College of Naturopaths of Ontario

REFERENCE GUIDE

ONTARIO CLINICAL SCIENCES EXAMINATION



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GENERAL INFORMATION

About this guide

This Reference Guide has been created to help candidates seeking registration with the College of Naturopaths of Ontario (the College) to prepare to sit the Ontario Clinical Sciences Examination. The Ontario Clinical Sciences Exam Handbook, which covers examination procedures, such as requesting accommodation, required and permitted items, registering for the exam and post-exam processes is available from the ETP Exams Resources and Policies section of the College website.

This Reference Guide includes:

- accepted acronyms and abbreviations.
- the exam blueprint outlining competencies – and weighting – to be tested in each content area (amended July 2021); and
- conditions and testable content.

The Reference Guide does not reflect the structure of the exam. However, individuals should be well-prepared to sit the exam by studying the processes, conditions, systems, and other information it contains.

About the Ontario Clinical Sciences Exam

The goal of the Ontario Clinical Sciences Exam is to test entry-level competencies required of all naturopaths in Canada to practise safely, ethically and competently, regardless of jurisdiction. The exam is a mix of case-based and stand-alone questions which test for clinical readiness and emphasise a candidate's ability to apply their knowledge and critical thinking. The exam is not testing any one curriculum from a specific Council on Naturopathic Medical Education (CNME)-accredited program, as such, all candidates are advised to review the blueprint in full.

About the College

The College of Naturopaths of Ontario is the regulatory authority governing naturopaths in Ontario. Its mandate is to serve the public interest by enhancing safety for patients using naturopaths. The College meets its mandate by ensuring that individuals wishing to be naturopaths in Ontario meet the entry-to-practise requirements, by ensuring practising naturopaths maintain their competency, by establishing and maintaining standards of practice in Ontario and by holding naturopaths accountable through the complaints and disciplinary processes.

About the College's entry-to-practise exams

There are four mandatory entry-to-practise exams that a candidate must pass in order to be eligible to be registered to practise as a naturopath in Ontario:

1. Ontario Clinical Sciences Exam
2. Ontario Biomedical Exam
3. Ontario Clinical (Practical) Exams
4. Ontario Jurisprudence Online Learning Module

The Clinical Sciences exam:

- is computer-based,
- allows for three re-takes with feedback and remediation after the second failure so candidates know how and where to improve,
- can be completed in less than a day (exam run time is four hours, split into two, two-hour segments, with a 15-minute break in between),
- provides exam candidates with verifiable information about exam performance,
- reflects what is taught and being practised in Ontario and Canada today,
- can be completed in any order, post-graduation, within the roster of Ontario entry-to-practise exams, depending on candidate preference,
- meets federal and provincial legal requirements for people with disabilities and people who need accommodations, as well as requirements to offer entry-to-practise and substantial equivalency exams in English as well as in French.

GENERAL INFORMATION

5-HTP: 5-hydroxytryptophan
AC: ante cibum (before meals)
ACTH: adrenocorticotropic hormone
ADH: antidiuretic hormone
ADHD: attention deficit hyperactivity disorder
AFP: alpha-fetoprotein
AIDS: acquired immune deficiency syndrome
ALT: alanine aminotransferase
AMP: adenosine monophosphate
ANA: antinuclear antibody
ANS: autonomic nervous system
AROM: active range of motion
ASA: acetylsalicylic acid
AST: aspartate aminotransferase
ATP: adenosine triphosphate
AV: atrioventricular
BID: bid in die (twice a day)
BLS: basic life support
BMI: body mass index
BMR: basal metabolic rate
BP: blood pressure
BPM: beats per minute
cAMP: cyclic adenosine monophosphate
CBC: complete blood count
CDC: Centers for Disease Control
cGMP: guanosine cyclic monophosphate
CH: centesimal dilution using Hahnemann's dilution method
CIN: cervical intraepithelial neoplasia
CMV: cytomegalovirus
CN: cranial nerve
CNS: central nervous system
CoQ10: coenzyme Q10 (ubiquinol)
CPR: cardiopulmonary resuscitation
CRP: C-reactive protein
CSF: cerebrospinal fluid
CVA: costovertebral angle
CVAT: costovertebral angle tenderness
DHEA: dehydroepiandrosterone
DPT: diphtheria-pertussis-tetanus
DTR: deep tendon reflexes
DVT: deep vein thrombosis
DXA/DEXA: dual-energy x-ray absorptiometry
EBV: Epstein-Barr virus
ECG/EKG: electrocardiogram
EEG: electroencephalogram
eGFR: estimated glomerular filtration rate
EMG: electromyogram
ESR: erythrocyte sedimentation rate
FEV: forced expiratory volume
FSH: follicle-stimulating hormone
G6PD: glucose-6-phosphate dehydrogenase
GABA: gamma-aminobutyric acid
GFR: glomerular filtration rate
GGT: gamma-glutamyl transferase
GHRH: growth hormone-releasing hormone
GMP: guanosine 5'-monophosphate
GnRH: gonadotropin-releasing hormone
Hb: hemoglobin
HbA1C: hemoglobin A1C
hCG: human chorionic gonadotropin
Hct: hematocrit
HDL: high density lipoprotein
HIV: human immunodeficiency virus
HLA: human leukocyte antigen
HPV: human papillomavirus
HRT: hormone replacement therapy
HS: hora somni (at bedtime or half strength)
IBD: inflammatory bowel disease
IL: interleukin
IM: intramuscular
RBC: red blood cells
RDW: red cell distributions width
RF: rheumatoid factor

IUD: intrauterine device
IV: intravenous
LDL: low density lipoprotein
LH: luteinizing hormone
LLQ: left lower quadrant
LOC: loss of consciousness
LUQ: left upper quadrant
MAO: monoamine oxidase
MCH: mean corpuscular hemoglobin
MCHC: mean corpuscular hemoglobin concentration
MCV: mean corpuscular volume
MPV: mean platelet volume
MRI: magnetic resonance imaging
MVA: motor vehicle accident
NAC: N-acetyl cysteine
NADH: nicotinamide adenine dinucleotide phosphate
NK: natural killer (cells)
NSAID: non-steroidal anti-inflammatory drug
OTC: over the counter
PABA: para-amino benzoic acid
PC: post cibum (after meals)
PG: progesterone
PMN: polymorphonuclear neutrophil
PNS: peripheral nervous system
PR: pulse rate
PRN: pro re nata (as needed)
PT: prothrombin time
PTH: parathyroid hormone
QID: quarter in die (4 times a day)
QD: quaque die (once a day)
Rh: rhesus factor
RLQ: right lower quadrant
RNA: ribonucleic acid
ROM: range of motion
RR: respiratory rate
RSV: respiratory syncytial virus
RUQ: right upper quadrant
SA: sinoatrial
SG: specific gravity
SGOT: serum glutamic-oxaloacetic transaminase
SLE: systemic lupus erythematosus
SOD: superoxide dismutase
Sub Q: Subcutaneous
T: temperature
T2DM: type 2 diabetes mellitus
TENS: transcutaneous electrical nerve simulation
TIBC: total iron-binding capacity
TID: ter in die (three times a day)
TNF: tumor necrosis factor
TRH: thyroid-releasing hormone
TSH: thyroid stimulating hormone
URI: upper respiratory infection
UTI: urinary tract infection
VLDL: very low-density lipoprotein
VMA: vanillylmandelic acid
WBC: white blood cell
WHO: World Health Organization
WNL: within normal limits

**Terms with acronyms not appearing on this list will be spelt out in full on the exam form.*

CLINICAL SCIENCES EXAMINATION BLUEPRINT

Competencies	% of Exam
1. ASSESSMENT & DIAGNOSIS	**30-34%**
1.01 Evaluate patients.	
1.01.01 Apply ethical principles to doctor-patient interactions.	
1.01.02 Take a medical and psychosocial history.	
1.01.03 Perform a physical examination.	
1.01.04 Select lab tests*.	
1.01.05 Collect and prepare specimens for lab evaluation.	
1.01.06 Select imaging studies**.	
1.02 Assess common conditions, both acute and chronic.	
1.02.01 Identify risk factors.	
1.02.02 Recognize signs and symptoms.	
1.02.03 Identify comorbidities.	
1.02.04 Generate a differential diagnosis.	
1.02.05 Determine pathogenesis and etiologies.	
1.03 Interpret findings.	
1.03.01 Interpret findings of physical examination.	
1.03.02 Interpret results of lab tests.	
1.03.03 Identify factors that may interfere with lab results.	
1.03.04 Interpret results of imaging.	
1.03.05 Predict the complications and sequelae.	
1.03.06 Determine the prognosis.	
1.03.07 Monitor patient progress using lab tests and imaging studies.	
1.04 Apply evidence informed practice to patient management.	
1.04.01 Interpret and critique the results of research studies.	
1.04.02 Apply the results of research studies to patient management	

*Refer to Ontario Clinical Sciences Examination Reference Guide, section Laboratory Tests
**Refer to Ontario Clinical Sciences Examination Reference Guide, section Imaging Studies

Competencies	% of Exam
2. MODALITIES	**55-59%**
2.01 Manage patient care by applying principles of botanical prescribing.	
2.01.01 Evaluate the safety of botanical medicine prescriptions, including side effects, contraindications, interactions, and toxicity.	
2.01.02 Prescribe botanical medicines*, including the posology and prescribing abbreviations, based on pharmacognosy, therapeutic effects, indications, mechanisms of action, and route of administration.	
2.02 Manage patient care by applying principles of homeopathic prescribing.	
2.02.01 Demonstrate knowledge of the critical aspects of case taking (e.g., timing, sidedness, intensity, aggravating and ameliorating factors).	
2.02.02 Prescribe homeopathic preparations** for acute conditions based on keynotes, including the posology and prescribing abbreviations, using classical Hahnemannian homeopathy.	
*2.03 Manage patient care by applying principles of clinical nutrition, including nutraceuticals***.*	
2.03.01 Assess diet and nutritional status (intake, absorption, utilization, loss).	
2.03.02 Evaluate the safety of nutritional interventions, including side effects, contraindications, interactions, and toxicity.	
2.03.03 Prescribe nutritional interventions based on indications, bioavailability, food sources, route of administration, and requirements for macronutrients and micronutrients.	
2.03.04 Prescribe therapeutic diets**** based on indications and contraindications.	
2.03.05 Counsel patients about general nutrition and food sources of nutrients.	
2.04 Manage patient care by applying principles of physical medicine.	
2.04.01 Evaluate the safety of physical medicine interventions, including side effects, contraindications and interactions.	
2.04.02 Perform specialized orthopedic tests*****.	
2.04.03 Perform osseous manipulation.	
2.04.04 Perform soft tissue manipulation.	
2.04.05 Treat patients using therapeutic devices (diathermy, sine wave and TENS, interferential and micro-current, light therapy, and therapeutic ultrasound).	
2.04.06 Prescribe and administer hydrotherapy treatments.	
2.04.07 Prescribe therapeutic exercise.	
2.04.08 Counsel patients regarding prevention of musculoskeletal conditions.	

