# TABLE OF CONTENTS

Preventive clinical practices ................................................................. 3
Six main categories .............................................................................. 4
  Cardiovascular and respiratory diseases ................................................. 5
  Tobacco use ......................................................................................... 6
  Diet ...................................................................................................... 6
  Dyslipidemia ...................................................................................... 6
  Obesity ............................................................................................... 7
  Hypertension ..................................................................................... 7
  Type 2 diabetes .................................................................................. 8
  Physical activity ................................................................................ 8
Cancer ...................................................................................................... 9
  Colorectal cancer ............................................................................... 10
  Breast cancer .................................................................................... 10
  Cervical cancer .................................................................................. 11
  Lung cancer ....................................................................................... 11
  Skin cancer ....................................................................................... 11
  Prostate cancer .................................................................................. 11
Infectious diseases ............................................................................... 12
  Immunisation ..................................................................................... 13
  Sexually transmitted or bloodborne infections ...................................... 15
Trauma and sensory deficits ............................................................... 16
  Fall assessment ................................................................................ 17
  Road safety ....................................................................................... 17
  Hearing ............................................................................................ 17
  Vision ............................................................................................... 18
  Osteoporosis ..................................................................................... 18
Psychosocial issues ............................................................................... 21
  Alcohol abuse .................................................................................. 22
  Cognitive impairment ....................................................................... 22
  Domestic violence ............................................................................ 23
  Suicide and depression ..................................................................... 23
Dental problems ................................................................................... 24
  Toothbrushing .................................................................................. 25
  Use of dental floss .............................................................................. 25
  Scaling ................................................................................................ 25
  Smoking cessation ............................................................................. 26
  Use of a gel or mouth rinse ................................................................. 26
Motivating patients to practice prevention ........................................ 27
Practice management ........................................................................... 32
Tracking tool for the Periodic health examination of adults .................. 33
References ............................................................................................ 34

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PREVENTIVE CLINICAL PRACTICES

This update of evidence-based data on adult primary prevention for clinicians draws on the work of the Canadian Task Force on Preventive Health Care (CTFPHC)*1, on recommendations of the United States Preventive Services Task Force (USPSTF)*2, as well as on relevant Quebec and Canadian guidelines*3. The guide is designed to act as a checklist to assist in daily prevention and preventive practices that are part of periodic health examinations. A summary tracking tool is included in the guide and should be personalised for each patient (page 33); this tool is an addition to the review of systems and usual physical examination.

Half of all deaths can be prevented: a good reason to talk to your patients about prevention. The main causes of death are still:

- tobacco use 19%
- poor diet and lack of physical activity 14%
- alcohol abuse 5%
- infections 4%
- toxic agents in the environment 3%
- suicides or homicides by firearms 2%

Four types of preventive practices enable you to act:

- **Screening**, which helps identify patients who require specific interventions
- **Counselling**, which is designed to exchange information and negotiate agreements related to changing certain behaviours or attitudes
- **Immunisation**, which confers protection against a number of infectious diseases
- **Pharmacologic treatment**, which involves using a medication to reduce the risks of developing a disease

Quebec and Canadian recommendations are cited in the text first. However, if more recent American recommendations provide supplementary advice, they are also included. When in doubt, clinicians should use their clinical judgement. The recommendations are valid as of their publication dates. However, the state of knowledge changes rapidly. It is important to be on the lookout for recommendations that will be added later.

*1- The CTFPHC grades evidence-based data by category of recommendation: (A) = good evidence to recommend the clinical preventive action; (B) = fair evidence to recommend the clinical preventive action; (C) = existing evidence is conflicting; (D) = fair evidence to recommend against the clinical preventive action; (E) = good evidence to recommend against the clinical preventive action; (I) = insufficient evidence to make a recommendation.

*2- The USPSTF grades its evidence-based data by category of recommendation: (A) = strongly recommends (good evidence); (B) = recommends (fair evidence); (C) = no recommendation for or against (conflicting evidence); (D) = recommends against (fair evidence); (I) = no recommendation for or against (insufficient evidence).

*3- These guidelines are based on the opinion of respected authorities, usually participating in committees or consensus conferences. The guidelines are based on clinical experience rather than on a thorough analysis of published studies. The recommendations issued are not graded according to the categories of the CTFPHC or USPSTF. However, they correspond to existing best practices.
The tool presented here can be useful as long as it is integrated into your practice. But first, clinicians must be convinced of the benefits of prevention: decreased morbidity, improved quality of life and lower mortality.

Clinicians convinced of these benefits are more likely to convince their patients; as a result, implementing preventive measures is easier and patient compliance improves. Another determining element is to feel capable of changing one’s own practices.

In addition, it is essential that clinicians themselves, or designated resource persons, encourage patients to follow the recommendations. Clinicians must also create the right conditions to integrate prevention into their own practices.
RECOMMENDATIONS

CARDIOVASCULAR AND RESPIRATORY DISEASES
TOBACCO USE

Active smoking is responsible for 30% of cardiovascular disease, 85% of lung cancers and 85% of chronic obstructive pulmonary diseases, among others. It is the direct cause of 14 000 deaths per year in Quebec. Second-hand smoke affects close to one quarter of Quebecers, 380 of whom die from it every year. The following preventive interventions have been proven to be effective:

- ask about tobacco use (USPSTF = A, 2003);
- clearly recommend smoking cessation (CTFPHC = A, 1994; USPSTF = A, 2003);
- prescribe pharmacological cessation aids (CTFPHC = A, 1994; USPSTF = A, 2003);
- note smoking status in the patient’s file (USPSTF = B, 2003);
- refer to recognised smoking cessation programmes (CTFPHC = B, 1994; USPSTF = A, 2003).

Extended and augmented smoking cessation counselling leads to better results (USPSTF = A, 2003).

DIET

Counselling for a healthy diet is recommended for the general population in Canada (CTFPHC = B, 1994). Canada’s Food Guide to Healthy Eating (currently under review) continues to meet the dietary needs of the general population and even of some risk groups (e.g. diabetics).

