

Parasympathetic Nervous System

Peripheral Nervous System

Hyperammonemia

Urea cycle
Asterixis
Alpha-ketoglutarate
Glutamine

Streptococcus pneumoniae

Gram positive
Lancet-shaped diplococci

Systemic Lupus Erythematosus

Autoimmune
Inflammation
Connective tissue
Malar
Nephropathy
Rheumatologic

Patient Communication CHALLENGE

Patient Communication CHALLENGE

Patient Communication CHALLENGE

Patient Communication CHALLENGE

Hypertension

Systole
Diastole
Blood Pressure
Cardiovascular Vessel
Atherosclerosis

Sympathetic Nervous System

Peripheral Nervous System

Familial Hypercholesterolemia

LDL receptor
Xanthoma
Lipoprotein

NSAID

Cyclooxygenase (COX)
Prostaglandin
Arachidonic acid
Anti-inflammatory
Antipyretic
Analgesic

Patient Communication CHALLENGE

Patient Communication CHALLENGE

Patient Communication CHALLENGE

Patient Communication CHALLENGE

Emphysema

COPD
Alveoli
Pursed lip breathing
Oxygen
Centriacinar/Panacinar
Tripod

*Patient Communication
CHALLENGE*

SIADH

Hormone
Hypothalamus
Pituitary
Vasopressin
Osmolality
Retention

*Patient Communication
CHALLENGE*

Atherosclerosis

Cholesterol
Plaque
Rupture
Macrophages/foam cells

*Patient Communication
CHALLENGE*

Myocardial infarction

Ischemia
Coronary
Circulation
Atherosclerosis
Angina
Occlusion

*Patient Communication
CHALLENGE*

Diabetic

Glomerulosclerosis

Basement membrane
Non-enzymatic
glycosylation
Hyperfiltration
Microalbuminuria
Glomerulus

*Patient Communication
CHALLENGE*

Urinary Tract Infection

Hematuria
Bacteria
Dysuria
Malodorous
Suprapubic pain

*Patient Communication
CHALLENGE*

Chronic Kidney Disease (CKD)

Glomerulus
Clearance
Filtration
GFR
Proteinuria
Dialysis

*Patient Communication
CHALLENGE*

Diuretic

Hypertension
Hypokalemia
Polyuria
Edema
Nephron (loop of henle,
DCT, collecting duct)

*Patient Communication
CHALLENGE*

Pleural Effusion

Exudate
Transudate
CHF
Thoracentesis

Patient Communication
CHALLENGE

Nephritic Syndrome

Hematuria
DPGN
RPGN
Crescents

Patient Communication
CHALLENGE

Adenocarcinoma

Neoplasm
Peripheral
Columnar Cells
Bronchioloalveolar
Mucin

Patient Communication
CHALLENGE

Acute Kidney Injury

BUN
Creatinine
Azotemia
Uremia
Hypovolemic

Patient Communication
CHALLENGE

Pneumothorax

Spontaneous
Deviation
Pleural
Hyperresonance
Dyspnea
Fremitus

Patient Communication
CHALLENGE

Pulmonary Embolism

Hypercoagulable
DVT
Dyspnea
CT Angiogram
Occlusion

Patient Communication
CHALLENGE

Cystic Fibrosis

CFTR gene
Cilia
Chlorine
Bronchiectasis
Trypsinogen

Patient Communication
CHALLENGE

Asthma

Atopy
Bronchoconstriction
Prostaglandins/leukotrienes
Beta-receptors
Obstructive
Albuterol

Patient Communication
CHALLENGE

Deep Vein Thrombosis

Stasis
Endothelial injury
Hypercoagulable state
Pulmonary emboli
Proximal

*Patient Communication
CHALLENGE*

Acute Respiratory Distress Syndrome

Alveola
Cytokine
Opacity
Compliance
PEEP
Ventilation

*Patient Communication
CHALLENGE*

Sarcoidosis

ACE
Autoimmune/rheumatologi
c
Hilar
Non-caseating granuloma
Bell's Palsy
Uveitis

*Patient Communication
CHALLENGE*

Pneumonia

Lobar
Interstitial/atypical
Congestion
Hepatization
Opacity
Consolidation

*Patient Communication
CHALLENGE*

Nephrotic Syndrome

Glomerulus
Proteinuria
Hypoalbuminemia
Hyperlipidemia
Podocyte/GBM/mesangial

*Patient Communication
CHALLENGE*

Pancoast Tumor

Apex
Sympathetic chain
Horner Syndrome
Ptosis/anhidrosis/miosis
Ganglion
SVC syndrome

*Patient Communication
CHALLENGE*

Pneumoconiosis

Asbestosis/Silicosis/Beryllio
sis etc.
Calcification
Carcinoma
Fibrosis
Granuloma
Lobe

