FAMILY MEDICINE

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FOUR PRINCIPLES OF FAMILY MEDICINE

Notes

1. The family physician must be a skilled physician
    - skilled in diagnosis and management of diseases common to the population that they serve
    - importance of early diagnosis and detection of serious life threatening illnesses which present and appear as minor or self-limited illnesses
    - competent in patient-centred clinical method
2. The doctor-patient relationship is central to the role of the family physician
    - committed to the person rather than just the disease
    - continuity of patient care
    - focus on patient's feelings, expectations, and fears
3. Family medicine is a community-based discipline
    - requires good knowledge of and access to a wide range of community services
    - must respond to changing needs and adapt to changing circumstances
    - collaborate as a team member or leader
4. The family physician is a resource to their patient population
    - acts as a health care resource, ensuring health of that population
    - self-directed life-long learning
    - advocate public policy to promote health

PATIENT-CENTRED CLINICAL METHOD

- ❑ a guide to exploring patient problems that allows physicians and patients to define problems and decide on management together
- ❑ consider the agendas of both the physician and the patient and find a common ground
    - doctor's agenda: history, physical, investigation
    - patient's agenda: FIFE = feelings, ideas, function, expectations
    - develop a working hypothesis AND understand the patient's illness experience

HEALTH MAINTENANCE AND PROMOTION

- ❑ health promotion is the most effective preventive strategy
- ❑ 40-70% of productive life lost annually is preventable

NUTRITION/WEIGHT CONTROL

Epidemiology

- ❑ 25-30% of population are obese; 1/3 of them binge eat
- ❑ 40-50% of population have increased cholesterol
- ❑ only 10-15% of population consume < 30% fat

Diagnosis

- ❑ complete diet history: include past attempts to lose weight, successes, obstacles, goals
- ❑ assess body mass index (BMI) = kg/m^2
    - normal range: 20.7-27.8 for men, 20.1-27.3 for women
    - 20-30% overweight: 27.8-31.1 for men, 27.3 -32.3 for women
    - moderately obese: 31.1-45.4 for men, 32.3-44.8 for women
    - morbidly obese: >45.4 for men, > 44.8 for women
- ❑ assess patient's self-image
    - does patient feel underweight, overweight, or normal?
    - does patient feel that weight interferes with health? with activities?
    - screen for eating disorders (see Psychiatry Notes)

- ❑ personal/family history of obesity/nutrition problems
    - obesity has strong genetic component
- ❑ review of systems; include sleep habits, apneic spells, OTC medication (e.g. laxatives)
- ❑ physical exam
    - directed at pertinent positives from review of systems
    - respiratory capacity
    - weight bearing joints
- ❑ investigations (discretionary)
    - fasting fractionated lipid profile
    - sleep study
    - exercise tolerance testing

Management

- ❑ success in weight control = at least 50% loss of excess weight maintained at one year
- ❑ discuss nutrition-related problems
    - heart disease, obesity, hypertension, osteoporosis, anemia, dental decay, cancer, gastrointestinal disorders, respiratory compromise, high lipids, diabetes, sleep apnea, osteoarthritis
- ❑ use Canada's Food Guide as a teaching guide
- ❑ counselling on diet (when applicable); stress weight maintenance if currently in healthy weight range
    - discourage fad diets: no long-term benefits
    - there is no ideal weight, but rather a range of healthy weights
- ❑ treatment approaches
    - behaviour modification
        - very effective, low side effects
        - daily records of foods eaten (eating slower and less)
        - change environment, preparation styles, etc...
        - lose about 0.5 kg/week
        - rewards when goal achieved (can not be food)
        - positive self-affirmation
    - exercise
        - associated with long-term weight maintenance
        - 20-30 minutes, 3 times per week
    - group support
        - Weight Watchers, Overeaters Anonymous
        - uses behaviour modification
        - high attrition rates (up to 80%)
    - surgery
- ❑ natural history
    - obesity is a chronic problem, refractory to most treatments
    - patients with central obesity are at increased risk of cardiovascular disease and diabetes mellitus
    - after 5 years, < 30% of patients maintain > 25% of lost weight

EXERCISE

Epidemiology

- ❑ 25% exercise regularly, 50% occasionally, 25% sedentary
- ❑ 1/3 of Canadians watch > 15 hours of TV/week
- ❑ daily physical activity decreases with age to middle adulthood, then increases

History

- ❑ assess current level of fitness, motivation and accessibility to exercise
- ❑ medical screen
    - age
    - previous level of activity
    - current medications
        - diuretics affect potassium levels
        - anticholinergics increase body temperature
        - insulin can cause hypoglycemia
    - cardiovascular risk factors
        - CBC, blood sugar, cholesterol, urinalysis, stress ECG test
    - contraindications: recent MI, conduction abnormalities

Management
- ❑ emphasize benefits of exercise
  - increases energy level, strength and flexibility
  - improves cardiovascular and metabolic functions
  - increases glucose tolerance
  - increases feeling of well-being and sex drive
  - improves quality of sleep
  - decreases depression/anxiety
- ❑ types of exercise
  - aerobic activity involving large muscle groups for 20-30 minutes at least 3-4 times a week at 60-80% of maximum heart rate (age-dependent)
  - 5-10 minutes stretching routine decreases musculoskeletal injuries

STRESS MANAGEMENT

- ❑ steps to manage stress
  - identify sources of stress
    - very important step (make a list)
  - modify environment/events to decrease stress
  - develop coping strategies
    - biofeedback, meditation, mental imagery, hypnosis, diaphragmatic breathing, progressive muscle relaxation, psychotherapy
  - focus on goal achievements and personal well-being
  - give positive feedback and rewards

SMOKING

Epidemiology
- ❑ single most preventable cause of death
- ❑ responsible for 80% of lung cancers, COPD, cardiovascular disease
- ❑ ages 25-34 have highest prevalence of smoking
- ❑ 15% of smokers smoke > 25 cigarettes/day
- ❑ see Community Health Notes for Stages of Change

History
- ❑ smoking habits: amount, duration, frequency, time of day
- ❑ gain from smoking (e.g. weight loss, decreased anxiety, social relationships)
- ❑ personal concerns about smoking and quitting
- ❑ foreseen benefits from quitting
- ❑ interest in quitting (a person will only quit if they are willing)
- ❑ previous attempts and results
- ❑ medical situation: cough, SOB, asthma, COPD, HTN
- ❑ social situation: other smokers in family/social network
- ❑ nicotine dependence
  - preoccupation or compulsion to use
  - impairment or loss of control over use
  - continued use despite negative consequences
  - minimization or denial of problems associated with use

Management
- ❑ 2 important components that need to be addressed
  - physical/chemical addiction: symptoms of withdrawal (tremors, irritability)
  - habitual/environmental factors: psychological, social, and spiritual components
- ❑ advise of health risks
- ❑ lung cancer, coronary artery disease, COPD, PUD, low birth weight babies, premature aging, upper GI/respiratory cancers, respiratory infections
- ❑ after assessing smoking habits
  - advise every smoker to quit at every visit
- ❑ assess stage of change
- ❑ motivate smoker to attempt to quit
  - benefits: decreased respiratory infections, increased exercise tolerance/energy, increased taste/smell
  - ask for a commitment to quit (set a date)
  - assist the smoker to quit
    - physician counselling

- ❑ self-help materials: remove ashtrays/lighters, increase high fibre snacks/gum, increase aerobic exercise, self-reward
  - nicotine patch/gum
  - smoking withdrawal programs
- ❑ reward for goals that are met
  - plan for new social relationships and activities to make it easier to make a serious attempt to change behaviour
- ❑ follow-up: set firm dates
- ❑ anticipate problems: weight gain, withdrawal symptoms
- ❑ continue to monitor/support
- ❑ do not give up if failed
- ❑ nicotine patch
  - continuous self-regulated amount of nicotine
  - decreases craving and/or withdrawal
  - will not replace immediate effects of smoking, habit or pleasure
  - indications: nicotine dependent, high motivation to quit smoking
  - contraindications: smoking while on patch, allergy, MI, CVA
  - relative contraindication: pregnancy
  - duration of treatment: 4-12 weeks usually adequate
- ❑ bupropion (Zyban)
  - approved in Canada in August, 1998
  - acts on dopaminergic (reward) and noradrenergic (withdrawal) pathways
  - contraindications: seizure disorder, alcoholism, eating disorder, recent MAOI use, current pregnancy; caution if using SSRI (reduction of seizure threshold)
  - dose varies with amount the patients smokes
  - patient continues to smoke for first week of treatment and then completely stops (therapeutic levels reached in one week)
  - recommend abstinence from alcohol due to risk of toxic levels with liver dysfunction
  - side effects: headache, insomnia, dry mouth, weight gain

Natural History

- ❑ most relapses occur in first year; most try > 5 times before quitting

ALCOHOL

Epidemiology

- ❑ 10-15% of patients in family practice are problem drinkers
- ❑ over 500 000 Canadians are alcohol-dependent
- ❑ 10% of all deaths in Canada are alcohol-related
- ❑ overall cost > $5 billion dollars in Canada

History

- ❑ HALT, BUMP, FATAL DT (see Psychiatry Notes)
- ❑ assess drinking profile
  - setting: time, place, occasion
  - social network: drinking partners
  - consumption: quantity (in standard drinks: 12 oz beer, 5 oz wine, 1 oz spirits), frequency, rate, weekly amount, maximum consumption at any one occasion in past month
  - pressures to drink: internal and external
  - associated activities: sports, parties
  - impact on: family, work, social
- ❑ detection of alcohol abuse screening questions
  - Do you think you have a drinking problem?
  - CAGE (2+ response): sensitivity 85%, specificity 89%

    CAGE Questionnaire

    C - need to Cut down?