The number of daily servings in each food group and the criteria related to key nutritional content per portion were established as follows:

1) milk and milk products - 2 to 4 servings (one serving is equal to a cup of milk, 50 g of cheese or ¾ cup of yogurt);
2) meat, fish, poultry and alternatives - 2 to 3 servings (one serving is equal to 50 g to 100 g);
3) fruit and vegetables - 5 to 10 servings, at least 2 of which are fruit;
4) bread and cereal - at least 5 servings (one serving is equal to a slice of bread, half a bagel, or ¾ cup of cereal).

In Canada, consider referral to a clinical nutritionist or other professional with specialized nutritional expertise (GECSSP = B, 1994)

DYSLIPIDEMIAS

According to the Working Group on Hypercholesterolemia and Other Dyslipidemias, all 40- to 70-year old men and all 50- to 70-year-old women should be screened for lipid disorders every five years. Patients with clinically evident cardiovascular disease should be screened annually, and diabetics every one to three years.

This recommendation also applies to younger men and women with risk factors for cardiovascular diseases; the main risk factors include smoking, hypertension, dyslipidemia, obesity and family history of premature cardiovascular diseases (B, 2001).

The CTFPHC (B, 1994) and the USPSTF (B, 2003) have concluded that intensive nutritional counselling (more than 6 sessions lasting over 30 minutes) is effective in changing the dietary habits of patients with hyperlipidemia or other risk factors for diet-related chronic diseases such as being overweight or obese.

Targets must include all risk factors for cardiovascular diseases. A multifactorial risk assessment such as that conducted using the Framingham table can help specify these targets. The decision to begin pharmacological treatment usually comes about following an unsuccessful attempt to alter lipid levels by changing lifestyle habits over a period of six months.
OBESITY

Health Canada (2003) and the CTFPHC (B, 1999) recommend body mass index measurement of obese adults with health problems linked to obesity. The USPSTF (B, 2003) suggests that clinicians also screen all adult patients for obesity and offer intensive counselling to all obese individuals (BMI > 30). There is insufficient data (I, 2003) to recommend the use of less intensive interventions or counselling for adults who are simply overweight (BMI between 25 and 30).

A clear correlation has been established between waist circumference, which reflects an accumulation of visceral fat, and higher risk of cardiovascular disease. North American cut-off values for abdominal obesity are 102 cm (40 inches) for men and 88 cm (35 inches) for women. This measurement is an additional tool to assess abdominal obesity.

With people who are overweight, it is important to be on the lookout for metabolic syndrome, which is strongly associated with higher risk of cardiovascular disease.

In general, a diagnosis is established in the presence of at least 3 out of 5 factors:
- triglycerides $\geq 1.7$ mmol/L;
- HDL $< 1.0$ in men or $< 1.3$ in women;
- elevated blood pressure $\geq 130/85$ mmHg;
- waist circumference $> 102$ cm (40 in) in men or $> 88$ cm (35 in) in women;
- glycaemia between 6.1 and 7 mmol/L.

In obese adults, regular practice of moderate aerobic exercise 30 to 60 minutes a day over the long term (1 year), with or without dietary recommendations, has been associated with weight loss. However, the data does not enable us to determine whether regular, long-term physical activity with or without dietary recommendations is enough to result in lower levels of abdominal obesity or to maintain weight in obese adults.

HYPERTENSION

The CTFPHC recommends that all adults be screened for high blood pressure (CTFPHC = B, 1994; USPSTF = A, 2003).

The Canadian Hypertension Education Program (CHEP, 2005) considers that diagnosis should be established rapidly, especially when there is a high risk of cardiovascular disease. One of the following validated methods should be used: clinic BP measurement, ambulatory BP measurement or self-measurement of BP.

According to the CHEP, the treatment plan for hypertensive patients should take into account an overall assessment of cardiovascular risk. Modifying lifestyle habits is the cornerstone of antihypertensive and anti-atherosclerotic treatment. Pharmacological treatment is also recommended. Reducing cardiovascular diseases is also dependent on the degree to which blood pressure is lowered. Specific attention should be paid to treatment compliance.
PHYSICAL ACTIVITY\textsuperscript{1,2,5}

Regular practice of physical activity is a grade B recommendation (CTFPHC, 1994). However, the debate regarding the effectiveness of physical activity counselling is ongoing (CTFPHC = C, 1994; USPSTF = I, 2002).

Moderate-intensity physical activity, such as walking fast enough to be a bit hot and feel slightly out of breath, for a total of 30 minutes or more almost every day (exercising twice for 15 minutes or three times for 10 minutes is also valid) is enough to burn 1000 calories a week and provide significant health benefits.

The following are considered moderate intensity physical activities: brisk walking (about 10,000 steps a day), dancing, golfing on foot, bicycling, skiing, exercising at home, raking leaves, cleaning windows, and light renovation work. In addition, elderly people should be encouraged to perform exercises to build muscular strength and improve balance.

TYPE 2 DIABETES\textsuperscript{1,2,9}

Routine screening remains controversial. The CTFPHC does not recommend it (D, 1994), except in patients with hypertension and hyperlipidemia (B, 2005); the USPSTF concludes that the evidence is insufficient to recommend for or against routine screening (I, 2003). The Canadian Diabetes Association (CDA, 2003) recommends screening at least every 3 years for individuals over 40 years old with no risk factors and individuals under 40 with cardiovascular risk factors. The American Diabetes Association also recommends screening people over 45 with a BMI > 25 kg/m\textsuperscript{2}, and even earlier for people who are overweight and have additional risk factors.

The CTFPHC (B, 1994) and the USPSTF (B, 2003) have concluded that intensive nutritional counselling (more than 6 sessions lasting over 30 minutes) is effective in changing the dietary habits of patients with risk factors such as diabetes. However, although the CTFPHC (B, 1994) recommends the practice of physical activity, both the CTFPHC (C, 1994) and the USPSTF (I, 2002) state that the effectiveness of physical activity counselling is still uncertain. The CTFPHC recommends lifestyle interventions for overweight individuals (BMI > 25 kg/m\textsuperscript{2} or > 22 kg/m\textsuperscript{2} in patients of Asian descent) with impaired glucose tolerance (B, 2005).