*Patient Communication
CHALLENGE*

Pulmonary Hypertension

Arteriosclerosis
Cor Pulmonale
BMPR2
Endothelial
Vasoconstriction

*Patient Communication
CHALLENGE*

Echocardiogram

Dilation
Stenosis
Cardiomyopathy
Ultrasound
CHF

*Patient Communication
CHALLENGE*

**Hypertrophic
Cardiomyopathy
(HoCM)**

Outflow
Myosin
Protein C
Syncope
Systolic/systole
Microfibrillar

*Patient Communication
CHALLENGE*

Aortic Stenosis

Syncope
Angina
Dyspnea
Calcification
Systolic/systole
Murmur

*Patient Communication
CHALLENGE*

Hydronephrosis

Urethral
Pelvis
Calyces
BPH
Obstructive
Creatinine

*Patient Communication
CHALLENGE*

CABG

CAD
Atherosclerosis
Occlusion
Stent
Cardiothoracic

*Patient Communication
CHALLENGE*

ECG

QRS
PR
STEMI/NSTEMI
Inversion
LAD/LCX/RCA/PDA

*Patient Communication
CHALLENGE*

Aneurysm

Prolapse
Stenosis
Dilation
Berry/saccular
Charcot-Bouchard
Lumen

*Patient Communication
CHALLENGE*

Atrial Fibrillation

Arrhythmia
P-wave
Irregularly irregular
Cardioversion
Anticoagulation
Thromboembolic

*Patient Communication
CHALLENGE*

Endocarditis

Sepsis
Embolus
Vegetation

*Patient Communication
CHALLENGE*

Pulmonary Edema

Dyspnea
Hydrostatic pressure
Oncotic pressure
CHF

*Patient Communication
CHALLENGE*

Left sided CHF

Edema
Ejection fraction
Orthopnea
Dyspnea
Diastole/diastolic
Systole/systolic

*Patient Communication
CHALLENGE*

Stent

CAD
Atherosclerosis
Occlusion
CABG

*Patient Communication
CHALLENGE*

Herpes Simplex Virus

Enveloped
Dorsal root ganglia

*Patient Communication
CHALLENGE*

Dialysis

Acidemia
Electrolytes
Uremia
Semipermeable membrane

*Patient Communication
CHALLENGE*

Right sided CHF

Hepatomegaly
JVD
Edema
Cardiomyopathy
Cor pulmonale
Ejection fraction

*Patient Communication
CHALLENGE*

PFT

FEV
FVC
TLC
COPD
Restrictive
Obstructive

*Patient Communication
CHALLENGE*

Lumbar radiculopathy

Nerve root
Compression
Paresthesias
Referred
Sciatica

Patient Communication
CHALLENGE

Biopsy

Excision
Incision
Aspiration
Pathology
Specimen

Patient Communication
CHALLENGE

Parvovirus B-19

Slapped cheek
Lacy rash
Aplastic anemia
Hydrops fetalis

Patient Communication
CHALLENGE

Rheumatoid arthritis

Synovium
Inflammation
Autoimmune
Erythema
MCP/PIP/DIP/MTP
Rheumatologic

Patient Communication
CHALLENGE

Rotator Cuff Tendinitis

SITS muscles
Impingement
Abduction
Adduction
Tendinopathy

Patient Communication
CHALLENGE

Osteoarthritis

Cartilage
Degenerative
Chronic
Old Age
Crepitus

Patient Communication
CHALLENGE

Marfan Syndrome

Genetic defect
Connective tissue
Aortic aneurysm
Lens dislocation
Fibrillin

Patient Communication
CHALLENGE

Immunosuppressant

Lymphocytes
Malignancy
Autoimmune
Cytokine
Antibody

Patient Communication
CHALLENGE

Pseudogout

- Birefringent
- Degenerative
- Chondrocalcinosis
- Calcium pyrophosphate
- Osteoarthritis

Patient Communication
CHALLENGE

Osteopetrosis

- Resorption
- Osteoclast
- Cortical
- Hematopoiesis
- Sclerosis

Patient Communication
CHALLENGE

Bursitis

- Patellar
- Trochanter
- Bursa
- Gluteal
- Cyst

Patient Communication
CHALLENGE

Carpal Tunnel Syndrome

- Entrapment
- Median Nerve
- Thenar eminence
- Paresthesia
- Atrophy

Patient Communication
CHALLENGE

Sjogren's Syndrome

- Autoimmune
- Exocrine
- Salivary
- Xerostomia
- Lymphoma

Patient Communication
CHALLENGE

Avascular Necrosis

- Watershed
- Infarction
- Ischemia
- Epiphysis

Patient Communication
CHALLENGE

Compartment Syndrome

- Fascia
- Outflow obstruction
- Necrosis
- Anoxia
- Hypoxia
- Reperfusion

Patient Communication
CHALLENGE

Osteoporosis

- Mineralization
- Trabecular
- Cortical
- Estrogen
- Vertebral

Patient Communication
CHALLENGE

**Raynaud's
Phenomenon**

- Vasospasm
- Ischemia
- Hypoxia
- Reperfusion
- SLE
- CREST

*Patient Communication
CHALLENGE*

Myasthenia Gravis

- Autoimmune
- Ptosis
- Diplopia
- Thymoma
- Proximal

*Patient Communication
CHALLENGE*

Ankylosing Spondylitis

- Sacroiliac
- Uveitis
- Costovertebral
- Costosternal
- Autoimmune

*Patient Communication
CHALLENGE*

Septic arthritis

- Synovial
- Purulent
- Leukocytes
- Erythema
- Effusion

*Patient Communication
CHALLENGE*

Scleroderma

- Sclerodactyly
- Pitting
- Esophageal dysmotility
- Autoimmune
vasculopathy
- Fibrosis