    A - Annoyed by criticism about drinking?

    G - Guilty feelings about drinking?

    E - morning Eye-opener?
- ❑ beware of alcohol-related medical problems
  - GI: bleeds, oral/esophageal cancer, pancreatitis, liver disease
  - cardiac: alcoholic cardiomyopathy
  - neurologic: Korsakoff's/Wernicke's peripheral neuropathy
  - hematologic: anemia, coagulopathies

Table 1. Distinguishing Problem Drinking from Severe Alcohol Dependence

Clinical Feature	Problem Drinking	Alcohol Dependence
withdrawal symptoms	no	often
amount consumed weekly	more than 12	more than 60
drinks moderately (< 4 daily)	often	rarely
social consequences	none or mild	often severe
physical consequences	none or mild	often severe
socially stable	usually	often not
neglects major responsibilities	no	yes

Source: Kahan, M. (in Canadian Family Physician 1996, Vol. 42, pg. 662)

Management

- ❑ 25-30% of abusers exhibit spontaneous improvement over 1 year
- ❑ 60-70% of individuals with jobs and families have an improved quality of life 1 year post-treatment
- ❑ account for patient's cultural background, sexual preference, need for child care
- ❑ significant health risks associated with > 2 oz/day (women) and > 4 oz/day (men)
- ❑ treatment strategies
  - brief physician-directed intervention for problem drinkers
    - review safe drinking guidelines
    - compare consumption to Canadian norms
    - offer information on health effects of drinking
    - have patient commit to drinking goal
    - review strategies to avoid intoxication (e.g. alternate alcoholic with non-alcoholic drinks, avoid drinking on empty stomach)
    - keep daily record of alcohol consumption
    - order GGT and MCV
    - have regular follow-up
  - refer for further treatment if problem persists
    - Alcoholics Anonymous
    - outpatient/day programmes for those with chronic, resistant problems
    - in-patient program if refractory to other treatment
  - pharmacologic
    - disulfiram (Antabuse): blocks conversion of acetaldehyde to acetic acid (which leads to flushing, headache, nausea, hypotension, hyperventilation, anxiety)
    - benzodiazepines, ß-blockers for withdrawal symptoms; see Psychiatry Notes for loading protocols
  - family treatment
    - look for spouse/child abuse
    - supports: Al-Anon, Al-A-Teen
- ❑ prognosis
  - relapse often occurs and should not be viewed as failure
  - monitor regularly for signs of relapse (e.g. missed appointments, cessation of treatment)

- ❏ Canadian Task Force on Preventative Health Care established in 1976; first published in 1979
- ❏ reviews the literature for preventability of conditions
- ❏ aids in developing clinical practice guidelines
- ❏ incorporates primary and secondary preventive measures
- ❏ most notable recommendation is the abolition of the annual physical exam; to be replaced by periodic health assessments (PHA)

Purpose of the PHE

- ❏ primary prevention
- ❏ identify risk factors for common chronic disease
- ❏ detect asymptomatic disease (secondary prevention)
- ❏ counsel patients to promote healthy behaviour
- ❏ update clinical data
- ❏ enhance patient - physician relationship

Table 2. Classifications of Recommendations

A	there is good evidence to support the recommendation that the manoeuvre/condition be considered in a periodic health exam
B	there is fair evidence to support the recommendation that the manoeuvre/condition be considered in a periodic health exam
C	there is poor evidence regarding the inclusion or exclusion of the manoeuvre/condition in a periodic health exam, but the recommendations can be made on other grounds
D	there is fair evidence to support the recommendation that the manoeuvre/condition be excluded from consideration in a periodic health exam
E	there is good evidence to support the recommendation that the manoeuvre/condition be excluded from consideration in a periodic health exam

BIRTH - 18 MONTHS

Leading Causes of Death
- congenital abnormalities
- heart disease
- injuries (non-MVA)
- pneumonia/influenza

Screening
- height and weight
- hemoglobin and hematocrit (once in infancy)

❑ high risk groups:
- hearing (TORCH, head/neck malform, birthweight < 1500 g, hyperbilirubinemia, severe perinatal asphyxia) with startle test and locating sounds

❑ in general
- developmental disorders
- musculoskeletal malformations
- cardiac abnormalities
- genitourinary anomalies
- metabolic disorders
- speech problems
- behavioural disorders
- family dysfunction
- ocular misalignment
- tooth decay
- signs of child abuse or neglect

Parental Counselling

❑ diet
- breastfeeding
- nutrient intake, especially iron-rich foods

❑ injury prevention
- child safety belts
- smoke detector
- hot water heater temperature
- stairway gates, window guards, pool fence
- storage of drugs and toxic chemicals
- poison control telephone number

Immunizations and Chemoprophylaxis
- DPTP and Hib at 2, 4, 6, and 18 months
- MMR after 1st birthday
- consider fluoride supplements if necessary
- varicella vaccine with 1st year may be considered

In First Week

❑ ensure the following has been done
- ophthalmic antibiotics
- hemoglobin electrophoresis
- T4/TSH
- phenylalanine
- sweat chloride test if cystic fibrosis history

AGES 2-6

Leading Causes of Death
- injuries (non-MVA)
- MVAs
- congenital anomalies
- homicide
- heart disease

Screening
- height and weight
- blood pressure
- eye exam for amblyopia and strabismus
- urinalysis for bacteriuria

❑ high risk group
- tuberculin skin test

❑ in general
- developmental disorders
- speech problems
- behavioural & learning disorders
- family dysfunction
- dental decay, misalignment, premature loss of teeth, mouth breathing
- signs of child abuse or neglect

Patient and Parent Counselling

❑ diet and exercise
- sweets, between-meal snacks, iron-enriched foods, sodium
- caloric balance
- selection of an exercise program

❑ injury prevention
- same as BIRTH - 18 MONTHS
- safety belts
- bicycle safety helmets

❑ dental health
- tooth brushing and dental visits

❑ in general
- effects of passive smoking
- skin and eye protection from UV light

Immunizations and Chemoprophylaxis
- DPTP, MMR at ~4-6 years
- fluoride supplements if necessary

AGES 7-12

Leading Causes of Death
- MVAs
- injuries (non-MVA)
- congenital anomalies
- leukemia
- homicide
- heart disease

Screening
- height and weight
- blood pressure
- tuberculin skin test

❑ in general
- developmental disorders
- scoliosis
- behavioural and learning disorders
- family dysfunction
- vision disorders
- diminished hearing
- dental decay, misalignment, mouth breathing
- signs of child abuse or neglect
- abnormal bereavement

Patient and Parent Counselling

❑ diet and exercise
- saturated fat, cholesterol, sweets and between-meal snacks
- caloric balance
- selection of exercise program

❑ injury prevention
- safety belts
- smoke detector
- storage of firearms, drugs, toxic chemicals, matches
- bicycle safety helmets

❑ dental health
- regular tooth brushing and dental visits

❑ in general
- skin and eye protection from UV light
- fluoride supplements if necessary

Immunizations

❑ hepatitis B at 12 years

Adapted from: (i) Medical Check-Ups Revamped. University of Toronto, Faculty of Medicine. Health News. Vol. 9 No. 5, Oct. 1991, 1-7.
(ii) Guide to Clinical Preventive Services. Report of U.S. Preventive Services Task Force. Williams & Wilkins 1991, XXXXIX-LXI.

Notes

AGES 13-18

Leading Causes of Death
- MVAs
- homicide
- suicide
- injuries (non-MVA)
- heart disease

Screening

❑ history
- dietary intake
- physical activity
- tobacco/alcohol/drug use
- sexual practices

❑ physical exam
- height and weight
- blood pressure
- for high risk groups
  - complete skin exam
  - testicular exam

❑ lab/diagnostic procedures
- for high risk groups
  - rubella antibodies
  - VDRL/RPR
  - chlamydia testing
  - GC culture
  - counselling and testing for HIV
  - tuberculin skin testing
  - hearing
  - Pap smear

❑ in general
- depressive symptoms
- suicide risk factors
- abnormal bereavement
- tooth decay, misalignment, gingivitis
- signs of child abuse
- developmental disorders
- scoliosis
- behavioural and learning disorders
- family dysfunction

Counselling

❑ diet and exercise
- saturated fat, cholesterol, sodium, iron, calcium
- caloric balance
- selection of an exercise program

❑ substance use
- tobacco: cessation/primary prevention
- alcohol and other drugs
  - cessation and primary prevention
  - driving while under the influence
  - treatment for abuse
- for high risk groups
  - sharing unsterilized needles and syringes

❑ sexual practices
- sexual development and behaviour
- STDs: partner selection, condoms
- unintended pregnancy and contraceptive options

❑ injury prevention
- safety belts
- safety helmets
- violent behaviour
- firearms
- smoke detector

❑ dental health
- regular tooth brushing, flossing, dental visits

❑ in general
- skin and eye protection from UV light
- hemoglobin testing if high risk group
- tetanus-diphtheria booster
- fluoride supplements if necessary

Immunizations
- Td + P at ~14-16 years

AGES 19-39
(periodic visit every 1-3 yrs)

Leading Causes of Death
- same as AGES 13-18

Screening

❑ history
- same as AGES 13-18, plus
- COPD
- hepatobiliary disease
- bladder cancer
- endometrial disease
- travel-related illness
- prescription drug abuse
- occupational illness and injuries

❑ physical examination
- same as AGES 13-18, plus
- complete oral cavity exam
- palpation for thyroid nodules
- breast exam
- digital rectal exam after age 40
- regular pelvic exams for women with their Pap smear

❑ lab/diagnostic procedures
- same as AGES 13-18, plus
- nonfasting total blood cholesterol
- high risk groups
  - fasting plasma glucose
  - ECG
  - mammogram
  - colonoscopy

Counselling

❑ diet and exercise
- same as AGES 13-18, plus discuss complex carbohydrates and fibre

❑ substance use, sexual practices, dental health, general preventative measures
- same as AGES 13-18

❑ injury prevention
- same as AGES 13-18, plus
- for high risk groups
  - back-conditioning exercises
  - prevention of childhood injuries
  - falls in the elderly

Immunizations
- tetanus-diphtheria booster every 10 years
- for high risk groups
  - hepatitis B vaccine
  - pneumococcal vaccine
  - influenza vaccine
  - measles-mumps-rubella vaccine

THE PERIODIC HEALTH EXAMINATION . . . CONT.