Various pharmacological agents have been proposed to prevent diabetes or its complications. The USPSTF recommends aspirin therapy to prevent ischemic heart disease (A, 2002), a recommendation also included in the 2003 Canadian Diabetes Association Clinical Practice Guidelines. The CTFPHC recommends acarbose treatment for patients with a body mass index (BMI) over 25 and glucose intolerance to prevent cardiovascular events and hypertension (B, 2005); the CTFPHC also states there is insufficient evidence to recommend metformin (I, 2005) or pharmacological treatment to prevent diabetes progression in individuals with impaired glucose tolerance (I, 2005). However, among these patients, lifestyle interventions are deemed effective (B, 2005). Angiotensin-converting enzyme inhibitors (ACE) are recommended by the CDA, even in the absence of hypertension, especially in the presence of a vascular event or other risk factors (2003).
RECOMMENDATIONS

CANCER
COLORECTAL CANCER$^{1,2,13}$

The Canadian Association of Gastroenterology issued the following screening recommendations in 2004:

- **Patients over 50 years old with no risk factors (75% of cancers) or with a family history of cancer or polyps (15%-20% des cancers):** annual or biennial fecal occult blood testing (A) or sigmoidoscopy every 5 to 10 years (B) or colonoscopy (C).

- **Family history of hereditary nonpolyposis colorectal cancer (5% of cancers):** colonoscopy every 5 years (B).

- **History of familial adenomatous polyposis (1% of cancers):** annual genetic testing (B) and sigmoidoscopy beginning at puberty (B).

The USPSTF strongly recommends screening using one of the available methods (A, 2002), pointing out that only fecal occult blood testing and sigmoidoscopy have been associated with reduced mortality. There is not enough evidence for barium enema.

Dietary habits (more vegetables) and physical activity are known to have a preventive role. People with polyps could benefit from the following pharmacoprophylaxis: ASA (80 mg-325 mg die) or calcium (1200-2000 mg die).

BREAST CANCER$^{1,2,13}$

The CTFPHC strongly recommends clinical breast examination and screening mammography (A, 1998) every 1 to 2 years for women aged 50 to 69 years, which is done in the Quebec Breast Cancer Screening Programme. There is conflicting evidence regarding mammography for 40- to 49-year-old women (C, 2001); however, yearly mammography can be offered to women at high risk (family history of four relatives or more diagnosed with breast cancer, or a personal history of atypical hyperplasia, lobular carcinoma in situ or previous breast cancer, or local radiation). Teaching breast self-examination is not recommended (D, 2001).

The USPSTF recommends screening mammography, with or without clinical breast examination, for women aged 40 and older (B, 2002). Evidence is insufficient to recommend for or against routine CBE alone to screen for breast cancer (I, 2002), breast self-examination (I, 2002) and chemoprevention with tamoxifen or raloxifene for women at low or average risk of breast cancer (I, 2002). Tamoxifen is recommended for women at high risk (B, 2002).
CERVICAL CANCER\textsuperscript{1,2}

The CTFPHC recommends annual Papanicolaou smears (PAP test) beginning at onset of sexual activity or age 18, with screening reduced to every three years after two normal results, to age 69 (B, 1994). Screening for human papilloma virus (HPV) is not recommended (D, 1995), but can be considered if the smear is abnormal (currently under review).

The USPSTF strongly recommends PAP smear screening (A, 2003) every 3 years after two normal tests, beginning within 3 years of onset of sexual activity or age 21, and continuing to age 65. It recommends against screening women over 65 years old or women who have had a total hysterectomy (D, 2003). The USPSTF concludes that the evidence is insufficient to recommend for or against the routine use of new technologies (I, 2003) such as liquid-based cytology, computerized rescreening and algorithm-based screening, or the routine use of HPV testing (currently under review).

LUNG CANCER\textsuperscript{1,2}

In addition to smoking cessation and a smoke-free environment, the CTFPHC advises smokers to eat an average of seven portions of green leafy vegetables or fruit per week as primary cancer prevention (B, 2005). Chest radiography screening is not recommended for the general population (D).

SKIN CANCER\textsuperscript{1,2}

The CTFPHC estimates there is poor evidence to include or exclude total-body skin examination from the periodic health examination of the general population (C, 1994), except for individuals with personal or family history of melanoma (B, 1994). Self-exam is not recommended (C, 1994).

It is recommended to avoid sun exposure and wear protective clothing (B, 1994); use of sunscreens is controversial (C, 1994). The risks of developing melanoma increases with age and sun exposure.

The USPSTF concludes that there is not enough evidence to recommend for or against routine screening for skin cancer using total-body skin examination (I, 2001) or counselling to reduce the risks of skin cancer (I, 2003).

PROSTATE CANCER\textsuperscript{1,2,14,15}

Screening for this cancer is based on a combination of digital rectal examination (DRE) and measurement of prostate specific agent (PSA) levels in men aged 50 and over. However, the CTFPHC considers that the effectiveness of DRE is unproven (C, 1994) and does not recommend screening with PSA (D, 1994) or transrectal ultrasound (D, 1994). The Collège des médecins du Québec (1998) assigns a C grade to PSA for men aged 50 to 69 whose life expectancy exceeds 10 years and who have concerns or fears related to prostate cancer after receiving counselling on the benefits and inconveniences of the test. The same recommendation applies for men over 40 years old with a family history of a first-degree relative with prostate cancer and for African-American men. The USPSTF concludes that the evidence is insufficient to recommend screening using PSA testing or digital rectal examination (I, 2002).
RECOMMENDATIONS

INFECTIOUS DISEASES
IMMUNIZATION

According to the Quebec Immunization Protocol (PIQ), vaccination recommendations for adults, excluding travellers’ health*, are as follows:

Rubella (CTFPHC, B)

MMR (measles-mumps-rubella) vaccine should be given to women of childbearing age who are not pregnant, unless there is proof of immunity in the form of either a record of prior immunization or laboratory evidence of detectable antibody. Women should avoid pregnancy for a month after vaccination.

