A Guide For National Boards Parts 2 & 3

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PROFESSIONAL LICENSING CONSULTANTS, INC.
P.O. BOX 1510 • ROSWELL, GA 30077 • (770) 509-9444

PREFACE

The "***GUIDE FOR NATIONAL BOARDS PARTS 2 & 3***" has been written to aid your preparation for Parts 2 and 3 of the National Boards.

The Guide is designed to OUTLINE, DEFINE, CORRELATE, and SUMMARIZE information. We have kept the pertinent material as concise and simple as is possible to help you to review and integrate the data. In some sections you will simply need to be able to recognize key words; in other areas you will need to understand the structure. More importantly, you must approach this material *in the context of the exam*.

PROFESSIONAL LICENSING CONSULTANTS, INC. recognizes the limitations of simple rote memorization. We emphasize conceptual understanding, so that no matter how the questions are asked, you will be more likely to respond correctly. As we are not the authors of the exam, we do not dictate the actual questions that will be asked. However, by analyzing the previous questions and tendencies, we can establish the interests and direction of the examiners.

In our program we will not only present National Board style questions, we will also discuss the related information. In addition, we will present much of the omitted details and provide direction for your preparation.

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SUGGESTIONS FOR THE USE OF THIS GUIDE

It is crucial that you attend the program AND study this Guide in the manner that it is designed. Learn the information *in the context* of the exam. We will use the questions to help you learn the Guide (the concepts); and the Guide will ensure that you will learn the questions.

The information is grouped in packets of related material. In other words, each concept is placed along with its valid detractors. Remember that this is a multiple-choice exam, so *you do not need to memorize the book*. You will not be tested on all these facts; you only need to be able to isolate the correct choice. You need to learn the key words or phrases only. For example:

glaucoma has *fixed dilated pupils/ redness/ cloudy steam cornea/ cupping of the disk/ crescent-shaped shadow / possible blindness*.
papillitis has *sudden vision loss / pain on eye movement / ass. with MS*
papilledema is due to *intracranial pressure / no eye problems*
or,
If a patient has a headache that is *abrupt, severe*, with *motor changes* or *drowsiness*- think **sub-arachnoid hemorrhage**

At the end of each day, only review the sections that we covered in class. Do not study any sections of the book that we did not discuss until after the first 3 days. You will not know what is important, why it is important and how you should learn it. However, do not ignore any sections of the Guide that we cannot address in class. Ninety-five percent of the Guide relates to a question or a concept in the pool of questions for Parts 2 and 3.

If you don't understand a point or concept, feel free to look the details up (or ask!). Remember, the Guide is written specifically for Parts 2 and 3, so make sure you know *this* guide before studying other material.

Here are some suggestions to help standardize your preparation.

1. UNDERLINE important phrases.
2. HIGHLIGHT key words.
3. Place quotations marks around "verbatim" terminology.

CONVENTIONS USED IN THIS MANUAL

P!&P?	= *pain and paresthesia*	C.I.	= *contraindication*
S/S	= *signs and symptoms*	(N)	= *normal*
↑	= *increases, elevated*	↓	=*decreases, deficiency*
←	= *is caused by*	→	= *indicates, causes*
D.Dx	= *differential diagnosis*	cf.	= *compare/contrast with*
m/c	= *most common*	*f*	= *function*
ⓟ	= *podcast online*		

DIAGNOSIS: RELATED TERMS AND DEFINITIONS

ACROCYANOSIS- An idiopathic vasospasm of the arterioles of the skin of the hands resulting in a symmetrical, persistent painless cyanosis.

ERYTHROMELALGIA- A paroxysmal, bilateral vasodilation of the lower extremities blood vessels causing burning **P!**, redness and increased temperature of the feet.

RAYNAUD'S PHENOMENON- An episodic vasospasm (sympathetic stimulation) resulting in color changes (white-blue-red), paresthesias (**P!** is rare) and ulcerations of the fingers. Attacks may be associated with stress, smoking or cold (cryotherapy is **C.I.**), S.L.E. or scleroderma.

THROMBOANGIITIS OBLITERANS- An inflammatory/occlusive condition of the arteries and veins of the legs. More common in males (especially smokers) 20-40 years of age and is characterized by intermittent claudication (**P!** with exercise, and relieved by rest). a.k.a., *Buerger's*.

AIDS- A syndrome of immunosuppression due to infection via a retrovirus (HIV-1) as a result of exchange of body fluids. Predisposed to opportunistic infections (pneumocystitis carinii, toxoplasmosis, cytomegalovirus, EBV, candidiasis, histoplasmosis, cryptosporidium, etc.) and Kaposi's sarcoma. Lab: ELISA, Western Blot, CD4 (helper T cells) lymphocytes).

ANGINA PECTORIS- Temporary myocardial ischemia produced upon exertion. The **P!** is retrosternal ("*crushing*") may radiate and lasts 1-5 minutes. EKG and ESR: normal.