AGES 40-64
(periodic exam every 1-3 yrs)

Leading Causes of Death
- heart disease
- lung cancer
- cerebrovascular disease
- breast cancer
- colorectal cancer
- obstructive lung disease

Screening
- ❑ history
  - dietary intake
  - physical activity
  - tobacco/alcohol/drug use
  - sexual practices
  - peripheral artery disease
  - COPD
  - hepatobiliary disease
  - bladder cancer
  - endometrial disease
  - travel-related illness
  - prescription drug abuse
  - occupational illness and injuries
- ❑ physical exam
  - height and weight
  - blood pressure
  - complete skin exam
  - testicular exam
  - digital rectal exam
  - regular pelvic exams for women with their Pap smears
  - in high risk groups
    - auscultate for carotid bruits
    - complete oral cavity exam
    - palpation for thyroid nodules
    - clinical breast exam
- ❑ lab/diagnostic procedures
  - nonfasting total blood cholesterol
  - in high risk groups
    - rubella antibodies
    - VDRL/RPR
    - chlamydia testing
    - GC culture
    - counselling and testing for HIV
    - tuberculin skin testing
    - hearing
    - Pap smear
    - fasting plasma glucose
    - ECG
    - fecal occult blood, sigmoidoscopy/colonoscopy, and bone mineral content
  - mammogram every 1-2 years for women beginning at age 50 (age 35 for those at increased risk)

Counselling
- ❑ diet and exercise, substance use, sexual practices, injury prevention and dental health
  - same as AGES 13-18, plus discuss complex carbohydrates and fibre
- ❑ in general
  - skin protection from UV light
  - discussion of aspirin therapy
  - discussion of estrogen replacement therapy

Immunizations
- same as AGES 19-39

AGES 65 and OVER
(periodic exam every year)

Leading Causes of Death
- heart disease
- cerebrovascular disease
- obstructive lung disease
- pneumonia/influenza
- lung cancer
- colorectal cancer

Screening
- ❑ history
  - same as AGES 40-64, plus
  - prior symptoms of TIAs
  - functional status at home
  - changes in cognitive function
  - medications that increase risk of falls
- ❑ physical exam
  - same as AGES 40-64, plus
  - visual acuity
  - hearing and hearing aids
- ❑ lab/diagnostic procedures
  - same as AGES 40-64, plus
  - mammogram every 1-2 years until age 75, unless pathology detected
  - thyroid function tests for women

Counselling
- ❑ diet and exercise, substance use, injury prevention and dental health
  - same as AGES 13-18, plus
  - complex carbohydrates & fibre
  - prevention of falls
  - hot water heater temperature
- ❑ in general
  - same as AGES 40-64, plus glaucoma testing by an eye specialist

Immunizations
- same as AGES 19-39 plus influenza vaccine, pneumococcal vaccine

Notes

EPIDEMIOLOGY

- ❑ most common outpatient diagnosis (20% of population)
- ❑ risk factors: family history, age, male, black race, obesity, alcohol/tobacco use

DEFINITION

Table 3. Classification of Blood Pressure

dBP (mmHg)	
< 90	normal BP
90 - 104	mild hypertension
105 - 114	moderate hypertension
> 115	severe hypertension
sBP when dBP < 90 mmHg	
< 140	normal BP
140 - 159	borderline isolated systolic hypertension
> 160	isolated systolic hypertension

Accelerated Hypertension

- ❑ significant recent increase in BP over previous hypertensive levels associated with evidence of vascular damage on fundoscopy but without papilledema

Malignant Hypertension

- ❑ sufficient elevation in BP to cause papilledema and other manifestations of vascular damage
- ❑ not defined by absolute level of BP, but often requires BP of at least 200/140
- ❑ develops in about 1% of hypertensive patients

Isolated Systolic HTN

- ❑ sBP > 160 mmHg, dBP < 90 mmHg
- ❑ associated with progressive reduction in vascular compliance
- ❑ risk factor for CVD and IHD
- ❑ usually begins 5th decade; up to 11% of 75 year olds

ETIOLOGY

- ❑ essential (primary) hypertension (90%)
  - undetermined cause
- ❑ renal hypertension (5%)
  - renal parenchymal disease (3%)
  - renovascular hypertension (< 2%)
- ❑ endocrine (4-5%)
  - oral contraceptives (4%)
  - primary hyperaldosteronism (0.5%)
  - pheochromocytoma (0.2%)
  - Cushing syndrome (< 0.2%)
  - hyperparathyroidism (< 0.2%)
- ❑ coarctation of the aorta (0.2%)
- ❑ enzymatic defects
- ❑ neurological disorders
- ❑ drug-induced hypertension
  - prolonged corticosteroid use
- ❑ hypercalcemia from any cause
- ❑ watch for labile, "white coat" hypertension

DIAGNOSTIC EVALUATION

- ❑ systolic > 140 and/or diastolic > 90 on three separate readings over 6 months

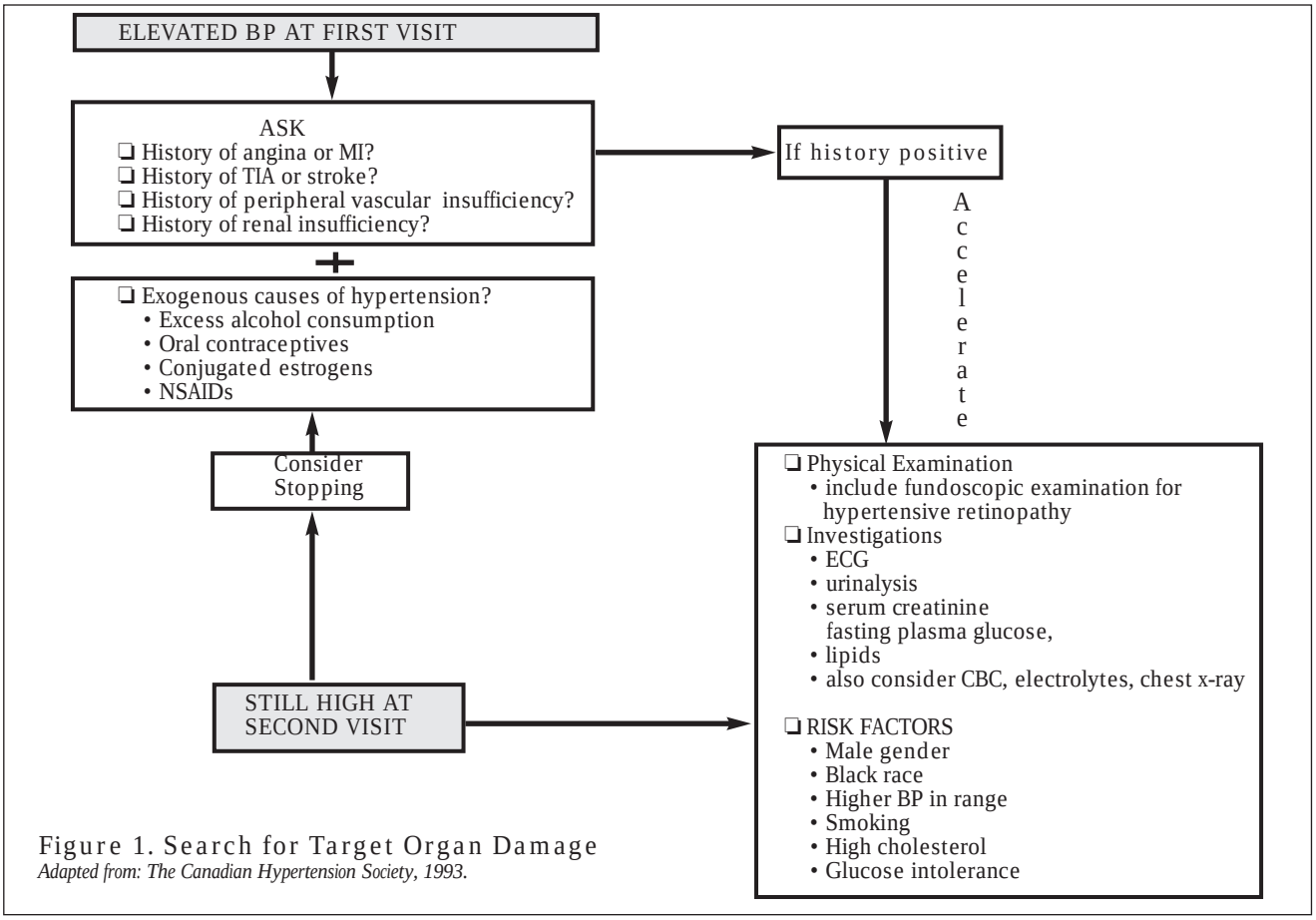


Figure 1. Search for Target Organ Damage
Adapted from: The Canadian Hypertension Society, 1993.