Measles - Mumps (CTFPHC, A)

Patients born before 1970 do not need MMR vaccine. Patients born between 1970 and 1979 should have been given a dose of vaccine, except for the following groups, who should have been given 2 doses of MMR:

- health care workers or trainees,
- CEGEP and university students,
- travellers,
- military recruits.

Patients born in 1980 or later should have received 2 doses of MMR.

Varicella (CTFPHC, B)

Varicella vaccine is free for susceptible adults, as are other vaccines included in the routine immunization schedule, upon review of their immunization status. First, it is important to assess the varicella immune status, determined by anamnesis or serology. In individuals who have no history or an uncertain history of prior varicella, serological testing may be considered. Two doses of vaccine should be administered at least 4 weeks apart from the age of 13 (only one dose if under 13).

Hepatitis A and B (CTFPHC, A)

Vaccinate people at high risk and those who wish to reduce their risk. There are numerous risk groups (men who have sex with men, HCV carriers, travellers, drug users, people with cirrhosis, etc...) who should be vaccinated against hepatitis A or B, or both. Consult the Public Health Department for indications on who can receive these vaccines free of charge.

Pneumococcus (CTFPHC, A)

One dose of 23-valent polysaccharide vaccine is given to people over 65 years of age during their lifetime. Other individuals who should be vaccinated include those over two years old with one of the following conditions: sickle-cell anemia, asplenia, splenic dysfunction, cochlear implant, chronic respiratory disease (except asthma), heart disease, cirrhose, alcoholism, chronic renal disease, nephrotic syndrome, diabetes, chronic CSF leak, HIV infection, conditions associated with immunosuppression (Hodgkin’s disease, lymphoma, multiple myeloma, immunosuppression for organ transplantation). A single re-immunization is recommended after 5 years for people with immunosuppression or asplenia.

* Indications for immunization of travellers are incomplete. For appropriate prevention, consult travel health professionals.
Influenza (CTFPHC, A)

Vaccinate the following people annually:

- people aged 60 years or over;
- adults and children over 6 months old with chronic cardiac or pulmonary disorders (including bronchopulmonary dysplasia, cystic fibrosis and asthma) severe enough to require regular medical follow-up or hospital care;
- adults and children over 6 months old with chronic diseases (e.g. diabetes, metabolic diseases, cancer, immunodeficiency, immunosuppression, renal disease, anemia, hemoglobinopathy, HIV infection, neurological disorders with respiration impairment (? JOHN) and people with cognitive impairment or reduced mobility;
- people at high risk of influenza-related complications who travel to regions where the virus is probably present;
- health workers and other individuals in close contact with people in groups at high risk for influenza described above;
- people (including children) living in the same household as someone with a chronic disease;
- people living with or taking care of children under 2 years of age;
- residents of nursing homes or long-term care facilities.

Diphtheria - tetanus (DTaP) and pertussis (P) (CTFPHC, A)

A booster dose should be administered every 10 years following completion of a primary series of vaccinations. Adults who have not completed primary immunization require 3 doses: at 0, 2 months and 14 months, one of which will be DTaP.

Adults who have been vaccinated but who have never received acellular pertussis vaccine should be given a single dose of DTaP. Adults who are in contact with children and adolescents can be given DTaP, even if they have received vaccine with a tetanus component less than five years ago.

Tuberculosis

The tuberculin skin test (TST) is recommended for all persons at high risk for the infection (CTFPHC, A):

- people in close contact with active cases of tuberculosis,
- people at high risk of infection,
- people with immune deficiency diseases (HIV, diabetes, kidney failure or silicosis, or taking steroids or immunosuppressive drugs),
- people with abnormal chest x-rays that may indicate inactive tuberculosis,
- health workers and trainees (base value is determined using a two-step procedure).

Always verify indications, precautions and contraindications (PIQ) before administering the vaccine or TST.
SEXUALLY TRANSMITTED (STI) OR BLOODBORNE INFECTIONS\textsuperscript{17}

According to the Guide québécois de dépistage des infections transmissibles sexuellement ou par le sang\textsuperscript{17}, risk factors for sexually transmitted or bloodborne infections (STI) must be assessed and then, on the basis of the results,

- counselling should be offered to encourage the adoption and maintenance of safe behaviours,
- appropriate screening should be provided.

Screening for the following STI should be conducted, depending on the risk factors identified. Tests can be repeated every 3 to 6 months, according to level of exposure.

- Individual under 25 years old
  - with a new sex partner in the past 2 months
  - with more than 2 sex partners during the previous year OR
  - who contracted an STI during the previous year.
- Women seeking to terminate a pregnancy.

- Individual with more than 2 sex partners in the past 2 months or more than 5 during the previous year.
- Men who have sex with men
- Sex workers
- Individual who has had sex with a new partner from a country where STI and HIV are endemic or who has returned from a trip to such a country
- Pregnant women

- History of transfusion of a blood product, tissue transplant or organ transplant
- Accidental exposure to blood
- Getting a tattoo or piercing under poor hygienic conditions

- Drug user, injecting or not\textsuperscript{*}.
- Individual asking for testing, even in the absence of a risk factor reported following pre-test counselling.

\textsuperscript{*} Hepatitis C screening is recommended for any type of history of injection; it is also considered if there has been inhalation drug use.

Contact your reference laboratory to find out about tests or indications that apply to the patient’s situation:

- \textbf{Chlamydia (B)}: Nucleic acid amplification testing (NAAT) of cervical or urethral samples (NAAT of urine samples is offered in some centres)
- \textbf{Gonococcal infection (A)}: Cervical, urethral, rectal or pharyngeal culture, depending on medical history (nucleic acid amplification testing (NAAT) of genital or urine samples is available in some centres)
- \textbf{Syphilis (A)}: Serology: non-treponemal test: VDRL or RPR
- \textbf{HIV (A)}: Serology: anti-HIV antibodies
- \textbf{Hepatitis B}: Serology: HBsAg, anti-HBs and anti-HBc
- \textbf{Hepatitis C}: Serology: anti-HCV

\begin{center}
\begin{tabular}{c|c|c|c|c}
& Chlamydia & Gonococcal infection & Syphilis & HIV & Hepatitis B & Hepatitis C \\
\hline
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Hepatitis B: Serology: HBsAg, anti-HBs and anti-HBc & & & & & & \\
Hepatitis C: Serology: anti-HCV & & & & & & \\
\end{tabular}
\end{center}
RECOMMENDATIONS