*Refer to Ontario Clinical Sciences Examination Reference Guide, section Botanical Medicines
**Refer to Ontario Clinical Sciences Examination Reference Guide, section Homeopathic Preparations
***Refer to Ontario Clinical Sciences Examination Reference Guide, section Nutraceuticals
****Refer to Ontario Clinical Sciences Examination Reference Guide, section Therapeutic Diets
*****Refer to Ontario Clinical Sciences Examination Reference Guide, section Orthopedic Tests

Competencies	% of Exam
2.05 Manage patient care by applying principles of counseling and health psychology.	
2.05.01 Apply basic counseling principles and use counseling techniques to provide patient care.	
2.05.02 Counsel patients regarding lifestyle choices, health promotion, and the prevention of chronic disease.	
2.05.03 Use and prescribe mind-body techniques.	
2.05.04 Identify and address lifespan/developmental issues.	
2.05.05 Use evidence-based psychological assessment tools*.	
2.06 Manage patient care by applying principles of Traditional Chinese Medicine.	
2.06.01 Demonstrate knowledge of the critical aspects of case taking (e.g., ten questions, pulse and tongue).	
2.06.02 Recognize signs and symptoms according to Traditional Chinese Medicine patterns (eight principles, vital substances, organs, meridians, five elements).	
2.06.03 Diagnose Zang-Fu pathologies**.	
2.06.04 Evaluate the safety of Chinese patent herbal formulas***, including side effects, contraindications, interactions, and toxicity.	
2.06.05 Prescribe Chinese patent herbal formulas based on Zang-Fu diagnosis.	
2.06.06 Determine acupuncture**** prescription.	
2.06.07 Administer acupuncture including point location, angulation, depth, and clean needling technique.	
2.06.08 Evaluate the safety of acupuncture including side effects, contraindications, interactions, and cautions.	
2.06.09 Prescribe adjunct therapies (moxibustion, cupping, electro-acupuncture, and laser).	
2.07 Manage patient care by applying principles of pharmacotherapy.	
2.07.01 Evaluate the safety of pharmaceuticals, including side effects, contraindications, interactions, and toxicity.	
2.07.02 Prescribe pharmaceuticals***** based on therapeutic effects, indications, mechanisms of action, and route of administration.	
2.07.03 Monitor and assess for therapeutic drug levels.	

*Refer to Ontario Clinical Sciences Examination Reference Guide, section Psychological Assessment Tools
**Refer to Ontario Clinical Sciences Examination Reference Guide, section Zang-Fu Pathologies
***Refer to Ontario Clinical Sciences Examination Reference Guide, section Chinese Patent Herbal Formulas
****Refer to Ontario Clinical Sciences Examination Reference Guide, section Acupuncture Point
*****Refer to Ontario Clinical Sciences Examination Reference Guide, section Pharmaceuticals

Competencies	% of Exam
3. CRITICAL CARE AND PUBLIC HEALTH	**9-13%**
3.01 Manage high-risk patients and critical conditions.	
3.01.01 Identify high-risk patients and critical conditions.	
3.01.02 Manage high-risk patients and critical conditions, including referral as appropriate.	
3.01.03 Perform Cardiopulmonary Resuscitation.	
3.01.04 Administer oxygen.	
3.02 Implement occupational and public health policies.	
3.02.01 Apply principles of sterilization, disinfection, and universal precautions.	
3.02.02 Manage bio-hazardous substances and materials.	
3.02.03 Counsel patients regarding communicable diseases.	
3.02.04 Report communicable diseases to local public health authorities.	
3.02.05 Report adverse reactions to therapeutic substances to Health Canada.	

Other Blueprint Parameters

Condition	% of Exam
1. Vascular	9-11%
2. Infectious	9-11%
3. Neoplastic	4-6%
4. Degenerative	9-11%
5. Inflammatory/Immunologic	9-11%
6. Congenital/Developmental	6-8%
7. Autoimmune	8-10%
8. Toxic/Environmental	6-8%
9. Traumatic	4-6%
10. Endocrine	9-11%
11. Metabolic	6-8%
12. Psychosomatic/Psychiatric	9-11%

Patient Population	% of Exam
Pediatric (0-14)	15-25%
Adult (15-49)	25-35%
Older Adult (50-65)	25-35%
Geriatric (over 65)	15-25%

Item Type	% of Exam
Independent	28-32%
Case-Based	68-72%

Taxonomy (Cognitive Level)	% of Exam
Knowledge/Comprehension	15-25%
Application	45-55%
Critical Thinking	25-35%

CONDITIONS TESTED ON THE CLINICAL SCIENCES EXAMINATION*

1. VASCULAR

A. Circulatory flow (lymphedema, central edema, peripheral edema, pulmonary edema, Raynaud's disease [primary Raynaud's phenomenon], chronic arterial insufficiency/chronic venous insufficiency, stasis dermatitis, peripheral vascular disease, hyperlipidemia, intermittent claudication, cluster headache, migraine headache).
B. Blood vessels (varicose veins, esophageal varices, hemorrhoids, aortic aneurysm, cerebral aneurysm).
C. Blood pressure (primary hypertension, secondary hypertension, hypertensive crisis, pulmonary hypertension, hypotension).
D. Ischemic conditions (ischemic heart disease, myocardial infarction, cardiac arrest, cerebrovascular accident, transient ischemic attack, avascular necrosis of the femoral head, gangrene, embolism, pulmonary infarction, pulmonary embolism).
E. Blood (anemias - aplastic, hemolytic, macrocytic, microcytic, normocytic, anemia of chronic disease; neutropenia, eosinophilia, basophilia, thrombocytopenia, Henoch-Schonlein purpura, disseminated intravascular coagulation, thrombosis).
F. Cardiac arrhythmias (atrial fibrillation, atrial and ventricular premature beats, heart block, premature ventricular contractions/ventricular ectopic beats, sinus bradycardia, sinus tachycardia, supraventricular tachyarrhythmias, ventricular fibrillation, ventricular tachycardia).
G. Conditions specific to pregnancy (gestational hypertension, antepartum anemia, placenta previa, abruptio placenta, pre-eclampsia).

2. INFECTIOUS

A. Blood and lymph (malaria, septicemia).
B. Generalized (Lyme disease, cytomegalovirus, Epstein–Barr virus, mononucleosis, herpes simplex, human immunodeficiency virus, systemic candidiasis, disseminated candidiasis, group A streptococcus, West Nile virus).
C. Gastrointestinal and hepatobiliary (oral thrush, intestinal dysbiosis, cholera, amoebic dysentery, *E. Histolytica*, *Giardia*, helminths [flat worms, flukes], round worms [*Ascaris*, pinworms, schistosomiasis], bacterial gastroenteritis, bacterial dysentery, *Salmonella, Shigella, Campylobacter, Escherichia coli [E. coli],* foodborne illness, enterotoxigenic gastroenteritis, viral gastroenteritis, post-antibiotic *Clostridium* colitis, peritonitis, gastrointestinal abscess, hepatitis [A, B and C], bacterial enterocolitis, proctocolitis).
D. Head and neck (pharyngitis, hordeolum, orbital cellulitis, otitis, vertigo caused by inner ear infections, dental abscess, gingivitis, stomatitis, laryngitis, tonsillitis, parotitis, peritonsillar abscess, retropharyngeal abscess, mastoiditis, viral thyroiditis [De Quervain's thyroiditis])
E. Musculoskeletal (septic arthritis, osteomyelitis, poliomyelitis).
F. Neurological (tetanus, botulism, encephalitis, herpes zoster, meningitis, neuritis, rabies).
G. Respiratory (blastomycosis, coccidioidomycosis, histoplasmosis, influenza, bronchiolitis, bronchitis, lung abscess, pleural empyema [pyothorax], pneumonia, tuberculosis).
H. Skin and nails (mucocutaneous candidiasis, carbuncles, cellulitis, folliculitis, furuncles, impetigo, necrotizing fasciitis, onychomycosis, paronychia, pediculosis, scabies, tinea, staphylococcus aureus).
I. Genitourinary (poststreptococcal glomerulonephritis, pelvic inflammatory disease, toxic shock syndrome, pyelonephritis, cystitis, urethritis, bacterial vaginitis, vaginal candidiasis, vaginosis, balanitis, epididymitis, orchitis, warts, human papillomavirus).
J. Sexually transmitted infections (chancroid, chlamydia, gonorrhea, herpes genitalis, lymphogranuloma venereum, phthirus pubis, syphilis, trichomoniasis).
K. Breast (mastitis).
L. Conditions critical in pregnancy (rubella, group B streptococcus, toxoplasmosis, cytomegalovirus).
M. Conditions generally pertaining to pediatrics (coxsackievirus, diphtheria, scarlet fever, encephalitis, erythema infectiosum, hand-foot-mouth disease, herpangina, meningitis, mumps, otitis media, pertussis, roseola, measles, rubella, streptococcal pharyngitis, thrush, varicella, croup, molluscum contagiosum, epiglottitis, infant respiratory distress syndrome, respiratory syncytial virus, rotavirus).

3. NEOPLASTIC

A. Blood and lymph neoplasms (leukemias, Hodgkin's and non-Hodgkin's [Burkitt] lymphoma, multiple myeloma, polycythemia vera, secondary polycythemia, myelodysplastic Syndrome).
B. Endocrine neoplasms (adrenal, pancreatic, pituitary, parathyroid, pheochromocytoma and thyroid).
C. Gastrointestinal neoplasm (colorectal, esophageal, gallbladder, gastric, hepatic, pancreatic, carcinoid, multiple endocrine neoplasia [MEN1/MEN2]).
D. Head and neck neoplasms (gingival, laryngeal, tonsillar, oral).
E. Musculoskeletal (chondromas, neuromas, osteochondromas, osteoid osteoma, osteomas, sarcomas).
F. Neurological (astrocytoma, glioma, meningioma, neuroma).
G. Respiratory (lung adenocarcinoma, mesothelioma, Pancoast tumor, small/oat cell carcinoma, squamous cell carcinoma).
H. Skin and nails (actinic keratosis, basal cell carcinoma, Kaposi's sarcoma, melanoma, squamous cell carcinoma).
I. Benign skin lesions (lichenification, lipoma, sebaceous cysts, seborrheic keratosis, acrochordon/skin tag, verrucae).
J. Genitourinary (adenocarcinoma, adenomyosis, cervical polyps, cervical dysplasia, cervical cancer, endometrial cancer, leiomyoma, uterine polyps, ovarian cancer, benign prostatic hyperplasia, prostate cancer, renal cell carcinoma, sarcoma, teratoma, testicular tumor, urinary tract cancer, endometrial hyperplasia, endometriosis, uterine cancer, vulvar cancer, nabothian cysts, colon cancer).
K. Breasts and axillae (breast cancer [DCIS, LCIS, inflammatory, invasive], fibroadenoma, fibrocystic breasts, Paget's disease of the breast).
L. Conditions critical in pregnancy (gestational trophoblastic disease/hydatidiform mole).
M. Conditions critical in pediatrics (leukemia, Ewing's sarcoma, neuroblastoma, Wilms' tumor, osteosarcoma, retinoblastoma,

hemangioma).