❑ suspect secondary causes and consider further investigations if
- onset of HTN before age 30 or after age 60
- HTN refractory to treatment
- accelerated or malignant hypertension
- suspicious clinical situation
  - presence of paroxysmal headache, palpitations and diaphoresis may suggest pheochromocytoma
  - presence of renal bruits may indicate renovascular hypertension
  - presence of hypokalemia and hypernatremia may suggest hyperaldosteronism

❑ follow-up
- 1-2 months for mild HTN; 1-2 weeks for moderate HTN
- immediate treatment for severe or accelerated/malignant HTN

THERAPEUTIC CONSIDERATIONS

General Considerations

❑ nonpharmacological (recommendation grade)
- smoking cessation
- salt (D) and alcohol (C) restriction
- saturated fat intake reduction
- weight reduction (B) if > 115% ideal body weight
- regular aerobic exercise (B)
- behavioural therapies (B) (see Stress Management Section)
- potassium (B) /calcium supplements (C)

❑ pharmacological
- patients under 60 years old
  - no organ damage: treat when diastolic > 100, grey zone between 90-100
  - with target organ damage, treat when diastolic > 90
- patients over 60 years old
  - treat when systolic > 160, grey zone 140-160
  - treat when diastolic > 105, grey zone 90-105
- choose one antihypertensive agent based on the individual patient (see Figure 2 and Table 4)

Table 4. Pharmacologic Treatment of Hypertension with Co-existing Conditions

Condition or Risk Factor	Recommended Drugs	Alternative Drugs	Not Recommended
Ischemic Heart Disease • Angina	ß-blockers	Ca^{++} antagonists, eg. diltiazem and verapamil, or dihydropyridines + ß-blockers	
• Recent Myocardial Infarction	ß-blockers	Ca^{++} antagonists, eg. verapamil and diltiazem if LV function not severely impaired	dihydropyridines
Congestive Heart Failure	diuretics, ACE inhibitors	hydralazine + isosorbide dinitrate	ß-blockers Ca^{++} antagonists
Peripheral Vascular Disease • Severe disease and Raynaud's • Mild Disease	vasodilators	ß-blockers may be used	ß-blockers
Dyslipidemias	*α-blockers, ACE inhibitors, ß-blockers with ISA, Ca^{++} antagonists, and centrally acting drugs	low dose thiazides	high dose thiazides, ß-blockers without ISA
Diabetes Mellitus	*α-blockers, ACE inhibitors, Ca^{++} antagonists	ß-blockers, thiazides and centrally acting agents or vasodilators if others contraindicated	high dose thiazides, ß-blockers without ISA
Asthma	potassium sparing + thiazide diuretics for patients on salbutamol		ß-blockers
Gout			thiazides, but asymptomatic hyperuricemia is not a contraindication
Pregnancy	methyldopa, clonidine, hydralazine and ß-blockers		ACE inhibitors Ca^{++} antagonists
Black Patients	low dose thiazides and Ca^{++} antagonists	ß-blockers and ACE inhibitors are less effective	

*=alphabetical order +=combined with ISA=intrinsic sympathomimetic activity

Adapted from: The Canadian Hypertension Society, 1993.

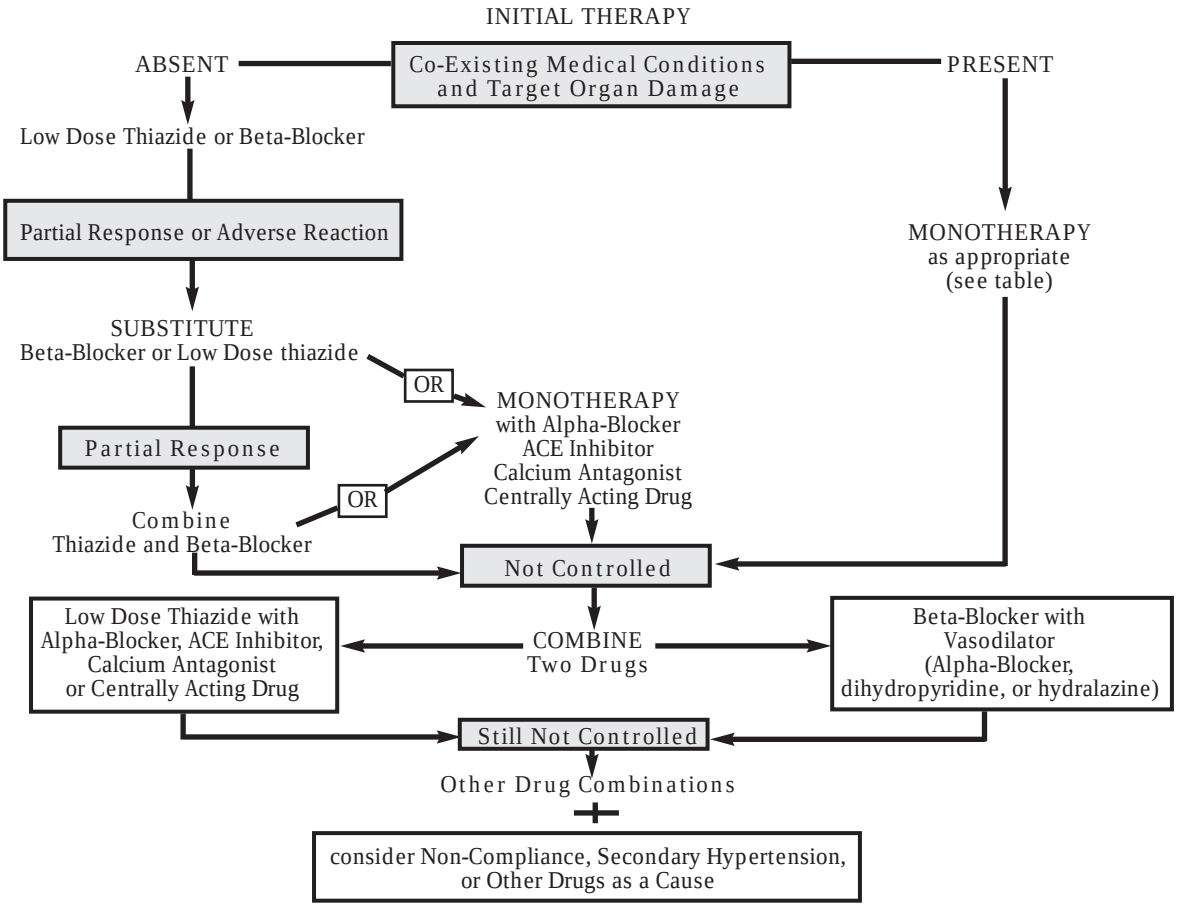


Figure 2. Pharmacological Treatment of Hypertension

Adapted from: The Canadian Hypertension Society, 1993.

- ❑ target BP should be < 140/90
  - may be lower for diabetic
  - correction need not be rapid
- ❑ referral is indicated for cases of refractory hypertension, suspected secondary cause or worsening renal failure
- ❑ hospitalization is indicated for malignant hypertension (diastolic blood pressure > 130, retinal hemorrhages, bulging discs, mental status changes, increasing creatinine)

Factors Adversely Affecting Prognosis

- ❑ presence of additional modifiable risk factors
- ❑ presence of uncontrollable risk factors
  - early age of onset, male sex, black race, family history
- ❑ evidence of target organ damage
- ❑ malignant hypertension

Epidemiology
- ❑ 5% of Canadian population has DM; 1.5 million affected
- ❑ NOTE: DM is under-diagnosed; for every diagnosis there is one undiagnosed
- ❑ 85-90% Type II (peak incidence age 50-55)
  - risk factors: family history, obesity, history of gestational diabetes, age
- ❑ 10-15% Type I (peak incidence age 10-15)
  - autoimmune

Diagnosis
- ❑ symptoms of diabetes (fatigue, polyuria, polydipsia, unexplained weight loss) of diabetes plus a casual plasma glucose value > 11.1 mmol/L
- ❑ fasting plasma glucose (FPG) > 7.0 mmol/L
  - a plasma glucose value in the 2-h sample of the OGTT > 11.1 mmol/L

Management
- ❑ after diagnosis, the initial visits should focus on
  - duration of diabetes prior to discovery
  - associated risk factors for macro/microvascular disease
  - any current complications (heart, eyes, kidney, vasculature)
  - patient education
- ❑ must work with patient to achieve blood glucose levels that are normal as much of the time as possible, while avoiding hypoglycemic episodes
- ❑ nonpharmacologic
  - exercise overcomes insulin resistance by depleting muscle glycogen and by inducing glucose storage (Type II only)
  - diet
    - strive to stay within 10% of ideal body weight
    - derive most calories from complex carbohydrates
    - avoid simple sugars and saturated fats
    - must have regular meals, synchronized with peak action of insulin
- ❑ pharmacologic
  - oral hypoglycemic agents (Type II only) (see Figure 3)
  - insulin (Type I and II)
    - initially: single dose of intermediate insulin before breakfast (0.3-0.6 u/kg/day)
    - for better control: intermediate-acting or regular-acting insulin (NPH/Regular) given twice daily (2/3 in morning, 1/3 in evening)
    - close monitoring necessary for adjustments
    - see Endocrinology Notes
- ❑ follow up
  - FPG, HbA1c, urinalysis, BUN, creatinine
  - BP, plasma lipids, ECG
  - ophthalmology
    - Type II - consult at time of diagnosis and follow up every two years
    - Type I - consult within 5 years of diagnosis and every year afterwards
  - proteinuria
    - Type II - screen at time of diagnosis and every year
    - Type I - screen within first 5 years of diagnosis and then every year
  - peripheral neuropathy: periodic health exam
  - lipid profile: every 1-3 years in adults
  - foot care: foot exams at least annually