TRAUMA AND SENSORY DEFICITS
FALLS ASSESSMENT\textsuperscript{1,18}

The CTFPHC recommends to conduct multidisciplinary assessment only if there is a history of falls in the home and if appropriate services are available (CTFPHC, A). If not, there is insufficient evidence to recommend screening the general population for potential determinants or risk factors (I recommendation). However, for people over 65 deemed to be at high risk or who have a history of falling, individually tailored exercise programmes to improve strength and balance are recommended (grade A) to prevent fractures linked to osteoporosis.\textsuperscript{21}

ROAD SAFETY\textsuperscript{1,19}

Legislation aimed at reducing the risks of traffic injuries meets the recommendations issued by the CTFPHC (A). Statutes on seatbelt use in cars, safety helmet use for motorcycles and controlling drinking and driving are grade A recommendations. However, during the periodic health examination of adults, individual counselling on seatbelt use and on reduction of alcohol consumption are grade B recommendations, while individual counselling on wearing a safety helmet when riding on a motorcycle and avoidance of drinking and driving, or talking about pedestrian safety are grade C recommendations.

HEARING\textsuperscript{1,19}

Limiting environmental noise exposure is a grade A recommendation (CTFPHC). We are not referring here to hearing protection measures requested and recommended by occupational health programmes. As for screening for hearing impairment, the following recommendations have been in effect since 1994: for the elderly, there are three screening manoeuvres, all graded “B”: audioscope test, asking a single question about hearing difficulty and whispered-voice out of field of vision test. Since 1996, the CTFPHC has recommended asking all patients over the age of 16 to ask a question in whispered speech. For 60-year-old patients with hearing loss, counselling on the use of hearing aids is a grade “B” recommendation, because hearing aids improve quality of life.
VISION\textsuperscript{1,2,19}

Recommendations issued by the CTFPHC and the USPSTF are similar and have not changed since 1996. Using the Snellen sight chart to assess the visual acuity of elderly patients in the periodic health examination is a grade “B” recommendation. Examination of fundi is a grade C recommendation, as is screening for glaucoma, except if the patient is at high risk, in which case the patient should be assessed by a specialist. Fundoscopy for elderly diabetic patients is the only examination that is a grade B recommendation. The Canadian Diabetes Association recommends screening and evaluation for retinopathy be performed annually 5 years after the onset of type-1 diabetes in individuals over 15 years of age, and then according to results. In people with type 2 diabetes, screening and evaluation for retinopathy should be performed at the time of diagnosis (grade A) and then tailored to results. In those with no or minimal retinopathy, the recommended interval is 1 to 2 years.

OSTEOPOROSIS\textsuperscript{19,20,21,22,23}

The most recent Canadian recommendations on osteoporosis were issued in 2004.\textsuperscript{21} Treatment of osteoporosis is accorded more importance than screening for the disease. Indeed, osteoporosis treatment can reduce the risk of fractures and is therefore a grade A recommendation. The CTFPHC concludes that there is fair evidence to recommend screening postmenopausal women, even though there is no direct evidence that screening reduces fractures (grade B).

The World Health Organization has defined the classification criteria for bone densitometry as follows:

- normal (T score > -1.0 or > 833 mg/cm$^2$ of hydroxyapatite)
- osteopenia (T score between -1.0 and -2.5 or between 833 and 648 mg/cm$^2$ of hydroxyapatite)
- osteoporosis (T score < -2.5 or less than 648 mg/cm$^2$ of hydroxyapatite)
- established (severe) osteoporosis includes the presence of a non-traumatic fracture.

The T score is the standard deviation above or below the mean bone mineral density for young adults. In fact, the most recent recommendations provide a model that integrates age and bone mineral density measurement value (either in table or graph form) to facilitate decision-making for treatment of osteoporosis.\textsuperscript{23}
SCREENING
According to the CTFPHC (2004), there are two predictors of low bone mineral density:
- history of fragility fractures (grade B recommendation) and
- high scores on the ORAI instrument (short questionnaire, compiling points for three questions: age, weight and current estrogen use) or SCORE questionnaire (which compiles differently questions that are similar to those on the ORAI while adding questions on ethnicity and history of fractures or rhumatoid arthritis)²⁴ (grade A recommendation).

Although these questionnaires can reliably assess bone mineral density, they are not as accurate when it comes to predicting fractures (grade B recommendations). Risk factors should be assessed in men over 50 and postmenopausal women. It is recommended (B)¹²(2004) to perform densitometry in all individuals who are 65 years or older, or whose ORAI score is over 9 or SCORE score over 6, or who have risk factors (see below). An individual’s situation can be reassessed and bone mineral density measured again every year or two. Screening using bone turnover markers is currently not recommended (I)¹²(2004).

Moreover, in 2002 the Osteoporosis Society of Canada produced a list of risk factors.²¹ The list identifies patients who do not meet the above criteria but who should be assessed:

**ONE MAJOR RISK FACTOR:**
- Age > 65 years.
- Vertebral compression fracture.
- Fragility fracture after age 40.
- Family history of osteoporotic fracture (especially hip fracture in mother).
- Systemic glucocorticoid therapy of more than 7.5 mg a day for more than 3 months.
- Malabsorption syndrome.
- Primary hyperparathyroidism.
- Propensity to fall.
- Appearance of osteopenia on radiograph.
- Hypogonadism.
- Early menopause (< 45 ans).