*Patient Communication
CHALLENGE*

**Lambert-Eaton
Syndrome**

- Autoantibody
- Autoimmune
- Autonomic
- Proximal
- Small Cell Lung Cancer

*Patient Communication
CHALLENGE*

Dermatomyositis

- Heliotrope
- Gottron papules
- Erythema
- Proximal
- CD8
- T-cells

*Patient Communication
CHALLENGE*

Enteropathic Arthritis

- IBD
- Pyoderma Gangrenosum

*Patient Communication
CHALLENGE*

Rhabdomyolysis

Myoglobin
Creatine phosphokinase
Compartment syndrome
AKI

Patient Communication
CHALLENGE

Achondroplasia

Dysplasia
FGFR3
Chondrocytes
Macrocephaly

Patient Communication
CHALLENGE

Stevens-Johnson Syndrome

Bullae
Necrosis
Dermal-epidermal junction
Nikolsky
Erythema Multiforme
TEN

Patient Communication
CHALLENGE

Psoriasis

Acanthosis
Plaque
Auspitz
Arthritis
Autoimmune

Patient Communication
CHALLENGE

Erb palsy

Cervical
Brachial plexus
Suprascapular
Dystocia
"Waiter's tip"

Patient Communication
CHALLENGE

Craniosynostosis

Sutures
Hydrocephalus
Congenital
Fontanelle

Patient Communication
CHALLENGE

Bisphosphonate

Osteoporosis
Hydroxyapatite
Osteoclast
Pyrophosphate

Patient Communication
CHALLENGE

Pemphigus Vulgaris

Bullae
Acantholysis
Desmoglein
Keratinocyte
Antibody
Tombstone

Patient Communication
CHALLENGE

Pityriasis (tinea) versicolor

Malassezia
Potassium hydroxide
"Spaghetti and meatballs"

Patient Communication
CHALLENGE

Basal Cell Carcinoma

Basal layer
Epidermis
UV radiation
Tumor suppressor gene

Patient Communication
CHALLENGE

Antiphospholipid Syndrome

Thrombosis
Lupus anticoagulant
Anticardiolipin
Antilipoprotein
Hypercoagulable
Autoimmune

Patient Communication
CHALLENGE

Osteomalacia

Osteoid
Epiphyseal widening
Osteoblast
Parathyroid
Rickets

Patient Communication
CHALLENGE

Pityriasis Rosea

Herald patch
"Christmas tree"
Plaque
Scale

Patient Communication
CHALLENGE

Seborrheic Dermatitis

Sebaceous glands
Malassezia
Plaque
Scale
Cradle Cap

Patient Communication
CHALLENGE

Lichen Planus

Pruritic
Wickham striae
Hypergranulosis
Papule
Plaque
5 P's

Patient Communication
CHALLENGE

Gout

Monoarthritis
Urate
Metatarsophalangeal
Tophus
Purines

Patient Communication
CHALLENGE

Kawasaki disease

- Conjunctival injection
- Adenopathy
- Strawberry tongue
- Erythema
- Coronary artery

Patient Communication
CHALLENGE

Muscular Dystrophy

- Dystrophin gene
- Pseudohypertrophy
- Gower's sign

Patient Communication
CHALLENGE

Guillian-Barre

- Ascending paralysis
- Demyelination
- C. jejuni
- Post-infectious

Patient Communication
CHALLENGE

Atopic Dermatitis

- Hypersensitivity
- Pruritus
- Flexor
- Eczema

Patient Communication
CHALLENGE

Meralgia paresthetica

- Lateral femoral cutaneous n.
- Impingement
- Sensory deficits
- Inguinal ligament
- Superficial