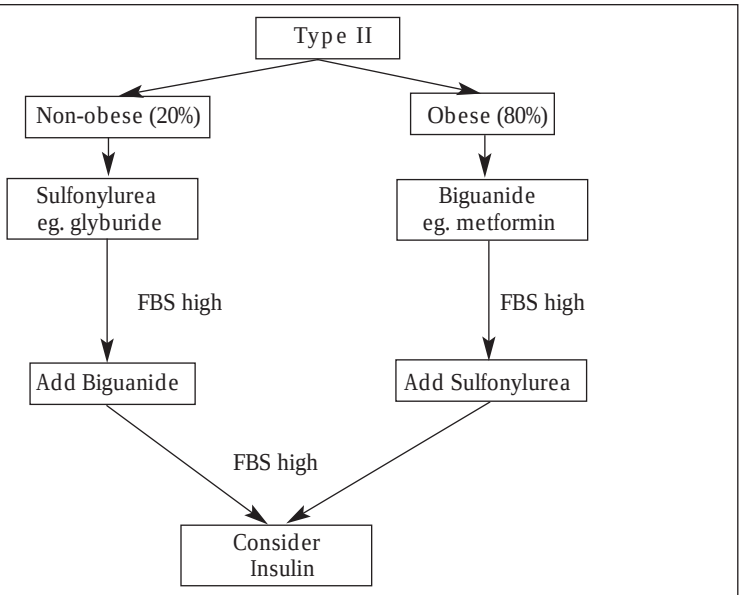


Figure 3. Initial Therapeutic Strategy in Type II Diabetes

COMMON PROBLEMS

ANXIETY

- ❑ see Psychiatry Notes
- ❑ history (screening question)
  - have you been unusually worried about things recently?

BRONCHITIS

Epidemiology

- ❑ most frequent LRTI in adults (especially in winter months)
- ❑ viral (90%): rhinovirus, coronavirus, adenovirus, influenza virus
- ❑ bacterial: H. *influenza, Mycoplasma, Pneumococcus*

Diagnosis

- ❑ symptoms
  - preceded by URTI
  - initially nonproductive cough that becomes productive
  - substernal chest pain with coughing, deep breathing, or movement
  - absent or mild fever
- ❑ signs
  - may hear rhonchi, wheezes or may be clear
  - dyspnea, fever, chills, crackles, and more toxic appearance suggest pneumonia
- ❑ investigations
  - mainly a clinical diagnosis (generally no investigations required)
  - may use sputum smear/culture, chest x-ray to rule out pneumonia

Management

- ❑ complete smoking cessation
- ❑ rest, fluids, antipyretics, antitussives
- ❑ randomized controlled trials have shown benefit of ß2-agonists over antibiotics
- ❑ antibiotics (if age > 55 or frequent purulent cough, high fever, toxic patient)
  - 1st line: tetracycline, erythromycin
  - 2nd line: doxycycline, clarithromycin, azithromycin

CHEST PAIN

- ❑ many causes: use history, physical and investigations in approach to diagnosis

Differential Diagnosis

- ❑ cardiac: angina, MI, myocarditis, pericarditis
- ❑ pulmonary: pneumothorax, PE, pneumonia, neoplasm, TB
- ❑ GI: esophageal spasm, esophagitis, GERD, PUD, hernia, cholecystitis, cholelithiasis, pancreatitis
- ❑ vascular: dissecting aortic aneurysm
- ❑ MSK/soft tissue: herpes zoster, mastitis, costochondritis, fractured rib, muscle strain
- ❑ psychological: anxiety, panic

COMMON COLD

Epidemiology

- ❑ leading upper respiratory tract infection (URTI)
- ❑ peak in winter months
- ❑ adults average 2-4 colds/year, children average 6-10 colds/year
- ❑ rhinoviruses most common cause
    - others: adenovirus, RSV, influenza, parainfluenza
- ❑ transmission primarily occurs by hand contact with the infectious agent which can survive on objects or skin
- ❑ incubation period 1-5 days

History

- ❑ local symptoms: sneezing, nasal congestion, rhinorrhea, scratchy/sore throat, non-productive cough
- ❑ constitutional symptoms: malaise, headache, myalgias, mild fever
- ❑ prior episodes and treatment, smoking history, epidemics
- ❑ sick contacts
- ❑ history must include inquiry into symptoms relating to entire respiratory tract
    - otalgia, facial/dental pain, hoarseness, sputum, dyspnea, wheezing

Physical Findings

- ❑ boggy nasal mucosa, erythematous nasopharynx, +/– enlarged posterior lymphoid tissue, post-nasal drip, enlarged lymph nodes
- ❑ signs of secondary bacterial infection: increasing fever, localized pain, productive cough

Management

- ❑ consider patient expectations
- ❑ patient education
    - symptoms peak by second or third day and usually subside within one week
    - cough may persist for days to weeks due to microscopic inflammation and sensitization of cough receptors
    - secondary bacterial infections can present within 3-10 days after onset of cold symptoms
- ❑ treatment is for symptomatic relief
    - hydration is best solution
    - congestion: sympathomimetics, decongestants
    - aches, pain and fever: acetaminophen, ASA (not in children)
    - loosen secretions: expectorants (not consistently effective)
    - cough: dextromethorphan or codeine

Prevention

- ❑ avoid aerosol exposure, wash hands and keep them away from mucosal membranes
- ❑ high dose vitamin C occasionally used but not proven

DEPRESSION

- ❑ see Psychiatry Notes
- ❑ NOTE: depression commonly presents as a physical complaint (e.g. fatigue)

DIZZINESS

Epidemiology
- ❑ accounts for 1% of patient visits
- ❑ frequency of presentation rises steadily with age
- ❑ most common presenting complaint of ambulatory patient age > 75

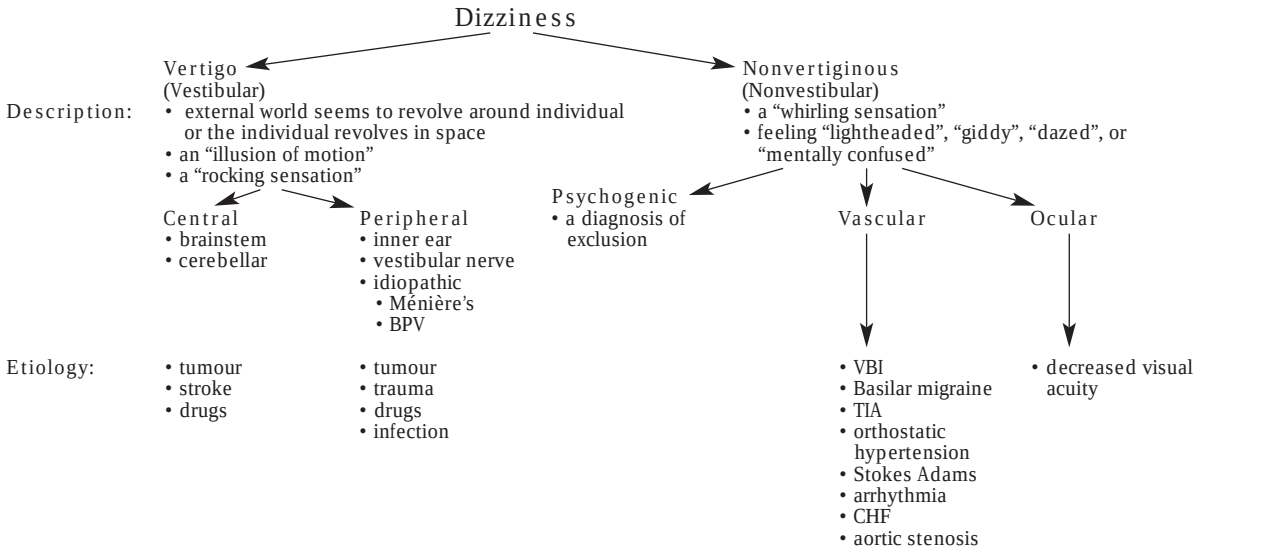


Figure 4. Differential Diagnosis of Dizzines

Diagnosis
- ❑ history
  - ask patient to define dizzy
  - duration of attack
    - flash - psychogenic
    - a minute - BPV, vascular
    - minutes to 24 hours – Ménière's
    - days - acute vestibular
    - months to years - psychogenic, CNS, multisensory loss
  - exacerbating events
    - worse with head movement: vestibular
    - worse with eyes closed: vestibular
    - no effect with closure of eyes or head movement: non-vestibular
  - associated symptoms
    - neurologic
      - transient diplopia, dysphagia, ataxia (TIA, VBI, arrhythmias)
      - persistent sensory and motor deficits (CVA, CNS)
    - audiologic
      - hearing loss, tinnitus, otalgia (labyrinthitis, Ménière's, ototoxicity, tumour)
    - non-specific
      - nausea, vomiting
      - prominent with peripheral; not central

Management (see Otolaryngology Notes)
- ❑ OTC medications (e.g. diphenhydramine)

DYSPNEA (see Respirology and Pediatrics Notes)

Differential Diagnosis
- ❑ respiratory: airway disease (e.g. asthma, COPD), parenchymal lung disease (e.g. pneumonia), pulmonary vascular disease, pleural disease, neuromuscular and chest wall disorders

- ❑ cardiovascular: elevated pulmonary venous pressure, decreased cardiac output, severe anemia
- ❑ anxiety/psychosomatic

COPD/Asthma

History
- ❑ dyspnea +/– cough, onset, duration, alleviating and aggravating factors
- ❑ associated symptoms: wheezing, sputum, fever, chills, chest pain, weight loss
- ❑ smoking, alcohol, allergenic exposure
- ❑ other respiratory problems/medical conditions
- ❑ current medications and previous treatments
- ❑ require oxygen? hospitalizations or ICU stay?
- ❑ determine functional limitation

