorsement

F2606-08(2021) Standard Guide for Three-Point Bending of Balloon-Expandable Vascular Stents and Stent Systems

F3142-16 Standard Guide for Evaluation of in vitro Release of Biomolecules from Biomaterials Scaffolds for TEMPs

F2529-13(2021) Standard Guide for in vivo Evaluation of Osteoinductive Potential for Materials Containing Demineralized Bone (DBM)

F3222-16 Standard Terminology Relating to F32 Land Search and Rescue Standards and Guides

F3172-15(2021) Standard Guide for Design Verification Device Size and Sample Size Selection for Endovascular Devices

F2902-16e1 Standard Guide for Assessment of Absorbable Polymeric Implants

F3515-21 Standard Guide for Characterization and Testing of Porcine Fibrinogen as a Starting Material for Use in Biomedical and Tissue-Engineered Medical Product Applications

F2502-17 Standard Specification and Test Methods for Absorbable Plates and Screws for Internal Fixation Implants

F3211-17 Standard Guide for Fatigue-to-Fracture (FtF) Methodology for Cardiovascular Medical Devices

F3223-17 Standard Guide for Characterization and Assessment of Tissue Engineered Medical Products (TEMPs) for Knee Meniscus Surgical Repair and/or Reconstruction

F3018-17 Standard Guide for Assessment of Hard-on-Hard Articulation Total Hip Replacement and Hip Resurfacing Arthroplasty Devices

F2581-12(2017) Standard Specification for Wrought Nitrogen Strengthened 11Manganese-

17Chromium-3Molybdenum Low-Nickel Stainless Steel Alloy Bar and Wire for Surgical Implants (UNS S29225)

F2819-10(2015)e2 Standard Test Methods for Measurement of Straightness of Bar, Rod, Tubing and Wire to be used for Medical Devices

F3262-17 Standard Classification System for Small Unmanned Aircraft Systems (sUASs) for Land Search and Rescue

F3207-17 Standard Guide for in vivo Evaluation of Rabbit Lumbar Intertransverse Process Spinal Fusion Model

F3259-17 Standard Guide for Micro-computed Tomography of Tissue Engineered Scaffolds

F1772-17 Standard Specification for Harnesses for Rescue and Sport Activities

F2847-17 Standard Practice for Reporting and Assessment of Residues on Single-Use Implants and Single-Use Sterile Instruments

F3206-17 Standard Guide for Assessing Medical Device Cytocompatibility with Delivered Cellular Therapies

F2514-21 Standard Guide for Finite Element Analysis (FEA) of Metallic Vascular Stents Subjected to Uniform Radial Loading

F3505-21 Standard Test Method for Stent and Endovascular Prosthesis Kink Resistance

F2890-17 Standard Guide for Hazard Awareness for Search and Rescue Personnel

F3260-18 Standard Test Method for Determining the Flexural Stiffness of Medical Textiles

F3224-17 Standard Test Method for Evaluating Growth of Engineered Cartilage Tissue using Magnetic Resonance Imaging

F3028-18 Standard Guide for Training of Search and Rescue Personnel Operating in the Alpine Environment (Alpine Endorsement)

F2706-18 Standard Test Methods for Occipital-Cervical and Occipital-Cervical-Thoracic Spinal Implant Constructs in a Vertebrectomy Model

F3293-18 Standard Guide for Application of Test Soils for the Validation of Cleaning Methods for Reusable Medical Devices

F3315-18 Standard Guide for Training of Abandoned or Inactive Mine Search and Rescue Team Member

F2580-18 Standard Practice for Evaluation of Modular Connection of Proximally Fixed Femoral Hip Prosthesis

F2602-18 Standard Test Method for Determining the Molar Mass of Chitosan and Chitosan Salts by Size Exclusion Chromatography with Multi-angle Light Scattering Detection (SEC-MALS)