Patient Communication
CHALLENGE

Giant cell arteritis

- Vascular
- Claudication
- Corticosteroids
- Granuloma
- Transmural

Patient Communication
CHALLENGE

Radiculopathy

- Nerve root
- Intervertebral disc
- Dermatome
- Myotome

Patient Communication
CHALLENGE

Impetigo

- Staph Aureus
- Group A Strep
- Vesicles
- Bullous

Patient Communication
CHALLENGE

Sickle Cell Disease

Hemoglobin
Hemolysis
Point mutation
Asplenia
Vaso-occlusive
Acute chest

*Patient Communication
CHALLENGE*

Rosacea

Vasodilation
Photosensitivity
Erythema

*Patient Communication
CHALLENGE*

Melanoma

Melanocyte
Epidermis
Biopsy
BRAF gene
ABCDE criteria

*Patient Communication
CHALLENGE*

**Anterior cruciate
ligament tear**

Anterior drawer test
Lachman test
Patella
Femoral condyle
Tibia

*Patient Communication
CHALLENGE*

Vancomycin

D-ala-D-ala
MRSA
C. diff

*Patient Communication
CHALLENGE*

**MRSA (Methicillin-
Resistant
Staphylococcus Aureus)**

Gram positive
Cocci in clusters

*Patient Communication
CHALLENGE*

Contact dermatitis

T cell
Delayed
Type IV hypersensitivity

*Patient Communication
CHALLENGE*

Celecoxib

Cyclooxygenase (COX)
Gastric
Arachidonic acid
Prostaglandins
Housekeeping

*Patient Communication
CHALLENGE*

Complete Blood Count (CBC)

Lymphocytes
Leukocytes
Erythrocytes
Hemoglobin
Differential

Patient Communication CHALLENGE

Megaloblastic Anemia

Macrocytic
B9/Folate
B12/cyanocobalamin
Hemoglobin
DNA synthesis
Hypersegmented neutrophils

Patient Communication CHALLENGE

Glucocorticoids

Steroid/corticosteroid/cortisol
Hormone
Adrenal
Immune
system/immunosuppression
Inflammation

Patient Communication CHALLENGE

PCR

Nucleic acid
mRNA
Reverse transcriptase
Amplify
Complementary
Denaturation

Patient Communication CHALLENGE

Leukopenia

Granulocytes
Chemotherapy
Immunosuppression

Patient Communication CHALLENGE

Thalassemia

Hemoglobin
Mutation
Deletion
Microcytic anemia
Transfusion

Patient Communication CHALLENGE

Anemia

Hemoglobin
Hematocrit
Reticulocyte

Patient Communication CHALLENGE

Vaccination

Immunization
Attenuated
Inactivated
Inoculate
mRNA

Patient Communication CHALLENGE

Lymphadenopathy

Reticuloendothelial system
Lymph nodes

Patient Communication
CHALLENGE

Complement System

Opsonization
Anaphylaxis
Membrane attack complex
(MAC)

Patient Communication
CHALLENGE

Cluster of Differentiation (CD) Markers

Flow cytometry
Immunotherapy

Patient Communication
CHALLENGE

Polycythemia

EPO
Plethora
Hemoglobin
Hematocrit

Patient Communication
CHALLENGE

Varicella Zoster

Chicken Pox
Shingles
Herpes
Dermatome
Dorsal Root Ganglion

Patient Communication
CHALLENGE

Paroxysmal Nocturnal Hemoglobinuria (PNH)