Physical
- ❑ vitals, level of consciousness
- ❑ respiratory exam: cyanosis, clubbing, signs of respiratory distress, wheezing, crackles, decreased air entry, increased resonance
- ❑ "blue bloaters" and "pink puffers"
- ❑ cardiovascular exam: peripheral edema, elevated JVP, S3, S4 (cor pulmonale)

Investigations
- ❑ CBC, differential, ABG, oxygen saturation, PFT, peak flow, CXR, ECG, sputum culture

Management
- ❑ asthma
  - environmental control (smoking, pets, carpets)
  - pharmacotherapy
    - short term relief: ß2-agonists +/– anti-cholinergics
    - long term prevention: inhaled corticosteroids, sodium cromoglycate, leukotriene receptor antagonists, oral corticosteroids
    - always consider aerochamber to optimize drug delivery
- ❑ COPD
  - smoking cessation
  - pneumococcal and influenza vaccines
  - exercise training, PT/OT
  - oxygen
    - 2-4 L/min 24 hours a day if PaO_2 > 55 mm Hg, O_2 saturation < 90% or PaO_2 55-59 mm Hg and evidence of cor pulmonale or polycythemia
  - ipratropium bromide +/– ß-2 agonists +/– long acting theophylline +/– corticosteroids
  - broad spectrum antibiotics indicated in acute bronchitis

DYSURIA

Epidemiology
- ❑ 25% of women experience an episode of acute dysuria per year
- ❑ second to URTI as cause of physician visits by sexually active women
- ❑ non-infectious: poor hygiene, allergic reaction, chemicals, foreign bodies, trauma

Table 5. Etiology, Signs and Symptoms of Dysuria

Infection	Etiology	Signs and Symptoms
UTI/Cystitis	E. *coli, S. saprophyticus, Proteus mirabilis, Enterobacter, Klebsiella, Pseudomonas*	internal dysuria throughout micturition, frequency, urgency, incontinence, hematuria, nocturia, back pain, suprapubic discomfort, low grade fever (rare)
urethritis	*C. trachomatis, N. gonorrhea* herpes, *Trichomonas, Candida*	initial dysuria, history of chlamydia/gonorrhea if no vaginal discharge
vaginitis	*Candida, Gardnerella, Trichomonas, C. trachomatis,* atrophic, herpes, condylomata accuminata, Doderlein's cytolysis	vaginal discharge, irritation, dyspareunia, dysuria on outside
pyelonephritis	same organisms as cystitis	internal dysuria, fever, chills, flank pain, CVA tenderness

Investigations
- ❑ urine R&M, C&S
- ❑ wet preparation
- ❑ vaginal swab for culture (including chlamydia)

Management (see Gynecology and Urology Notes)
- ❑ UTI/cystitis: TMP-SMX double dose BID X 3 days, nitrofurantoin, amoxicillin
- ❑ urethritis
  - gonococcal: ceftriaxone (250mg IM single dose), norfloxacin (800 mg PO single dose)
  - chlamydia: doxycycline (100 mg BID X 7 days); azithromycin (1g PO single dose)
  - always treat for both
- ❑ pyelonephritis
  - inpatient: ampicillin and gentamicin
  - outpatient: TMP-SMX, ciprofloxacin, norfloxacin or other quinolone

EARACHE (Otitis Media) (see Otolaryngology Notes)

History
- ❑ peak age 3 months - 3 years
- ❑ recent URI
- ❑ sudden onset of severe earache
- ❑ hearing loss, tinnitus, discharge
- ❑ fever, associated nausea, vomiting, diarrhea

Physical
- ❑ increased temperature
- ❑ tympanic membrane: erythematous, bulging
- ❑ otorrhea: bloody, serosanguinous, purulent

Etiology
- ❑ S. *pneumoniae, H. influenza, M. catarrhalis*

Management
- ❑ antibiotics
  - 1st line: amoxicillin, TMP-SMX
  - 2nd line: amoxicillin/clavulinate, cephalosporins

Controversy of Antibiotics Use
- ❑ trend exists toward a decrease in use of antibiotics
- ❑ studies show that 60% of children are pain free within 24 hours of presentation without antibiotics use
- ❑ children receiving antibiotics have almost twice the amount of vomiting, diarrhea, and rashes

FATIGUE

Epidemiology

- ❑ 5-10% of office visits to primary care physicians
- ❑ F > M, especially parents of children/newborns
- ❑ frequent users of the health care system
- ❑ up to 80% are psychological in origin
- ❑ chronic fatigue syndrome < 5% of chronic fatigue

Approach

- ❑ assess for presence of anxiety or depression
- ❑ assess for current life stresses, past trauma, and abuse
- ❑ focused history and physical exam with emphasis on medications, existing chronic illnesses, and possible infection
- ❑ investigations as indicated by history and physical may include: CBC and differential, ESR, electrolytes, urinalysis, BUN, creatinine, plasma glucose, TSH, CXR, ECG, serologies (EBV, CMV, HIV, VDRL, if indicated)

Table 6. Organic vs. Psychologic Features

Features	Organic	Psychologic
reason for less activity	unable	unwilling
onset	not stress-related	stress-related
duration	< 1-2 months	> 3 months
worse	end of day/after exercise	morning/unaffected by rest
relieved by	rest	exercise
family	supportive	problematic
associations	fever, chills weight loss, sweats	vague symptoms
past medical history	concurrent medical illness/medications	psychiatric history

Management

- ❑ specific treatment for specific causes
- ❑ if etiology undetermined (most cases)
  - physician support, reassurance and follow-up are very important
  - behavioural or group therapy
  - aerobic exercise program
  - drug therapy (e.g. vitamins)
  - prognosis: after 1 year, 40% are no longer fatigued

Chronic Fatigue Syndrome (CDC working class definition)

- ❑ major criteria (must meet both)
  - new onset of persisting, relapsing or debilitating fatigue that impairs daily activities > 50% of pre-morbid levels for at least 6 months
  - exclusion of other physical and psychological conditions
- ❑ minor criteria (8/11 or 6/11 and 2 physical findings)
  - mild fever, sore throat, tender lymph nodes, myalgia, arthralgia, muscle weakness, prolonged fatigue after exercise, headaches, neuropsychiatric symptoms, sleep disturbances, rapid onset of main symptoms
- ❑ minor criteria (physical findings)
  - low grade fever, non-exudative pharyngitis, palpable or tender anterior/posterior cervical/axillary nodes
- ❑ management
  - strong doctor-patient relationship
  - gentle exercise program (do not fatigue)
  - low dose antidepressant
  - NSAIDs if indicated

Notes

HEADACHE

Etiology
- ❑ muscle contraction/tension: 50%
- ❑ vascular headaches (migraines/cluster): 10%
- ❑ mixed headaches: 15-20%
- ❑ intracranial/inflammatory headaches: < 1%

Red Flags for Headache
- ❑ headaches due to meningitis, trauma, subarachnoid hemorrhage, tumour, temporal arteritis
- ❑ history: headache worse at night, fever, neck stiffness, seizures, trauma, changes in LOC/behaviour, vomiting, new onset, severe, very young/old patients
- ❑ physical exam: fundi, Kernig's/Brudzinski's signs, focal neurologic findings
- ❑ investigations: only when indicated

Muscle Contraction/Tension Headaches
- ❑ common associations: young females, positive family history (40%), stress
- ❑ symptoms
  - location: bilateral, occiput-vertex
  - quality: non-throbbing, lasts hours to weeks
  - associations: depression, sleep and appetite disturbance, difficulty with work and relationships, stress-related
- ❑ signs
  - muscle tightness, trigger points, decreased range of motion (cervical arthritis, infection, inflammation)
- ❑ management
  - acute: acetaminophen 650-1000 mg q4-6 h, NSAIDs, muscle relaxants
  - preventative: ß-blockers, TCA, education, counselling, stress management, exercise, dietary changes
  - early follow-up to monitor response
- ❑ see Neurology Notes

Migraine Headaches
- ❑ benign, recurrent episodic headaches which may be severe and throbbing
- ❑ 85% are common migraine (without aura)
- ❑ l5% are classical migraine (with aura): transient visual or sensory symptoms lasting 10-30 minutes between prodrome and headache
- ❑ cerebral ischemia leading to visual symptoms like fortification spectra (zig zags), scintillating scotoma (spots) and teichopsia (flashing lights)
- ❑ also sensory, motor, language or perceptual problems

Symptoms
- ❑ location: unilateral but occasionally bilateral, rarely posterior
- ❑ quality: throbbing, lasts hours to 2 days
- ❑ associations: nausea, vomiting, anorexia, photophobia, phonophobia
- ❑ prodrome: any time of day or night: irritable or depressed mood, increased or decreased activity, appetite cravings, fluid retention

Signs
- ❑ during headache: pallor, diaphoresis, tachycardia, mild hypertension, dilated pupils, distended scalp vessels, tender scalp

Triggers
- ❑ heredity plus environment: stress, stress let down, fatigue, increased/decreased sleep, fasting, caffeine, menstruation, ovulation, OCP, EtOH, food with tyramine (cheese), phenylethylamine (chocolate), nitrites, MSG, weather

Exacerbating Factors
❑ exertion, straining, coughing, bending, noise, light

Management
❑ reassurance, lifestyle changes, removal of triggers
❑ pharmacotherapy (indicated if the headaches threaten to disrupt the patient's ability to function normally)
- mild attacks (patient can continue his/her usual activities with minimal disruption)
  - ASA, NSAIDs
- moderate attacks (patients' activities are moderately impaired)
  - NSAIDs: ibuprofen, naproxen sodium, mefenamic acid
  - selective 5-HT receptor agonist: sumatriptan (PO or SC) (not concurrently or within 24 h of ergotamine or DHE)
  - non-selective 5-HT receptor agonist: DHE (SC, IM or IV)
- severe attacks (patient unable to continue his/her normal activities and can function in any capacity only with severe discomfort and impaired efficiency)
  - 1st line: DHE (SC, IM or IV), sumatriptan (PO or SC), metoclopramide (IV preferred), chlorpromazine (IV or IM), prochlorperazine (IV or IM)
  - alternative if above ineffective: ketorolac, dexamethasone
  - last resort: meperidine