4. DEGENERATIVE

A. Cardiovascular (cardiomyopathy, right-sided and left-sided congestive heart failure, aortic valve stenosis, mitral, pulmonary, and tricuspid valves, insufficiency of aortic, mitral, pulmonic, and tricuspid valves, mitral valve prolapse, hepatojugular reflux).
B. Gastrointestinal and hepatobiliary (GERD, hiatal hernia, hypochlorhydria, cirrhosis, diverticulosis, fistula, inguinal hernia, umbilical hernia, intestinal polyps, Meckel's diverticulum, rectal prolapse).
C. Head and neck (cataract, glaucoma, hypertensive retinopathy, macular degeneration, otosclerosis).
D. Respiratory (chronic bronchitis, emphysema, pulmonary fibrosis).
E. Musculoskeletal (osteoarthritis, osteochondrosis, osteopenia, osteoporosis, ganglion cyst, discopathy [cervical, thoracic, lumbar], spondylosis, facet syndrome, kyphosis, scoliosis, lordosis, spondylolisthesis, hallux malleus/hammer toes, spinal stenosis polymyalgia rheumatica).
F. Neurological (neuralgia, neuropathy, dementia [Alzheimer's, frontotemporal, lewy body, pre-senile, senile, vascular], Parkinson's disease/Parkinsonism, amyotrophic lateral sclerosis).
G. Genitourinary (nephropathy, nephrosclerosis, renal failure, uterine prolapse, vaginal prolapse, urinary incontinence, vaginal atrophy).
H. Other conditions commonly associated with aging (loss of balance and flexibility, vision impairment, hearing impairment, undernourishment and malnourishment, muscle and joint pain, pressure ulcers).

5. INFLAMMATORY, IMMUNOLOGIC

A. Blood and lymph (lymphadenitis, lymphangitis, phlebitis, hemolytic uremic syndrome).
B. Cardiovascular (endocarditis, myocarditis, pericarditis, temporal arteritis/giant cell arteritis, vasculitis, atherosclerosis, thrombophlebitis).
C. Gastrointestinal and hepatobiliary (Barrett's esophagitis, eosinophilic esophagitis, esophageal strictures, gastric ulcer, gastritis, peptic ulcer disease, pancreatitis, cholecystitis, splenomegaly, appendicitis, diverticulitis, duodenal ulcer, irritable bowel syndrome, anorectal strictures, cryptitis, fissures, proctitis).
D. Head and neck (chalazion, conjunctivitis, dacryocystitis, pterygium, uveitis, labyrinthitis, vestibular neuronitis, vestibulitis, allergic rhinitis, sinusitis, nasal polyps, papilledema).
E. Hypersensitivity disorders (allergies, anaphylaxis, urticaria, angioedema).
F. Respiratory (asthma, bronchiectasis, pleural effusion).
G. Musculoskeletal (bursitis, tendinitis, adhesive capsulitis, epicondylitis, de Quervain's tenosynovitis, trigger finger, costochondritis, chondromalacia patella, complex regional pain syndrome, chronic fatigue syndrome, fibromyalgia).
H. Neurological (acute inflammatory demyelinating neuropathy, Guillain-Barre syndrome, radiculitis, sinus headache, Bell's palsy, trigeminal neuralgia, post-polio syndrome).
I. Skin and nails (acne rosacea, acne vulgaris, pityriasis alba and rosea, seborrheic dermatitis, contact dermatitis, eczema, erythema multiforme, urticaria).
J. Genitourinary (glomerulonephritis, nephritis, nephrosis, nephrotic syndrome, interstitial cystitis, endometritis, Bartholin's cyst, prostatitis, immunologic causes of infertility) .
K. Conditions critical in pregnancy (pruritic urticarial papules and plaques of pregnancy).

6. CONGENITAL, DEVELOPMENTAL

A. Blood and lymph (alpha-thalassemia, beta-thalassemia, glucose-6-phosphate dehydrogenase deficiency, hemochromatosis, sickle cell disease, hemophilia, Von Willebrand disease, acute intermittent porphyria, erythropoietic protoporphyria, porphyria cutanea tarda, familial hypercholesterolemia, hereditary spherocytosis).
B. Immunologic (IgA deficiency, hereditary angioedema, severe combined immunodeficiency, Wiskott-Aldrich syndrome, Chediak-Higashi Syndrome, chronic granulomatous disease, Bruton’s agammaglobulinemia).
C. Head and Neck (cleft lip/palate, Coat’s disease, retinopathy of prematurity).
D. Musculoskeletal (osteitis deformans, Paget's disease of bone, Dupuytren's contracture, muscular dystrophy, achondroplasia).
E. Vascular (arterial malformations, congenital heart disorders, atrial septal defect, coarctation of the aorta, patent ductus arteriosus, Tetralogy of Fallot, ventricular septal defect).
F. Neurologic (neurofibromatosis, tuberous sclerosis, Huntington's disease, neural tube defects, seizure disorders [epileptic, focal, generalized]).
G. Genitourinary (polycystic kidney disease, renal glucosuria, Wilson’s syndrome, 21-hydroxylase deficiency, Klinefelter’s syndrome, hypospadias, epispadias, cryptorchidism, paraphimosis, phimosis).
H. Conditions related to pregnancy (oligohydramnios, polyhydramnios, intrauterine growth restriction).
I. Gastrointestinal disorders (anal stenosis, infantile colic, enuresis, encopresis, Hirschsprung's disease, intussusception, meconium ileus, pyloric stenosis, familial polyposis coli).
J. Musculoskeletal disorders (congenital hip dislocation, internal tibial torsion, femoral anteversion, juvenile rheumatoid arthritis, Legg-Calve Perthes disease, Osgood-Schlatter disease, subluxation of radial head/nursemaid' s elbow, osteochondrosis, rickets, scoliosis, Duchenne’s Muscular dystrophy, Marfan’s syndrome).
K. Developmental disorders (failure to thrive congenital hypothyroidism, Fanconi's syndrome, glycogen storage diseases, galactosemia).
L. Other clinically significant genetic variations (Down syndrome, Turner’s syndrome, Methylenetetrahydrofolate reductase [MTHFR] gene

variant, breast cancer tumour suppressor [BRCA1, BRCA2] gene defect, Phenylketonuria [PKU]).

7. AUTOIMMUNE

A. Blood and lymph (idiopathic thrombocytopenic purpura).
B. Cardiovascular (rheumatic fever, rheumatic heart disease, necrotizing vasculitis, polyarteritis nodosa, temporal arteritis, vasculitis, granulomatosis with polyangiitis [GPA]).
C. Gastrointestinal (celiac disease, non-celiac gluten sensitivity, pernicious anemia, inflammatory bowel disease [Crohn's disease and ulcerative colitis]).
D. Skin (alopecia areata, lichen planus, lichen sclerosus, pemphigus vulgaris, bullous pemphigoid, psoriasis, vitiligo).
E. Head and neck (Meniere's disease, Hashimoto's thyroiditis, Graves' disease).
F. Gastrointestinal (autoimmune hepatitis, primary biliary sclerosis, type I [1] diabetes, latent autoimmune diabetes of adults [LADA]).
G. Genitourinary (interstitial cystitis, IgA nephropathy).
H. Musculoskeletal (ankylosing spondylitis, myasthenia gravis, dermatomyositis, Reiter's syndrome, rheumatoid arthritis, reactive arthritis, psoriatic arthritis, multiple sclerosis [MS], polymyositis).
I. Generalized (systemic lupus erythematosus [SLE], scleroderma, Sjogren's syndrome, sarcoidosis).

8. TOXIC, ENVIRONMENTAL

A. Manifestations of vitamin toxicity (vitamins A, D, E, K, pyridoxine).
B. Manifestations of mineral toxicity (iron, iodine, fluorine, copper, selenium, manganese, chromium, zinc, nickel, lithium, vanadium, aluminum, arsenic, lead, mercury, cadmium, thalium, tin, antimony, bismuth, palladium, platinum).
C. Toxic chemicals (organophosphates, organochlorines, polychlorinated biphenyls [PCBs], chlorinated pesticides, dioxins, volatile solvent, drugs).
D. Gastrointestinal (poisoning).
E. Respiratory (pneumoconiosis, mold, pulmonary oxygen toxicity).
F. Generalized (multiple chemical sensitivity).

9. TRAUMATIC

A. Blood and lymph (post-hemorrhagic anemia).
B. Cardiovascular (hypovolemic shock, chest injuries with cardiovascular implications).
C. Gastrointestinal (ileus, intestinal obstruction, injuries).
D. Head and neck (retinal detachment, ruptured tympanic membrane, foreign bodies, injuries).
E. Musculoskeletal (rotator cuff injury, tendinopathy, ulnar nerve entrapment, carpal tunnel syndrome, thoracic outlet syndrome, sciatica, iliotibial band syndrome, meniscal and ligament disorders, patellofemoral disorders, medial tibial syndrome, bunion, Baker's cyst, plantar fasciitis, disc herniation, post-calcaneal neuroma, disc rupture, dislocation, fracture, separations, sprains, strains, tears, tendon rupture, whiplash, nerve root entrapment).
F. Neurological (tension headache, temporomandibular joint disorder, benign paroxysmal positional vertigo, upper motor neuron lesion, injuries, shock, nerve compression syndrome).
G. Respiratory (acute respiratory distress syndrome, atelectasis, pneumothorax, pulmonary embolism, airway obstruction, thoracic injuries with pulmonary implications).
H. Skin and nails (skin trauma [wounds, bites, bums, foreign bodies]).
I. Genitourinary (dyspareunia, testicular torsion, trauma to genitourinary tract).
J. Breasts and axillae (mastalgia).
K. Obstetric emergencies (eclampsia, ectopic gestation, precipitous birth, placenta previa, post-partum hemorrhage, pre-term labor, prolapsed cord, Rh factor incompatibility, threatened and spontaneous abortion).
L. Other conditions related to obstetrics (post-partum symphysis pubis dysfunction).
M. Generalized (trauma [emotional, physical, and sexual abuse and assault]).
N. Conditions generally pertaining to pediatrics (trauma [emotional, physical, and sexual abuse]).
O. Conditions generally pertaining to geriatrics (trauma [elder abuse, fracture]).