**OR TWO MINOR RISK FACTORS:**
- Rheumatoid arthritis.
- History of clinical hyperthyroidism.
- Long-term anticonvulsant or heparin therapy.
- Low dietary calcium intake.
- Daily intake of 2.5mg of steroids.
- Excess alcohol intake (more than two drinks a day).
- Excess caffeine intake (more than four cups a day).
- Body weight < 57 kg.
- Weight loss > 10% of body weight at age 25.
PHYSICAL ACTIVITY
The Osteoporosis Society of Canada recommends that individuals be encouraged to practice physical activity, especially weight-bearing activities (walking, dancing, racket sports...), impact-type exercises or using weights (C recommendation for men, B recommendation for pre- and post-menopausal women).22

PHARMACOPROPHYLAXIS
General recommendations for daily intake of calcium and vitamin D are as follows:

Calcium: for women aged 19 to menopause and men aged 19 to 50: 1000 mg; for menopausal women and men over 50 years old: 1500 mg/day (reassess after age 70). Although hormone replacement therapy (combination of estrogen-progesterone) is effective to reduce the number of fractures in women, the CTFPHC recommends against its use (grade D recommendation) for the primary prevention of chronic diseases and for the treatment of osteoporosis because potential risks outweigh potential benefits.1
Do not exceed 2500 mg/day. (A 250 ml glass of milk provides 314 mg of elemental calcium).

Vitamin D: 19 to 50 years old: 400 i.u., over 50 years old: 800 i.u.
Daily exposure to the sun (hands and face) for 15 minutes is enough to produce vitamin D. (A 250 ml glass of milk provides 100 i.u. of vitamin D).
RECOMMENDATIONS

PSYCHOSOCIAL ISSUES
**ALCOHOL ABUSE**\(^1,2\)

The USPSTF and CTFPHC both recommend screening to detect alcohol abuse and counselling for adult populations (B recommendation). In 2004, the USPSTF added a similar recommendation specific to people over 65 years old. The USPSTF also concludes that the evidence is insufficient to recommend for or against screening and behavioural counseling for adolescents. Methods used to identify alcohol abuse are the following:

- The four items in the CAGE questionnaire\(^25\) (touching on need to cut down on drinking, feeling guilty about drinking, being criticised for drinking, and having a drink first thing in the morning to get going). *(the acronym CAGE refers to the main issues: Cut down/Annoyed/ Guilt/ Eye-opener).*

- The AUDIT questionnaire\(^1\) is based on a point system; this questionnaire takes up the same issues as the CAGE but also quantifies alcohol consumption and certain consequences.

- Response to the clinical questionnaire about number of drinks per week exceeding 14 drinks for men and 9 for women.

The most recent data on this subject go back to 2004 for the USPSTF and 2002 for the CTFPHC. In 2003, the American Geriatrics Association recommended screening people over age 65 for alcohol consumption because of lower alcohol tolerance, reduced volume of distribution and increased drug interactions (since consumption of medications is greater). This recommendation was ratified and added to USPSTF recommendations in 2004. Although there is no specific recommendation for drug abuse screening, the USPSTF assigns it a grade C recommendation.

**COGNITIVE IMPAIRMENT**\(^1,2,26,27\)

While noting it is important to be attentive to issues related to labelling individuals as demented, the CTFPHC and the USPSTF recommend screening for dementia or cognitive impairment during the periodic examination using the Mini-Mental State Examination (MMSE) or Folstein Test\(^27\), if decline is observed by a caregiver or family member (A). If the memory complaint is self-reported, patient screening is a grade B recommendation. The stabilising but temporary effectiveness of medication and discussions on the sensitivity and specificity of screening tests and follow-up for dementia and loss of cognitive skills do not provide enough evidence to recommend routine screening of elderly individuals for cognitive impairment using the MMSE or Folstein test\(^27\) (grade I recommendation). *The Folstein test assesses spatiotemporal orientation, learning, attention and arithmetic skills, memory capacity, language and praxis of construction.*
DOMESTIC VIOLENCE\textsuperscript{1,28}

According to the CTFPHC, there is insufficient evidence to recommend for or against routine screening for violence against women (I). However, clinicians should be alert to signs and symptoms of potential abuse and may wish to ask about exposure to abuse during diagnostic evaluation of these patients.

Three questions can be asked:

1. Has your partner ever hurt, pushed or mistreated you?
2. Do you ever feel unsafe or afraid of your partner?
3. Does your partner call you names or try to control your every move?

Screening elderly people for mistreatment, identifying potential abusers, and counselling for the general population in case of domestic violence or violence against women are all grade C recommendations. However, it is recommended to refer women who have spent at least one night in a shelter to a structured programme of advocacy services (B).

SUICIDE AND DEPRESSION\textsuperscript{1,2,29}

The recommendations for these two themes are closely linked.

The CTFPHC does not recommend routine screening for suicide risk (C recommendation). The same grade is attributed if the target group is composed of individuals who have attempted suicide previously.

However, screening adults for depression in primary care settings where there are integrated programs for feedback to patients and access to case management or mental health care is a grade B recommendation (2005)\textsuperscript{29}; or if there is suicidal ideation; or in the presence of one of the following risk factors: history of psychiatric illness, substance abuse, chronic terminal illness, family history of suicide, first-generation immigrant or Native or Aboriginal young man.

Moreover, treatment for patients with suicidal ideation or depression are grade B and A recommendations respectively.
RECOMMENDATIONS

DENTAL PROBLEMS
TOOTHBRUSHING\textsuperscript{1,30}

Toothbrushing is essential for self-application of a fluoride dentifrice. Consequently, daily toothbrushing with fluoride toothpaste should be recommended to all patients (CTFPHC,A).

Effective brushing every day, even without fluoride toothpaste, removes dental plaque from the surfaces of the teeth. (It is worth checking if the patient is aware of the proper toothbrushing technique). Dental plaque on a tooth surface is a necessary factor for the development of tooth caries. It has been proven that daily use of fluoride toothpaste results in an effective way to reduce dental caries.

Some people develop tartar more quickly than others. It has been proven that anti-tartar toothpaste helps reduce tartar build-up above the gums in patients in whom tartar tends to form.

Consequently, daily use of anti-tartar dentifrice should be recommended once it has been determined that a person has a propensity to develop tartar.

USE OF DENTAL FLOSS\textsuperscript{1,30}

It has been proven that daily flossing helps prevent gingivitis (CTFPHC,A), except in children, given that it removes plaque between the teeth.

Although there is not enough scientific evidence (CTFPHC,C) to recommend that physicians ask patients if bleeding occurs when they brush their teeth or use dental floss, bleeding gums when using these two preventive measures may be an indication of periodontal disease.