Table 7. Usual Clinical Features

	Tension Headache	Common Migraine	Classic Migraine	Cluster Headache
incidence	very common	common	not common	uncommon
age of onset	15-40	10-30		20-40
sex bias	more females	more females		mostly males
family history of headache	frequent	very frequent		infrequent
headache frequency	variable, can be daily	variable, but "never" daily		daily during cluster
triggers	stress or fatigue	stress, fatigue, menstruation oral contraceptives, certain foods, alcohol, weather changes, lights, odors		alcohol, only during cluster
onset during sleep	extremely rare	not uncommon		typical
warning	none	none	visual or sensory aura	none
location	bilateral, frontal or nucho-occipital	often unilateral, sometimes bilateral		unilateral, orbital, temporal, and malar
severity	mild to moderate	moderate to severe		extremely severe
exacerbators	stress or fatigue	movement, head jarring, head-low position		none
concomitants	none	nausea, sometimes vomiting, photophobia, sonophobia, etc...		unilateral suffusion of eye with ptosis and tearing stuffing and rhinorrhea of ipsilateral nostril
duration of headache	hours to days	hours to "all day" - seldom more than two days		20-90 minutes
examination during headache	little distress; sometimes tense tender scalp and neck muscles	mild to severe distress, tenderness of scalp arteries		severe distress, eye changes as noted above

Table Usual Clinical Features of Headaches, (Sandoz, Headache, 1992 Edition), by John Edmeads

SLEEP PROBLEMS

Etiology
❑ primary sleep disorder
❑ secondary - psychiatric disorder, drug and alcohol abuse, medical/surgical problems (COPD, hyperthyroid, delirium, sleep apnea)

History
❑ onset, duration, pattern
❑ chief sleep symptom (initial insomnia, waking at night)
❑ daytime performance
❑ collateral from bed partner (snoring, movements, apneic episodes)
❑ medical assessment (ROS, medications, drugs, alcohol, caffeine, smoking)
❑ psychological assessment (stressors, screen for psychiatric disorders)

Physical/Investigations
- ❑ address specific medical problems (CBC with differential, TSH)
- ❑ sleep disorder clinic referral if suspect primary cause

Management
- ❑ non-pharmacologic
  - first line management - promote good sleep hygiene (avoid caffeine, nicotine, alcohol, exercise regularly, use bed only for sex, sleep, sickness, comfortable sleep environment, go to bed when drowsy)
  - progressive relaxation
  - cognitive treatments
- ❑ pharmacogical
  - used in conjunction with non-pharmacological treatment
  - benzodiazepines (only for short period of time)
  - cyclopyrrolone (zopiclone)
  - sedating antidepressants (trazodone)

MUSCLE OR JOINT PAIN (see Orthopedics, Rheumatology and Neurosurgery Notes)

Diagnosis
- ❑ history for MSK in general should include:
  - chief complaint: pain, instability, and/or weakness
  - contributing mechanism
- ❑ where and when is the pain worst
  - onset and duration
  - weight-bearing status
  - pattern, stiffness (morning or after activity)
  - previous attacks (important risk factor)
  - aggravating and alleviating factors
  - previous treatment
  - effect on function: occupation, ADLs, limitations
  - psychosocial history
  - associated symptoms
  - treatment goals

ANKLE /KNEE PAIN
- ❑ sprains are the most common MSK injury in sports
- ❑ pain can be from acute injury, overuse injury, or other condition
- ❑ traumatic (sprains, strains, dislocated fractures, overuse syndromes)
- ❑ non-traumatic (arthritis, osteomyelitis, neoplasm)
- ❑ Red flags: hemarthrosis, knee pain/limp in child with a normal knee exam, poor response to treatment, bony/joint swelling, fever, rash

Management
- ❑ Ankle sprain: consider NSAIDs, splinting, early mobilization, physiotherapy, ice, compression

LOW BACK PAIN
- ❑ see Orthopedics and Neurosurgery Notes for more details

Epidemiology
- ❑ 4-5% of primary care visits (lifetime prevalence 85%)
- ❑ largest WSIB category
- ❑ #1 cause of chronic disability
- ❑ 80-85% of back pain is non-specific
- ❑ classify as uncomplicated back pain, complicated back pain, pain due to systemic disease or referred pain
- ❑ red flags (BACK PAIN)
  - B: bowel or bladder dysfunction
  - A: anesthesia (saddle)
  - C: constitutional symptoms/malignancy
  - K: chronic disease
  - P: paresthesias
  - A: age > 50
  - I: IV drug use
  - N: neuromotor deficits

Physical Examination
- ❑ inspection of spine: curvature, posture
- ❑ palpation: paraspinal, bony tenderness
- ❑ range of motion of back
- ❑ straight leg raises, femoral stretch
- ❑ physical exam for nerve root injury
- ❑ must always rule out less common but potentially serious causes
    - surgical emergencies
        - cauda equina syndrome: fecal incontinence, urinary retention, saddle anesthesia, decreased anal tone
        - abdominal aortic aneurysm: pulsatile abdominal mass
    - medical conditions
        - neoplastic (primary, metastatic)
        - infectious (osteomyelitis, tuberculosis)
        - inflammatory (seronegative spondyloarthropathies)
        - metabolic (osteoporosis with fractures, osteomalacia, Paget's disease)
        - visceral (prostatitis, endometriosis, pyelonephritis, pancreatitis)

Management
- ❑ order x-rays and appropriate labs in presence of any red flags
- ❑ explain diagnosis and natural history confidently
    - 90% of low back pain will improve within 2-8 weeks
    - reassurance is very important
- ❑ educate patient about prevention and consider physiotherapy or back school in occupational settings
- ❑ medical
    - NSAIDs
    - acetaminophen
- ❑ physical
    - manipulation of low back during first month of symptoms
    - application of heat or cold
- ❑ exercise
    - temporary avoidance of activities that increase mechanical stress on spine
    - bed rest > 4 days is contraindicated
    - gradual return to normal activities
    - conditioning exercises for trunk muscles after 2 weeks
- ❑ if no improvement after one month of conservative therapy consider further investigations
- ❑ consider surgery when there is clinical evidence of nerve root irritation or neurological deficit after one month of conservative therapy

SEXUALLY TRANSMITTED DISEASES (see Gynecology Notes)
- ❑ sexual history
    - are you sexually active? types of activities?
    - when did you start being sexually active?
    - sex with men, women or both?
    - number of partners? duration of involvement with each?
    - problems related to sexual activity (pain, dyspareunia, ejaculation, obtaining/maintaining an erection, reaching orgasm, lubrication)
- ❑ STD history
    - are you aware of STDs? have you ever had one? ever been tested?
    - take contraception history (see Gynecology Notes)
    - symptoms such as genital burning, itching, discharge, sores, vesicles
    - associated symptoms such as fever, arthralgia, lymphadenopathy
    - last Pap test and results
    - history of travel
    - how is this affecting your life? your relationships?
- ❑ conservative management
    - counsel regarding the risks of HIV, hepatitis, STDs
    - counsel about sexual practices, contraception
    - urinate after sexual contact

SINUSITIS (see Otolaryngology Notes)

Epidemiology
- ❑ 4.6% of physician visits by young adults
- ❑ fifth most common diagnosis for which antibiotics are prescribed

Table 8. Clinical Diagnosis of Acute Bacterial Sinusitis

Based on 5 signs and symptoms

- maxillary toothache
- poor response to decongestants
- history of coloured nasal discharge
- purulent nasal secretions
- abnormal transillumination

Number of signs and symptoms	Recommended course of action
4-5	x-rays[1] not required, treat all
2-3	x-ray all, treat based on results
< 2	no x-rays or treatment necessary

[1]Waters view x-ray is sufficient; x-rays should not be performed in children < 1 year of age

Adapted for Low et al.: CMAJ 1997; 156: S1-S14.

Management
- ❑ amoxicillin 500 mg PO TID, TMP/SMX if allergic
- ❑ decongestants

SKIN LESIONS (see Dermatology Notes)

Appearance of Common Skin Cancers
- ❑ Malignant Melanoma
  - A: asymmetry
  - B: border irregularity
  - C: colour change
  - D: diameter > 1 cm
  - E: eccentricity
- ❑ Basal cell carcinoma
  - pearly, translucent, rolled telangiectatic border; central ulceration
- ❑ Squamous cell carcinoma
  - plaque/nodule with varying degrees of scaling, crust, erosion, and ulceration

SKIN RASHES
- ❑ rashes that are common in family practice: psoriasis, atopic dermatitis, seborrheic dermatitis, acne rosacea, acne vulgaris, tinea, exanthems, pityriasis rosea, sun- and drug-related (see Dermatology Notes)

SORE THROAT

Etiology
- ❑ viral most common cause and often may mimic bacterial infection
  - adenovirus
    - primarily summer months, lasts 5 days
    - sore throat, rhinitis, conjunctivitis, fever
  - coxsackie virus
    - primarily summer months
    - pharyngitis with small, tender blisters on soft palate, uvula, tonsils; blisters rupture and leave erythematous ulcers
    - may also see ulcerations on hands and feet (hand, foot and mouth disease) or GI symptoms (vomiting, diarrhea)

- herpes simplex virus
    - like coxsackie virus but ulcers fewer and larger
- EBV (infectious mononucleosis)
    - pharyngitis, tonsillar exudate, fever, lymphadenopathy, fatigue, and rash

❑ bacterial
- Group A Streptococci (GABHS)
    - by far the most common bacterial cause
    - most common between ages 5-17 years
    - four classic symptoms
        - fever
        - tonsillar or pharyngeal exudate
        - swollen, tender anterior cervical nodes
        - absence of cough

Table 9. SORE THROAT SCORE*

	POINTS
Is COUGH ABSENT?	1
Is there a HISTORY OF FEVER OVER 38ºC (101ºF)?	1
Is there TONSILLAR EXUDATE?	1
Are there SWOLLEN, TENDER ANTERIOR NODES?	1
Age 3-14 years	1
Age 15-44 years	0
Age > 45 years	–1

In communities with moderate levels of strep infection (10% to 20% of sore throats):

	SCORE				
	0	1	2	3	4
Chance that patient has strep throat	2-3%	3-7%	8-16%	19-34%	41-61%
Suggested action	No culture or antibiotic		Culture all, treat only if culture is positive		Culture all, treat with penicillin on clinical grounds[1]

[1]Clinical grounds include a high fever or other indicators that the patient is clinically unwell and is presenting early in the the course of the illness. If the patient is allergic to penicillin, use erythromycin.