10. ENDOCRINE

A. Hypothalamic and pituitary hormone disorders (hyposecretion, hypersecretion, diabetes insipidus, diabetes mellitus).
B. Parathyroid disorders (hyperparathyroidism, hypoparathyroidism).
C. Thyroid disorder (hyperthyroidism, hypothyroidism, toxic and non-toxic goiter, multinodular goiter, exophthalmia).
D. Adrenal disorders (Addison's disease, Cushing's disease, Conn's syndrome).
E. Pancreatic disorders (type II [2] diabetes, insulin resistance, hypoglycemia).
F. Genitourinary (anovulation, polycystic ovary syndrome, menstrual disorders of hormonal origin [Amenorrhea, Menorrhagia], menopause, endocrine causes of female and male infertility, endocrine causes of erectile dysfunction).
G. Breast (gynecomastia, galactorrhea).
H. Conditions related to pregnancy and lactation (gestational diabetes, hyperemesis gravidarum, lactation disorders).

11. METABOLIC

A. Deficiencies and excess in vitamins, minerals, amino acids and other nutrients (vitamins A, C, D, E, K, thiamin, riboflavin, niacin, pyridoxine, cobalamin [B12], folate).
B. Manifestations of mineral deficiency (iron, iodine, fluorine, zinc, copper, selenium, manganese, chromium).
C. Gastrointestinal (cholelithiasis, fatty liver disease [NASH], lactose intolerance).
D. Head and neck (diabetic retinopathy, sialolithiasis).
E. Musculoskeletal (gout, osteomalacia, osteopenia, osteoporosis).
F. Genitourinary (nephrolithiasis, metabolic causes of infertility).
G. Generalized (protein-energy malnutrition, kwashiorkor, marasmus, obesity, metabolic syndrome, sleep apnea).

12. PSYCHOSOMATIC/PSYCHIATRIC

A. Psychotic disorders (delusional disorder, brief reactive psychosis, schizophrenia and schizophrenoid disorders).
B. Mood disorders (bipolar disorder, cyclothymia, depression, dysthymia, mania).
C. Anxiety disorders (generalized anxiety disorder, obsessive-compulsive disorder, panic disorder, phobias, post-traumatic stress disorder, hyperventilation syndrome).
D. Somatic symptom and factitious disorders (adjustment disorder with physical complaints, conversion disorder, hypochondriasis, malingering, Munchausen syndrome, Munchausen syndrome by proxy, somatization).
E. Eating disorders (anorexia nervosa, orthorexia, bulimia nervosa, binge eating).
F. Sexual disorders (erectile dysfunction, pedophilia, sadism/masochism, voyeurism).
G. Personality disorders (paranoid, schizoid, schizotypal, antisocial, borderline, histrionic, narcissistic, avoidant, dependent, obsessive-compulsive).
H. Substance abuse (tobacco, alcohol, prescription and street drugs).
I. Trauma (domestic violence, incest, rape).
J. Lifespan and mortality issues in pediatric, adolescent, adult, and geriatric populations
K. Pregnancy / hormonally mediated (post-partum depression, post-partum anxiety).
L. Pediatric disorders (global developmental disorders, autism spectrum disorder, learning disorders, attention deficit (hyperactivity) disorder, conduct disorder, oppositional defiant disorder, pervasive developmental disorders, separation anxiety disorder, somnambulism, Tourette's syndrome, enuresis, night terrors).
M. Conditions commonly associated with aging (delirium, depression, immobility, social isolation, loss and grief).

** This condition classification system is by predominant function/pathophysiological process underlying the observable phenomenon. The level of manifestation of the dysfunction can be universal, limited to a few body systems, confined to one system or particular type of tissue. It is understood that many conditions can be classified under more than one category; a judgment is made as to which category fits with the predominant dysfunction.*

LABORATORY TESTS*

BLOOD

17-OH-Progesterone
Adrenocorticotropic Hormone; ACTH
Alanine transaminase (ALT; SGPT)
Albumin
Aldosterone
Alkaline Phosphatase (ALP)
Allergy testing (IgE specific; RAST)
Amino Acids
Ammonia
Amylase
Androstenedione
Antibody Screening (IgG, IgA, IgM, titres)
Anticholinesterase test
Anti cyclic citrullinated peptide (CCP)
Antidiuretic hormone (ADH); Vasopressin
Anti-dsDNA
Anti-Mullerian Hormone (AMH)
Antinuclear Antibody (ANA)
Antiparietal Cell Antibody
Antithyroid peroxidase (TPO) Antibodies
Antithyroglobulin (TG) Antibody
Apolipoproteins
Aspartate Aminotransferase (AST; SGOT)
Bicarbonate
Bilirubin
Blood Cultures
Blood Gases
Blood Group ABO and RhD
Blood Urea Nitrogen; BUN; Urea
BUN / Creatinine Ratio
C Reactive Protein (CRP, hsCRP)
Calcitonin
Calcium
Cancer markers (CA 125, CA 15-3, CA 19-9)
Carbon Dioxide (CO2)
Carcinoembryonic Antigen [CEA])
CD4/CD8
Ceruloplasmin
Complete Blood Count (CBC) - *RBC, hemoglobin, hematocrit, MCV, MCH, MCHC, platelets (thrombocytes), RDW, WBC, differential, blood smear*
Cortisol
Creatine kinase (CK, CK-MB)
Creatinine
Creatinine Clearance
D-Dimer
Dehydroepiandrosterone Sulphate (DHEAS)
Prothrombin Time (PT)
Public health tests *(e.g., STI screening, HIV, Hepatitis, HSV, EBV, Lyme, etc.)*
Red Cell Distribution Width (RDW)
Reticulocyte Count
Rheumatoid Factor (RF)
Serology
Sex Hormone Binding Globulin (SHBG)
Testosterone
Thyroglobulin
Digitalis purpurea (digoxin)
Dihydrotestosterone (DHT)
Drugs of Abuse Screen
Electrolytes (chloride, sodium, potassium, anion gap)
Erythrocyte Sedimentation Rate (ESR)
Erythropoietin (EPO)
Estrogens
Fatty Acids
Ferritin
Fibrinogen
Follicle Stimulating Hormone (FSH)
Gamma-Glutamyl Transferase (GGT)
Gliadin Antibodies
Glomerular Filtration Rate (GFR/eGFR)
Glucose
Glucose Tolerance Test (GTT)
Glucose-6-Phosphate Dehydrogenase (G-6-PD)
Growth Hormone (GH)
Heavy Metals (e.g., mercury)
Helicobacter pylori Antibody
Hemoglobin A1C (HbA1C)
Hemoglobin Electrophoresis
Homocysteine
Human Chorionic Gonadotropin (HCG, ßHCG)
Human Leukocyte Antigen (HLA)
Insulin
Insulin-like Growth Factor -1 (IGF-1)
International Normalized Ratio (INR)
Intrinsic Factor (IF)
Iron studies (TIBC, iron saturation, total iron, transferrin)
Lactate (Lactic Acid)
Lactate Dehydrogenase (LD)
Leptin
Lipase
Lipid panel (cholesterol, HDL, LDL, triglycerides)
Luteinizing Hormone (LH)
Minerals (e.g., copper)
Mononuclear Heterophile Antibodies (Monospot)
Natriuretic Peptide (BNP)
Parathyroid Hormone (PTH)
Partial Thromboplastin Time (PTT)
Progesterone
Prolactin
Prostate Specific Antigen (PSA, PSA ratio)
Protein Electrophoresis
Protein; Total (Albumin/Globulin Ratio)

Thyroid Stimulating Immunoglobulins
Thyroxine (T4)
Total Iron Binding Capacity (TIBC)
Transferrin
Transglutaminase (IgA/IgG Antibodies)
Triiodothyronine (T3)
Uric Acid (Urate)
Vitamins (e.g., B12, D, folate, B6, etc.)
White Blood Cells

- Basophils
- Eosinophils

Thyroid Stimulating Hormone (TSH)
Thyroid Stimulating Immunoglobulin (TSI)

- Lymphocytes
- Monocytes
- Neutrophils

BREATH

Hydrogen breath test
Lactulose breath test
Pulmonary Function Test
Urea breath test for H. pylori

STOOL

Bacteria/Yeast (microbiology profile)
Calprotectin
Elastase
Fecal Fat
Occult Blood
Ova and parasites
Secretory IgA

TISSUE/DISCHARGE/SPUTUM

Cerebrospinal Fluid Culture
Culture and Sensitivity
Nail and Skin Scraping
Pap smear
Pleural fluid aspiration & analysis
Semen Analysis
Western Blot

URINE

Bilirubin
Blood
Creatinine Clearance
Culture
Drugs of Abuse Screen
Glucose
Heavy metals
Human Chorionic Gonadotropin (HCG)
Ketone
Leukocytes
Minerals
Nitrites
Ph
Porphyrins
Protein
Specific Gravity (SG)
Uric Acid (urate)
Urobilinogen

**Exam candidates are also responsible for knowing the requirements for collecting specimens, performing blood tests and ordering laboratory tests as authorized under the Laboratory Regulation made under the Laboratory and Specimen Collection Centre Licensing Act, 1990 (LSCCLA), as well as the restrictions around labs and specimen collection as noted in the General Regulation (Ontario Regulation 168/15).*

IMAGING STUDIES

ELECTRODIAGNOSTIC TESTS

Angiogram
Cardiac Stress testing
Electrocardiography
Electroencephalopathy
Electromyography
Electroneurography
Holter monitor
Nonstress

ULTRASOUND STUDIES

Abdominal
Breast
Echocardiography
Pelvic
Scrotal
Thyroid
Vascular Doppler studies

ENDOSCOPIC STUDIES

Arthroscopy
Bronchoscopy
Colonoscopy
Colposcopy
Cystoscopy

RADIOGRAPHIC STUDIES

Barium enema
Barium swallow
Bone Densitometry (e.g., DEXA)
Bones/Skull/Spine/Chest/Bowel
Computed Tomography (CT)

Endoscopy
Sigmoidoscopy

NUCLEAR SCANNING

Bone scan
Radioactive iodine uptake
Thyroid Scan (e.g., Scintiscan)

Mammography
Voiding Cystourethrogram

OTHER IMAGING

Magnetic Resonance Imaging (MRI)

BOTANICAL MEDICINES

Achillea millefolium
Aconitum napellus
Actaea racemosa (Cimicifuga)
Aesculus hippocastanum
Agrimonia eupatoria
Allium cepa
Allium sativum
Aloe vera
Althaea officinalis
Andrographis paniculate
Angelica archangelica
Angelica sinensis
Apium graveolens
Arctium lappa
Arctostaphylos uva ursi
Arnica montana
Artemisia absinthium
Artemisia annua
Asclepius tuberosa
Aspidosperma quebracho
Astragalus membranaceus
Atropa belladonna
Avena sativa
Bacopa monnieri
Baptisia tinctorial
Berberis aquifolium
Berberis vulgaris
Boswellia serrata
Bryonia alba
Cactus grandiflorus (Selenicereus)
Calendula officinalis
Camellia sinensis
Cannabis sativa
Capsella bursa-pastoris
Capsicum anuum
Capsicum frutescens
Cassia angustifolia (Senna)
Cassia spp.
Caulophylum thalictroides
Cinnamomum verum
Cinnamomum zeylanicum
Codonopsis pilosula
Colchicum autumnale
Coleus forskohlii
Collinsonia canadensis
Commiphora molmol
Commiphora mukul
Commiphora myrrha
Convallaria majalis
Cordyceps sinensis
Corydalis spp.
Crataegus laevigata
Crataegus oxyacantha
Crataegus spp.
Curcuma longa
Cynara scolymus
Datura stramonium
Digitalis purpurea
Dioscorea villosa
Dipsacus sylvestris
Drosera rotundifolia
Echinacea angustifolia
Echinacea purpurea
Eleutherococcus senticosus
Ephedra sinica
Equisetum arvense
Eschscholzia californica
Eucalyptus globulus
Eupatorium perfoliatum
Eupatorium purpurea
Euphrasia officinalis
Filipendula ulmaria
Foeniculum vulgare
Fucus vesiculosus
Galium aparine
Ganoderma lucidum
Gelsemium sempervirens
Gentiana lutea