SCALING\textsuperscript{1,30}

When a patient has tartar buildup, a dental consultation should be recommended. Therefore, a physician should ask patients about this issue or conduct an examination to check for tartar when he or she suspects poor dental hygiene.

Tartar is an aetiological factor for periodontitis. As a result, a dental health professional (dentist or dental hygienist) should remove tartar using the scaling process.
SMOKING CESSATION$^{1,30}$

There is good scientific evidence to consider smoking as an independent risk factor for periodontal diseases and as a major risk factor for malignant tumours of the oral cavity. Smoking cessation counselling should be delivered to all individuals who smoke (CTFPHC,B).

USE OF A GEL OR MOUTH RINSE$^{1,30}$

Fluoride supplementation other than thorough brushing with fluoride toothpaste can be recommended in some clinical situations, when prescribed by a dentist. A patient who develops at least one new carious lesion during the year becomes a potential candidate who could benefit from use of fluoride supplements (CTFPHC,A).

Use of chlorhexidine mouth rinse helps prevent gingivitis. This antiseptic is an effective antimicrobial to reduce plaque located above the gums, and can also be useful to prevent dental caries. Use of a mouth rinse containing 0.12% de chlorhexidine, twice a day, should be recommended to patients who have difficulty brushing their teeth (e.g. people with disabilities or cancer) (CTFPHC, A).
RECOMMENDATIONS

MOTIVATING PATIENTS TO PRACTICE PREVENTION
Implementing preventive practices into an already hectic medical practice requires changes.\(^{31,32,33,34}\)

**Changes in our knowledge:**
What preventive measures are proven to be effective today?
What will these be tomorrow?
Will we have to relearn constantly?

**Changes in our values:**
Believing in evidence or not. Having confidence in its impact or not. Wanting to follow-up or not.
What are my own personal values related to primary prevention?

One has to believe in the effectiveness of preventive measures to follow-up on them. We say we do not believe in “easy” application and results, but in the effectiveness of actions under the right conditions.

**Changes in our behaviours:**
“The problem is… a patient who doesn’t show up or who doesn’t want to make an effort;
It is… controversies in the data;
It is… the clinic, which isn’t organised for this type of action, or… possible lawsuits, lack of time, no payment, etc.”

Real motives or external attributions? Will I let all these obstacles spoil my practice? Will I let them manage my personal values? Do good, and do it well.
Human beings are complex, and so, of course, are behaviour changes (both the physician’s and the patient’s). Physicians who understand the complexity of the task of initiating change will set realistic goals.

**Objective:**

Patient self-management of his or her own health.

**Prerequisites:**

When undertaking to motivate a patient to change, it is necessary to knowingly integrate at least the four basic concepts listed here:

1. Prepare yourself to work with the complexities of the human intrapsychic process (patient and physician): two individuals, two value patterns at work.

2. Think of it as individual but opposite objectives:
   - those of the patient: unknown prevention objectives that are played down or repressed;
   - those of the physician: prevention objectives to impart to each patient.

3. Accept the patient’s ambivalence as a useful factor for change.

4. Relinquish power to enable the patient to appropriate it. Empowerment or power over one’s one life belongs to the patient. Essentially, it is at the heart of the change process that can stem from it. If the patient does not appropriate power, he or she must learn to take it, thus freeing the physician from shouldering the entire responsibility. Motivational interviewing provides a respectful approach to patient empowerment and fosters patient autonomy.

There are many ways to address a patient and to present a theme such as prevention. Some physicians already apply the Five A’s construct (Assess, Advise, Agree, Assist, Arrange) or the transtheoretical model of change as useful elements to frame the process. However, general principles should be followed. Motivational interviewing describes these principles:

1. Express empathy.
2. Examine perceived discrepancies between current behaviour and future goals.
3. Roll with resistance, not against it.

A stages of change worksheet is proposed to help patients to move towards prevention taking into account the principles of motivational interviewing and applying the transtheoretical model of change designed specifically for an individual prevention approach. A description sheet given to the patient helps focus on the prevention priority or priorities agreed upon.
### The undecided patient

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<tr>
<th>Current intention</th>
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<tr>
<td><strong>Is resistant</strong> to suggestions for prevention.</td>
<td><strong>Starts</strong> thinking about the positive aspects of prevention.</td>
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<tr>
<th>Arguments</th>
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<td>• What are the disadvantages he/she puts forward?</td>
<td>• What disadvantages worry him/her?</td>
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<td>• Does he/she see any advantages at all? Which ones?</td>
<td>• What benefits does he/she foresee?</td>
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<tr>
<th>Empathic attitude</th>
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<td>• Listen without judging.</td>
<td>• Consider the patient’s main concern. If taken seriously, the patient will be more inclined to want to listen to something else.</td>
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<td>• Avoid argument and confrontation; they provoke resistance and obstruct change.</td>
<td>• Allocate enough time.</td>
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<th>Precautions</th>
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<td>• Provide direct, concise, non-emotional answers.</td>
<td>• Work on ambivalence</td>
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<th>Cost</th>
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<td>• Expensive intervention effort</td>
<td>• Effective effort</td>
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<th>Motivational interventions</th>
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<td>• List one or two prevention successes (vaccination, smoking cessation, etc.).</td>
<td>• Answer questions clearly.</td>
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<td>• Briefly answer questions.</td>
<td>• Discuss the concerns raised.</td>
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<tr>
<td>• Express your concerns regarding the individual effects of no prevention. (health repercussions).</td>
<td>• Discuss strategies to deal with the difficulties mentioned.</td>
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<td>• Tell patient that you want to help him or her make an informed decision and understand the consequences of no prevention and the requirements and benefits of prevention.</td>
<td>• Encourage the patient to focus on reasons that motivate him to choose prevention.</td>
</tr>
<tr>
<td>• Stress that it is up to them to decide whether to invest in prevention and when</td>
<td>• Remind the patient that you want to help him or her make an informed decision and understand the consequences of no prevention and the requirements and benefits of prevention.</td>
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<tr>
<td>• Stress the fact that it is up to them to decide whether to invest in prevention and when</td>
<td>• Stress the fact that it is up to them to decide whether to invest in prevention and when</td>
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<th>Preventive interventions</th>
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<td>• Make it known that you are available for medical follow-up and to shed light on prevention.</td>
<td>• Go over the context of diseases and their consequences before there was interest in prevention.</td>
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<tr>
<td>• Correct misinformation.</td>
<td>• Tell the patient you have confidence in his or her ability to attain prevention objectives.</td>
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<th>Summary</th>
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<td>• Clearly identify the intervention framework.</td>
<td>• Offer counselling: remain realistic and progressive.</td>
</tr>
<tr>
<td>• Offer educational material.</td>
<td>• Inform the patient of the various prevention options and resources available.</td>
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</table>

References: 31, 32, 33, 34
The “active” patient

Decides on an action.