Complement
MAC
Hemolysis
Eculizumab

Patient Communication
CHALLENGE

Adaptive Immunity

Humoral
Cell-mediated
B lymphocyte (B-cell)
T-cell

Patient Communication
CHALLENGE

Neutropenia

Granulocytes
Chemotherapy
Immunosuppression

Patient Communication
CHALLENGE

Von Willebrand Disease

Factor VIII
Von Willebrand Factor
Desmopressin

Patient Communication
CHALLENGE

Thrombolysis

Fibrinogen
Fibrin
D-dimer

Patient Communication
CHALLENGE

PTT

Intrinsic
Clotting factors

Patient Communication
CHALLENGE

Type I Hypersensitivity

Mast cell degranulation
Histamine
IgE
Epinephrine

Patient Communication
CHALLENGE

Hemophilia

Factor VIII
Factor IX
Desmopressin
PTT
Emicizumab

Patient Communication
CHALLENGE

Thrombotic Thrombocytopenic Purpura

ADAMTS13
Von Willebrand Factor
Schistocytes

Patient Communication
CHALLENGE

PT/INR

Extrinsic
Clotting factors
Warfarin/Coumadin

Patient Communication
CHALLENGE

Type IV Hypersensitivity

Dermatitis
Memory T Cells (CD4+)
Cytotoxic T Cells (CD8+)
Dermatitis

Patient Communication
CHALLENGE

Plasma

Clotting Factors
INR
Frozen

CMV

Owl eye
Herpes
Congenital

Asplenia

Encapsulated Bacteria
lymphoid organ
Sickle Cell

Warfarin

Bridge
Heparin

*Patient Communication
CHALLENGE*

*Patient Communication
CHALLENGE*

*Patient Communication
CHALLENGE*

*Patient Communication
CHALLENGE*

Blood Typing

Antibody
Antigen
Type A, Type B, Type O
Rh

DiGeorge

22q11 deletion
Velocardiofacial
CATCH-22

Malaria

Trophozoites
Babesia

Heparin

Anticoagulation
Warfarin

*Patient Communication
CHALLENGE*

*Patient Communication
CHALLENGE*

*Patient Communication
CHALLENGE*

*Patient Communication
CHALLENGE*

Autoimmune Disease

Antibody
Immunosuppression
T/B-cell
IgG/IgM/IgA

Patient Communication
CHALLENGE

Antigen test

Immunoassay
Enzyme
Substrate
Antibody
Blot
ELISA

Patient Communication
CHALLENGE

HIV

IV drug user
AIDS
CD4 count

Patient Communication
CHALLENGE

**Massive Transfusion
Protocol**

Type and screen

Patient Communication
CHALLENGE

Leukemia

Lympho-
Myelo-
B/T-cell
Neoplasm
Malignant
Hematopoietic

Patient Communication
CHALLENGE

Hypercoagulable

Thrombosis/DVT
Mutation
Factor
PT/PTT

Patient Communication
CHALLENGE

Factor V Leiden

Hypercoagulable
Coagulation cascade

Patient Communication
CHALLENGE

**Bone Marrow
Transplant**

Graft versus Host

Patient Communication
CHALLENGE

Osteogenesis Imperfecta

Sclera
Fracture
Collagen
Triple helix

*Patient Communication
CHALLENGE*

Autosomal Recessive

Allele
Chromosome
Carrier

*Patient Communication
CHALLENGE*

Antibiotics

Bacteria
Lysis
Gram Negative/Positive
Resistance

*Patient Communication
CHALLENGE*

Chemotherapy

Cytotoxic
Apoptosis
Mitosis
Myelosuppression
Alopecia

*Patient Communication
CHALLENGE*

Li Fraumeni Syndrome

Tumor suppressor
Cell cycle
p53

*Patient Communication
CHALLENGE*

G6PD Deficiency

Glutathione
Oxidative Stress
Free radical
Hemolysis

*Patient Communication
CHALLENGE*

Xeroderma Pigmentosum

Genetic defect
DNA repair
Enzyme
Hyperpigmentation
Nucleotide excision repair

*Patient Communication
CHALLENGE*

Heart Murmur

Auscultate
Valves
Rub
Gallop

*Patient Communication
CHALLENGE*

Sensitivity (of a test)

True positive
False negative
Probability
Gold standard

Patient Communication
CHALLENGE

Botulism

Toxin
Flaccid paralysis
Floppy baby
SNARE protein
Neuromuscular junction

Patient Communication
CHALLENGE

CYP450 Inducer

Metabolism
Therapeutic level
Bioavailability
Enzyme

Patient Communication
CHALLENGE

Down Syndrome

Trisomy
Nondisjunction
Meiosis
Advanced maternal age

Patient Communication
CHALLENGE

Bioavailability

First pass metabolism
Therapeutic level
Concentration

Patient Communication
CHALLENGE

Scurvy

Deficiency
Hydroxylation
Petechiae
Gingival edema
Cross-link

Patient Communication
CHALLENGE

Clostridium Difficile Infection

Gram positive
Anaerobic
Spore forming
latrogenic
Oral vancomycin

Patient Communication
CHALLENGE

Sacrococcygeal Teratoma

Primitive streak
Coccyx
Benign

Patient Communication
CHALLENGE

Tetanus

Gram positive
Spastic paralysis
SNARE
Spore
Neuromuscular junction

*Patient Communication
CHALLENGE*

Von Gierke Disease

Glycogen
Glucose
Glucose-6-phosphatase
Hypoglycemia

*Patient Communication
CHALLENGE*

Neural Tube Defect

Folate
Folic acid
Anencephaly
Spina bifida
Neuropore

*Patient Communication
CHALLENGE*

Huntington's Disease

CAG
Anticipation
Trinucleotide repeat
Chorea
Autosomal dominant

*Patient Communication
CHALLENGE*

Anticipation

Trinucleotide repeat
Huntington's

*Patient Communication
CHALLENGE*

Lumbar Puncture

Subarachnoid space
L3/L4
Dura
Arachnoid
Meninges
Spinal tap

*Patient Communication
CHALLENGE*

Teratogen

Embryo
Exposure
Gestation
Organogenesis

*Patient Communication
CHALLENGE*

Prader Willi Syndrome

Paternal deletion
Silencing
Chromosome 15
Obesity
Imprinting

*Patient Communication
CHALLENGE*

Spina Bifida

Caudal neuropore
Neural
Folic acid
Vertebral arch

MRI

CT-scan
X-ray

Lysosomal Storage Disease

Sphingolipidoses
Metabolism

Phenylketonuria (PKU)

Phenylalanine hydroxylase
Tetrahydrobiopterin (BH4)
Tyrosine

Patient Communication CHALLENGE

Patient Communication CHALLENGE

Patient Communication CHALLENGE

Patient Communication CHALLENGE

Mitochondrial Inheritance

Mutation
Powerhouse
Heteroplasmy

Diabetic Ketoacidosis

Noncompliance
Ketosis
Kussmaul respiration
Metabolic acidosis

Specificity (of a test)