Ceanothus americanus
Centella asiatica
Chamaelirium luteum
Chelidonium majus
Chionanthus virginicus
Cineraria maritima
Cinnamaldehyde
Hamamelis virginiana
Harpagophytum procumbens
Humulus lupulus
Hydrangea arborescens
Hydrastis canadensis
Hyoscyamus niger
Hypericum perforatum
Inonotus obliquus
Inula helenium
Iris versicolor
Juglans nigra
Juniperus communis
Lactuca virosa
Larrea tridentate
Lentinus edodes
Leonurus cardiaca
Leptandra virginica
Ligusticum porteri
Ligustrum lucidum
Linum usitasissmum
Lobelia inflata
Lomatium dissectum
Lycopus virginicus
Mahonia aquifolium
Marrubium vulgare
Matricaria chamomilla
Matricaria recutita
Medicago sativa
Melaleuca alternifolia
Melissa officinalis
Mentha piperita
Menyanthes trifoliata
Mitchella repens
Momordica charantia
Nepeta cataria
Olea Europa
Paeonia alba
Panax ginseng
Panax spp.
Papaver somniferum
Passiflora incarnata
Geranium maculatum
Ginkgo biloba
Glycyrrhiza glabra
Grifola frondose
Grindelia robusta
Grindelia robusta
Gymnema sylvestre
Piper methysticum
Piscidia erythrina
Plantago major
Podophyllum peltatum
Polygonum multiflorum
Poria cocos
Prunus africana
Prunus serotina
Pulsatilla vulgaris
Quercus rubra
Rauwolfia serpentine
Rehmannia glutinosa
Rhamnus spp.
Rheum palmatum
Rhodiola rosea
Ricinis communis
Rosemarinus officinalis
Rubus idaeus
Rumex crispus
Salix alba
Salvia officinalis
Sambucus nigra
Sanguinaria canadensis
Sassafras albidum
Schizandra chinensis
Scutellaria lateriflora
Scutelleria baicalensis
Selenicereus grandifloras
Serenoa repens
Silybum marianum
Smilax spp.
Solidago spp.
Symphytum officinale
Syzigium aromaticum
Tabebuia impetiginosa
Tanacetum parthenium
Tanacetum vulgare
Taraxacum officinale
Theobroma cacao
Thuja occidentalis
Thymus vulgaris

Pausinystalia yohimbe
Petasites hybridus
Phyllanthus amarus
Phytolacca americana
Pilocarpus microphyllus
Pimpinella anisum/ aniseed
Ulmus rubra
Urtica dioica
Usnea barbata
Vaccinium macrocarpum
Vaccinium myritillus
Valeriana officinalis
Veratrum album
Verbascum thapsus
Verbena officinalis
Tilia (cordata; europa)
Trametes versicolor
Tribulus terrestris
Trifolium pratense
Turnera diffusa
Tussilago farfara
Veronicastrum virginicum
Viburnum spp.
Vinca major/minor
Viscum album
Vitex agnus-castus
Withania somnifera
Zanthoxylum Americanum
Zea mays
Zingiber officinale

BOTANICAL CONSTITUENTS

Allicin
Carvacrol
Cinnemaldehyde
Eugenol
Thymol

HOMEOPATHIC PREPARATIONS

Aconitum napellus
Aesculus hippocastanum
Agaricus muscarius
Allium cepa
Allium sativum
Antimonium tartaricum
Apis mellifica
Argentum nitricum
Arnica montana
Arsenicum album
Atropa belladonna
Aurum metallicum
Baryta carbonica
Bellis perennis
Bryonia alba
Calcarea carbonica
Carbo vegetabilis
Causticum
Cephaelis ipecacuanha (Ipecac)
Ignatia
Kali bichromicum
Lachesis mutans
Ledum palustre
Lycopodium clavatum
Magnesium phosphoricum
Medorrhinum
Mercurius corrosivus
Mercurius solubilis
Natrum muriaticum
Natrum phosphoricum
Natrum suphuricum
Nitricum acidum
Nux vomica
Phosphorus
Phytolacca
Podophyllum peltatum
Pulsatilla
Rhus toxicodendron

Chamomilla
Chelidonium majus
Cina
Colocynthis Cucumis
Conium maculatum
Drosera rotundifolia
Equisetum arvense
Eupatorium perfoliatum
Ferrum phosphoricum
Gelsemium
Graphites
Hepar sulphur
Hypericum
Rumex crispus
Ruta graveolens
Sepia
Silica dioxide (Silicea)
Staphysagria
Stramonium
Sulphur
Sulphuricum acidum
Symphytum officinale
Thuja occidentalis
Tuberculinum
Urtica urens
Veratrum album

NUTRACEUTICALS

VITAMINS

Biotin (B7, vitamin H)
Cobalamin (B12) - 3 forms:

- cyano
- hydroxy
- methylcobalamin

Folate (B9) and Folic Acid
Inositol (B8)
Niacin (B3, nicotinic acid),
Niacinamide, Inositol hexanicotinate
Pantothenic Acid (B5)
Pyridoxine/Pyridoxal 5-Phosphate (B6)
Riboflavin (B2)
Thiamine (B1)

Vitamin A - 2 forms:

- Preformed - retinol, retinyl esters
- Proviatmin A carotenoids - beta carotene

Vitamin C (ascorbic acid)
Vitamin D – 2 forms:

- (D2) ergocalciferol
- (D3) cholecalciferol

Vitamin E (topherols and d-tocotrienols) – dl-alpha vs. alpha
Vitamin K - 2 forms:

- K1-phylloquinone
- K2-menaquinones

MINERALS

Boron
Calcium
Calcium ascorbate
Calcium bis-glycinate
Calcium carbonate
Calcium citrate
Chromium
Chromium picolinate
Copper
Ferrous bisglycinate
Ferrous fumarate
Ferrous gluconate
Ferrous sulphate
Fluoride
Iodine
Iron (ferrous and ferric)
Magnesium
Magnesium citrate
Magnesium (bis)glycinate
Magnesium sulphate
Manganese
Molybdenum Phosphorus
Potassium
Selenium
Silica
Sodium
Strontium
Sulphur
Vanadium
Zinc citrate
Zinc sulphate
Zinc picolinate

AMINO ACIDS

Alanine
Arginine
Aspartate
Cysteine (N-Acetylcysteine)
Glutamic Acid
Glutamine
Glycine
Histidine
Isoleucine
Leucine
Lysine
Methionin
Phenylalanine
Proline
S-adenosyl-L-methionine
Selenomethionine
Serine
Taurine
Threonine
Tryptophan
Tyramine
Tyrosine
Valine

ESSENTIAL/CONDITIONALLY ESSENTIAL POLYUNSATURATED FATTY ACIDS

Alpha Lipoic Acid
Alpha-Linolenic Acid (ALA)
Arachidonic acid (AA)
Buteric acid, Butyrate
Caprylic acid
Conjugated Linoleic acids
Dihomo-gamma-linolenic acid
Dihomo-gamma-linolenic acid (DGLA)
Gamma-linolenic acid (GLA)
Linoleic acid (LA)
Omega-9 (Oleic acid)
Omega-3 (EPA and DHA)
Omega-6
Plant Sterols

OTHER

(Proteolytic, endopeptidase,
5-hyroxytripotophane (5HTP)
Astaxanthin)
Amino Acid derivatives
Azelaic Acid
Berberine
Betaine (trimethylglycine)
Betaine hydrochloride
Bile acids/salts
Black Current seed oil
Bonito Peptites
Caretonoids: (Beta-carotene)
Carnitine (Acetyl-L-Carnitine)
Chitosan
Chlorella
Choline
Choline Bitartrate
Chondroitin Sulphate
Chrysin
Cod liver oil
CoQ10/Ubiquinol
Curcumin
Deglycyrrhizinated licorice (DGL)
D-Glucarate
Dimethylglycine (DMG)
D-Mannose
D-Ribose
Enzymes – Bromelain
Enzymes – Multi
Enzymes – other
Enzymes – Pancreatic
Enzymes – Papain
Enzymes - Serratia peptidase
Enzymes – Nattokinase
Fibre – Insoluble
Fibre – Soluble
Flax seed oil/powder
Forskolin
GABA
Glucomannan
Glucosamine (Sulphate)
Glutathione
Hydrochloride
Indole-3-carbinol
Kelp
lactase
Lycopene
Melatonine
Myo-inositol
Quercetin
Rutin
Spirulina

THERAPEUTIC DIETS

Anti-inflammatory
Candida
DASH

Elimination Challenge:
Dairy, wheat, gluten, egg, night shades (Solanaceae foods), Asteraceae family, citrus fruits, pro-inflammatory foods (sugar, high-fructose corn syrup, trans fats, refined carbohydrates, excessive alcohol, processed meat, vegetable and seed oils), purine-containing foods (red meat, bacon, liver, sardines, anchovies, dried peas and beans, oatmeal).
Fructose intolerance (FODMAP)
Ketogenic
Low Glycemic
Mediterranean
Paleolithic
Portfolio
Vegan/Whole Food Plant-Based
Vegetarian

ORTHOPEDIC TESTS

VERTEBRAL COLUMN

Adam's sign
Adson's test
Bechterew's test
Braggard's test
Brudzinski's test
Cervical compression tests (Jackson's, Spurling's)
Elevated Arm Stress Test (Roos test)
Kemp's test
Kernig's test
Lasegue's test (straight-leg raise)
Minor's sign
Romberg Test
Shoulder depression test
Soto Hall and Linder's test
Valsalva test
Vertebral artery test
Wright's (hyperabduction) test

SHOULDER

Apley's scratch test
Cross-arm test (horizontal adduction test)
Drop-arm test (Codman's)
Empty Can test; Full Can test
Glenohumeral apprehension test
Hawkins-Kennedy Sign
Lift off test
Neer's test
Speed's test
Yergason's test

WRIST/HAND/ELBOW

Cozen's test
Finkelstein's test
Mill's test
Phalen's test
Retinacular test
Tinel's sign
Valgus/varus stress test