Takes action:
- Makes appointments/shows up
- Sticks to preventive behaviour
- Does not postpone dates and actions.

Tries again, on a specific date.

- What are the foreseen concerns and obstacles?
- Highlight the concrete objectives and strategies chosen.

- What are his or her concerns or questions, prevention plan, risks of abandoning?

- What are the reasons for delays or setbacks?

- Listen without judging.
- Consider the patient’s main concern. If taken seriously, the patient will be more inclined to want to listen to something else.
- Avoid arguments and confrontations; they provoke resistance and obstruct change.
- Allocate enough time.

- Explain again Support
  Congratulate on the decision

- Support
  Congratulate on the results

- Remove guilty feelings/Support

- Useful, inexpensive effort

- Discuss the obstacles foreseen by the patient.
  - Identify with the patient residual factors that trigger uncertainty, and strategies to deal with it.
  - Identify people close to the patient who can offer support (positive)

- Discuss the concerns raised.
  - Discuss the strategies used to attain the objectives.
  - Discuss how to resist the numerous opportunities to put off prevention
  - Suggest that the patient emphasise his or her successes, no matter how small.

- Explore the strategies to adopt to avoid delays.
  - Tell the patient that you are available to provide support for prevention.

- Make it known that you are available for medical follow-up and shed light on prevention.
- Remind the patient of the context of diseases and their consequences before there was an interest in prevention.
- Correct misinformation.
- Tell the patient you have confidence in his or her ability to attain prevention objectives.

- Clearly identify the intervention framework.
- Offer counselling: remain realistic and progressive.
- Offer educational material.
- Inform the patient of the various prevention options and resources available.
70% of adults consult a family physician every year. A physician will have about 150,000 patient visits during his or her career, each lasting about 15 minutes. This translates into 5000 hours spent informing and counselling people, the equivalent of 2.4 full-time years! Nonetheless, preventive recommendations are not well integrated into daily clinical practice. During a periodic health examination, the clinician raises an average of four subjects and spends around 3 minutes on prevention. Preventive messages can then be brought up again during subsequent visits.

Here are a few examples:
- Ask about the smoking status 86%
- Take the patient’s blood pressure 83%
- Vaccinate against influenza 75%
- Do a Pap smear 66%
- For women aged 50 to 69 years, do a mammography 65%
- Provide smoking cessation counselling 58%
- Provide physical activity counselling 47%
- Provide counselling about sexual practices 36%

To foster adoption of preventive recommendations, it is important to decrease barriers to change, believe in prevention, and especially be motivated to do it!

A few preconditions have been shown to be effective, when done in stages:

1- Support change

This step involves assessing the degree to which physicians, nurses, support staff and other professionals who may be involved are open to change. Values and beliefs related to prevention are determined. It is essential to have the support of colleagues and administrators, and to designate someone to be in charge of the prevention component.

2- Be familiar with your patients and their current preventive practices

Initially, draw up a profile of morbidity and causes of mortality among your clientele. Then, list the preventive practices currently used in the clinic so as to identify the services required.

3- Opt for a preventive framework

Choose a reference guide that is up-to-date, useful and easily accessible for everyone. It is important to carefully choose tools that are useful to professionals, and to allot time for training.

4- Assign roles

Establish the roles of nurses, secretaries and other professionals. It is important to ensure that a mechanism is in place for patient follow-up and to schedule visits in a patient registry.

5- Empower patients

It is advisable to have a realistic action plan that can be measured and is tailored to the different issues. Patient self-management tools can be proposed and resources suggested.
PERIODIC HEALTH EXAMINATION OF ADULTS

The proposed tracking tool can be included in an adult patient’s file to follow the evolution over time of various risk factors relevant to preventive practice. These elements combine the main Category A and B recommendations to undertake, as well as other recommendations that emanate from guidelines presented in this guide. To avoid repetition, elements that may pertain to more than one issue are reported only once.

*Each main category is subdivided into three sections:*

- **Q**: at questionnaire;
- **E**: at examination;
- **L**: in the laboratory

This tool is easy to integrate into a patient’s file and acts as a checklist for periodic medical checkups.

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<th>YEAR</th>
<th>AGE</th>
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<th>CANCER</th>
<th>INJURIES AND SENSORY DEFICITS</th>
<th>PSYCHO-SOCIAL</th>
<th>DENタル</th>
<th>INFECTIOUS DISEASES</th>
<th>TRACKING TOOL FOR THE PERIODIC HEALTH EXAMINATION OF ADULTS</th>
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<td>Vitamin D</td>
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<td>50+</td>
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<td>Q</td>
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<td>60+</td>
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<td>Evaluation after a fall</td>
<td>Q</td>
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<td>60+</td>
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<td>Domestic violence (if ever)</td>
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<td>Cognitive impairment (Folstein)</td>
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<td>Toothbrushing+fluoride toothpaste</td>
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<td>Dental floss</td>
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33 Periodic health examination of adults
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27. A version of the Folstein test is available: Web site: http://www.esculape.com/fmc/folstein


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Dr. François Goulet
Dr. André Jacques
Dr. Martin Labelle
Dr. Monique Letellier
Dr. Claude Thivierge
Dr. Robert L. Thivierge

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Pedagogic division
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Dr. Claude Thivierge
Dr. Robert Thivierge

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