F3295-18 Standard Guide for Impingement Testing of Total Disc Prostheses

F3294-18 Standard Guide for Performing Quantitative Fluorescence Intensity Measurements in Cell-based Assays with Widefield Epifluorescence Microscopy

F3320-18 Standard Guide for Coating Characterization of Drug Coated Balloons

F1764-97(2018) Standard Guide for Selection of Hardline Communication Systems for Confined-Space Rescue

F1740-96(2018) Standard Guide for Inspection of Nylon, Polyester, or Nylon/Polyester Blend, or Both Kernmantle Rope

F1739-96(2018) Standard Guide for Performance of a Water Rescuer—Level I

F2743-11(2018) Standard Guide for Coating Inspection and Acute Particulate Characterization of Coated Drug-Eluting Vascular Stent Systems

F1823-97(2018) Standard Guide for Water Rescue Personal Flotation Device (PFD)

F3027-18 Standard Guide for Training of Personnel Operating in Mountainous Terrain (Mountain Endorsement)

F2888-19 Standard Practice for Platelet Leukocyte Count—An In-Vitro Measure for Hemocompatibility Assessment of Cardiovascular Materials

F2579-18 Standard Specification for Amorphous Poly(lactide) and Poly(lactide-co-glycolide) Resins for Surgical Implants

F3306-19 Standard Test Method for Ion Release Evaluation of Medical Implants

F1583-95(2019) Standard Practice for Communications Procedures—Phonetics

F2047-00(2019) Standard Practice for Workers' Compensation Coverage of Emergency Services Volunteers

F1591-95(2019) Standard Practice for Visual Signals Between Persons on the Ground and in Aircraft During Ground Emergencies

F2958-14(2019) Standard Guide for Helicopter Inland Search and Rescue (SAR) Technician

F2436-14(2019) Standard Test Method for Measuring the Performance of Synthetic Rope Rescue Belay Systems Using a Drop Test

F3026-14(2019) Standard Guide for Helicopter Inland Search and Rescue (SAR) Crew Chief

F3292-19 Standard Practice for Inspection of Spinal Implants Undergoing Testing

F3108-19 Standard Guide for Clinical Outcomes for Clinical Trials and/or Clinical Registries for Knee Reconstructive Surgery

F2901-19 Standard Guide for Selecting Tests to Evaluate Potential Neurotoxicity of Medical Devices

F3369-19e1 Standard Guide for Assessing the Skeletal Myoblast Phenotype

F2954-19 Standard Guide for Training for Intermediate Rope Rescuer Endorsement

F2752-19 Standard Guide for Training for Basic Rope Rescuer Endorsement

F2955-19 Standard Guide for Training for Advanced Rope Rescuer Endorsement

F3368-19 Standard Guide for Cell Potency Assays for Cell Therapy and Tissue Engineered Products

F3374-19 Standard Guide for Active Fixation Durability of Endovascular Prostheses

F2943-14(2019) Standard Guide for Presentation of End User Labeling Information for Musculoskeletal Implants

F3395/F3395M-19 Standard Specification for Neurosurgical Head Holder Devices

F2790-10(2019)e1 Standard Practice for Static and Dynamic Characterization of Motion Preserving Lumbar Total Facet Prostheses

F2633-19 Standard Specification for Wrought Seamless Nickel-Titanium Shape Memory Alloy Tube for Medical Devices and Surgical Implants

F2852-19 Standard Practice for Training a Land Search Tracker

F2759-19 Standard Guide for Assessment of the Ultra-High Molecular Weight Polyethylene (UHMWPE) Used in Orthopedic and Spinal Devices

F3335-20 Standard Guide for Assessing the Removal of Additive Manufacturing Residues in Medical Devices Fabricated by Powder Bed Fusion

F2754/F2754M-21 Standard Test Method for Measurement of Camber, Cast, Helix, and Direction of Helix of Coiled Wire