HIP/PELVIS

Ely's test
Gaenslen's test
Hibb's test
Ober's test
Patrick's (FABER) test
Pelvic rock test Thomas' test
Trendelenberg test (Brodie- Trendelenburg)
Yeoman's test

KNEE

Anterior/posterior drawer test
Apley's compression test
Apley's distraction test
Knee joint effusion tests (ballotable Patella grind test [major effusion]; bulge test [minor effusion])
Lachman' s test
McMurray's test (and reduction click)
Patellar Apprehension test (for patellar dislocation)
Patella femoral grinding test (including Clark's test)
Valgus and varus stress test

ANKLE/FOOT

Anterior/posterior drawer test
Babinski's sign
Dorsiflexion test
Forefoot squeeze test (Morton's test)
Homan's sign
Test for rigid or supple flat feet
Thompson's (squeeze) test

PSYCHOLOGICAL ASSESSMENT TOOLS

Beck Depression Inventory (BDI; BDI-1A; BDI-II)
Generalized Anxiety Disorder Assessment - 7 (GAD-7)
Hamilton Anxiety Rating Scale
Hamilton Depression Rating Scale
Mini-Cognitive Assessment Instrument (Mini-Cog)
Mini-Mental State Examination (MMSE)
Minnesota Multiphasic Personality Inventory (MMPI)
Patient Health Questionnaire - 9 (PHQ-9)
Symptom Checklist-90-R (SCL-90-R)
The Sweet 16
Verbal Fluency Test
Wechsler Memory Scale (WMS)

PSYCHOLOGICAL THERAPIES

Cognitive Behavioural Therapy
Gestalt Therapy
Hypnosis
Mindfulness Meditation
Psychodynamic (Psychoanalytic) Psychotherapy
Relaxation Training

ZANG-FU PATHOLOGIES

Full exterior: Invasion by Wind-Cold; Invasion by Wind-Heat
LUNG Full Interior: Heat; Damp-Phlegm; Cold-Phlegm; Phlegm-Heat; Dry-Phlegm; Phlegm Fluids Obstructing
LUNG Empty: Qi Deficiency; Yin Deficiency; Dryness
LARGE INTESTINE Full: Damp-Heat; Heat; Heat Obstructing; Cold Invasion
LARGE INTESTINE Empty: Dry; Cold; Collapse
STOMACH Full: Qi Stagnation; Fire (or Phlegm-Fire); Cold Invasion; Stomach Qi Rebelling Upward; Damp-Heat; Food Retention; Blood Stasis
STOMACH Empty: Qi Deficiency; Yin Deficiency
SPLEEN Full: Cold-Damp Invasion; Damp-Heat Invasion
SPLEEN Empty: Qi Deficiency; Yang Deficiency; Qi Sinking; Spleen not Controlling Blood
HEART Full: Fire Blazing; Phlegm-Fire Harassing Heart; Phlegm Misting the Mind; Qi Stagnation; Vessel Obstructed
HEART Empty: Qi Deficiency; Yang Deficiency; Yang Collapse; Blood Deficiency; Yin Deficiency
HEART Empty/Full: Blood Stasis
SMALL INTESTINE Full: Full-Heat; Qi Pain; Qi Tied (Qi Obstruction)
SMALL INTESTINE Empty: Deficient and Cold
BLADDER Full: Damp-Heat; Damp-Cold
KIDNEY Empty: Yang Deficiency; Yin Deficiency; Qi deficiency; Failure to Receive Qi; Essence Deficiency
KIDNEY Empty/Full: Yin Deficiency with Empty-Heat Blazing
PERICARDIUM Full: Blood Stasis
GALL BLADDER Full: Damp-Heat; Dampness
LIVER Full: Qi Stagnation; Rebellious Qi; Blood Stasis; Fire Blazing; Damp-Heat; Cold Stagnation
LIVER Empty: Blood Deficiency; Yin Deficiency
LIVER Full/Empty: Yang Rising; Wind Agitating

CHINESE PATENT HERBAL FORUMLAS

RELEASE THE EXTERIOR
Ma Huang Tang
Gui Zhi Tang
Chuan Xiong Cha Tiao San
Sang Ju Yin
Yin Qiao San

CLEAR HEAT
Long Dan Xie Gan Tang

PURGE
Ma Zi Ren Wan
Da Huang Fu Zi Tang

HARMONIZING
Si Ni San
Xiao Yao San
Jia Wei Xiao Yao San

EXPEL DAMPNESS
Ba Zheng San

TRANSFORM PHLEGM
Er Chen Tang

WARM THE INTERIOR
Si Ni Tang
Dang Gui Si Ni Tang

TONIFY QI
Bu Zhong Yi Qi Tang
Si Jun Zi Tang

TONIFY BLOOD
Si Wu Tang

TONIFY QI BLOOD
Ba Zhen Tang
Gui Pi Tang

NOURISH AND TONIFY YIN
Liu Wei Di Huang Tang
Zuo Gui Yin
Da Bu Yin Wan
Zhi Bai Di Huang Tang

TONIFY YANG
You Gui Wan
Jin Gui Shen Qi Wan

REGULATE QI
Ban Xia Hou Po Tang
Ding Chuan Tang

WARM THE MENSES AND DISPEL BLOOD STAGNATION
Sheng Hua Tang
Gui Zhi Fu Ling Wan

NOURISH THE HEART AND CALM THE SPIRIT
Suan Zao Ren Tang
Tian Wan Bu Xin Dan
Gan Mai Da Zao Tang

RELEASE THE WIND THE SKIN AND CHANNELS
Xiao Feng San

EXTINGUISH INTERNAL WIND
Tian Ma Gou Teng Yin

ACUPUNCTURE POINTS

LUNG (LU)
1, 2, 3, 4, 5, 7, 9, 10, 11

LARGE INSTESTINE (LI)
1, 4, 5, 10, 11, 14, 15, 17, 20

STOMACH (ST)
1, 7, 8, 17, 25, 29, 30, 34, 35, 36, 37, 38, 40, 41, 42, 44, 45

SPLEEN (SP)
1, 3, 4, 6, 8, 9, 10, 15, 21

HEART (HT)
1, 2, 3, 5, 7, 8, 9

SMALL INTESTINE (SI)
1, 3, 4, 8, 9, 10, 11, 12, 13, 15, 16, 17, 19

URINARY BLADDER (BL)
1, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 40, 44, 52, 53, 57, 60, 62, 67

KIDNEY (KI)
1, 2, 3, 6, 7, 10, 13, 14, 16, 27

PERICARDIUM (PC)
1, 3, 6, 7, 9

TRIPLE WARMER/ENERGIZER/BURNER (TE)
1, 3, 4, 5, 6, 10, 13, 14, 15, 16, 19, 21, 23

GALL BLADDER (GB)
1, 2, 12, 14, 20, 21, 24, 25, 26, 28, 30, 33, 34, 37, 39, 40, 41, 43, 44

LIVER (LR)
1, 2, 3, 5, 7, 8, 13, 14

CONCEPTION VESSEL (CV)
1, 2, 3, 4, 5, 6, 8, 12, 13, 14, 15, 17, 21, 22, 24

GOVERNING VESSEL (GV)
1, 2, 3, 4, 8, 10, 14, 20, 24, 28

EXTRA
Head and Neck: Sishencong, Yintang, Taiyang, Bitong, Anmian, Dingchuan
Back: Huatuojiaii, Yaoyan
Arm and Hand: Baxie, Jianneiling, Yaotongxue
Abdomen: Zigong Xue, Bafeng
Leg and Foot: Biochongwo, Heding, Xiyan
Laser acupuncture
Cupping
Moxibustion
Electro acupuncture

PHARMACEUTICALS*

3,4-methylenedioxymethamphetamine (MDMA)
5-fluorouracil
Abatacept (Orencia)
Acetaminophen
Acetylcysteine
Acetylsalicylic acid (ASA)
Acyclovir
Adalimumab
Alendronate
Alprazolam
Amantadine
Amiodarone
Amitriptyline
Amlodipine
Amoxicillin
Aripiprazole
Atenolol
Atorvastatin
Azithromycin
Benzodiazepine
Bisacodyl
Bismuth subsalicylate
Buspirone
Caffeine
Cannabis
Captopril
Carbamazepine
Carvedilol
Celecoxib
Cephalexin
Ciprofloxacin
Citalopram
Clindamycin
Clonazepam
Clonidine
Clopidogrel
Cocaine
Codeine
Colchicine
Cyclobenzaprine
Dextromethorphan
DHEA
Diazepam
Diclofenac
Dicyclomine
Digoxin
Dihydroergotamine
Diphenhydramine
DMPS
DMSA
Docusate
Donepezil
Doxorubicin
Doxycycline
DTaP vaccine
EDTA
Epinephrine/Adrenalin
Escitalopram
Esomeprazole
Estrogen
Ethinyl estradiol
Fentanyl
Finasteride
Fluconazole
Fluoxetine
Fluticasone
Furosemide
Gabapentin
Gemfibrozil
Glyburide

Cyclosporine
Desmopressin
Dexamethasone
Dextroamphetamine
Hydrochlorothiazide
Hydrocodone
Hydrocortisone
Hydroxychloroquine
Hydroxyzine
Ibuprofen
Influenza vaccine
Insulin
Interferon
Ipratropium bromide
Isotretinoin
Ketamine
Latanoprost
Levodopa-carbidopa
Levonorgestrel
Levothyroxine /l-thyroxine
Lisinopril
Lithium
Loperamide
Loratadine
Lorazepam
Mebendazole
Meningococcal vaccine
Metformin
Methadone
Methocarbamol
Methotrexate
Methyl salicylate
Methylphenidate
Metoclopramide
Metoprolol
Metronidazole
Misoprostol
MMR vaccine
Mometasone
Montelukast
Morphine
Mupirocin
Naltrexone
Naproxen
Nicotine
Nitrofurantoin
Nitroglycerin
Norgestimate
Nystatin
Oseltamivir
Oxycodone
Oxytocin
Paclitaxel
Pantoprazole
Guaifenesin
Haemophilus influenza type B vaccine (Hib)
Hepatitis A vaccine
Hepatitis B vaccine
Heroin
Herpes zoster vaccine
HPV vaccine
Penicillamine
Penicillin VK
Pentoxifylline
Permethrin
Phenelzine
Phenobarbital
Phentermine
Phenylephrine
Phenytoin
Pneumococcal vaccine
Polio vaccine
Pramipexole
Prednisone
Pregnenolone
Prochlorperazine
Progesterone /Progestins
Propranolol
Propylthiouracil
Pseudoephedrine
Raloxifene
Ramipril
Ranitidine
Risperidone
Rivastigmine
Rosuvastatin
Rotavirus vaccine
Salbutamol
Sildenafil
Spironolactone
Sucralfate
Sulfamethoxazole/Trimethoprim
Sulfasalazine
Sumatriptan
Tamoxifen
Tamsulosin
Terbinafine
Testosterone
Tetracycline
Tiotropium bromide
Tolterodine
Trandolapril
Trazodone
USP (desiccated) thyroid
Valacyclovir
Valsartan
Varicella vaccine
Warfarin
Zidovudine
Zolpidem
Zopiclone

**Exam candidates are also responsible for knowing those substances which can be prescribed by Ontario naturopaths in accordance with Table 3 of the General Regulation (Ontario Regulation 168/15).*

SAMPLE QUESTIONS (STAND-ALONE)

1. A 35-year-old female presents with migraine headaches that localize behind her right eye. She describes the pain as excruciating, and as a pressure pushing outwards behind her eyes. Which information would indicate prescribing homeopathic Sanguinaria canadensis over Atropa belladonna?