True negative
False positive
Probability

Glycogen Storage Disease

Metabolism

Patient Communication CHALLENGE

Patient Communication CHALLENGE

Patient Communication CHALLENGE

Patient Communication CHALLENGE

Mosacism

Allele
Chromosome
Tortise shell cat

Variable Expressivity

Allele
Chromosome
Phenotype

Cru-di-chat

Cat
Microdeletion
Congenital

Wolf-Hirschhorn

Greek Helmet
Microdeletion
Congenital

*Patient Communication
CHALLENGE*

*Patient Communication
CHALLENGE*

*Patient Communication
CHALLENGE*

*Patient Communication
CHALLENGE*

X-Linked Disease

Allele
Chromosome
Gene

P-Value

Significant
< 0.05

Chediak-Higashi

Albinism
Reccurent pyrogenic
LYST gene

Williams Syndrome

Cocktail personality
Elfin face
Congenital

*Patient Communication
CHALLENGE*

*Patient Communication
CHALLENGE*

*Patient Communication
CHALLENGE*

*Patient Communication
CHALLENGE*

Ulcerative Colitis

TH2
Mucosal/Submucosal
Crypt
Haustra
Sclerosing cholangitis
Lead pipe

Patient Communication
CHALLENGE

Shock

Hypotensive
Septic
Distributive
Cardiogenic
Anaphylactic

Patient Communication
CHALLENGE

Diabetes

Glucose
Insulin
Resistance
Beta Cells
Autoimmune

Patient Communication
CHALLENGE

Lesch Nyhan

Gout
Hyperuricemia
Purine
HGPRT

Patient Communication
CHALLENGE

Diverticulosis

Intraluminal
Villi
False diverticula

Patient Communication
CHALLENGE

Crohn's Disease

Cobblestone
Granuloma
TH1
Erythema Nodosum
Pyoderma Gangrenosum
Spondyloarthritis

Patient Communication
CHALLENGE

Coronary Artery Disease

Atherosclerosis
Embolus/Emboli/Embolism
Thrombi/Thrombus
Ischemia

Patient Communication
CHALLENGE

Chronic Granulomatous Disease

NADPH Oxidase
Respiratory Burst
Catalase Positive
Non-Caseating Granulomas

Patient Communication
CHALLENGE

Acute Gastritis

NSAID
Curling ulcer
Mucosal ischemia
Cushing ulcer
Vagal stimulation

Patient Communication
CHALLENGE

Plummer-Vinson Syndrome

Dysphagia
Anemia
Esophageal web
Glossitis
SCC

Patient Communication
CHALLENGE

Achalasia

LES
Myenteric plexus
Stenosis
Chagas disease

Patient Communication
CHALLENGE

Diverticulitis

LLQ
Leukocytosis
Abscess
Fistula
Peritonitis

Patient Communication
CHALLENGE

Zenker Diverticulum

False diverticulum
Esophageal dysmotility
Herniation
Pharyngeal
Dysphagia
Aspiration

Patient Communication
CHALLENGE

Barrett's Esophagus

Metaplasia
Stratified squamous
epithelium
Columnar cell
Goblet cell
GERD
Adenocarcinoma

Patient Communication
CHALLENGE

Mallory-Weiss Syndrome

Longitudinal laceration
GE junction
Mucosa/submucosa
Hematemesis
Bulimia

Patient Communication
CHALLENGE

Appendicitis

Lymphoid hyperplasia
Closed-loop
Intraluminal
Peritonitis
Ectopic pregnancy

Patient Communication
CHALLENGE

Portal Hypertension

- Cirrhosis
- Vascular obstruction
 - Thrombosis
- Schistosomiasis
- Varices
- Hematemesis

Patient Communication
CHALLENGE

Polyp

- Sessile
- Pedunculated
- Protrusion
- Lumen
- Adenomatous
- Serrated

Patient Communication
CHALLENGE

Volvulus

- Mesentery
- Infarction
- Obstruction
- Midgut
- Sigmoid

Patient Communication
CHALLENGE

Meckel Diverticulum

- True diverticulum
- Vitelline duct
- Ectopic acid
- Hematochezia
- Volvulus
- Intussusception

Patient Communication
CHALLENGE

GERD

- H. pylori
- Epigastric
- LES

Patient Communication
CHALLENGE

Cirrhosis

- Fibrosis
- Hepatitis
- Stellate cells
- Biliary
- Nodule

Patient Communication
CHALLENGE

Ileus

- Hypomotility
- Flatus
- Distension
- Opiate
- Hypokalemia

Patient Communication
CHALLENGE

Hirschsprung Disease

- Megacolon
- Ganglion cells
- Enteric plexus
- Auerbach/Meissner
- Neural crest cells
- Down Syndrome

Patient Communication
CHALLENGE

Endoscopy

Esophagogastroduodenoscopy (EGD)

Patient Communication
CHALLENGE

ERCP (Endoscopic Retrograde Cholangiopancreatography)

Endoscopy
Fluoroscopy
Cholelithiasis

Patient Communication
CHALLENGE

Cholecystitis

Calculous
Acalculous
HIDA scan
Murphy's sign

Patient Communication
CHALLENGE

Pyloric Stenosis

Sphincter
Epigastric

Patient Communication
CHALLENGE

Celiac Disease

Tissue transglutaminase (TTG)
Villous atrophy
Crypt hyperplasia
Lymphocytosis
Gliadin