F2895-20 Standard Practice for Digital Radiography of Cast Metallic Implants

F1730-96(2020) Standard Guide for Throwing a Water Rescue Throwbag

F1729-96(2020) Standard Practice for Single Person Cold Water Survival/Rescue Technique: HELP Position

F1728-96(2020) Standard Practice for Multiple Persons Cold Water Survival/Rescue Technique: Huddle Position

F1422-08(2020) Standard Guide for Using the Incident Command System Framework in Managing Search and Rescue Operations

F1774-20 Standard Specification for Climbing and Mountaineering Carabiners

F1766-97a(2020) Standard Guide for Ice Awls Self-Rescue Technique

F2789-10(2020) Standard Guide for Mechanical and Functional Characterization of Nucleus Devices

F1767-14(2020) Standard Guide for Forms Used for Search and Rescue

F1768-97(2020) Standard Guide for Using Whistle Signals During Rope Rescue Operations

F2662-08(2020) Standard Guide for Minimum Training of Dispatchers and Telecommunicators of SAR Incidents

F2099-01(2020) Standard Guide for Use of Universal Transverse Mercator (UTM) Grids When Preparing and Using a Field Map for Land Search

F1846-98(2020) Standard Practice for Symbols and Markings for Use With Land Search Maps

F2794-09(2020) Standard Guide for Level 1 (Basic) Mounted Search and Rescue (MSAR) Responder

F3071-14(2020) Standard Guide for Basic Wilderness GPS/GNSS Use (GPS/GNSS-IW) Endorsement

F2821-15(2020) Standard Test Methods for Basket Type Rescue Litters

F3072-14(2020) Standard Guide for Intermediate Wilderness GPS/GNSS Use (GPS/GNSS-IIW) Endorsement

F1956-20 Standard Specification for Rescue Carabiners

F1879-14(2020) Standard Guide for Demonstrating Obedience and Agility in Search and Rescue Dogs

F2603-06(2020) Standard Guide for Interpreting Images of Polymeric Tissue Scaffolds

F2778-09(2020) Standard Test Method for Measurement of Percent Crystallinity of Polyetheretherketone (PEEK) Polymers by Means of Specular Reflectance Fourier Transform Infrared Spectroscopy (R-FTIR)

F1705-96(2020) Standard Guide for Training Emergency Medical Services Ambulance Operations

F2694-16(2020) Standard Practice for Functional and Wear Evaluation of Motion-Preserving Lumbar Total Facet Prostheses

F2624-12(2020) Standard Test Method for Static, Dynamic, and Wear Assessment of Extra-Discal Single Level Spinal Constructs

F1654-95(2020) Standard Guide for Training and Evaluation of Individuals Who Are Responsible for or Perform Triage in a Prehospital Environment

F1653-95(2020) Standard Guide for Scope of Performance of Triage in a Prehospital Environment

F2695-12(2020) Standard Specification for Ultra-High Molecular Weight Polyethylene Powder Blended With Alpha-Tocopherol (Vitamin E) and Fabricated Forms for Surgical Implant Applications F1453-92(2020) Standard Guide for Training and Evaluation of First Responders Who Provide Emergency Medical Care

F1287-90(2020) Standard Guide for Scope of Performance of First Responders Who Provide Emergency Medical Care

F2977-20 Standard Test Method for Small Punch Testing of Polymeric Biomaterials Used in Surgical Implants

F1268-90(2020) Standard Guide for Establishing and Operating a Public Information, Education, and Relations Program for Emergency Medical Service Systems

F2944-20 Standard Practice for Automated Colony Forming Unit (CFU) Assays—Image Acquisition and Analysis Method for Enumerating and Characterizing Cells and Colonies in Culture

F2491-20 Standard Guide for Determining Safety Factors for Technical Rescue Systems and Equipment

F3268-18a Standard Guide for in vitro Degradation Testing of Absorbable Metals

F3046-21 Standard Specification for Wrought Titanium-3Aluminum-2.5Vanadium Alloy for Surgical Implant Applications (UNS R56320)