* Limitations:
    * This score is not applicable to patients less than 15 years of age.
    * If an outbreak or epidemic of illness caused by GAS is occuring in any community, the score is invalid and should not be used.

Adapted from Centor RM et al.: Med Decis Making 1981; 1: 239-246; McIsaac WI, White D, Tannenbaum D, Low DE: CMAJ 1998; 158(1):75-83.

Importance of Diagnosis

❑ must distinguish viral from bacterial to decrease the incidence of complications from GABHS

❑ purpose of treatment
- decrease incidence of rheumatic fever (very low incidence)
- decrease suppurative complications (abscess)
- decrease spread of disease

❑ note: incidence of glomerulonephritis not decreased by antibiotic treatment

Diagnosis and Treatment

❑ gold standard for diagnosis is throat culture

❑ rapid test for streptococcal antigen only 85% sensitive

❑ if rapid test positive, take a culture and treat the patient immediately with antibiotics

❑ if rapid test negative, take a culture and call the patient if culture is positive to start antibiotics

❑ there is no increased incidence of rheumatic fever with a 48 hour delay in antibiotic treatment

❑ penicillin is drug of choice; erythromycin if penicillin allergic

❑ there is no therapy except symptomatic for viral pharyngitis

DOMESTIC VIOLENCE
- ❑ emotional, physical, sexual abuse

Epidemiology
- ❑ 25% of women have experienced violence from current or past partner
- ❑ physicians under-estimate prevalence (at 1-2%)

Effects of Violence
- ❑ psychological: depression, PTSD, suicidal ideation and attempts, alcoholism
- ❑ physical: pelvic pain, panic like symptoms (e.g. headaches, chest pain, palpitations)
    - often labelled as panic attacks or "functional"

Detection and Management
- ❑ screen ALL patients; ask directly and non-judgementally
- ❑ be patient and refrain from being directive
- ❑ reassure that it is not their fault
- ❑ remind that spousal abuse is a criminal act but is not reportable by physicians
    - note: suspected abuse in children MUST be reported
- ❑ determine level of safety and make an exit plan
- ❑ facilitate contact with community resources
- ❑ fully document all evidence of abuse (e.g. pictures, sketches)

CONTRACEPTION (see Gynecology Notes)
- ❑ history
    - contraindications, relationships/sexual history
    - current and previous methods of contraception, expectations
    - obstetrical and gynecological history, STD history
- ❑ benefits of oral contraceptives
    - A: anemia decreased
    - B: benign breast disease and cysts decreased
    - C: cancer (ovarian decreased), cycles regulated
    - D: dysmenorrhea decreased, reduction in STDs

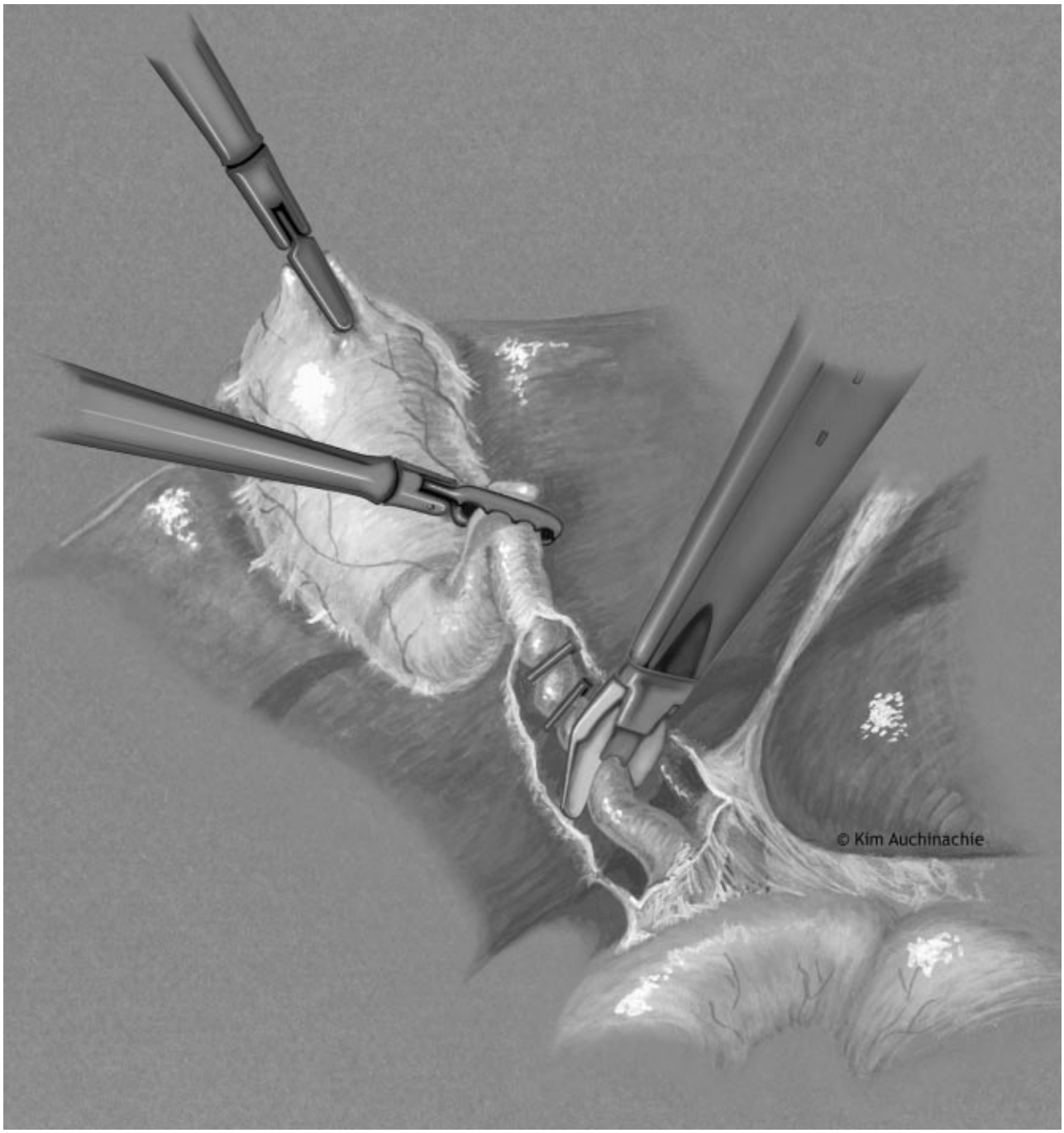
MENOPAUSE/HRT (see Gynecology Notes)

Epidemiology
- ❑ mean age of cessation of menstruation = 51.4 years
- ❑ Canadian female life span = 81.2 years
    - a woman will spend over 1/3 of her life in menopause
    - risk of CVD and osteoporosis increases dramatically after menopause
- ❑ contraindications to HRT
    - A: acute liver disease/chronically impaired liver
    - B: bleeding (undiagnosed vaginal)
    - C: cancer (breast or uterus)
    - D:DVT (acute vascular thrombosis or thromboembolic disease)

Management
- ❑ encourage physical exercise and vitamin D/calcium supplements
- ❑ routine use of HRT still controversial
    - HRT routines include: cyclic estrogen + progesterone, continuous estrogen + progesterone, estrogen ring, estrogen gel, raloxifene (SERM)

COMPLEMENTARY THERAPIES
- ❑ knowledge of complementary therapies can improve
    - communication with patients who choose these therapies
    - co-ordination of care
    - the well-being of patients through appropriate use of these therapies

- ❑ mind-body therapies
  - based on the inseparability and interaction of cognitive and emotional processes with the body's organ systems
  - biofeedback: learning to modify one's own vital functions
  - also hypnosis, meditation and mindful exercise such as yoga and tai chi
- ❑ chiropractic
  - therapy focuses mainly on manual adjustment or manipulation of the spine
- ❑ bodywork
  - traditional massage
- ❑ reflexology
  - the application of pressure to points of the hands/feet that are believed to correspond to relieving tension, stimulating deep relaxation, increasing circulation, and modifying nerve impulses
  - little research available
- ❑ applied kinesiology
  - the identification of weakness in specific muscles and the use of techniques to correct these imbalances
  - therapeutic touch
  - energy-based healing system
- ❑ acupuncture
  - developed as part of Chinese traditional medicine
  - based on health being dependent on "chi" (the vital life energy)
- ❑ herbal remedies
  - many available but little research at this time



Drawing by Kim Auchinachie