Patient Communication
CHALLENGE

Proton Pump Inhibitor

Parietal cells
Na⁺/H⁺ ATPase
Zollinger-Ellison Syndrome

Patient Communication
CHALLENGE

Biliary Colic

Neurohormonal activation
Cholelithiasis
RUQ

Patient Communication
CHALLENGE

Pancreatitis

Autodigestion
Epigastric
Amylase
Lipase
Necrosis

Patient Communication
CHALLENGE

Liver Panel

Alanine transaminase (ALT)
Aspartate transaminase (AST)
Alkaline phosphatase (ALP)
Albumin
Gamma Glutamyl transferase (GGT)

Patient Communication
CHALLENGE

Peptic Ulcer Disease

Mucosal protection
Zollinger-Ellison Syndrome

Patient Communication
CHALLENGE

Jaundice

Bilirubin
Sclera
Conjugated

Patient Communication
CHALLENGE

Fistula

Transmural
Ostomy

Patient Communication
CHALLENGE

Prolactinoma

Amenorrhea
Bitemporal hemianopsia
Transsphenoidal

Patient Communication
CHALLENGE

Lynch Syndrome

Mismatch repair
Hereditary

Patient Communication
CHALLENGE

Bilirubin

Hemolysis
Cirrhosis

Patient Communication
CHALLENGE

Hernia

Inguinal
Umbilical
Fascia

Patient Communication
CHALLENGE

Pheochromocytoma

Medulla
Chromaffin Cells
Catecholamines
Polycythemia

*Patient Communication
CHALLENGE*

Hashimoto Thyroiditis

Antithyroglobulin
Antithyroid peroxidase
Thyrototoxicosis
Hurthle cells

*Patient Communication
CHALLENGE*

Cushing Syndrome

Corticosteroids
Adrenal adenoma
Striae

*Patient Communication
CHALLENGE*

Acromegaly

Pituitary adenoma
IGF-1

*Patient Communication
CHALLENGE*

Diabetes Insipidus

Antidiuretic hormone
Polyuria
Polydipsia
Nephrogenic

*Patient Communication
CHALLENGE*

Adrenal Insufficiency

Glucocorticoids
Mineralocorticoids
Orthostasis

*Patient Communication
CHALLENGE*

Graves Disease

Immunoglobulin
Hypersensitivity
Exophthalmos

*Patient Communication
CHALLENGE*

SIADH

Hyponatremia
Osmolality
Osmotic demyelination

*Patient Communication
CHALLENGE*

Hemochromatosis

HFE gene
Hemosiderin
Cardiomyopathy
Ferritin

Patient Communication
CHALLENGE

Irritable Bowel Syndrome

Defecation
Structural abnormalities

Patient Communication
CHALLENGE

Gilbert's Disease

UDP
glucuronosyltransferase
Unconjugated bilirubin

Patient Communication
CHALLENGE

Sheehan Syndrome

Hypopituitarism
Hypoperfusion
Hemorrhage
Amenorrhea

Patient Communication
CHALLENGE

Cholelithiasis

Bile salts
Pigmented
Radiolucent

Patient Communication
CHALLENGE

Physiologic Neonatal Jaundice

UDP
glucuronosyltransferase
Hyperbilirubinemia
Neonate

Patient Communication
CHALLENGE

Hyperparathyroidism

Hypercalcemia
Hypercalciuria
Hypophosphatemia
Adenoma
Osteitis fibrosa cystica

Patient Communication
CHALLENGE

Hyperosmolar Hyperglycemic State (HHS)