F3504-21 Standard Practice for Quantifying Cell Proliferation in 3D Scaffolds by a Nondestructive Method

F3273-17(2021)e1 Standard Specification for Wrought Molybdenum-47.5 Rhenium Alloy for Surgical Implants (UNS R03700)

F1824-97(2021) Standard Guide for Performance of a Water Rescuer—Level II

F1783-97(2021) Standard Guide for Performance of an Ice Rescuer—Level II

F2989-21 Standard Specification for Metal Injection Molded Unalloyed Titanium Components for Surgical Implant Applications

F3036-21 Standard Guide for Testing Absorbable Stents

F3384-21 Standard Specification for Polydioxanone Polymer Resins for Surgical Implants

F3275-22 Standard Guide for Using a Force Tester to Evaluate Performance of a Brush Part Designed to Clean the Internal Channel of a Medical Device

F3336-22 Standard Practice for Lipid Preconditioning of Ultra-High-Molecular-Weight Polyethylene for Accelerated Aging

F3276-22 Standard Guide for Using a Force Tester to Evaluate the Performance of a Brush Part Designed to Clean the External Surface of a Medical Device

F2884-21 Standard Guide for Pre-clinical in vivo Evaluation of Spinal Fusion

F3163-22 Standard Guide for Categories and Terminology of Cellular and/or Tissue-Based Products (CTPs) for Skin Wounds

F1031-22 Standard Practice for Training the Emergency Medical Technician (Basic)

F1149-22 Standard Practice for Qualifications, Responsibilities, and Authority of Individuals and Institutions Providing Medical Direction of Emergency Medical Services

F1256-22 Standard Guide for Selection and Practice of Emergency Medical Services Instructor for Emergency Medical Technician (EMT) Training Programs

F1257-22 Standard Guide for Selection and Practice of Emergency Medical Services Instructor for Advanced Emergency Medical Technician

F1285-22 Standard Guide for Training the Emergency Medical Technician to Perform Patient Examination Techniques

F1949-22 Standard Specification for Medical Oxygen Delivery Systems for EMS Ground Vehicles

F3210-22e1 Standard Test Method for Fatigue Testing of Total Knee Femoral Components Under Closing Conditions

F3106-22 Standard Guide for in vitro Osteoblast Differentiation Assays

F2952-22 Standard Guide for Determining the Mean Darcy Permeability Coefficient for a Porous Tissue Scaffold

F3088-22 Standard Practice for Use of a Centrifugation Method to Quantify/Study Cell-Material Adhesive Interactions

F2516-22 Standard Test Method for Tension Testing of Nickel-Titanium Superelastic Materials

F3574-22 Standard Test Methods for Sacroiliac Joint Fusion Devices

F1847-14(2022) Standard Guide for Minimum Training of Search Dog Crews or Teams

F1848-14(2022) Standard Classification System for Canine Search Resources

F2685-14(2022) Standard Guide for Training of a Land Search Team Leader (STL)

F3024-13(2022) Standard Guide for Training of a Land Search and Rescue (SAR) Strike Team/Task Force Leader

F3048-13(2022) Standard Guide for Swiftwater/Flood Search and Rescue Operations

F3068-14(2022) Standard Guide for Contents and Use of a Position Task Book (PTB)

F3070-14(2022) Standard Guide for Evaluating Area Search Dog Crews or Teams

F3069-14(2022) Standard Guide for Requirements for Bodies That Operate Certification Programs in the Field of Search and Rescue

F3144-15(2022) Standard Guide for Evaluating Trailing Search Dog Crews or Teams

F3145-15(2022) Standard Guide for Swiftwater/Flood Rescue Technician Basic

F3570-22 Standard Terminology Relating to Microphysiological Systems

F1765-97a(2022) Standard Guide for Ice Staff Self-Rescue Technique

F1221-89(2022) Standard Guide for Interagency Information Exchange

F1258-95(2022) Standard Practice for Emergency Medical Dispatch

F1560-00(2022) Standard Practice for Emergency Medical Dispatch Management

F2076-01(2022) Standard Practice for Communicating an EMS Patient Report to Receiving Medical Facilities