DISSECTING ANEURYSM- Separation of the walls of the aorta results in sudden (peak intensity at onset) severe, crushing chest **P!**, described as being "torn in half". Patient may be shocky and present with an abdominal bulge. Normal EKG and BP (unequal in lower extremities). (May be associated with Marfan's syndrome- arachnodactyly, lens dislocation).

MYOCARDIAL INFARCTION- **P!** is severe ("crushing" or "pressure-like"), prolonged (20 minutes to hours) retrosternal and radiating. May occur spontaneously with no relief with rest. EKG: abnormally deep Q waves, elevated S-T segment, inverted T wave.

PERICARDIAL EFFUSION- Fluid accumulation within the pericardial sac. S/S: dyspnea, cough, precordial P!, ↑ cardiac dullness (x-ray shadow), ↑ pulse pressure, friction rubs, orthopnea and muffled heart sounds. Differentiated from congestive heart failure by echocardiogram.

PRINZMETAL'S ANGINA- Variant angina due to coronary artery spasm. **P!** occurs at rest. EKG shows arrhythmia and ST elevation.

APPENDICITIS- Inflammation usually 2° to obstruction. Begins with diffuse epigastric/periumbilical **P!** (especially on recumbency), migrating to the R.L.Q. and groin. S/S- vomiting, fever, constipation, abdominal rigidity, rebound tenderness (Blumberg's sign), leukocytosis, rectal **P!** but no bleeding. Associated with the "*psoas sign*" and "*obturator sign*" (**P!** is ↓ with flexion).

IRRITABLE BOWEL SYNDROME- (also *spastic colon*). A chronic, non-inflammatory disorder of GI motility (psycho-physiological ass. w/ stress). S/S - chronic intermittent constipation and diarrhea, abdominal **P!** and distension, flatulence and small stools.

DIVERTICULITIS- Inflammation/perforation of diverticula, with L.L.Q. **P!**, fever, abdominal distention, occult blood, and leukocytosis. Possible intestinal obstruction, malignancy.

REGIONAL ILEITIS (CROHN'S)- A non-specific granulomatous inflammation associated with chronic diarrhea, abdominal **P!** and mass, fever, weight loss, Vit. B12 def. and (+) HLA-B27.

ULCERATIVE COLITIS- Chronic, non-specific inflammatory/ulcerative disorder. Usually 15-40 y.o.a., and characterized by bloody diarrhea, arthropathies (sacroiliitis), and a +HLA-B27. Dx by sigmoidoscopy.

APTHOUS ULCER/STOMATITIS- "*canker sore*". **P!**-ful round white ulcer with yellow fibrinous red margins on the buccal mucosa.

BASAL CELL CARCINOMA- a.k.a., *rodent ulcer*. Small, shiny (pearly gray) nodule of the skin with occasional teleangiectasis. May be ulcerated, crusted and bleed.

hyper-resonant / radiolucent

EMPHYSEMA- *COPD-Type A*. Distention and destruction of alveolar walls. X-rays: radiolucent lungs (blebs, bullae), mediastinum shifting (away), narrow heart shadow, flat diaphragm. S/S; exertional dyspnea, prolonged expiration (>6 sec.), barrel chest, respiratory muscle hypertrophy, hyper-resonance on percussion, cyanosis, clubbing of the digits, pursed lips and nonproductive cough. Precursors: smoking, occupational or environmental exposure.

PNEUMOTHORAX- Sudden onset of **P!** (non-radiating, pressure of the chest) and dyspnea often in a previously healthy individual. May also produce tachypnea, tachycardia and hyper-resonance on percussion. Radiographs demonstrate radiolucent lung fields.

dull / radiodense

BRONCHIAL ASTHMA- Hyper-reactivity (to allergens, exertion, etc.) causes bronchial constriction with pulmonary secretions. Characterized by acute dyspnea, wheezing, productive cough (w/ *eosinophilia, Curschmann* spirals, and *Charcot-Leyden* crystals).

BRONCHIECTASIS- A chronic abnormal dilatation and destruction of the bronchial walls. Digital clubbing, inspiratory rales, halitosis, and copious, foul smelling, muco-purulent sputum.

BRONCHOGENIC CARCINOMA- S/S; cough, dyspnea, hemoptysis, chest pain, weight loss, digital clubbing, lymphadenopathy, sinus arrythmia (due to vagal irritation) and Horner's syndrome. X-ray: periostitis, mass or infiltrate, wide mediastinum, atelectasis and pleural effusion. M/C in right upper lobe. The M/C cell types: squamous cell, adenocarcinoma.

CHRONIC BRONCHITIS- Also, *COPD-Type B*. Excess mucous production in the bronchi w/ pulmonary obstruction. Presents a history of productive cough, dyspnea and wheezes.

MIDDLE LOBE SYNDROME- Recurrent (chronic) pneumonia/atelectasis due to bronchus obstruction and compression by enlarged lymph nodes.

PLEURAL EFFUSION- Excess (>250ml) fluid accumulation in the pleural space usually due to cardiopulmonary disease. S/S: chest pain, dyspnea, orthopnea and a dry, nonproductive cough. Exam reveals ↓ fremitus, dullness on percussion and ↓ breath sounds near lung bases.