Osmolality
Diuresis
Polyuria

Patient Communication
CHALLENGE

Parkinson Disease

Lewy bodies
Tremor

Delirium

Reversible
Dementia

**Spongiform
Encephalopathy**

Creutzfeldt-Jakob
Prions
Mad-cow disease

Thyroid Storm

Tachyarrhythmia

*Patient Communication
CHALLENGE*

*Patient Communication
CHALLENGE*

*Patient Communication
CHALLENGE*

*Patient Communication
CHALLENGE*

Meningitis

Meningismus
S. pneumo, etc
Nuchal rigidity

Huntington Disease

Huntingtin gene (HTT)
Chorea
CAG

Alzheimer Dementia

Neurofibrillary tangles
Beta-amyloid
Insidious
Senile plaques

**MEN (Multiple
Endocrine Neoplasms)**

Adenoma
Hyperplasia
RET
MEN1

*Patient Communication
CHALLENGE*

*Patient Communication
CHALLENGE*

*Patient Communication
CHALLENGE*

*Patient Communication
CHALLENGE*

Aphasia

Wernicke
Broca
Receptive
Expressive

*Patient Communication
CHALLENGE*

**Spinal Muscular
Atrophy**

Floppy baby
Fasciculations
SMN1
Werdnig-hoffman

*Patient Communication
CHALLENGE*

Absence Seizure

Hyperventilation
Petit mal
Postictal

*Patient Communication
CHALLENGE*

Seizures

Epilepsy
Grand mal/tonic-clonic
Postictal
Febrile

*Patient Communication
CHALLENGE*

OCD

Ego-dystonic

*Patient Communication
CHALLENGE*

Mania

Bipolar
Grandiosity
Depression

*Patient Communication
CHALLENGE*

Multiple Sclerosis

Optic neuritis
Lhermitte's
CNS
Axonal damage
Oligoclonal bands

*Patient Communication
CHALLENGE*

Meningioma

Arachnoid cells
Extra-axial
Meninges

*Patient Communication
CHALLENGE*

Major Depressive Disorder

Depressed
Anhedonia

Patient Communication CHALLENGE

Narcolepsy

Orexin
Hypocretin
Lateral hypothalamus
Cataplexy

Patient Communication CHALLENGE

Hydrocephalus

Intracranial pressure (ICP)
Communicating
Non-communicating
Cerebrospinal fluid

Patient Communication CHALLENGE

Stroke

Infarction
Occlusion
tPA
Hemorrhagic
Hemiplegia
Hemiparesis

Patient Communication CHALLENGE

ADHD

Hyper
Fidgeting
Stimulants

Patient Communication CHALLENGE

PTSD

Veteran
Flashbacks

Patient Communication CHALLENGE

Schizophrenia

Delusions
Hallucinations
Word salad

Patient Communication CHALLENGE

Demyelinating

Schwann Cell
Oligodendrocyte
Multiple Sclerosis
Guillain-Barre

Patient Communication CHALLENGE

Amyotrophic Lateral Sclerosis

Lou Gehrig disease
UMN + LMN
Superoxide dismutase
ALS

Patient Communication
CHALLENGE

Migraine

Photophobia
Phonophobia
Meninges

Patient Communication
CHALLENGE

Cluster Headache

Periorbital
Lacrimation
Rhinorrhea
Trigeminal

Patient Communication
CHALLENGE

Transient Ischemic Attack (TIA)

Mini-stroke
Ischemia

Patient Communication
CHALLENGE

Bell's Palsy

Idiopathic
Lyme

Patient Communication
CHALLENGE

Extrapyramidal Symptoms

Dystonia
Akathisia
Parkinsonism
Tardive dyskinesia
Antipsychotics

Patient Communication
CHALLENGE

Aneurysm

Berry
Saccular
Dilation

Patient Communication
CHALLENGE

Subdural Hematoma

Crescent-shaped
Hyperdense
Bridging veins

Patient Communication
CHALLENGE

Locked-in Syndrome

Basilar artery
Corticospinal
Corticobulbar

Patient Communication
CHALLENGE

Epidural Hematoma

Middle meningeal
Lucid interval
Biconvex

Patient Communication
CHALLENGE

Circadian Rhythm

Suprachiasmatic nucleus
Melatonin
Entrain

Patient Communication
CHALLENGE

Conjunctivitis

Conjunctiva
Adenovirus

Patient Communication
CHALLENGE

Wernicke (Receptive)

Aphasia

Temporal
Fluent

Patient Communication
CHALLENGE

Subarachnoid Hemorrhage

Aneurysm
AVM
Xanthochromic

Patient Communication
CHALLENGE

Ataxia

Cerebellar
Trendelenburg

Patient Communication
CHALLENGE

Syringomyelia

Central cord syndrome
Syrinx
Chiari malformation

Patient Communication
CHALLENGE

Factitious Disorder

Munchausen
Gain

Patient Communication
CHALLENGE

**Benign Paroxysmal
Peripheral Vertigo**

Otolith
Dix-Hallpike
Epley

Patient Communication
CHALLENGE

Asterixis

Hepatic encephalopathy
Wilson disease

Patient Communication
CHALLENGE

**Broca (Expressive)
Aphasia**

Frontal gyrus
Nonfluent

Patient Communication
CHALLENGE

**Neuroleptic Malignant
Syndrome**

Antipsychotics
Myoglobinuria
Encephalopathy

Patient Communication
CHALLENGE

Horner Syndrome

Ptosis
Miosis
Anhidrosis
Pancoast tumor

Patient Communication
CHALLENGE

Osmotic Demyelination

Hyponatremia
Pontine myelinolysis
Osmotic
Isotonic

Patient Communication
CHALLENGE

Chorea

Basal ganglia
Huntington
Rheumatic fever

Patient Communication
CHALLENGE

Platelets

Megakaryocytes
Thrombopoietin
Von Willebrand Factor

Patient Communication
CHALLENGE

Patient Communication
CHALLENGE

McArdle Disease

Enzyme
Lysosome

Patient Communication
CHALLENGE

Delirium Tremens

Autonomic
Psychomotor agitation
Gamma-Glutamyl
transferase (GGT)

Patient Communication
CHALLENGE

T-cell Activation

MHC
Co-Stimulation
Combinatorial
Junctional
AIRE

Patient Communication
CHALLENGE

Patient Communication
CHALLENGE

**Leukocyte Adhesion
Deficiency**

Umbilical cord
Macrophage
Immunodeficiency
recurrent infection

Patient Communication
CHALLENGE