F1220-95(2022) Standard Guide for Emergency Medical Services System (EMSS) Telecommunications

F3225-17(2022) Standard Guide for Characterization and Assessment of Vascular Graft Tissue Engineered Medical Products (TEMPs)

F2554-22 Standard Practice for Measurement of Positional Accuracy of Computer-Assisted Surgical Systems

F3127-22 Standard Guide for Validating Cleaning Processes Used During the Manufacture of Medical Devices

F2504-05(2022) Standard Practice for Describing System Output of Implantable Middle Ear Hearing Devices

F3448-20 Standard Guide for Clinical Outcomes for Clinical Trials and/or Clinical Registries for Hip Reconstructive Surgery

F1993-16(2022) Standard Classification System of Human Land Search and Rescue Resources

F2684/F2684M-07(2022) Standard Test Method for Portable High Anchor Devices

F3089-23 Standard Guide for Characterization and Standardization of Polymerizable Collagen-Based Products and Associated Collagen-Cell Interactions

F2885-17(2023) Standard Specification for Metal Injection Molded Titanium-6Aluminum-4Vanadium Components for Surgical Implant Applications

F3212-16(2023) Standard Test Method for Coring Testing of Huber Needles

F2721-09(2023) Standard Guide for Preclinical in vivo Evaluation in Critical-Size Segmental Bone Defects

F3107-14(2023) Standard Test Method for Measuring Accuracy After Mechanical Disturbances on Reference Frames of Computer Assisted Surgery Systems

F2887-23 Standard Specification for Total Elbow Prostheses

F3109-23 Standard Practice for Verification of Multi-Axis Force Measuring Platforms

F2808-23 Standard Test Method for Performing Behind-the-Knee (BTK) Test for Evaluating Skin Irritation Response to Products and Materials That Come Into Repeated or Extended Contact with Skin

F3437-23 Standard Test Methods for Metallic Bone Plates Used in Small Bone Fracture Fixation

F3602-23 Standard Guide for Assessing the Compatibility of a Cleaning Brush Part with Different Substrates Used in the Construction of Medical Devices

F3141-23 Standard Guide for Total Knee Replacement Loading Profiles

F3047M-23 Standard Guide for High Demand Hip Simulator Wear Testing of Hard-on-Hard Articulations

F2528-06(2023) Standard Test Methods for Enteral Feeding Devices with a Retention

Balloon

F3495-23 Standard Test Methods for Determining the Static Failure Load of Ceramic Knee Femoral Components

F2886-17(2023) Standard Specification for Metal Injection Molded Cobalt-28Chromium-6Molybdenum Components for Surgical Implant Applications

F2777-23 Standard Test Method for Evaluating Knee Bearing (Tibial Insert) Endurance and Deformation Under High Flexion

F3140-23 Standard Test Method for Cyclic Fatigue Testing of Metal Tibial Tray Components of Unicondylar Knee Joint Replacements

F2537-23 Standard Practice for Calibration of Linear Displacement Sensor Systems Used to Measure Micromotion

F2503-23e1 Standard Practice for Marking Medical Devices and Other Items for Safety in the Magnetic Resonance Environment

F2527-24 Standard Specification for Wrought Seamless and Welded and Drawn Cobalt Alloy Small Diameter Tubing for Surgical Implants (UNS R30003, UNS R30008, UNS R30035, UNS R30605, and UNS R31537)

F2914-12(2024) Standard Guide for Identification of Shelf-Life Test Attributes for Endovascular Devices

F2995-24 Standard Guide for Shipping Possibly Infectious Materials, Tissues, and Fluids