A) Improves with fasting.
B) Improves with vomiting.
C) Worse during daylight hours.
D) Worse with application of heat

2. Which of the following patients has the highest risk for heart disease and stroke?

A) BP 120/80 mmHg, non-diabetic, smoker, total cholesterol of 6.7 mmol/L, ratio of total cholesterol to HDL is 12.5.

B) BP 136/80 mmHg, diabetic, smoker, total cholesterol of 6.5 mmol/L, ratio of total cholesterol to HDL is 12.5.

C) BP 136/80 mmHg, non-diabetic, non-smoker, total cholesterol of 5.0 mmol/L, ratio of total cholesterol to HDL is 8.0.

3. A homeless patient has had a cough for 3 weeks, hemoptysis, chest pain, and dyspnea. Which of the following tests is most indicated?

A) Complete blood count.
B) Chest x-ray.
C) Spirometry.
D) Pulmonary function test.

Answer Key

1. C 2.B 3.B

SAMPLE QUESTIONS (CASE-BASED)

Use the following information to answer questions 1 to 8:

Patient: 35-year-old female, 166 cm (5'5"), 89 kg (196 lbs), BMI: 32
Presentation: The patient presents with a 6-month history of amenorrhea. She reports acne and facial hair growth for the last 3 years. Her family physician has told her to lose weight, but she has never successfully done so and is hoping the Naturopathic Doctor will be able to offer new avenues of treatment. She has gained 22.5 kg (50 lbs) over last 7 years.
Medical History: Cervical dysplasia diagnosed at age 33, treated successfully with loop electrosurgical excision procedure (LEEP). Hypothyroid diagnosed at age 31. Appendectomy at age 24. Menarche at age 10.
Psychosocial: Works as an office manager for a real estate company. She lives alone. She is sexually active in a monogamous relationship.
Health Habits: Diet: Breakfast: 1 cup of coffee with sugar and cream. Lunch: Bagel with cream cheese, sandwich with tuna, or Chinese food, plus one can of diet soda. Dinner: Cooked at home; usually potatoes or pasta with chicken or beef with frozen vegetables. Likes to snack on donuts, muffins or chocolate bars throughout the day.
Alcohol: 2 glasses of wine on the weekend.
Tobacco: Smokes 1/2 pack per day since age 15.
Exercise: Walks to and from bus stop daily; about 10 minutes each way.
Supplements: She is taking a daily hair, skin and nails supplement, purchased from a drug store.
Medication: L-thyroxine 0.112 mg qd for four years. Ethinyl estradiol 20 mcg; levonorgestrel 0.1 mg from age 20-33. Metformin: 1000 mg qd for 6 months.
Allergies: Seasonal allergies in the summer
Family History: Father: Type 2 diabetes mellitus
Mother: Hypothyroid
Grandfather: Died at age 73 from a cerebral vascular accident
Vital Signs: T: 36°C (96.8°F), BP: 130/80 mmHg, PR: 72 bpm, RR: 12 bpm
Physical Exam: Abdominal obesity noted. Cystic acne over jaw and chin. Dark, velvety skin noted around neck and under arms. Coarse, dark hair seen on lower abdomen and under chin.

Preliminary Lab Results: Fasting glucose: 6.3 mmol/L [3.6-6.0 mmol/L]
HbA1c: 0.063 (6.3%) [0.045-0.060 (4.5-6.0%)]
TSH: 3.2 mU/L [0.4 - 5 mU/L]

Diagnostic Imaging: Pelvic ultrasound showing ovarian enlargement with multiple small cysts bilaterally.

Question 1
The Naturopathic Doctor suspects polycystic ovarian syndrome. What condition must be ruled out before making this diagnosis?

A) Addison's disease.
B) Diabetes mellitus.
C) Metabolic syndrome.
D) Androgen secreting tumour.

Question 2
The Naturopathic Doctor should recommend which of the following diets to this patient?

A) A plant-based diet, with 8 – 10 servings of fruits and vegetables per day, plus beans, legumes, and nuts as the primary protein source.
B) Plenty of whole-grain foods, vegetables, beans, legumes, nuts, seeds, olive oil, fish and seafood. Occasional lean red meat, and dairy.
C) Unlimited amounts of beans, seeds, whole grains, vegetables, fish and meat, and limited amounts of refined sugar.
D) Avoidance of gluten-containing grains, dairy products, corn, soy, beef, pork, citrus foods, nightshade vegetables, caffeine-containing beverages, refined sugars, food additives or preservatives, and alcohol.

Question 3
Which combination of botanicals would be most indicated for this patient?

A) Vitex agnus-castus, Serenoa repens, and Gymnema sylvestre.
B) Achillea millefolium, Panax ginseng, and Thuja occidentalis.
C) Chamaelirium luteum, Dioscorea villosa, and Withania somnifera.
D) Fucus vesiculosus, Cinnamomum zeylanicum, and Ginkgo biloba.

Question 4
Which group of pathologies is the patient most at risk for developing?

A) Hypercholesterolemia, cervical cancer, candidiasis.
B) Uterine fibroleiomyoma, infertility, metabolic syndrome.
C) Ovarian cancer, recurrent miscarriage, insulin resistance.
D) Type 2 diabetes mellitus, hypertension, endometrial hyperplasia.

Question 5
The patient is concerned about the risk of developing cervical cancer and wants to know what she can do for prevention. What intervention should the Naturopathic Doctor advise as the priority?

A) Reduce alcohol consumption.
B) Follow a low glycemic-index diet.
C) Use a barrier method during penetrative sex.
D) Engage in cardiovascular exercise for 40 minutes at least three times per week.

Question 6
This patient should be educated on her increased risk of developing which condition?

A) Lung cancer.
B) Myocardial infarction.
C) A thromboembolic event.
D) Chronic obstructive pulmonary disease.

Question 7
Based on the patient's chief concern and goals of treatment, which nutrient should the Naturopathic Doctor recommend?

A) Zinc citrate 15 mg qd.
B) l-selenomethionine 200 mcg qd.
C) Chromium picolinate 200 mcg qd.
D) Pyridoxil-5'-phosphate 20 mg qd.

Question 8

The patient reports that she has begun taking 200,000 IU of vitamin A daily because she read that it might help with her acne. What is the most important concern that the Naturopathic Doctor must warn her of?

A) Smoking.
B) Pregnancy.
C) Alcohol consumption.

D) Prolonged sun exposure.

Use the following information to answer questions 9 to 15:

Patient: 38-year-old male, 177.8 cm (5'10"), 90.7 kg (200 lb)
Fever of unknown origin persisting for 6 weeks.

Presentation: Six weeks ago, the patient presented to an urgent care clinic with a temperature of 38.9°C (102°F), chills, a severe headache at the temples and occiput that was worse lying down, sore throat, and a sinus infection with nasal congestion. He was prescribed amoxicillin clavulanate (Augmentin), which caused him to vomit. After four days of vomiting and feeling generally worse, he was instructed to stop the Augmentin and prescribed a second antibiotic, azithromycin (Zithromax). Two days later his condition worsened and his temperature climbed to 40°C (104°F) and was characterized by a strong sensation of shivering cold (rigors). The fevers were severe in the afternoon and would also wake him around 3 - 4 AM when his ibuprofen (Advil) wore off. He was sent to the E.R. where he was found to have elevated liver enzymes, normal CBC (including WBC), and slightly diminished breath sounds in the left lobes of the lungs. He was placed on I.V. antibiotics and fluids, admitted to C.C.U where he remained for eight days while a battery of tests were run and nothing conclusive was found. Although his fever had finally decreased, he had no diagnosis and within days of being discharged his fever began to return. After a couple of days of worsening symptoms, he presented to the Naturopathic Doctor.

In the Naturopathic Doctor's office: the patient reported severe fatigue and inability to work, fever and chills, no sensation of heaviness, no thirst, no dryness of the lips or mouth, and his stools had recently become drier. Previous to the last few days, he generally felt cold with the fever, but now he began to feel hot with the fever. He was taking "eight Advil's a day" (see exact dosage below) to control the fever (4 tablets every 12 hours). When the Ibuprofen would wear off, the fever would spike, and he would begin to perspire. His pulse was slippery, floating, and rapid. His Tongue had cracks, no coat, was slightly red with small purple spots on the underside of the tongue.

Medical History: Type 2 Diabetes and occasional gastro-esophageal acid reflux.
Psychosocial: Married with 3 children. Feels overworked. Reports generally poor sleep prior to onset of symptoms.
Health Habits: Standard American Diet. Sedentary lifestyle.
Supplements: No supplements or natural medicines taken.
Medications: Ibuprofen (Advil) 400 mg p.o. q 6 hr.; Metformin 700mg t.i.d.;Famotidine (Pepcid) prn.
Allergies: No known allergies
Family History: No relevant family history.
Vital Signs: T: 38.9°C (102°C), BP: 140/90 mmHg, PR: 120 bpm, RR: 30.
Physical Examination: Breath sounds clear and equal bilaterally.

Question 9

What is the most appropriate Traditional Chinese Medicine differential diagnosis?

A) Yin Deficiency, Blood Stagnation, Lung Yin Deficiency.
B) Blood Deficiency, Liver Qi Stagnation, Spleen Qi Deficiency.
C) Wind Heat pathogen, Wandering Bi Syndrome, Kidney Yang Deficiency.
D) Wind Cold pathogen transforming to heat, Fixed Bi Syndrome, Kidney Yin Deficiency.

Question 10

What is the most likely TCM Diagnosis?

A) Fixed bi syndrome.
B) Kidney yin deficiency.
C) Wind heat pathogen.
D) Wind cold pathogen transforming to heat.

Question 11

Many nutrients play crucial roles in the proper functioning and maintenance of the immune system. Which of the following statements, in regard to nutrient influences on immune function, is most accurate?

A) Vitamin E deficiency leads to defects in the mucosal epithelia.
B) Selenium deficiency is characterized by decreased serum thymuline.
C) L-carnitine has been shown to neutralize lipid-induced immunosuppression.
D) Zinc stimulates the production of interferon and increases chemotaxis and phagocytosis.

Question 12

Which of the following provides an adequate dietary source of zinc (at least 30 mg), for the purposes of immune support in an adult male?