PNEUMONIA- Pulmonary consolidation due to infection. S/S include: fever, dyspnea, tachypnea, productive cough (rust-colored sputum), dullness on percussion, rales, displaced breath sounds, ↑ voice sounds (bronchophony) and ↑ tactile fremitus. X-ray reveals increased density, and the "air bronchogram sign".

PULMONARY EDEMA- Fluid in the lungs (often due to left ventricular failure or mitral stenosis). S/S: nocturnal dyspnea, orthopnea, tachypnea, and pink frothy sputum. Exam reveals rales and rhonchi at lung bases, "butterfly pattern" of alveoli edema on x-ray.

PULMONARY EMBOLISM- Sudden onset of "*knife-like*" chest **P!**, dyspnea and cough with hemoptysis. May result in possible pulmonary infarct. History suggests a pre-embolic condition: surgery, fracture, thrombosis, prolonged immobility, postpartum, etc.

CELLULITIS- A diffuse infection of the skin and deep subcutaneous tissues producing an area of local tenderness and solid edema. The skin is hot and red border.

ERYSIPELAS- A β-hemolytic strep. skin infection characterized by a sharply demarcated area of redness (frequently of the face), tight skin and pitting edema. Sudden chills, fever and pain. Considered to be a superficial form of cellulitis.

CIRRHOSIS- Fibrosis and nodule formation of hepatic tissue. S/S; jaundice, hepatic enlargement, portal hypertension (spider angioma, nevi, hemorrhoids, esophageal varices with hematemesis, clubbing of the digits), testicular atrophy, bronze diabetes ("tanned"), hemochromatosis. M/C cause of ascites.

COARCTATION OF THE AORTA- Narrowing of the aortic arch results in systolic hypertension of the upper extremities, head and neck (dizziness, epistaxis, headache); decreased blood pressure in the lower extremities (decreased femoral pulses, intermittent claudication).

LERICHE'S SYNDROME- A "saddle thrombus" of the terminal aorta causing intermittent claudication, impotence, ↓ femoral and popliteal pulses, and coldness of the lower extremities.

SALIENT FEATURES OF PRIMARY BONE TUMORS AND TUMOR-LIKE LESIONS

PROCESS AGE/ SEX	RADIOGRAPHIC FINDINGS & CLINICAL FEATURES
ANEURYSMAL BONE CYST 10-20/ 1:1	eccentric, osteolytic expansile lesion with a thin cortical shell ("blister of bone"); cortical erosion; P! is acute, rapidly progressive; neurological signs with spinal lesions
ENCHONDROMA 10-40/ 1:1	tubular bones (especially the hands and feet); well-defined eccentric radiolucency with punctate calcifications; may be expansile; mild P!, swelling, tenderness
EWING'S SARCOMA 3-14/ m2:1	tubular bones (meta-diaphyseal) and flat bones; diffuse rarefaction; sub-periosteal laminations- "onion-skin"; "cortical saucering"; and sclerosis. Mimics osteomyelitis; P!, swelling, fever, rubor; leukocytosis, ↑ ESR; anemia
FIBROUS CORTICAL DEFECT 4-8/ 1:1	90% at the posterior distal femur; well-defined, lobulated, radiolucent cortical defect; <2 cm in diameter; no expansion. asymptomatic; seen in 30-40% of children <8 years of age. May be self-resolving.
NON-OSSIFYING FIBROMA 8-20/ m2:1	actively proliferating F.C.D.; >2 cm in diameter, usually asymptomatic; may be self-resolving; possible pathological fracture.
GIANT CELL TUMOR 20-40/ m4:5	meta-epiphyseal in long bone (60% in knee; distal radius) eccentric, osteolytic "soap-bubble"; cortical thinning and expansion. local P!, swelling; possible pathological fracture; quasi-malignant
HEMANGIOMA 20-40/ 1:1	coarse, vertical striations ("corduroy" appearance); normal cortex; no expansion; generally asymptomatic
MULTIPLE MYELOMA "*plasma cell myeloma*" >40/ m2:1	"punched out areas of osseous destruction"; general osteopenia; pathological fracture, no reactive sclerosis or expansion. Local P!, swelling; anemia, uremia; ↑ serum and urinary Ca^{++}; Bence-Jones proteinuria; rouleaux formation, ↑ gamma globulins (reversed A-G ratio, "*M spike*" or spiking of the gamma globulins on immunoelectrophoresis) and ↑ total protein.
OSTEOBLASTOMA 10-25/ m2:1	over 50% in posterior spine; radiolucent nidus (>2 cm in diameter) with minimal to absent reactive sclerosis. local P! less severe than osteoid osteoma, and not relieved by salicylates; cord signs
OSTEOCHONDROMA 10-25/ m2:1	pedunculated or sessile; cartilage capped "coat-hanger" or "cauliflower" exostosis; grows away from the epiphysis; favors the knee and humerus. Generally asymptomatic unless pressure related.