A) 120 ml (1/2 cup) pumpkin seeds.
B) 150 gm (5 oz.) beef liver, cooked.
C) 150 gm (5 oz.) anchovies, canned.
D) 75 gm (2.5 oz.) oysters, eastern, cooked.

Question 13

The patient wishes to know whether he might be infectious. Given the duration of this fever (6 weeks), what is the Naturopathic Doctor's most accurate response?

A) Statistically, he is most likely infectious (>90% chance).
B) Statistically, there is a 70-75% chance that he is infectious.
C) Statistically, there is a 25-30% chance that he is infectious.
D) Statistically, it is unlikely that he is infectious at this point.

Question 14

As per the *Ontario Health Protection and Promotion Act*, which of the following communicable diseases, if the Naturopathic Doctor diagnosed the patient as having, must be reported to the local Medical Officer of Health?

A) Influenza.
B) Rotavirus.
C) Fifth Disease.
D) Norovirus Infection (Norwalk-like).

Question 15
The patient was initially prescribed amoxicillin clavulante (Augmentin). After four days of vomiting and generally feeling worse, he was instructed to stop taking it. What is the Naturopathic Doctor's responsibility regarding adverse reaction reporting?

A) All health professionals should report confirmed adverse reactions to a pharmaceutical prescription.
B) All health professionals should report any suspected adverse reactions to a pharmaceutical prescription.
C) Only the prescribing doctor should report confirmed adverse reactions to a pharmaceutical prescription.
D) Only the prescribing doctor should report any suspected adverse reactions to a pharmaceutical prescription.

Answer Key
1D, 2B, 3A, 4D, 5C, 6C, 7C, 8B, 9D, 10D, 11C, 12D, 13C 14A, 15B

TIPS FOR ANSWERING MULTIPLE CHOICE QUESTIONS

Tip #1: Read Each Question Carefully

- When you're reading a question, stop and make note of the most important details (e.g., patient symptoms, patient history, etc.). Re-read the question, if necessary, to ensure that you have all the relevant information before you select an answer.
- Make sure that you have access to all of the details. Some questions may be part of a longer "case". These case-based questions also include a passage with additional details. When you get one of these, the information you need could be in the case passage, in the question itself, or in both. So, make sure to read both parts before selecting an answer.
- Watch out for key words in the question like "**not**", or "**except**"; as well as nuances like "what is the **best** response?" or "what is the **priority** action?" These could change the meaning of the question (as well as the correct answer).
- If you're having trouble understanding the question, try rephrasing it in your own words. This is especially helpful when dealing with questions that include negative phrasing (for example "not"), or other tricky language.

Tip #2: Try to Answer Each Question before Looking at the Answer Options

- Remember that a well-written multiple-choice question is something that you should be able to answer without seeing the options. In fact, many of the answer options are there to tempt and distract you. Try reading the entire question to see if you know the answer **before** you look at the answer options.
- One useful strategy is the 'hand cover' approach. To do this, cover the answer options and then read the question. Doing this can help you avoid getting confused by distractor options (remember that they're meant to tempt you); and will encourage you to focus on what the question is actually asking.

Tip #3: Focus on Answering One Question at a Time

- The questions on the exam are designed to be independent of one another. This means knowing the answer to one question should not help you answer a different question (similarly, getting the answer wrong to one question won't force you to answer other questions incorrectly). Focus on one question at a time (and try not to let a difficult question make you anxious when you read the next one).
- The order of correct answers will be random. So don't try to look for patterns in your answers. For example, don't worry if you've answered "C" four times in a row. Just focus on answering each individual question without thinking about how you answered the other questions.
- Focus on one question at a time; but remember that you do have a limited time to finish the entire exam. Consider setting a time limit for answering each question; or skipping and then coming back to any questions you can't answer (remember that every question is independent of one another).

Tip #4: Don't Get Fooled by the Distractor Options

- On the examination, each question will have four possible answers. Your task is to select the option that you think is the correct (or the best possible) answer out of the four alternatives that are provided.
- Remember that, of these four options, a question will only have **one** correct (or clearly best) option. However, the wrong answer options will be designed to look plausible. Therefore, it's important to select the best answer to the question being asked; not just an answer that *seems* correct (as often, many answers will seem correct).
- Beware of answer options that include unqualified absolutes such as "**never**", "**always**", and "**ensures**". These statements are very restrictive and are very difficult to defend. Therefore, they are rarely correct.

Tip #5: Remember What You're Being Tested On

- Although the exam may ask you to apply your knowledge to situations that you have not experienced, you should be able to answer them if you apply the specialised knowledge and skills that you acquired in your education program. Remember that every question will relate to specific competencies (identified on the examination blueprint); and will test your knowledge, skills, and judgments related to these areas of naturopathic clinical practice specifically.

- There are several cognitive levels that multiple-choice questions can assess you on. Be prepared for questions that: (1) test your ability to recall information and facts; (2) test your ability to apply principles and procedures to patient situations; and (3) test your ability to apply your best critical judgment to naturopathic practice.
- Remember that some questions may refer to an image (e.g., an x-ray or photograph).

Tip #6: When in Doubt…Guess (But Do So Strategically)

- You don't lose points for incorrect answers (you just don't get the point for being correct). This means that if you guess and get a question wrong, your score will be the same as it would be if you didn't answer that question at all. Therefore, there's no harm in guessing if you really don't know the answer
- If and when you need to make a guess, try to do so methodically. For example, try to eliminate any answer options that you know are incorrect, so that you can narrow down your choices. Then, relate each remaining answer option back to the question to see if it fits. Compare these options and identify how they differ. Then, make an informed guess.

Other Tips

- Make sure to get a good night's rest before the exam.

REFERENCE BOOK LIST

Assessment and Diagnosis

- Bates' Guide to Physical Examination and History Taking (Bickley)
- Physical Examination and Health Assessment – Canadian (Jarvis)
- DeGowin's Diagnostic Examination (DeGowin)
- Mosby's Diagnostic and Laboratory Test Reference (Pagana and Pagana)
- Mosby's Manual of Diagnostic and Laboratory Tests (Pagana and Pagana)
- Mosby's Canadian Manual of Diagnostic and Laboratory Tests (Pagana)
- Standards of Practice (College of Naturopaths of Ontario)
- Advanced Health Assessment and Clinical Diagnosis in Primary Care 1998 (Scheibel)
- The Merck Manual of Diagnosis and Therapy 20th Ed (Porter)
- The Merck Manual of Children's Health 2006 (Various)
- The Merck Manual of Women's and Men's Health 2014 (Various)

Modalities

Botanical Medicine

- Herb Contraindications and Drug Interactions: Plus Herbal Adjuncts with Medicines 4th Ed (Brinker)
- Medical Herbalism 2003 (Hoffman)
- Principles and Practice of Naturopathic Botanical Medicine 2012 (Godfrey and Saunders)
- Principles and Practice of Phytotherapy: Modern Herbal Medicine 2nd Ed (Mils and Bone)
- Natural Medicines Comprehensive Database 2015
- Advanced Botanical Prescribing (Pickrell and Saunders)

Homeopathy

- Desktop Guide to Keynotes and Confirmatory Symptoms (Morrison)
- Materia Medica with Repertory (Broericke)
- Organon of the Medical Art (Hahnemann)
- Synthesis 9.1 Homeopathic Repertory

Nutrition

- Textbook of Integrative Clinical Nutrition (Prousky and Hoffer)
- Textbook of Natural Medicine 4th Ed (Pizzorno and Murray)
- The Encyclopedia of Natural Medicine 3rd Ed (Murray and Pizzorno)
- Clinical Nutrition (The Nutrition Society Textbook) 2nd Ed (Elia et al)

Physical Medicine

- Orthopedic Physical Assessment (Magee)
- Evidence Based Guide to Therapeutic Physical Agents (Belanger)
- Massage for Orthopedic Conditions (Hendrickson)
- Lectures in Naturopathic Hydrotherapy (Boyle and Saine)
- Therapeutic Exercise for Musculoskeletal Injuries 3rd Ed. (Kisner and Colby)
- Braddom's Physical Medicine and Rehabilitation 5th Ed (Cifu)

Psychology

- Diagnostic and Statistical Manual of Mental Disorders 5th Ed. (American Psychiatric Association)
- Cognitive Behaviour Therapy: Basics and Beyond (Beck)

Traditional Chinese Medicine and Acupuncture

- Acupuncture Point Combinations: The Key to Clinical Success 1995 (Ross and Livingstone)
- A Manual of Acupuncture (Deadman and Al-Khafaji)
- Clean Needle Technique Manual for Acupuncturists (Ellis, Wiseman, and Boss)
- Foundations of Chinese Medicine: A Comprehensive Text (Maciocia)
- Fundamentals of Chinese Acupuncture (Ellis, Wiseman and Boss)
- The Traditional Chinese Medicine Formula Study Guide 2000 (Yi)
- Fundamentals of Clinical Acupuncture (Kassam and Gowan) 2009

- Chinese Acupuncture and Moxibustion (Cheng Xinnong)
- Chinese Herbal Patent Medicines: A Clinical Desk Reference (Fratkin)
- Chinese Herbal Medicine: Formulas & Strategies (Scheid, Bensky, Ellis, Barolet)
- The Web That Has No Weaver (Kaptchuk)
- The Practice of Chinese Medicine (Maciocia)
- Traditional Chinese Medicine: Cupping Therapy (Chirali)
- The Treatment of Infertility with Chinese Medicine (Lyttleton)
- Clinical Handbook of Internal Medicine: The Treatment of Disease with Traditional Chinese Medicine (MacLean and Lyttleton)
- Obstetrics and Gynecology in Chinese Medicine (Maciocia)

Pharmacology

- A-Z Guide to Drug-Herb-Vitamin Interactions 2nd Ed. (Gaby)
- Canadian Pharmaceuticals and Specialties (Canadian Pharmacists Association)
- Drug Facts and Comparisons 2017 (Lippincott)
- Herb Contraindications and Drug Interactions (Brinker)
- Compendium of Therapeutic Choices, 2017 Ed. or newer (Canadian Pharmacists Association)
- Katzung & Trevor's Pharmacology Examination and Board Review 12th Ed (Trevor and Katzung)

Parenteral Therapy

- Professional IV Seminars; Principles of Basic Intravenous Therapy; Principles of Advanced Intravenous Therapy 2004 (Osborne; Raffety and Carter)

Critical Care and Public Health

Emergency Medicine

- Advanced First Aid, CPR, and AED (AAOS)
- Emergency Care 13th Ed (Limmer, et al)
- CURRENT Diagnosis and Treatment Emergency Medicine 8th Ed (Stone and Humphries)
- Tintinalli's Emergency Medicine: Just the Facts 3rd Ed (Cline and Ma)
- Rosen and Barkin's 5-Minute Emergency Medicine Consult 5th Ed (Schaider, et al)

Occupational and Public Health

- Control of Communicable Diseases Manual 20th Ed (Heymann)
- Gordis Epidemiology 6th Ed (Gordis)
- Introduction to Public Health 5th Ed (Schneider)